

Broadband affordability estimates for the UK

May 2023

Author

James Meadway, Independent Economist, for Promising Trouble

Contact

annad@promsingtrouble.net



Contents

Executive Summary	3
Broadband price changes	7
Social tariffs	9
Impact of broadband price increases on households	11
Specific household examples	16
For more information	22



1. Executive Summary

Broadband access in UK households has risen dramatically over the last two decades, from 57% of households having broadband at home in 2006 (when the comparable official series began) to 96% by 2020. This shift to near-universal provision, close to the levels of running water (>99%) and electricity (>99%) suggests that broadband access at home has become an essential part of household consumption.

Although the UK has historically ranked well for overall affordability compared to similar developed countries, recent, substantial increases in broadband prices suggest that this recently positive picture is under threat. Lower-income households, in particular, may face significant and growing difficulties accessing what has become essential expenditure for full participation in modern life. The table below shows recent broadband price increases.

Table 1: Broadband price increase index

Date range	Price
	increase
Apr 19-Apr 20	7.61%
Apr 20-Apr 21	2.04%
Apr 21-Apr 22	4.70%
Apr 22-Apr 23	7.50%
Apr 23-Apr 24	11.03%

Sources: ONS CPI, 2019-2022; own calculations from published price increases, 2022-24

Ahead of the most recent broadband price increases, announced April 2023 for the year to April 2024, we can estimate the following expenditures on broadband for households, ranked by income decile from poorest to richest 10%. These estimates are based on Ofcom's own estimates for spending, adjusted for subsequent price inflation, and ONS figures for household incomes and spending, all for the year to April 2023.

https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/bulletins/internetaccesshouseholdsandindividuals/2020

¹ ONS (7 August 2020), "Internet access".



Table 2: Households by income decile, monthly broadband spend, financial year ending April 2023

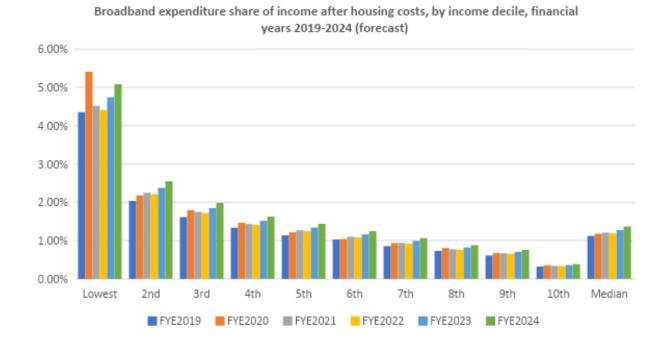
Decile	Lowest	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Median
Income											
Before											
Housing											
Costs	£1,083	£1,886	£2,388	£2,860	£3,259	£3,830	£4,376	£5,168	£6,214	£11,483	£3,545
Housing											
costs	(£428)	(£387)	(£462)	(£512)	(£602)	(£766)	(£786)	(£826)	(£1,172)	(£1,590)	(£753)
Income											
After											
Housing											
Costs											
(AHC)	£654	£1,498	£1,926	£2,348	£2,657	£3,064	£3,591	£4,342	£5,041	£9,894	£2,792
Broadba											
nd											
spend	£31.00	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60
% of											
AHC	4.7%	2.4%	1.8%	1.5%	1.3%	1.2%	1.0%	0.8%	0.7%	0.4%	1.3%

Sources: ONS Effects of Taxes and Benefits (2022); ONS Family Spending (2022); income forecasts for financial year to April 2023 from Office for Budget Responsibility Economic and Fiscal Outlook (March 2023)



It is clear that relative broadband costs, taking them as a share of household income, increase substantially with lower incomes. This reflects the essential nature of broadband spending, with lower income households having to devote proportionately more of their disposable income to broadband costs compared to richer households, rather than being able to opt out of such spending. This, again, reinforces the point that broadband expenditure, like food or energy, is an essential consumption item for a household.

These figures can be placed into a more historical context by looking at the impacts of disposable income changes and broadband pricing changes over time, for the years where comparable figures are available. It is also possible, using official forecasts for income growth from the Office for Budget Responsibility, to project the expenditure shares on broadband forward to April 2024, given the announced broadband price increases. All this is shown on the graph below.



The rising share with lower incomes, especially for the poorest households, alongside the increased general burden of expenditure over time are both now very apparent. For the poorest decile of households, the costs of broadband access are significantly higher than other decile groups, suggesting affordability issues.

Breaking this down further, we can look at the issue of affordability for specific types of low-income households. Assuming a single-person low income household, paying either the standard, average or the social tariff for broadband, the following shares of expenditure apply.



Table 3: Shares of disposable income spent on broadband, low-income household type, year to 2023

Household type	Standard tariff	Social tariff
Median	1.28%	n/a
Out-of-work UC claimant	8.41%	4.61%
Part-time UC claimant	3.61%	1.98%
Individual in receipt of disability benefits	6.68%	3.67%
State pension and pension credits	3.85%	2.11%
Low income household not eligible for benefits	4.74%	2.60% NB most will not be eligible for a social tariff

This breakdown shows that affordability issues for particular low-income households may become severe on the standard tariff. Social tariffs typically reduce the burden substantially but it is worth noting that these are only available to households in receipt of some form of benefits. Even so, households solely dependent on benefits payments (particularly outside of pensions) are likely to find the costs of provision prohibitive without a social tariff, and difficult even with.

Those 2.4m households recently identified by the Joseph Rowntree Foundation as on low incomes but not are likely to be especially badly affected, since they are not eligible for social tariff provision but on the average payments suggested here, would find affordability significantly improved if they were. They lose out on the benefits uprating of 2023, which otherwise positively impacts some very low income groups.



Broadband price changes

Although the historical figures have suggested UK broadband costs are not especially high, ranking as the fifth most affordable of comparable developed countries in the OECD group,² recent significant increases in the costs of broadband provision imply a considerable worsening of affordability. In addition, longstanding income inequalities between households imply that, away from the average and higher-income households, specific problems for affordability could exist amongst lower-income groups. The latter have been highlighted by Ofcom, the official regulator, in previous work.³

The table below, compiled from multiple sources including suppliers' own data, shows the current tariffs and announced broadband price increases for standard broadband for the major UK providers. We have also included their shares of the total UK broadband market.

Table 4: UK main broadband services, April 2023, per month, with announced price increases

Provider	%	Standard	2023	% UK
	increase	speed	price	market
		(Mbps)		
BT	14.4	36	26.99	25.0%
Sky	8.1	36	25.00	22.0%
Virgin Media	13.8	132	28.5	17.0%
TalkTalk	14.2	145	32.00	9.0%
Plusnet	14.4	66	24.99	4.0%
EE	14.4	36	24.00	5.0%
Vodafone	14.4	35	24.00	4.0%
NOW Broadband	0	36	25.00	2.0%
Shell Energy Broadband	13.5	35	22.99	1.0%
Gigaclear	14	200	17.00	0.1%

² Catherine Tiley (10 March 2022), *Global Broadband Index*, Uswitch. https://www.uswitch.com/broadband/global-broadband-index/

³ See Ofcom's "Affordability of communications services" series from 2020 onwards.



Hyperoptic	0	50	25.00	0.1%
Community Fibre	13.4	150	20.00	0.1%

Sources: provider websites; Uswitch; Moneytothemasses.com; Choose.co.uk; Statista

A weighted average price increase (weighted by the market size) for UK broadband prices in April 2023 is 11.03%. This compares to a weighted average increase of 7.05% in April 2022, based on Ofcom's figures for UK broadband price increases that year. Together with the Office for National Statistics Consumer Price Index series for broadband services, we can show typical broadband price increases for the last few years.

Table 5: Broadband price increase index

Date range	Price
	increase
Apr 19-Apr 20	7.61%
Apr 20-Apr 21	2.04%
Apr 21-Apr 22	4.70%
Apr 22-Apr 23	7.50%
Apr 23-Apr 24	11.03%

Sources: ONS CPI, 2019-2022; own calculations from published price increases, 2022-24



Social tariffs

Social tariffs are cheaper broadband and phone packages intended for those claiming Universal Credit, Pensions Credit and some other benefits. Introduced on a voluntary basis, the provision of social tariffs has expanded significantly in recent years. From only BT and KCOM providing such a tariff in 2020, there are now 20 known providers of social tariffs across much of the country, as detailed (for different price tariffs) below.

Table 6: UK available broadband social tariffs, April 2023

Broadband social tariff	Price per month	Av. Speed (Mbps)	Eligibility	Areas available
BT Home Essentials	£15	36	Various benefits (in and out of work)	Widely available
BT Home Essentials 2	£20	67	Various benefits (in and out of work)	Widely available
B4RN	£15	1000	Council Tax Support	Rural areas in Lancashire and Cumbria
Connect Fibre Basic Essentials	£20	50	Various benefits (in and out of work)	Parts of Cambridgeshire, Derbyshire, Essex, Nottinghamshire and Yorkshire
Country Connect Social Tariff	£15	50	Various benefits (in and out of work)	Wales
G.Network Essential Fibre Broadband	£15	50	Various benefits (in and out of work)	London
Grain Social	£15	15	Various benefits (in and out of work)	Selected towns and cities
Grain Social Plus	£22.50	30	Various benefits (in and out of work)	Selected towns and cities
Grayshott Gigabit	£20	100	Various benefits (in and out of work)	East Hampshire, Surrey Hills, surrounding areas
Hyperoptic Fair Fibre 50	£15	50	Various benefits (in and out of work)	Selected towns and cities
Hyperoptic Fair Fibre 150	£20	150	Various benefits (in and out of work)	Selected towns and cities
KCOM Full Fibre Flex	£14.99	30	Various benefits (in and out of work)	Hull



Lightning Fibre Social Tariff	£15	50	Various benefits (in and out of work)	Parts of Kent & Sussex
Lothian Broadband Social Tariff	£14.99	100	Various benefits (in and out of work)	Parts of East Lothian & Midlothian
Now Broadband Basics	£20	36	Various benefits (in and out of work)	Widely available
Sky Broadband Basics	£20	36	Sky Broadband customers receiving various benefits (in and out of work)	Widely available
Truespeed Basic	£20	30	Various benefits (in and out of work)	Parts of Somerset
Virgin Media Essential Broadband	£12.50	15	Various benefits (in and out of work)	Widely available
Virgin Media Essential Broadband Plus	£20	54	Various benefits (in and out of work)	Widely available
Vodafone Essentials Broadband	£12	38	Various benefits (in and out of work)	Widely available
WightFibre Essential Broadband	£16.50	100	Universal Credit or Pension Credit	Isle of Wight
Wildanet Social Tariff	£20	30	Universal Credit	Parts of Cornwall and Devon
YouFibre Social Tariff	£15	50	Various benefits (in and out of work)	Selected towns and cities
4th Utility social tariff	£13.99	30	Various benefits (in and out of work)	London, North West, South East, West Midlands

Source: Which?; supplier websites

In the absence of demand data, we use a simple average for these tariffs to later construct a "typical" spend for social tariffs, as shown below.



Impact of broadband price increases on households

This section shows the impact of broadband price increases on different households, looking at both the impact on inequality, via income deciles, and on representative lower-income households. It is intended to build on existing work by Ofcom, expanding the range of lower-income households considered (importantly including those not in receipt of benefits) and allowing us to make some claims about the likely impact of broadband price increases announced in April 2023, ahead of survey data becoming available.

We have built a new After Housing Cost series for income deciles from the Family Spending data using DWP guidance for its own Households Below Average Income series.⁴ Where the Family Spending data on housing costs was incomplete, as it was for the last two financial years of 2021 to 2022, the missing data has been filled in using the ONS' Consumer Price Index disaggregation for the appropriate series to model price changes in the series for the missing years.

This method is not perfect, since in response to changing prices, households and individual consumers may well also choose to shift their spending around. But where the missing information concerns essential household spending (as housing costs inevitably must be) the scope of any such substitutions will be limited and so changes in (for instance) the price of water supplies over time will not be substituted by households particularly easily. We can therefore use the new After Housing Costs disposable income series with some confidence.

For the financial year ending April 2023, running up to the price increases announced for this month, we can show the following breakdown for incomes and costs by decile, matching the breakdown provided by Ofcom for 2020, published in July 2021:⁵

⁴ The DWP describe the difference between before and after housing costs measures of household income: "Before Housing Costs (BHC) indicates the following housing costs have not been deducted from income, however After Housing Costs (AHC) indicates the following housing costs have been deducted from income: rent (gross of housing benefit); water rates; community water charges and council water charges; mortgage interest payments; structural insurance premiums." DWP, "Households Below Average Income (HBAI) Stat-Xplore database guide", (n.d.):

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/972042/households-below-average-income-stat-xplore-user-guide.pdf

⁵ See Ofcom (11 July 2021), *Affordability of Broadband Services: summary of findings*, Table 7. https://www.ofcom.org.uk/__data/assets/pdf_file/0015/222324/affordability-of-communications-services-summary.pdf



Table 7: Households by income decile, monthly broadband spend, financial year ending April 2023

Decile	Lowest	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Median
Income											
Before											
Housing											
Costs	£1,083	£1,886	£2,388	£2,860	£3,259	£3,830	£4,376	£5,168	£6,214	£11,483	£3,545
Housing											
costs	(£428)	(£387)	(£462)	(£512)	(£602)	(£766)	(£786)	(£826)	(£1,172)	(£1,590)	(£753)
Income After											
Housing											
Costs (AHC)	£654	£1,498	£1,926	£2,348	£2,657	£3,064	£3,591	£4,342	£5,041	£9,894	£2,792
Broadband											
spend	£31.00	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60	£35.60
% of AHC	4.7%	2.4%	1.8%	1.5%	1.3%	1.2%	1.0%	0.8%	0.7%	0.4%	1.3%

Sources: ONS Effects of Taxes and Benefits (2022); ONS Family Spending (2022); income forecasts for financial year to April 2023 from Office for Budget Responsibility Economic and Fiscal Outlook (March 2023)



The broadband expenditure series are based on Ofcom's decile estimates for financial year ending April 2020. These costs are based on "dual-play" spending by households, incorporating broadband only and broadband plus landline costs. They exclude the costs of "triple-play" or additional services that are often bundled for households along with broadband and line rental costs, such as TV subscriptions services.

Ofcom's original figures were constructed on the basis of a very large database of broadband payments by area, using confidential supplier data. Ofcom took the average spend in the 10% of most deprived areas as a proxy for spending by the lowest income decile in any area, and treated the average spend for the remaining 90% of areas as a proxy for the average spend for a household in any area. By basing our projections forward on their data, we are implicitly assuming this method is correct, although it will (in practice) mis-count a household in the poorest decile if they live outside of the most deprived areas, and vice versa for a richer household in the most deprived areas. Nonetheless, it means our figures can be treated as directly comparable to Ofcom's own.

We then estimated these costs to households for the financial years after April 2020 using the ONS CPI series "Internet access provision services" (08.3.0.3), up to March 2022. This series accounts for price increases across broadband provision. After March 2022, when the ONS series ends, we use an average, weighted by market share, of broadband providers' announced increase in prices, based on the price increases and market shares shown in Table 1 above. This gives us estimated household spending on broadband by deciles for the years to April 2023 and April 2024, which includes the most recent price increases announced.

Note that these are estimates, based on the assumption that substitution either between differently priced broadband providers, or out of (or into) broadband provision is limited. We think this is a reasonable assumption, given the limited amount of switching of provision that actually takes place,⁶ and the price inelastic demand for broadband services that reflects its status as essential expenditure.⁷

⁶ Only 15% of fixed broadband, and 13% of "dual play" customers switched provider in 2022, falling from previous years. Ofcom (11 April 2023), Ofcom Switching Tracker: proposed changes for 2023, Table 1.

https://www.ofcom.org.uk/__data/assets/pdf_file/0030/256629/2023-switching-tracker-notification-of-change.pdf ⁷ Studies have consistently shown a low elasticity of demand for broadband services in the UK and other developed countries, meaning consumers respond only a little to price changes for broadband services. For example, Richard Cadman and Chris Deneen (2008), "Price and Income Elasticity of Demand for Broadband Subscriptions: A Cross-Sectional Model of OECD Countries", *Telektronik* 3-4; Chris Doyle (3 March 2009), "Increasing the regulated prices of BT Openreach is unnecessary and will undermine Digital Inclusion", Warwick Business School, working paper; George S. Ford (28 July 2021), "Assessing broadband



Given the dominance of broadband provision in the UK by three major providers (BT, Sky and Virgin Media) who account for almost two-thirds of the market, all of whom increased prices during our period, a consumer's choices may be somewhat constrained.

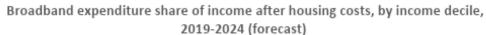
But our assumption implies that the estimates for spending here are likely to be towards the upper end of household expenditure, to the extent that households are able to substitute between different broadband providers (or even drop spending altogether) in the face of price increases. Ahead of the full survey data becoming available, however, these should be reasonably robust estimates of household spending.

For the financial year to 2024, we use the official forecasts of income growth from the Office for Budget Responsibility. This allows us to forecast the likely broadband expenditure and shares of broadband spending in household income, given the price increases announced from April 2023. We assume, for simplicity, that nominal income growth over this period is even across the population, in line with the OBR's central forecast; although we note in practice that, since lower-income deciles have tended to see lower nominal income growth in recent years than higher, this assumption is likely to *understate* the share of lower income spending on broadband.

The changes in broadband expenditure for households, as a share of household income by decile, are shown for 2019 to 2024 below.

policy options: empirical evidence on two relationships of primary interest", Phoenix Centre for Advanced Legal and Economic Public Policy Studies, working paper.







The contrast between expenditure shares of household income for poorer and richer deciles is immediately apparent, as is the steady increase in household expenditure shares over the six years covered (including the forecast period). This reflects the status of broadband expenditure as an essential service for modern living, with poorer households compelled to devote more of their disposable income to essential goods and services than those with more disposable income, in a manner analogous to food or energy. For the poorest decile, the year to April 2020 appears to be anomalous, with the expenditure share of broadband in after housing costs disposable income rising dramatically for that year only. This arises from a notable increase in recorded housing costs over 2019-20 in the ONS figures, rather than a surge in the costs of broadband directly, which fades back to the trend rate of growth in the following financial year.

In general, there has been an upwards shift in the typical share of broadband spending by households that is more pronounced the poorer the household. We tabulate this differential shift below for the whole period excluding the last, forecast financial year ending in April 2024.

⁸ This effect is known as Engel's Law, and has proved extremely robust since first being observed in 1857.



Table 8: Shift in share of broadband expenditure by income decile, FYE2019-FYE2023

Lowest	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Median
0.38%	0.34%	0.24%	0.18%	0.20%	0.13%	0.14%	0.09%	0.10%	0.04%	0.15%

Specific household examples

Matching the work Ofcom (2020),⁹ we also include here six sample households likely to be paying very substantial shares of their income on broadband services, given the announced price increases for April 2023, as listed below:

- median income household
- out of work Universal Credit claimant (based on uprating of benefits from April 2023)
- part-time working Universal Credit claimant (based on uprating of benefits from April 2023)
- single person household receiving UC and standard Personal Independence Payments (based on uprating of benefits from April 2023)
- single person household receiving State Pension and Pension Credit (based on uprating of benefits from April 2023)
- single person low income household not eligible for social tariffs, or not claiming benefits, based on Joseph Rowntree Foundation (2023)¹⁰

Other than the median household, we have assumed a single person household either in receipt of the stated benefit or assumed (for the last household) an estimate of their earnings, if they were earning the average income of the lowest income decile. In all cases, disposable incomes are presented After Housing Costs,

⁹ Ofcom (15 February 2022), Affordability of Communications Services: Summary of research findings and update on availability and take-up of broadband social tariffs, p.12.

https://www.ofcom.org.uk/__data/assets/pdf_file/0016/232522/Affordability-of-Communications-Services.pdf

10 Katie Scheumaker, Joseph Elliot (19 January 2023), "On a low income but not claiming means-tested benefits", Joseph Rowntree Foundation. https://www.irf.org.uk/report/low-income-not-claiming-means-tested-benefits



following the Households Below Average Income standard and with the implicit assumption that these costs are otherwise covered.

We have assumed throughout that the broadband expenditure will be typical for the income decile that a household of the kind shown would find itself in, mirroring the method in Ofcom (2020). For the social tariff, we have taken a simple average of the social tariffs listed in Table 4 above. This is a reasonable method, given the lack of data on real household expenditures at this level of detail.

In contrast to the decile results, these specific households should be taken as case studies, or examples of the costs that could be faced by different households, given broadband price increases, rather than "average" or "typical" representatives of the population. Without the micro data on incomes for 2023, not yet available, it is not possible to construct an "average" in this fashion. As Ofcom (2020) notes, it is also difficult from the data available to construct an "average" broadband spend for households at this level of disaggregation.

For the final category, of households with low incomes but not in receipt of benefits, we note with Joseph Rowntree Foundation that "data limitations mean we cannot easily quantify" the experiences of the group and the households within it. Instead, we have used our own fitted figure for a typical household's disposable, after housing cost income for the lowest-income decile of households up to April 2023. JRF estimate that four in ten households in the poorest fifth of households are not in receipt of benefits, implying that 2.4m households are in something like this situation.



Table 9: Effects on example households, 2022 payments and broadband costs included (April 2022-April 2023)

Household	Median			Part-time UC claimant		Individual in receipt of disability benefits		State pension and pension credits		Low income household not eligible for benefits	
Broadband tariff type	Standard	Standard	Social	Standard	Social	Standard	Social	Standard	Social	Standard	Social
Disposable income, after housing costs (£)	2,619	335	335	781	781	421	421	730	730	610	610
Estimated broadband spend (£)	35.00	31.00	16.50	31.00	16.50	31.00	16.50	31.00	16.50	31.00	16.50
Share of income	1.34%	9.26%	4.93%	3.97%	2.11%	7.36%	3.92%	4.24%	2.26%	5.08%	2.70%



Table 10: Effects on example households, 2023 upratings and broadband costs included (April 2023-April 2024)

Household	Median	Out-of-work UC claimant		Part-time UC claimant		Individual in receipt of disability benefits		State pension and pension credits		Low income household not eligible for benefits	
Broadband tariff type	Standard	Standard	Social	Standard	Social	Standard	Social	Standard	Social	Standard	Social
Disposable income, after housing costs (£)	2,792	369	369	859	859	464	464	804	804	654	654
Estimated broadband spend (£)	39.54	34.43	17.00	34.43	17.00	34.43	17.00	34.43	17.00	34.43	17.00
Share of income	1.42%	9.34%	4.61%	4.01%	1.98%	7.42%	3.67%	4.28%	2.11%	5.26%	2.60%

Sources: DWP guidance on benefits (2023); estimated broadband spend calculated for decile share of household, given income, as above; social tariffs taken as average of known current tariffs. Note that households not eligible for benefits will not usually be eligible for social tariffs.



Table 11: Changes in shares of household expenditure, 2022-2023

	Median	Out-of-work UC claimant		Part-time UC claimant		Individual in receipt of disability benefits		State pension and pension credits		Low income household not eligible for benefits	
	Standard	Standard	Social	Standard	Social	Standard	Social	Standard	Social	Standard	Social
Change in share, 2022 to 2023	0.08%	0.08%	-0.32%	0.04%	-0.13%	0.06%	-0.25%	0.04%	-0.15%	0.18%	-0.11%

Table 12: Population sizes

	Total claimants	Share of all individuals
Universal Credit claimants, not in work		
	3,500,000	5.2%
Universal Credit claimants, in work		
	2,000,000	3.0%
Personal Independence Payment recipients		
	2,774,000	4.1%
Pension Credit claimants		
	1,470,000	2.2%

Sources: Department for Work and Pensions (Feb 2023)



The broadband price increases announced in April 2023 are, on these estimates, likely to increase the burden of broadband expenditure, even with benefits uprating from April 2023. However, it is clear from these case studies that those dependent on Universal Credit, PIP or the Pension Credit are likely to face the most severe difficulties in accessing broadband, given price rises over the last two years. The shares of AHC income required to obtain the projected broadband costs, on the standard tariffs, are well in excess of the payments being made by the median household (or any richer decile). For those wholly dependent on non-pension benefits, in particular, the costs are likely to prove prohibitive, and even the modelling of a "typical" social tariff that such households might access places them well above the expenditure shares of even the lowest decile of households in the whole distribution.

However, with social tariffs only presently available to those in receipt of benefits, the 2.42m that Joseph Rowntree have estimated are low income households unable to receive benefits (typically because they hold savings worth more than £16,000) are being pushed into significant expenditures on broadband, and in contrast to the other groups shown here, their expenditure share is likely to be increasing.

On the modelling here, access to a social tariff broadband service almost halves the cost of broadband, expressed as a share of disposable income. Aside from increasing knowledge of these services (highlighted by Ofcom as an issue for affordability),¹¹ expanding the provision of social tariffs to households not otherwise able to receive benefits would significantly improve affordability for a large number of low-income households.

¹¹ Ofcom (April 2023), *Affordability of Communications Services: April 2023 update*, p.3. https://www.ofcom.org.uk/ data/assets/pdf file/0020/260147/2023-april-affordability-of-communications-services.pdf



For more information

Anna Dent, Head of Research annad@promisingtrouble.net