Oxera report on Ofcom's proposals to prohibit inflation-linked price increases

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Prepared for Virgin Media O2 - Non-confidential version

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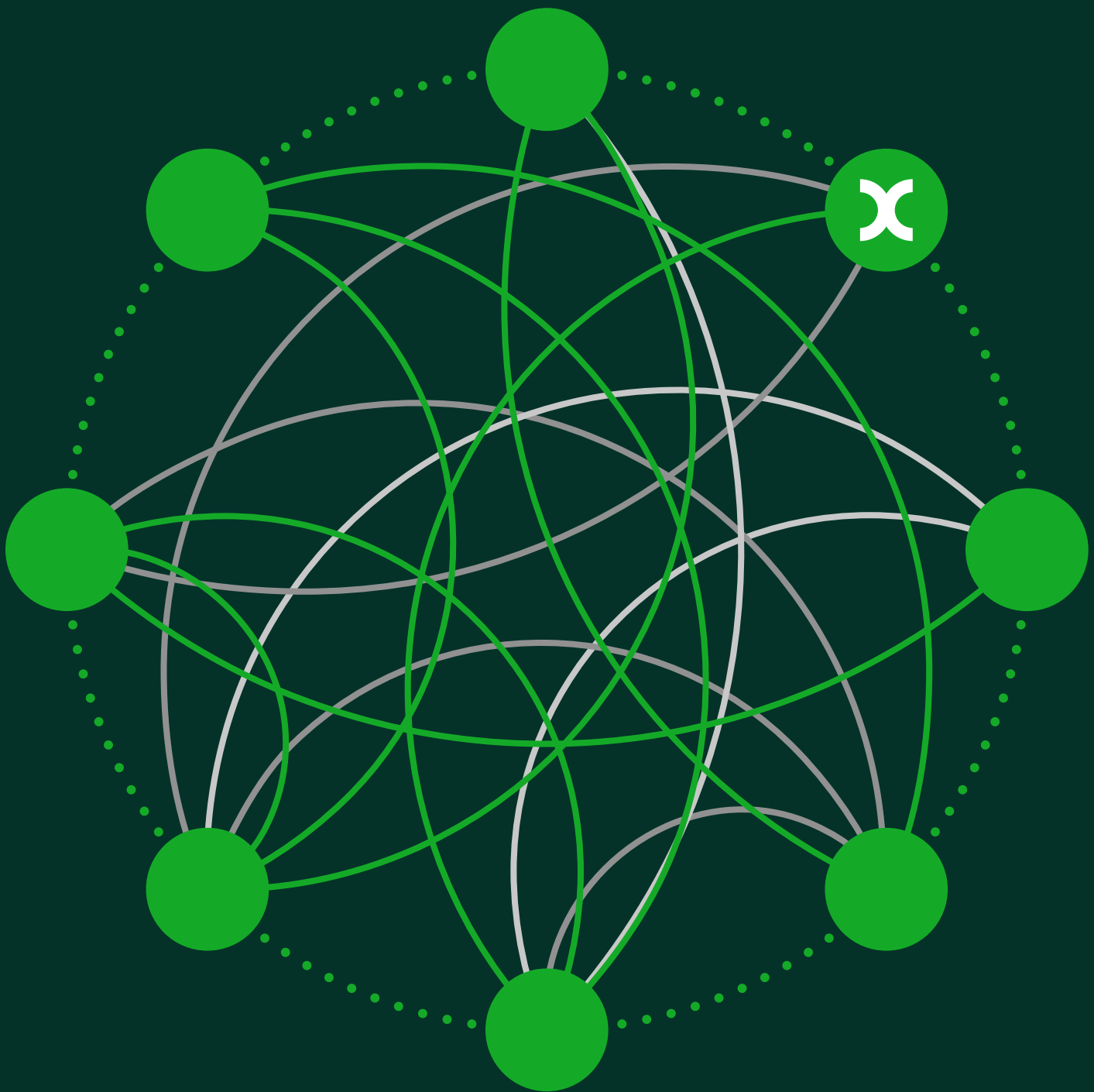

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1 Executive summary

1.1 The context of this report

In a document published on 12 December 2023,[1] Ofcom proposes to ban in-contract price increases which are (i) linked to inflation indices; and (ii) presented in percentage terms. Its suggested alternative to these pricing structures is for telecoms operators to instead set out any in-contract price increases in absolute monetary terms (i.e. in 'pounds and pence') at the beginning of the contract.

Ofcom's concerns are that these inflation-linked price variation (ILPV) contracts make UK telecoms competition less effective since some consumers do not fully consider (or understand) ILPV terms when choosing a contract, leading to a lack of engagement. This theory of harm is based on insights from behavioural economics that Ofcom summarises in a supporting document[2] and consumer research.

Virgin Media O2 has asked Oxera to consider the economic theory and insights underpinning Ofcom's theory of harm and its proposed remedy to support its response to the consultation.

1.2 Our assessment of Ofcom's proposals

Our economic assessment of Ofcom's proposals consists of three parts.

1.2.1 The economic theory in relation to retail price regulation and inflation-linked prices

In Section 2, we consider the economic rationale for telecoms operators to set prices which vary with inflation, showing that a significant amount of their input costs are impacted by inflationary pressures. Therefore, it would be reasonable from an economic perspective to expect them to pass these cost increases on to consumers, to sustain the strong competition on headline prices that the UK experiences today.

The impact of Ofcom's proposals would be to transfer the inflation uncertainty fully onto operators, despite the evidence indicating that some consumers may be willing and able to bear it. This would result in a significant reduction in consumer choice in the market, to the detriment of those customers who have a preference for ILPV contracts over alternatives.

[1] Ofcom (2023), 'Prohibiting inflation-linked price rises', December.
[2] Ofcom (2023), 'Inflation-linked price rises: relevant behavioural economics concepts', December.

1.2.2 The risk of unintended consequences of Ofcom's proposals

In Section 3, we consider the history of regulation that has led to the telecoms market we have in the UK today. UK telecoms firms compete aggressively on headline prices (and other tariff elements), leading to a very competitive retail market, with low prices which have been falling in real terms. Without the ability to pass on input cost increases, we might expect telecoms providers to set higher prices.[3]

We next consider that today consumers have a wide choice of different contracts from which to choose, including whether they include ILPV terms or not. This reflects different customer preferences for different types of contract and enables telecoms operators to differentiate their offerings. Banning ILPV contracts would reduce choice and differentiation in the market, possibly reducing competitive intensity.

We then discuss the impact assessment required to support a significant regulatory intervention at the retail level, such as the one Ofcom proposes. In our view, such an impact assessment should give due consideration to the possible unintended consequences of the intervention (such as those which occurred following Ofgem's 2013 intervention in the energy market).

We consider examples of four possible unintended outcomes that might arise where telecoms providers react to Ofcom's proposals by changing the structure and pricing of their offerings to reflect the additional risk they would need to bear without ILPV contracts.

1. Expected monthly prices for some consumers (particularly those on lower cost tariffs today) increasing when telecoms providers move to £/p in-contract price terms.
2. A reduction in contract lengths offered.
3. An increase in non-headline prices for new customers.
4. An increase in 'prices may vary' terms.

We also provide stylised illustrations of the potential price increases that different groups of consumers might bear as a result of some of these reactions to Ofcom's proposals.

[3] In Section 3, we show that risk averse telecoms firms would be expected to increase prices as compensation for having to bear the risks associated with the uncertainty of future inflation rates.

1.2.3 An assessment of the relevant consumer research and behavioural economics

In Section 4, we consider the behavioural economic insights and consumer research that Ofcom has relied on to construct its theory of harm. We show that many of the behavioural economic insights Ofcom relies on are not universal results that can be expected in every situation—they depend on the specific market context.

We therefore consider that Ofcom should have assessed these insights in the specific context of the strong competitive dynamics of the UK telecoms market, which have the potential to address the concerns identified in the behavioural economics literature, in particular given the transparency requirements updated by Ofcom in 2022 and the guidance from the Committee of Advertising Practice (CAP) and Broadcast Committee of Advertising Practice (BCAP) on the advertising of telecoms contracts with ILPV terms, which took effect on 15th December 2023. We also note that the insights from consumer survey evidence that Ofcom relies on may be influenced by survey design and that Ofcom may have misinterpreted some of these findings.

1.3 Conclusions and recommendations

Our assessment of Ofcom's proposals to prohibit ILPV contracts has raised some significant concerns with the impact assessment underpinning the intervention.

Today, competition in the UK telecoms retail markets appears to be working well. We would, therefore, expect that any intervention in the retail market which has the intention of further promoting competition would need to pass a thorough impact assessment.

We have identified concerns that Ofcom's impact assessment appears not to have suitably weighed up all the possible downsides of its intervention against the perceived benefits. In particular, we demonstrate that there are plausible unintended consequences from Ofcom's proposals which may have been overlooked, while its theory of harm relies on a subset of the available behavioural economic literature and a possible misinterpretation of some of the consumer research.

We recommend that Ofcom revisits its impact assessment for this proposed intervention to ensure that its perceived benefits do outweigh the possible costs once all relevant factors have been considered.

2 The economic theory in relation to retail price regulation and inflation-linked prices

2.1 The general principles of telecoms regulation

The objective of telecommunications regulation is to replicate outcomes that would likely occur in competitive markets. This typically leads to the regulator intervening to mitigate the risk that a provider which holds a degree of market power acts in a way where citizens and consumers could be subject to potential harm. This may include, for example, protecting consumers from firms which have the incentive and ability to price higher or provide services with a lesser quality than would otherwise be observed in competitive markets.

Ofcom's duties in this respect are set out in the Communications Act 2003, where its principle duty is '(i) to further the interests of citizens; (ii) to further consumer interests in relevant markets, where appropriate by promoting competition'.[4] The Communications Act also requires that 'Ofcom must also have particular regard to the interests of consumers in respect of choice, price, quality of service and value for money when performing their duty of furthering the interests of consumers'.[5]

There are several ways in which regulators such as Ofcom can meet these duties. For example, if a regulator is concerned that a lack of competition could lead to higher retail prices or low quality offers, there are two options it might consider.

1 Introduce access regulation at the wholesale level which enables entry from other firms which will compete at the retail level, offering choice to consumers, which may in turn result in lower prices and higher quality services.
2 Intervene at the retail level, which itself can take many forms. At one end of the spectrum it could set transparency and other information requirements to ensure that retail offers are presented in ways that will encourage competition between retail providers. At the other end of the spectrum it could intervene directly by banning certain offers or products, or even directly capping the prices of any firm that may have market power in the retail market.

[4] Communications Act (2003), Section 3(1).
[5] Ibid., Section 3(4).

As a general rule, regulators aim to intervene only where necessary and in the most proportionate and targeted way.[6] In the telecoms sector, this has translated into a preference for regulation as far upstream as possible, so as to influence retail outcomes through competition, rather than directly intervene in the retail market (other than through general transparency and other information requirements). That is, regulators have expressed a strong a priori preference for (1), combined with light touch interventions at the retail level, over direct intervention in retail markets as outlined under (2) above.

Ofcom's statements reflect this preference. For example, in its 2021 Wholesale Fixed Telecoms Market Review it states that:

> Our regulatory objective is to apply remedies as far upstream as possible to ensure that as much of the value chain is open to competition as possible.[7]

The same sentiment is also reflected by the European Commission in the European Electronic Communications Code (EECC) which, for example, has stated that:

> Ex ante regulation imposed at the wholesale level, which is in principle less intrusive than retail regulation, is considered to be sufficient to tackle potential competition problems on the related downstream market or markets.[8]

It follows that regulators[9] should, therefore, only intervene directly at the retail level if a high evidentiary bar is crossed. That is, if both of the following conditions are met.

1 There is material proof of substantial consumer harm under the existing regulations, which justifies an intervention.
2 An intervention at the retail level is proportionate and the least intrusive option to resolve the identified harm.[10]

[6] Ibid., Section 3(3) in relation to Ofcom's duties.
[7] Ofcom (2021), 'Promoting competition and investment in fibre networks: wholesale fixed telecoms market review 2021-26', Volume 3: non-pricing remedies, para. 1.8.
[8] Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code, Recital 173.
[9] Including Ofcom, since the principles of UK regulation are derived from EU legislation.
[10] For example, one of Ofcom's regulatory principles is to '[…]always seek the least intrusive regulatory methods of achieving its objectives'. See Ofcom's regulatory principles, https://www.ofcom.org.uk/about-ofcom/policies-and-guidelines#:~:text=Regulatory%20principles&text=Ofcom%20will%20operate%20with%20a,that%20markets%20alone%20cannot%20achieve (accessed 31 January 2024).

All significant interventions require the regulator to conduct an impact assessment of its proposals, comparing the expected benefits against the potential costs.[11]

2.2 The theory supporting inflation-indexed price increases

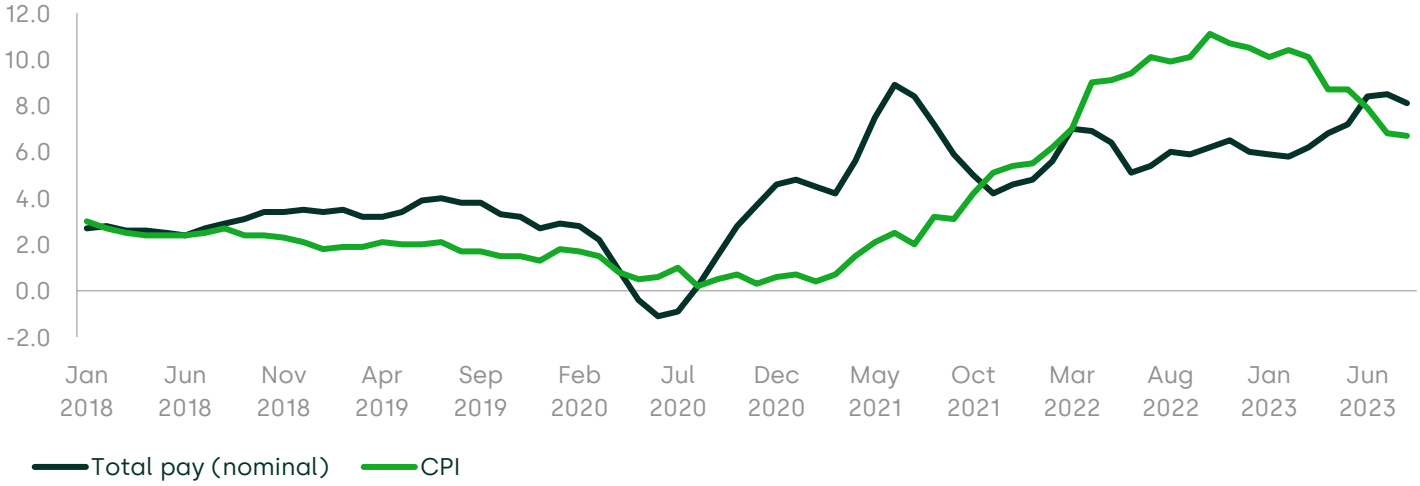
The purpose of this report is to consider the application of a proposed retail-level regulation in relation to the way in which some telecoms operators vary their prices to reflect inflation. We first discuss why, in general, it is rational for firms to price this way today.

Basic textbook economics explains that firms set prices in accordance with their input costs.[12] If input costs increase, firms must adjust their prices to ensure that their revenue covers these costs, such that they can remain profitable. Furthermore, economic theory and empirical evidence on pass-on rates predicts that firms will typically pass on a significant amount of the increases in their input costs in a competitive market, particularly when there is an industry-wide cost shock (as inflation would be expected to be).[13]

Many input costs increase alongside consumer inflation (such as the Consumer or Retail Price Indices—CPI/RPI[14]). For example, energy, transport costs and salaries are typically closely linked to inflation indices, while also contributing to differing degrees to a typical firms' input costs. Figure 2.1 illustrates the correlation between average labour costs and CPI movements since January 2018, showing that the two measures typically move in the same direction.[15]

[11] Ofcom (2023), 'Impact assessment guidance', para. 3.1.
[12] For example, in a perfectly competitive market, a firm will set its prices such that they are equal to the marginal cost of production of a good.
[13] See Oxera (2018), 'Pass it on: the draft EU guidelines on pass-on and volume effects', *Agenda*, 26 October, https://www.oxera.com/insights/agenda/articles/pass-it-on-the-draft-eu-guidelines-on-pass-on-and-volume-effects/.
[14] These indices are a measurement of consumer inflation. It tracks the monthly changes in price of a basket of goods and services which consumers typically buy.
[15] In Section 2.3, we show that salaries are an important component specifically of telecoms operators' input costs.

Figure 2.1 Average salaries and CPI (% change, Jan 2018-Jul 2023)



Source: Oxera analysis based on December 2023 ONS CPI data. See Office for National Statistic (2024), 'Consumer price inflation, UK: December 2023', 17 January, https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/december2023). Average salaries are calculated as the, seasonally-adjusted, annual growth in average weekly earnings in the UK. See Office for National Statistics (2023), 'Average weekly earnings in Great Britain: October 2023', 17 October, https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/averageweeklyearningsingreatbritain/october2023.

Firms will typically expect to pass on at least some of these increases in input costs driven by inflation to consumers in the form of higher prices (as is predicted by the economic theory and evidence on pass-on that we discuss above).

2.3 Inflationary costs in telecoms

Inflationary pressures on input costs also impact telecoms firms, where a number of significant costs are closely linked to inflation indices. Table 2.1 sets out examples of the key costs faced by telecoms operators and an illustration of the degree to which these costs have been impacted by recent spikes in inflation for Virgin Media O2.

Table 2.1 Inflation-linked telecoms costs

Category	Explanation	Virgin Media O2 illustration[16]
Regulated wholesale inputs	Telecoms firms often rely on purchasing inputs which are subject to regulated costs. In the UK, there are three categories of regulated wholesale inputs whose prices are directly linked to CPI. 1 **Active fixed wholesale products.** These products are used by fixed networks to access Openreach's active elements (e.g. copper and fibre broadband lines) so that they can offer their own broadband services. In most cases, the charge increases with CPI each year.[17] [18] 2 **Passive fixed wholesale products**. These products are used by fixed networks to access Openreach's ducts and poles to enable them to deploy their own active equipment (e.g. fibres). The prices networks pay to access the infrastructure are set by Ofcom, based on Openreach's costs, and vary each year with CPI+X.[19] 3 **Annual licence fees (ALFs).** UK mobile operators typically pay annual licence fees on the spectrum licences they hold which are outside of their initial payment period (generally 15–20 years from the date they are auctioned). The ALFs paid by operators on spectrum in the 900MHz, 1800MHz and 2100MHz bands increase by CPI each year.[20]	Virgin Media O2's input costs are variously exposed to inflation-linked increases in the cost of regulated access products. For example, it purchases passive infrastructure access to support the expansion of its fixed broadband network. In 2023, Virgin Media O2 spent [✂] on passive infrastructure products, all of which have prices indexed to inflation. Virgin Media O2 also pays ALFs on the 66.4MHz of spectrum it holds across the 900MHz, 1800MHz and 2100MHz bands. It paid a total of £63m in 2022, which increased by 8.7% in 2023 (to £68m) as a result of increases in CPI.
Labour	Telecoms operators employ a large number of staff, both directly (e.g. retail and head office) and through sub-contractors. Staff salaries typically move in line with inflation.	Virgin Media O2 introduced cost of living payments in 2022 to reflect inflationary pressures in the UK. [✂]

[16] Detail in this column is based on evidence provided to Oxera by Virgin Media O2 to provide a real-world illustration of the linkages between inflation and its inputs costs.
[17] Ofcom (2021), 'Promoting competition and investment in fibre networks: wholesale fixed telecoms market review 2021-26', Volume 4: pricing remedies.
[18] We note that TalkTalk has publicly identified the link between the inflation indexing of Openreach's regulated active wholesale prices and its input costs, noting that its decision to introduce ILPV terms in 2021 was a direct result of Ofcom's indexing of wholesale costs to CPI. See https://www.talktalkgroup.com/newsroom/talktalk-response-to-ofcom-announcement-on-mid-contract-cpi-linked-price-rises (accessed 12 February 2024)
[19] Ibid., Table 4.1.
[20] Ofcom (2024), 'Review of Ofcom's market-based approach to mobile spectrum management', paras A1.24–A1.29.

Category	Explanation	Virgin Media O2 illustration[16]
Network costs	These are the costs telecoms operators bear when building and expanding their networks. These include the costs of purchasing and installing input materials, such as ducts and cables. The costs of these input materials often increase with inflation.	Evidence from the Shared Rural Network programme indicates that the passive infrastructure costs in the programme (including civil engineering) have increased by around [✂] compared with the initial budget due to 'macroeconomic factors', including inflation. The contracts that Virgin Media O2 holds with its radio access network (RAN) suppliers, Nokia and Ericsson, both include provisions for the costs of the services provided by these suppliers to increase with inflation each year. Virgin Media O2 also provided us with information on the unit costs of the inputs it uses to construct its fixed network.[21] This information shows a [✂] increase in average network unit costs from 2022 to 2023 and a further [✂] from 2023 to 2024.[22]
Energy	Telecoms networks are relatively energy intensive, as operators require power to light fibres, power radio transmitters and cool network elements. In recent times, energy costs have increased significantly above inflation. Although telecoms operators often hedge the risk of spikes in energy inflation by taking out financial products, these are only useful in the shorter term. More sustained increases in energy costs will invariably be reflected in telecoms operators' input costs.	Virgin Media O2's energy costs increased from [✂] in 2021 to [✂] in 2022, broadly tracking (or even exceeding) the spike in energy inflation experienced in the UK over that period. For example, the ONS reported a 42% year-on-year increase in motor fuel costs (a reasonable proxy for energy costs) in June 2022, compared with the [✂] increase in Virgin Media O2's energy costs.

[21] This includes equipment and construction information relating to the costs of trackwork, chambers, cabinets, works on existing ducts, additional network construction work (e.g. lateral connections from existing ducts), cabling, etc.
[22] Note that we do not have the information available to map these unit cost increases to total network costs.

Regulators typically recognise that telecoms operators' costs increase alongside inflation, for example by allowing regulated wholesale charges to increase by inflation each year (i.e. CPI-X charge controls) and by allowing for asset price inflation in their estimation of the annual regulatory asset base over which to set charge controls.[23]

Currently, telecoms providers which offer ILPV contracts are hedged against the risk to their finances from higher inflation rates (and the subsequent increase in input costs we discuss in this section) by indexing their prices to inflation. This has allowed them to compete aggressively on headline prices and quality, helping to drive a competitive retail market where prices have been falling in real terms.[24]

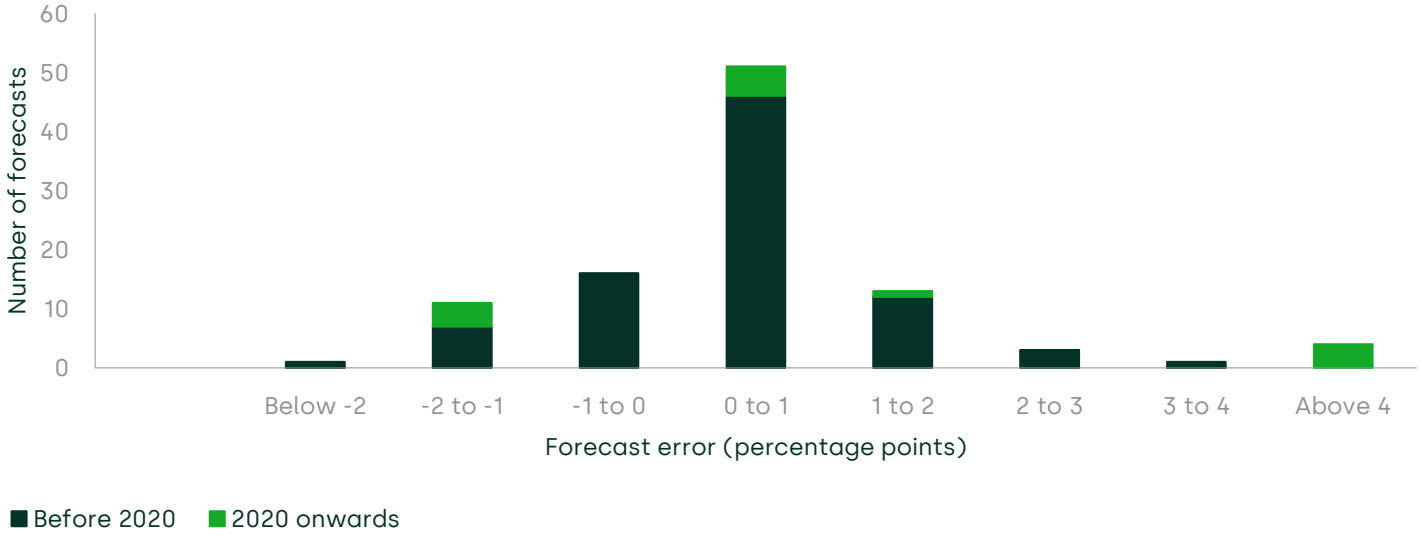
2.4 Some consumers are willing/able to bear inflation uncertainty

Retail telecoms contracts typically last for up to 24 months.[25] The level of inflation can vary considerably over this period, sometimes significantly out of line with forecasts, even by respected commentators. This is particularly the case, as we have recently seen, where there were unanticipated events (such as the energy price shock following the conflict in Ukraine) that lead to inflation spikes.

The level of this uncertainty is highlighted in Figure 2.2 which shows that the OBR's CPI forecasts are regularly inaccurate, with most of the largest underestimates occurring since 2020.

[23] For example, in its 2021 Fixed Access Market Review, Ofcom decided to inflate Openreach's passive infrastructure assets by RPI in each year of the charge control. See Ofcom (2021), 'Promoting competition and investment in fibre networks: Wholesale Fixed Telecoms Market Review 2021-26 Volume 4: Pricing remedies', 18 March, https://www.ofcom.org.uk/__data/assets/pdf_file/0025/216088/wftmr-statement-volume-4-pricing-remedies.pdf, para. 4.58.
[24] Ofcom (2023), 'Pricing trends for communications services in the UK,' p. 4.
[25] Fixed telecoms contracts are typically 18 or 24 months, whereas mobile airtime contracts can be shorter (1–24 months). The longer duration of fixed contracts and mobile contracts which include handsets typically reflect the greater time taken to recover customer premise equipment (CPE) and handset costs under these contracts.

Figure 2.2 OBR CPI forecast errors (2003–23)



Source: Office for Budget Responsibility (2024), 'Economic and Fiscal Outlook', November.

In this context of uncertainty over the level of inflation, and the link between inflation and telecom providers' input costs we discuss in Section 2.3, there is a question about which party should be exposed to the uncertainty of inflation being higher or lower than forecast.

Some consumers could feasibly be well-placed to bear the uncertainty associated with changes in inflation. We consider four examples.

1 Some consumers may not experience a real terms increase in prices with ILPV contracts. For example, pensioners, consumers whose main income is from benefits or those whose salaries increase with inflation will see the real prices of their ILPV contracts stay constant. They may, therefore, be less exposed to inflation risk than telecoms firms who do experience real terms increases in their costs (as we discuss in Section 2.3), and be more willing and able to bear the inflation uncertainty.

2 Many consumers have experience purchasing goods whose prices vary depending on macroeconomic factors—for example, energy and water bills are typically indexed to inflation, while variable rate mortgages are linked to interest rates. Moreover, it is conceivable that the prevalence of customers who feel more comfortable considering these factors has increased in recent times, given the focus on inflation in the news cycle.

3 Telecoms providers typically have systems and policies in place to help consumers manage risk. For example, they (i) have credit

and affordability checks in place at the point of sale; (ii) allow customers to trade down contracts if they find their current one to be too expensive; (iii) offer social tariffs to low-income customers; (iv) offer customers support (such as payment holidays) if they have affordability issues.

4 By bearing the inflation uncertainty associated with ILPV contracts, consumers can benefit if outturn inflation is lower than their expectations when purchasing an ILPV contract. Some consumers might value having this option to 'beat the forecast'—this is supported by the findings from Ofcom's discussion forum where some participants considered that it may be worth taking the risk of ILPV contracts if they expected inflation to fall (we discuss this in more detail in Section 4.5).

Comparing consumer inflation expectations with outturn inflation rates shows that, in general, consumers' expectations are broadly in line with (within one percentage point of) outturn inflation and, at least, do not appear to be systematically biased towards underestimating inflation. This means that consumers who do opt to 'beat the forecast' through taking ILPV contracts are not worse off on average. For example, comparing the median expectation of inflation (in 12 months) from the Bank of England's inflation attitudes surveys between May 2017 and November 2022 against the outturn CPI demonstrates that:[26]

- in **7 out of 23** months surveyed, outturn CPI was **higher** than the median inflation expectation;
- in **8 out of 23** months surveyed, outturn CPI was **within one percentage point** of the median inflation expectation;
- in **9 out of 23** months surveyed, outturn CPI was **lower** than the median inflation expectation.

Of course, it is also likely that other consumers may not be best-placed to bear the inflation risk. These may be, as Ofcom suggests, those which do not understand inflation or are incapable of calculating percentages. These consumers might be better placed purchasing non-ILPV contracts (although, as we discuss in Section 3, non-ILPV contracts may be associated with higher prices).

[26] Oxera analysis based on Office for National Statistics (2024), 'CPI ANNUAL RATE 00: ALL ITEMS 2015=100', 17 January; Office for National Statistics (2024), 'RPI All Items: Percentage change over 12 months: Jan 1987=100', 17 January; Bank of England (2019), 'Bank of England/TNS Inflation Attitudes Survey – May 2019: Summary results', 7 June; Bank of England (2021), 'Bank of England/Kantar Inflation Attitudes Survey – May 2021: Summary results', 18 June; Bank of England (2023), 'Bank of England/Ipsos Inflation Attitudes Survey – May 2023: Summary results', 16 June.

However, it is feasible that those customers which are less capable of fully understanding the implications of ILPV contracts may have similar issues with Ofcom's proposed £/p alternative. For example, they may have difficulty comparing different £/p contract structures such that it may not be clear whether the lifetime cost of a contract with a low headline price and a higher (or multiple) £/p mid-contract increase(s) is cheaper than an alternative with a high headline price and lower £/p mid-contract increases.

2.5 Choice in the UK telecoms market today reflects different consumer preferences

Strong retail competition in the UK telecoms market has delivered outcomes whereby consumers have significant choice about the types of contract they take. Table 2.2 displays a selection of different contract offers available to UK telecoms consumers today (both mobile and fixed). It demonstrates that consumers today are offered many options across a variety of different tariff components, including brand, price, contract length and inclusive allowances. This leaves consumers with the option to choose the contract which best suits their preferences.

Table 2.2 Customer tariff examples (fixed and mobile, January 2024)

Fixed contracts				
Provider	**Average monthly price**	**Contract length**	**Download speeds (fixed)**	**ILPV terms**
Virgin Media	£27	18 months	264Mbps	RPI + 3.9%
Sky	£33	18 months	500Mbps	'prices may vary'
TalkTalk	£31	24 months	152Mbps	CPI + 3.7%
Hyperoptic	£34	24 months	1Gbps	None
Community Fibre	£32	12 months	1Gbps	CPI + 2.9%
Gigaclear	£49	18 months	830Mbps	'prices may vary'

Mobile airtime contracts				
Provider	**Average monthly price**	**Contract length**	**Data allowance (mobile)**	**ILPV terms**
O2	£18.99	24 months	30GB	RPI + 3.9%
Sky Mobile	£14	12 months	15GB	None
Three	£25	24 months	Unlimited	CPI + 3.9%
Giffgaff	£25	18 months	120GB	None
ID Mobile	£15	24 months	Unlimited	CPI + 3.9%
VOXI	£15	1 month	30GB	None

Source: Telecoms providers' websites: https://www.virginmedia.com/broadband/broadband-only; https://www.sky.com/broadband; https://new.talktalk.co.uk/; https://www.hyperoptic.com/broadband/home/price-plans/; https://communityfibre.co.uk/?gad_source=1&gclid=Cj0KCQiA2eKtBhDcARIsAEGTG43stkx01vLdc4DQ5Cfi-4C0jTDA4K7ChlJ1fJnOlEhl9ru9wLnRJ24aAk3aEALw_wcB&gclsrc=aw.ds; https://www.gigaclear.com/home-broadband; https://www.o2.co.uk/shop/sim-cards/sim-only-deals?setTTSelectedStack=360; https://www.sky.com/shop/mobile/plans; https://www.three.co.uk/shop/sim-only/pay-monthly; https://www.giffgaff.com/sim-only-deals; https://www.idmobile.co.uk/sim-only-deals; https://www.voxi.co.uk/sim-only-plans (accessed 30 January 2024).

One component of this choice is whether consumers prefer to bear the inflation uncertainty risk or not. In this context, consumers have the option between two types of contract.

1 Consumers that take out ILPV contracts bear the uncertainty of inflation turning out to be higher or lower than forecast since their tariffs are updated every year based on inflation.
2 Consumers that take out contracts which are not subject to ILPV terms (e.g. contracts with fixed prices or 'prices may vary' terms) do not bear any uncertainty about prices within their contract period or have the right to exit their contract for free if prices do vary in-contract.

Currently, although a large group of consumers do choose to take ILPV contracts, there is also a significant group that opts for the contracts described under option (2).[27] This reflects the different preferences towards inflation uncertainty that we discuss in Section 2.4—if consumers are comfortable bearing inflation risk, they can choose to take a contract with ILPV terms, if not, they can choose not to.[28]

Ofcom's proposals would remove option (1), reducing choice and fully transferring the risk of inflation uncertainty onto UK telecoms operators, even where a consumer would otherwise prefer to bear it.

2.6 Conclusions

In this section, we have shown that significant elements of telecoms providers' costs are linked to inflation. Currently, providers which offer ILPV contracts are hedged against the risk to their finances from higher inflation rates increasing their input costs by indexing customer prices to inflation. This has allowed firms to compete aggressively on introductory headline prices, helping to drive a highly competitive retail market where prices have fallen in real terms.[29]

Under Ofcom's proposals, this will no longer be feasible—the pass-on of inflation-related input costs will become imperfect—and there will be reduced choice for consumers in the market. Telecoms providers will be required to undertake ex ante inflation forecasts and set prices based on those expectations. This will transfer the risks associated with inflation uncertainty fully onto telecoms providers, even where consumers prefer to bear them. In Section 3 below, we discuss how the transfer of uncertainty from consumers to telecoms providers is likely to

[27] Ofcom estimates that around 40% of fixed broadband and half of mobile customers are on ILPV contracts today. Although, we note that this does include consumers that are out of contract and, therefore, out of scope of Ofcom's proposals.
[28] We note that the choice of non-ILPV contracts will likely be expanded once BT begins offering 'pounds and pence' in-contract price increases following its recent announcement.
[29] Ofcom (2023), 'Pricing trends for communications services in the UK,' p. 4.

have implications for the level of prices in the market, in particular, putting upward pressure on prices.

3 The risk of unintended consequences from Ofcom's proposals

3.1 The historic context of ILPV contracts

Ofcom first substantively considered its view on ILPV contracts over ten years ago.[30] In its assessment in 2013, Ofcom concluded that it was not appropriate nor proportionate to ban ILPV contracts[31] so long as the contract terms made clear that (i) the price may be variable during the initial commitment period; (ii) any increase is linked to a relevant published price index (e.g. CPI or RPI); (iii) the frequency of any such increase is limited to no more than every 12 months.[32]

The CMA also considered ILPV contracts in its 2015 guidance on unfair contract terms. In this guidance, it stated that 'terms which permit increases linked to a relevant published price index such as the Retail Prices Index are likely to be acceptable […]'.[33]

Ofcom reassessed its view in 2020 in the context of the European Electronic Code Consultation (EECC),[34] reaffirming its decision to allow ILPV contracts (with additional requirements for operators which offer them[35]).

Our understanding is that the use of ILPV contracts in telecoms markets gained popularity following the implementation of the EECC in 2020.[36] Prior to the implementation of the EECC, telecoms operators typically relied on 'prices may vary' terms to protect themselves against unanticipated large increases in input costs. The 2020 implementation of the EECC (which took effect in 2022) extended consumers' termination rights (which are a requirement of discretionary price increases) to any contract that forms a bundle with the contract to

[30] Ofcom (2013), 'Price rises in fixed term contracts: Decision to issue guidance on General Condition 9.6'.
[31] Ibid., para. 6.74.
[32] Ibid., para. 6.81.
[33] Competition and Markets Authority (2015), 'Unfair contract terms guidance: Guidance on the unfair terms provisions in the Consumer Rights Act 2015', July, para. 5.23.5.
[34] Ofcom (2020), 'Fair treatment and easier switching for broadband and mobile customers: Implementation of the new European Electronic Communications Code', October.
[35] That the contract should set out an example of what the customer's core contract price would be once an inflation increase had been applied and information on the expected core subscription price at the end of any commitment period. See Ofcom (2020), 'Fair treatment and easier switching for broadband and mobile customers: Implementation of the new European Electronic Communications Code', October, para. 5.25.
[36] For example, see Ofcom (2023), 'Prohibiting inflation-linked price rises,' Figure 1 for Ofcom's assessment of the number of telecoms operators that have introduced ILPV terms since 2020.

which the contractual modification is being made.[37] This is likely to have made 'prices may vary' contracts unattractive for some providers.

We understand from discussions with Virgin Media O2 that telecoms operators' decision to move to ILPV contracts would have likely been based on commercial considerations, including their ability to pass on increases in the their input costs (proxied by inflation) without running the risk of consumers cancelling their contracts.

3.2 The requirement for a robust impact assessment

In Section 2.1, we noted that direct retail level regulatory interventions (such as banning certain types of contract) should be expected to clear a high evidentiary bar given that there are typically less intrusive alternatives, such as wholesale regulation (which promotes competition by lowering barriers to entry) and general transparency requirements applicable to all providers in the market. We would expect this bar to be higher still in the context of ILPV contracts since Ofcom considers the fixed and mobile retail markets in the UK to be competitive.[38]

Undertaking an impact assessment is the way in which Ofcom would assess whether its proposals meet this evidentiary bar. Ofcom published updated guidance on its approach to conducting impact assessments in 2023.[39] This guidance confirmed the below.

1. Ofcom's commitment to carrying out impact assessments 'in relation to a large majority of [its] proposals (including new or amended policies and processes)'.[40]
2. Ofcom having a bias against intervention and that any interventions will be made in the least intrusive way possible to achieve its policy objectives.[41]
3. Ofcom's principle of proportionality, which explains that the 'depth of analysis should be proportionate to the potential impact of the decision under consideration'.[42]

An impact assessment in respect of Ofcom's proposed prohibition of ILPV contracts would be expected to robustly weigh up the expected

[37] For example, if a consumer took a fixed voice and broadband dual-play bundle and the broadband part of that bundle was subject to a discretionary price rise, the consumer would have the right to terminate both elements of that bundle.
[38] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, para. 7.
[39] Ofcom (2023), 'Impact assessment guidance', July.
[40] Ibid., para. 3.5.
[41] Ibid., para. 1.3.
[42] Ibid., para. 4.3.

benefits of the proposed intervention against the possible costs, consistent with the considerations in Ofcom's guidance.

3.3 A summary of Ofcom's impact assessment

3.3.1 Ofcom's theory of harm and related interventions that Ofcom's impact assessment does not appear to fully consider

Ofcom's assessment of the benefits of its proposed intervention relies on its expected mitigation of the perceived consumer harm it associates with ILPV contracts. Specifically, Ofcom's theory of harm is its perception that consumers have a low awareness and understanding of ILPV terms and are unable to estimate reliably what they will pay as a result. Ofcom's view is that these terms, therefore, risk lessening consumer engagement and it is concerned that this makes competition less effective[43]—the implication is that this will result in higher prices.

Ofcom has relied on behavioural economic insights and consumer survey data to evidence this harm. We discuss this approach in Section 4, but note here that Ofcom appears not to consider either of the following in sufficient detail.

1. An assessment of the success (or otherwise) of its updated transparency requirements in relation to telecoms contracts.[44] This requires customers to be given a one-page summary of the main terms of their contract, including how any increase will impact the total price they pay and a straightforward example showing how an ILPV is likely to impact this price.
2. The possible impact of updated guidance from the CAP and BCAP on the prominence of information about future price increases.[45] This guidance requires telecoms providers to present the price increase at the same level of text as monthly prices and ensure that references to inflation are clear and simple to understand.

We would expect both of these interventions to be directly relevant to Ofcom's theory of harm since they have the intention of overcoming some of the behavioural biases that Ofcom is concerned with. In particular, they should ensure that consumers have greater awareness of the ILPV terms in their contract, overcoming the biases Ofcom

[43] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, paras 1.11–1.12.
[44] See Ofcom's news centre update, Ofcom (2022), 'New rules on short and simple contract details', June, https://www.ofcom.org.uk/news-centre/2022/new-rules-on-short-and-simple-contract-details (accessed 31 January 2024).
[45] The Committee of Advertising Practice (2023), 'Guidance on the presentation of in-contract price increases in advertising for telecoms contracts', June.

associates with sequential pricing and the complexity of ILPV terms that we discuss in Sections 4.2 and 4.3.[46]

We note that Ofcom does consider the updated CAP/BCAP guidance in its consultation,[47] recognising that it may improve consumer awareness of ILPV terms, but dismissing it since some customers would still have a limited understanding of inflation and it does not apply to some sales channels—i.e. in Ofcom's view, it does not, on its own, fully mitigate all its concerns. However, we would expect an impact assessment to consider the guidance in the round, for example by (i) assessing its impact alongside other interventions such as Ofcom's transparency requirements (which are aimed at helping consumers understand inflation); (ii) reconsidering the magnitude of any harm if only those customers which use sales channels not captured by the CAP/BCAP's guidance are potentially less aware of ILPV terms.

We would, therefore, expect a robust impact assessment to undertake a detailed analysis of the extent to which these interventions (and others like them) mitigate Ofcom's theory of harm in the round.

3.3.2 Ofcom's assessment of the potential costs of its intervention

Ofcom's assessment of the potential costs of its proposals considers the below.[48]

- Possible changes to operators' billing systems and training agents to reflect changes to its billing structure.
- The impact on telecoms providers' business plans. Ofcom suggests that these costs would be small since telecoms operators can mitigate financial risk through a number of tools and would retain the freedom to decide on the length of contract they offer.
- Whether there are any unintended consequences of its proposals which (i) could ultimately be detrimental to consumers; (ii) lead to impacts on providers' ability to recover costs; (iii) lead to reductions in investment.
- The possibility of telecoms operators reacting by increasing headline prices or the number of contracts with shorter terms.

[46] Particularly noteworthy is that the CAP/BCAP guidance requires information on ILPV terms to be communicated to potential customers at the start of the purchasing journey, potentially fully mitigating the issues with sequential pricing that Ofcom identifies.
[47] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, paras 4.16–4.19.
[48] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, paras 4.70–4.82.

Ofcom's view is that these costs are unlikely to be significant for a variety of reasons, and it does not attempt to quantify the probability or potential scale of the impact of these costs.[49]

Although Ofcom does consider the possibility of unintended price responses by telecoms operators, it dismisses them for the following reasons.

1 It dismisses 'unspecified' (i.e. discretionary) price rises on the basis that (i) consumers will have a right to exit their contract as a result; (ii) it considers that 'the £/p requirement lowers the likelihood of unspecified price rises [...] given providers will still have the flexibility to set contract terms which include price rises'.[50]
2 It dismisses the prospect of higher headline prices since its view is that its proposals will strengthen consumer engagement and, therefore, the effectiveness of price competition.[51]
3 It is sceptical that its proposals will lead to telecoms providers increasing the number of tariffs with shorter contract lengths and considers this not to be an issue specifically in relation to the impact of more consumers being out of contract (rather than potential higher in-contract prices, as we discuss in Sections 3.5 and 3.6).[52]

In Sections 3.5 and 3.6, we extend Ofcom's analysis by considering other feasible possible unintended consequences of its proposals (for example, £/p prices being higher than expected prices with ILPV contracts) and the in-contract pricing impact of providers offering shorter contracts (rather than whether more consumers end up out of contract, as Ofcom considers).

3.4 Case study—unintended consequences in UK energy markets

First, we consider a practical example of a case in which retail regulation of a similar kind to Ofcom's proposals has had unintended, adverse consequences for retail competition. This is Ofgem's 2010 Retail Market Reforms (RMRs), in particular the 'simpler tariff choices' element of this intervention.

[49] Even for costs which may be more straightforward to estimate, such as the practical implementation costs.
[50] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, para. 4.80.
[51] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, para. 4.81.
[52] Ibid.

The simpler tariff choices reforms were designed to make it easier for consumers to understand and compare energy tariffs, thereby promoting customer engagement and ultimately competition. This came against a backdrop of concerns that competition was not working effectively in UK energy markets.

However, in the subsequent energy market investigation carried out in 2016, the CMA found that the following three components of the simpler tariffs choices reforms had themselves led to adverse effects on competition.

1 A ban on 'complex' tariffs' (which vary the price per unit according to consumption levels).
2 A maximum limit on the number (four) of tariffs that suppliers were able to offer at any point in time.
3 The simplification of cash discounts, such that upfront and loyalty discounts are prohibited.

The CMA found that despite the stated purpose of these reforms, they 'restrict the behaviour of suppliers and constrain the choices of customers in a way that may have distorted competition and reduced customer welfare'.[53] For example, the CMA found that there was limited evidence that customer engagement was improving materially following the reforms, and that the four-tariff rule had led the main energy operators to withdraw a number of tariffs and discounts and charging structures, in particular including some notably innovative tariffs and discounts.[54]

Following its detailed assessment of the energy market, including Ofgem's regulations, the CMA's remedies included a recommendation that certain aspects of the simpler tariff choices component be withdrawn: the ban on complex tariffs, the four-tariff rule, and the restriction to offer discounts and bundled products. This remedy sought to promote competition and innovation between retail energy suppliers, by 'allowing them to offer a wider range of tariffs, including tariffs designed to benefit certain customer groups', [55] as well as facilitating competition between price comparison websites.

This example demonstrates the potential risk for interventions at the retail level—in particular those that are prescriptive and impose

[53] Competition and Markets Authority (2016), 'Energy market investigation: Final report', 24 June, para. 171.
[54] Ibid., para. 172.
[55] Ibid., para. 213.

restrictions on tariff structures—to have unintended, adverse effects on competition, in direct contradiction with the regulator's objectives.

There are some clear parallels between this case study and Ofcom's proposals to prohibit ILPV contracts. For example:

- Ofcom's intervention, similar to Ofgem's, is intended to reduce complexity in the market and, as a result, increase consumer engagement (through reducing consumer choice).
- One of the CMA's main criticisms of the Ofgem intervention was that there were few, if any, signs of improved consumer engagement brought about by the reforms.[56] As we discuss in Section **Error! Reference source not found.**, the behavioural e conomic theory that Ofcom relies on does not indicate that consumer engagement will necessarily increase after the intervention.
- Ofgem's intervention led to unintended consequences for UK energy markets through a reduction in choice which resulted in a distortion of competition and reduced consumer welfare. As we set out below, our view is that Ofcom's proposals may similarly have unintended consequences.

3.5 The possible unintended responses by telecoms providers

In this section we consider the types of unintended consequences that should be considered in an impact assessment of the proposals to prohibit ILPV contracts. In particular, we consider how telecoms providers might respond to the banning of ILPV contracts by adopting new contract structures which instead increase prices.

Competition in the UK telecoms market today is primarily undertaken through aggressive headline pricing (including upfront discounts, add-ons, etc.) and differentiation in contract types and tariffs. ILPV terms then serve to manage inflation risk through separate, in-contract, price increases.

The impact of Ofcom's proposals are likely to be that telecoms providers would then need to consider alternative ways of managing inflation uncertainty if they are risk averse. We think it is plausible to conclude that telecoms operators are risk averse (at least to some degree). Empirical evidence indicates that telecoms operators are

[56] Ibid., para. 172.

typically risk averse,[57] and we would consider it highly implausible for telecoms providers to be risk-seeking.

The textbook treatment of risk aversion considers it in the presence of a (concave) utility function, where the expected marginal utility a consumer or firm derives from a certain payoff (e.g. wealth or profit—we focus on profit here since it is relevant to this context) is decreasing in that payoff. We can use this framework to assess how the expected utility of a firm would differ depending on different profit levels, and degrees of uncertainty—for example, assessing how much utility a firm derives from an additional £1m profit with certainty, compared to £1.5m with a 50% probability.

In this context, the concept of a 'risk premium' is relevant. This is the amount of profit a risk-averse firm is willing to give up to remove uncertainty[58]—i.e. to move from an uncertain profit outcome to the 'certainty equivalent' which yields the same expected utility.

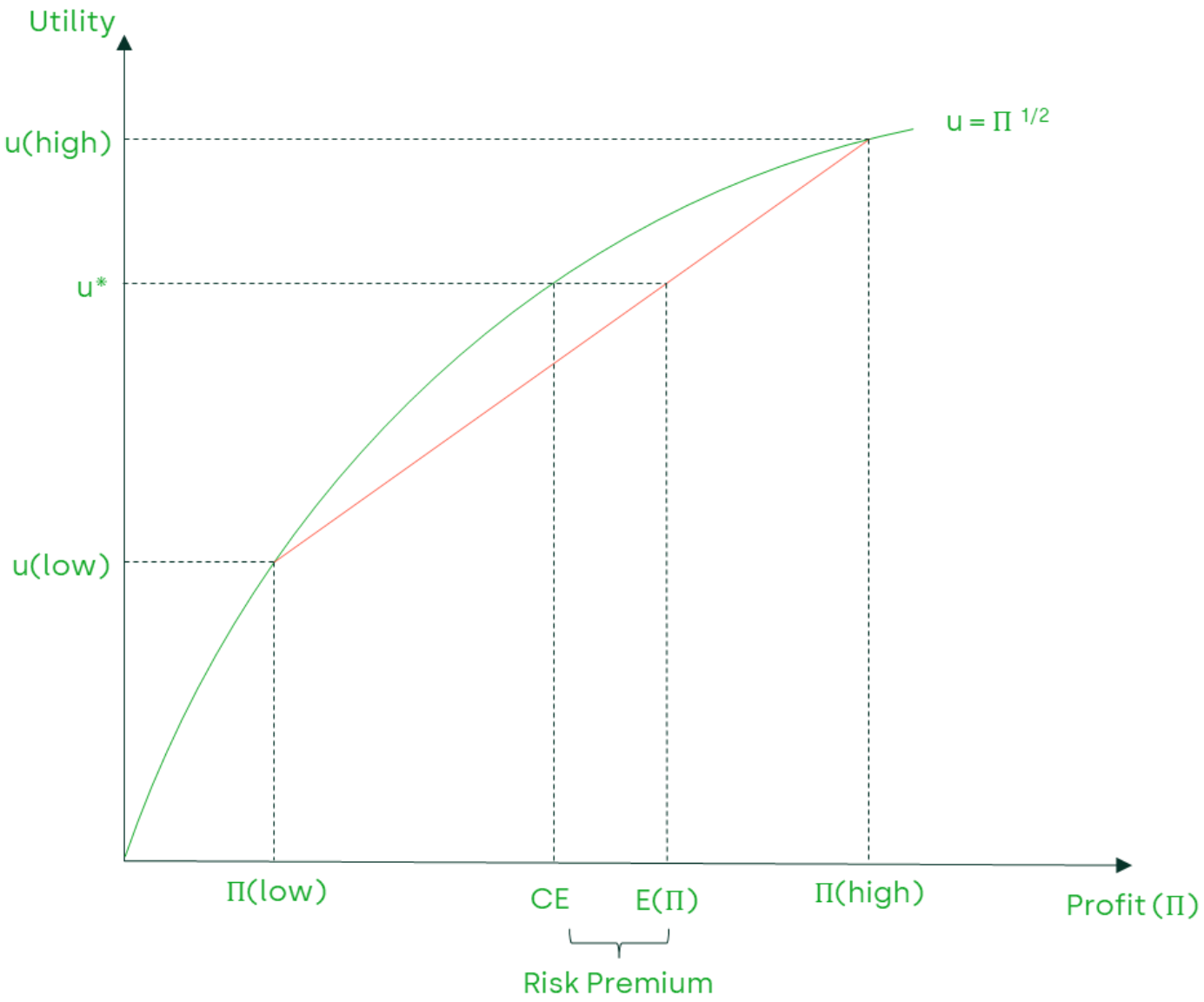
The concept of a risk premium for a risk averse firm is illustrated graphically in Figure 3.1, where:

- Π(low) and Π(high) are the profits associated with uncertain outcomes of a gamble (e.g. a risky investment)—u(low) and u(high) are the utilities the firm receives from each of these profit values;
- E(Π) is the expected profits of the gamble;
- CE is the certainty equivalent value which yields the same utility as would be achieved from E(Π);
- the risk premium is calculated as the difference between CE and E(Π).

The risk premium (the difference between CE and E(Π)) is a result of the concave utility function, whereby greater profits increase utility at a decreasing rate. Conversely, reductions in profit result in reductions in utility at an increasing rate. A risk averse firm, therefore, is willing to make a payment (the risk premium) if doing so avoids the risk of it earning lower profits (and disproportionately lower utility).

[57] For example, TalkTalk adds a £2/month 'risk premium' to its contracts when it does not offer ILPV contracts (and, therefore, bears the inflation uncertainty itself).
[58] Technically, this is the value a firm would be willing to pay (or give up) to avoid a 'zero mean risk'. Depending on the shape of the risk-averse firm's utility function, it may be willing to bear some uncertainty if probability of a favourable outcome is significantly higher than a less favourable one.

Figure 3.1 Illustration of the risk premium for a risk averse firm



Source: Oxera.

In this context, ILPV contracts are analogous to the certainty equivalent since they are not associated with any of the risk from inflation uncertainty associated with the link between telecoms input costs and inflation that we discuss in Section 2.3. Ofcom's proposed ban on ILPV contracts would result in telecoms operators not having the option of this certainty equivalent outcome. Instead, they would face an uncertain outcome with a risk of high inflation (i.e. Π(low)). Their way of managing this is likely to be by increasing an element of their pricing to compensate for this additional risk—i.e. by adding a risk premium.

We have identified four feasible examples of unintended consequences which might arise as a result of telecoms operators being required to bear inflation uncertainty, and resultantly charging something akin to a risk premium.

Pounds and pence prices set above the level which recovers the costs of forecast inflation

In this scenario, telecoms operators' pricing structures would be as Ofcom expects—with pounds and pence in-contract price increases set to manage inflation uncertainty. Telecoms operators would, however, require a risk premium (above the price that would enable them to recover their costs with forecast inflation) to compensate them for having to bear the uncertainty of future outturn inflation being higher than their expectation. This risk premium would result in higher in-contract price increases than with ILPV contracts in expected terms, all else remaining the same.

A reduction in contract lengths

An alternative approach would be for telecoms operators not to directly increase prices. Instead, they could remove contracts with longer terms from the market—i.e. those that are exposed to the greatest inflation uncertainty.

Although this would not necessarily result in a direct increase in prices, we typically expect longer contract terms to be associated with lower prices—since operators charge lower prices to reflect the benefit to them from the certainty of longer-term future revenue streams. Moreover, there are some fixed costs (e.g. routers and handsets) which are typically recovered over the course of a consumer's contract and, for fixed network services, providers can face significant customer set up costs, such as civil works and engineer visit/installation costs. Contracts with longer durations allow providers to recover these costs from customers over a longer period of time (via a larger number of lower monthly payments). The removal of contracts with longer terms from the market could, therefore, increase the average prices paid by consumers.[59]

[59] Although Ofcom does consider shorter contracts as a consequence of its proposals, this is specifically in the context that it might increase the number of customers outside their initial contract term, rather than the average prices paid by consumers within that term.

Increasing non-headline prices (e.g. out of bundle charges)

The risk premium could, instead, be realised through increases in other prices. For example, telecoms operators might increase their out-of-bundle prices for new customers, to earn the revenue to compensate them for bearing inflation uncertainty. This would enable them to continue to compete strongly on headline prices, while mitigating the inflation uncertainty risk through other prices.

There may be more significant distributional effects under this outcome if the distribution of out of bundle charging across customers is uneven (e.g. if some consumers pay no out of bundle charges and others exceed their allowances more frequently). In this scenario, those customers who frequently exceed their bundled allowances could potentially pay significantly higher prices since the revenue the telecoms operator would require to cover its risk premium would be spread over a smaller number of customers than in alternative scenarios (e.g. the £/p scenario).

Increases in 'prices may vary terms'

Ofcom considers whether its proposals would result in telecoms providers responding by introducing more 'prices may vary' terms.[60] It recognises that this response could harm consumers if it led to less certainty, but noted the risk to providers of customers invoking their right to exit following unspecified in-contract price increases and considered that its preferred remedy would make 'prices may vary terms' less likely.

Today, 'prices may vary' terms are not commonplace since there are alternatives, such as ILPV contracts, which allow telecoms operators to manage inflation uncertainty risk. If 'prices may vary' terms became more common in response to Ofcom's intervention, there may indeed be considerable consumer harm resulting from the future pricing uncertainty associated with these contracts. This would be a plausible outcome if risk averse telecoms operators (i) considered that alternatives, such as £/p price increases, were not sufficient to protect them from inflation uncertainty; and (ii) assessed that the risk of consumers exiting their contracts in response to unspecified price increases was low. We consider that these outcomes could be feasible

[60] Ofcom (2023), 'Prohibiting inflation-linked price rises', December, para. 4.80.

and, therefore, a greater prevalence of 'prices may vary' terms could be a realistic market response to Ofcom's proposals.

In Section 3.6, we provide illustrations of the possible scale of the unintended consequences for the first two scenarios (£/p in-contract price rises and shorter contracts). We have not done the same for the remaining two scenarios as we do not have sufficient information to estimate the harm, even in a stylised scenario.

3.6 An illustration of the possible scale of the unintended consequences

In this section, we consider examples of the possible unintended consequences that might arise from a risk averse firm reacting to Ofcom's proposals by attempting to protect itself from having to bear inflation uncertainty (drawing on the discussion in Section 3.5). These examples are not intended to reflect the most likely outcome, but instead have been presented to illustrate that reactions by telecoms providers could feasibly lead to higher overall prices and different distributional effects, such that some consumers could be impacted more than others. In our view, a robust impact assessment could give appropriate weight to these possibilities.

In Annex A1, we provide further details on the methodology we have used and sensitivities on our results.

3.6.1 Illustrative example: £/p in-contract price rise

We have modelled a stylised example to illustrate the potential impact of a scenario where operators introduce £/p terms for in-contract price increases, in line with Ofcom's proposed remedy. Specifically, we model the prices a consumer would face under two hypothetical scenarios.

- **Counterfactual scenario**: a consumer purchases a contract with ILPV terms, under which the in-contract price will increase in April 2025 and April 2026 by RPI plus 3.9%.
- **Operator response scenario**: a consumer purchases a contract with £/p terms, under which the in-contract price will increase by a £/p figure in April 2025 and April 2026 (which is specified upfront at the start of the contract).

We model the price increases as taking place in April 2025 and April 2026 to capture a period in which the inflation rate is expected to be

more stable,[61] and more closely aligned with the UK government's target rate of 2%.[62] We consider that this is reasonable for the purposes of assessing potential unintended consequences of Ofcom's proposals on a forward-looking basis.

Given that the price increase (under ILPV and £/p terms) takes place in a specific month of the year (April, in the case of Virgin Media O2), the month in which the consumer is assumed to purchase the contract will affect the scale of the impact, as it affects the number of months in which the consumer pays different prices across the two scenarios. In the results below, we assume the consumer purchases their contract in October 2024, i.e. six months before the first price rise.[63]

The scale of any future £/p in-contract price increase is inherently uncertain. Therefore, we base the scale of the modelled £/p price increases on two approaches.

- In the first approach, we assume the operator increases prices in line with those announced in the public domain (specifically, those announced by BT).[64]
- In the second approach, we assume the operator increases prices by an amount which includes a risk premium, which we derive from a stylised scenario, reflecting the uncertainty that they would face with respect to the outturn rate of inflation.

£/p increase based on BT's price rise announcement

Under this approach, we model three O2 SIM-only tariffs (with 24-month contract lengths) and three Virgin Media broadband-only tariffs (with 18-month contract lengths) advertised on O2 and Virgin Media's websites.[65] The tariffs we use are summarised in Table .

[61] For example, see Office for Budget Responsibility (2023), 'Historical official forecasts database', 22 November.
[62] Bank of England (2023), 'Inflation and the 2% target', 17 January, https://www.bankofengland.co.uk/monetary-policy/inflation (accessed 7 February 2024).
[63] In Annex A1, we present sensitivities on the assumed purchase date of the contract, to assess how this assumption affects the scale of the impact.
[64] BT (2023), 'Press release: Our new pricing structure for the future', 16 January, https://newsroom.bt.com/our-new-pricing-structure-for-the-future/ (accessed 7 February 2024).
[65] Since our model assumes that the consumer purchases the contract in October 2024, we assume that the tariffs available (as of January 2024) would continue to be available to consumers at the same prices in October 2024.

Table 3.1 £/p in-contract price rise: tariffs modelled

Tariff name	Monthly headline price (at the start of the contract)
O2	
SIM-only: 6GB	£16.00
SIM-only: 150GB Plus	£22.99
SIM-only: Unlimited Plus	£28.99
Virgin Media	
M125 Fibre Broadband	£26.50
M250 Fibre Broadband	£27.00
M500 Fibre Broadband	£39.00

Note: The M250 Fibre Broadband and M500 Fibre Broadband prices include a promotional discount over the full duration of the contract.
Source: Oxera based on O2's website. See O2 website, https://www.o2.co.uk/shop/sim-cards/sim-only-deals (accessed 29 January 2024); Virgin Media website, https://www.virginmedia.com/broadband/broadband-only (accessed 29 January 2024).

We assume the following price increases take place in each scenario:

- **Counterfactual scenario**: the price of each tariff increases in April 2025 by forecast RPI (2.60%) plus 3.9%, and in April 2026 by forecast RPI (2.51%) plus 3.9%.[66]
- **Operator response scenario:** the price of each O2 (mobile) tariff increases by £1.50 in April 2025 and by £1.50 again in April 2026, and each Virgin Media (broadband) tariff increases by £3 in April 2025 and again by £3 in April 2026.[67]

The impact of the operator response to Ofcom's proposals is given by the difference in the total cost to the consumer over the contract duration under the counterfactual scenario and the operator response scenario—we do not consider any further impacts beyond the end of the contract period since this is out of scope of Ofcom's proposals. The results are presented in Table 3.2, with a positive value indicating that

[66] For the April 2025 price increase, we use the OBR RPI forecast for 2025 (2.60%); for the April 2026 price increase, we use the OBR RPI forecast for 2026 (2.51%)(source: OBR, (2023), 'Historical official forecasts database', 22 November). We note that the OBR does not provide a monthly or quarterly RPI forecast, which would enable us to use a more precise estimate for each price change.
[67] We recognise that BT's announcement specifies only an indicative level of future price rises in £/p terms. However, we consider these is a reasonable approximation for these illustrative purposes.

the consumer pays a higher price in the operator response scenario with £/p terms relative to ILPV terms (and vice versa).[68]

With ILPV terms, the price of all tariffs increase proportionally by the same percentage (but by different absolute amounts). In contrast, if operators respond to Ofcom's proposals by implementing £/p terms that specify a single fixed price increase for all tariffs (or groups of tariffs),[69] consumers will experience different proportional increases in the prices paid (as the £/p figure corresponds to a different percentage increase for each tariff). Where the proportional increase under £/p terms is higher than the rate of inflation (plus the fixed percentage), consumers will be worse off under £/p terms relative to ILPV terms (and vice versa). Under the modelled scenario, we find that, if Virgin Media O2 were to implement £/p price rises equivalent to those announced by BT, some consumers would face higher price increases than they would have with ILPV terms.

Given that consumers may experience different proportional increases in their prices, a move to £/p terms could lead to distributional effects across consumers, relative to ILPV terms. Notably, consumers who purchase cheaper tariffs may be more likely to be disadvantaged by the move to £/p terms. For example, as shown in Table 3.2 below:

- considering the O2 mobile tariffs, consumers who purchase the less expensive 6GB tariff face higher prices relative to the ILPV counterfactual, whereas those who purchase the more expensive 150GB and Unlimited tariffs face lower prices;
- considering the Virgin Media fixed tariffs, while all consumers face higher prices relative to the ILPV counterfactual, the effects are most acute for those on the cheaper M125 Fibre Broadband tariff, with these customers incurring the largest increase in cost.

[68] We present our results in undiscounted terms, and therefore do not take into account the time-value of money.
[69] A single £/p increase across or tariffs, or groups of tariffs is likely a plausible scenario in light of BT's announcement and the fact that this was how operators typically implemented price increases prior to ILPV terms. For example, in 2019 Sky introduced a single, flat price increase for broadband tariffs of £1 per month, or £2 per month for fibre broadband. See Money Saving Expert (2019), 'Sky to hike TV and broadband prices from April', 19 February, https://www.moneysavingexpert.com/news/2019/02/sky-set-to-hike-prices-/ (accessed 29 January 2024). While in 2018, Virgin Media increased price each bundle type by a single fixed amount. See Money Saving Expert (2018), 'Virgin Media to hit customers with 4.5% price hike', 15 August, https://www.moneysavingexpert.com/news/2018/08/virgin-price-hikes/ (accessed 29 January 2024).

Table 3.2 £/p in-contract price rise: illustrative results

Tariff name	Change in cost to consumer (over the contract duration)
O2	
SIM-only: 6GB	£10.72
SIM-only: 150GB Plus	- £0.32
SIM-only: Unlimited Plus	- £9.79
Virgin Media	
M125 Fibre Broadband	£15.33
M250 Fibre Broadband	£14.94
M500 Fibre Broadband	£5.58

Note: The results are presented in undiscounted terms.
Source: Oxera analysis.

Given the potential distributional effects across tariffs from a move from ILPV terms to £/p price increase, it's important to examine how different groups of consumers may be affected. Using data from Virgin Media O2,[70] we examine the demographic variation of customers taking Virgin Media O2 tariffs, in terms of age and socioeconomic indicators.

We first analyse customers who purchase O2 tariffs, and specifically focus on SIM-only tariffs with ILPV terms (excluding monthly rolling contracts). As shown in Figure 3.2, looking across SIM-only tariffs with different data allowances, we find a higher proportion of customers aged over 60 purchase tariffs with smaller data allowances, which are generally cheaper, than younger customers. This suggest that customers over 60 may be more likely to face higher price rises with £/p terms relative to a scenario with ILPV terms than younger customers (since our example above indicates that those customers on cheaper tariffs are more likely to be worse off in our £/p scenario).

[70] This data was provided to us by Virgin Media O2. The demographic information is representative of only acquisition customers, and may therefore not be representative of VMO2's subscriber based including existing customers.

Figure 3.2 Proportion of customers taking each SIM-only tariff type (by age category)

[✂]

Note: This analysis is focused on customers who purchase SIM-only contracts with ILPV terms (excluding monthly rolling contracts).
Source: Oxera analysis.

In terms of socioeconomic status, we find that [✂] of customers taking SIM-only contracts with ILPV terms (excluding monthly rolling contracts) with a data allowance below 10GB are in the lowest socioeconomic categories—'financially stretched' and 'urban adversity'.[71]

Next we assess the types of customers who purchase Virgin Media fixed broadband-only tariffs.[72] As shown in Figure 3.3, we find that a higher proportion of customers aged over 60 purchase tariffs with slower download speeds, which are generally cheaper, than younger customers.[73] This suggest that customers aged over 60 may be more likely to face higher price rises with £/p terms relative to a scenario with ILPV terms than younger customers.

Figure 3.3 Proportion of customers taking each broadband-only tariff type (by age category)

[✂]

Note: This analysis is focused on customers who purchase broadband-only contracts.
Source: Oxera analysis.

As shown in Figure 3.4, we find a higher proportion of customers in the 'low' or 'very low' socioeconomic category purchase broadband-only tariffs with slower download speeds, which are generally cheaper, than those in higher socioeconomic categories.[74] This suggest that customers

[71] These are the socioeconomic categories recorded in Virgin Media O2's database for O2 tariffs. Our understanding is that 'financially stretched' and 'urban adversity' are the lowest socioeconomic categories.
[72] For Virgin Media tariffs, the demographic data covers customers taking contracts both with and without ILPV terms. We do not have data on customers with ILPV terms in isolation.
[73] The data on age is available for 99% of customers who purchase broadband-only contracts.
[74] These are the socioeconomic categories recorded in Virgin Media O2's database for Virgin Media tariffs. These categories were applied by Virgin Media O2's data providers and correspond to the CACI categorisation bands as follows: band E (very low); band D (low); band C (Medium); bands A and B (high). The data on socioeconomic status is available for 92% of customers who purchase broadband-only contracts.

with a lower socioeconomic may be more likely to face higher price rises with £/p terms relative to a scenario with ILPV terms than those with a higher socioeconomic status.

Figure 3.4 Proportion of customers taking each broadband-only tariff type (by socioeconomic category)

[✂]

Note: This analysis is focused on customers who purchase broadband-only contracts.
Source: Oxera analysis.

While this is not a complete analysis across all customers and tariffs, it highlights the importance of investigating the potential effects on different consumer groups, particularly where there is the potential for adverse unintended consequences.

£/p increase based on modelled risk premium

With ILPV terms, in-contract prices increase in line with inflation, providing a mechanism by which operators can pass on input cost increases. In this case, if inflation is unexpectedly very high or low—which, for the reasons explained in Section 2, would imply very high or low increases in an operator's input costs—prices can adjust in line with this. However, if operators must specify any price increases upfront in £/p terms, they lose the ability to subsequently adjust prices in the face of inflation shocks. As explained above, if firms are risk averse, they will charge a 'risk premium' to compensate them for the uncertainty they now face in respect of the outturn inflation rate.

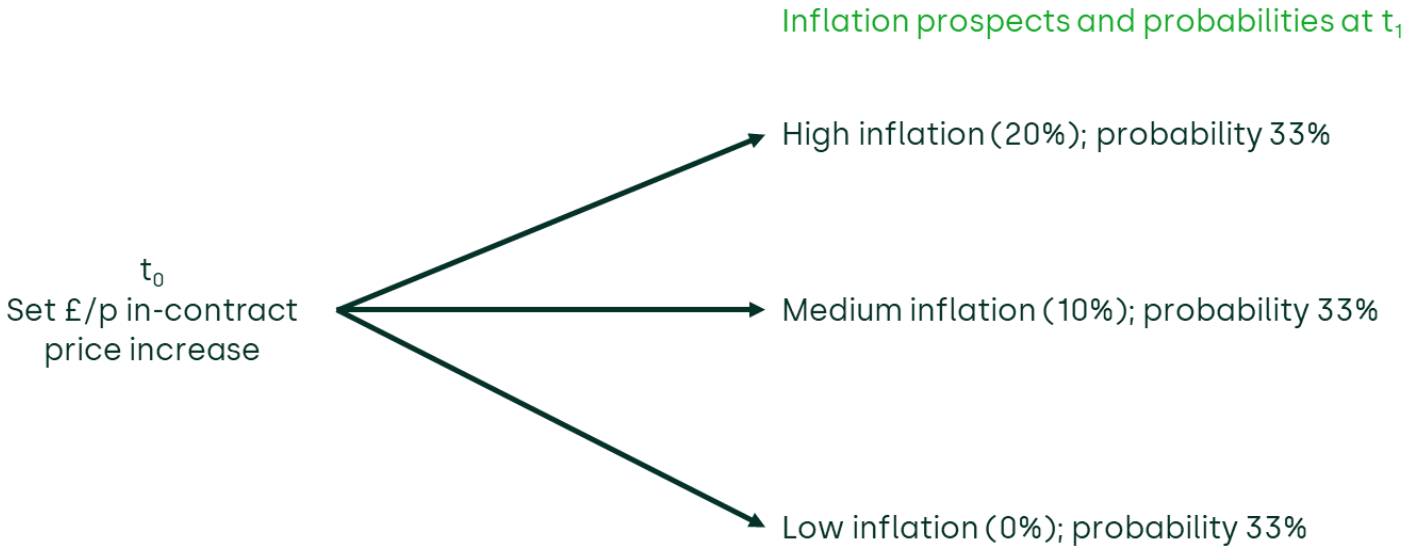
We have constructed a stylised scenario to estimate an indicative level of the risk premia that operators may apply to tariffs. For the full details on the methodology we have used, see Annex A1.

In the counterfactual scenario with ILPV terms, the operator essentially faces no uncertainty over the outturn inflation rate, since its prices automatically adjust to reflect this. In our stylised example, we assume that, in the counterfactual, the operator experiences a 10% increase in its costs as result of inflation, and that these are automatically passed on (in absolute terms) through an increase in prices. This generates the

same absolute profit, which provides a specific level of utility in line with the operator's utility function.[75]

In the operator response scenario, at the point of having to set the £/p price increase, the operator faces uncertainty over the future inflation rate. We make the stylised assumption that the operator faces the uncertain inflation prospects as described in Figure 3.5 below. The operator faces a medium inflation rate prospect (which is the actual outturn scenario, consistent with the counterfactual), but also faces the risk of a high or low inflation rate, each with equal probability. For simplicity, this example is constructed so that the inflation rate in expected terms (i.e. the inflation prospects multiplied by their respective probabilities) is 10%, in line with the counterfactual scenario.

Figure 3.5 Uncertain inflation prospects faced by the operator



Source: Oxera.

We calculate the in-contract £/p price increase that the operator would specify upfront which, when faced with the prospects described in Figure 3.5, yield the same *expected* utility (from the profit earned) that it achieves in the counterfactual scenario with ILPV terms. Since we assume the firm is risk averse, and therefore has a concave utility function, the £/p price increase specified upfront is larger than the price increase that would be expected to take place with ILPV terms. The

[75] For simplicity, we assume the operator's concave utility function is given by: $u = profit^{1/2}$.

difference between the price increases under each scenario is the risk premium, i.e. the additional profit the firm requires (in expected terms) to achieve the same level of utility as with ILPV terms.

We present an overview of the key results from our analysis in Table 3.3 below. This suggests that, under this simplified, stylised scenario, the risk premium is relatively modest. However, it is important to note that this is the additional increase in price that would occur over and above the increase in price that would occur with ILPV terms. Moreover, under alternative scenarios this could be plausibly higher. For example, if the uncertainty over the inflation rate was skewed towards higher inflation risks than lower inflation risks.

Table 3.3 Modelled risk premium: illustrative results

	O2: SIM-only – 25GB	VM: M500 Fibre Broadband
Monthly price (start of contract)	£17.00	£39.00
Monthly price increase: ILPV terms	£1.36	£3.12
Monthly price increase: £/p terms	£1.45	£3.33
Monthly risk premium	£0.09	£0.21

Source: Oxera analysis.

The purpose of this highly stylised example is to demonstrate that if operators are risk averse, in-contract price increases could be systematically higher than those that would be expected with ILPV terms, due to the risk premium that would be applied to price increases. In practice, the magnitude of the price increases will be determined by the level of the firm's risk aversion and the distribution of uncertain outcomes.

3.6.2 Illustrative example: reduction in contract lengths

We have modelled a stylised example to illustrate the potential impact of a scenario where operators withdraw longer contract lengths and instead offer only 12-month contracts. Specifically, we model the prices a consumer would face under two hypothetical scenarios.

- **Counterfactual scenario**: a consumer purchases a contract with ILPV terms, under which the in-contract price will increases in April 2025 and April 2026 by RPI plus 3.9%.[76]
- **Operator response scenario**: a consumer purchases two consecutive 12-month contracts to obtain the same services as in the counterfactual scenario. We have modelled two versions of this scenario: (i) including an increase in the headline price in line with inflation (plus a fixed percentage) for the second 12-month contract;[77] (ii) excluding any increase in the headline price for the second 12-month contract.

As above, we assume the consumer purchases the contract in October 2024, i.e. six months before the first price rise.[78]

First, we undertake the analysis for mobile tariffs and then consider fixed.

Shorter contract lengths: mobile tariffs

We model three O2 SIM-only tariffs advertised on the O2 website.[79] These tariffs are available with a 12-month and 24-month contract.[80] The tariffs used are summarised in Table 3.4. This also presents the 'price premium' for 12-month contracts, i.e. the additional cost per month of taking 12-month contract instead of a 24-month for tariff which is equivalent in all other aspects.

Table 3.4 Reduction in contract lengths: tariffs modelled

Tariff name	[a] 12-month contract price	[b] 24-month contract price	[c] = [a] – [b] 12-month contract price premium
SIM-only: 6GB	£18.00	£16.00	£2.00

[76] For the April 2025 price increase, we use the OBR RPI forecast for 2025 (2.60%); for the April 2026 price increase, we use the OBR RPI forecast for 2026 (2.51%). See Office for Budget Responsibility, (2023), 'Historical official forecasts database', 22 November. We note that the OBR does not provide a monthly or quarterly RPI forecast, which would enable us to use a more precise estimate for each price change.
[77] Consistent with the counterfactual, we use the OBR RPI forecast for 2025 (2.60%), and a fixed percentage of 3.9%.
[78] In Annex A1, we present sensitivities on the assumed purchase date of the contract, to assess how this assumption affects the scale of the impact.
[79] Since our model assumes the consumer purchases the contract in October 2024, we assume that the tariffs available (in January 2024) would continue to be available to consumers at the same prices in October 2024.
[80] We do not model Virgin Media fixed tariffs as all tariffs offered on its website have an 18-month contract, meaning we cannot impute the premium it would charge for shorter contact length.

Tariff name	[a] 12-month contract price	[b] 24-month contract price	[c] = [a] – [b] 12-month contract price premium
SIM-only: 150GB Plus	£24.99	£22.99	£2.00
SIM-only: Unlimited Plus	£34.99	£28.99	£6.00

Source: Oxera based on O2's website. See O2 website, https://www.o2.co.uk/shop/sim-cards/sim-only-deals (accessed 29 January 2024).

The impact of the operator response to Ofcom's proposals is given by the difference in the total cost to the consumer over the 24-month period under the counterfactual scenario and the operator response scenario. The results are presented in Table 3.5, with a positive value indicating that the consumer pays a higher price in the operator response scenario with shorter contract lengths relative to ILPV terms (and vice versa).[81]

Under this scenario, whether consumers face higher prices depends on the relative scale of the price increases under ILPV terms (given the relevant inflation rates) and the prices that would be paid where only shorter, more expensive contracts are available. The scale of the impact is also dependent on whether the operator would seek to increase headline prices for the second 12-month contract.

As can be seen, there are cases in which the consumer would incur a higher cost over the 24-month period where only shorter contracts are available, relative to the counterfactual with ILPV contracts (even including the scenario in which we exclude an increase in headline prices). There are also distributional effects, driven by the net effect of the premium applied to the shorter contracts and the price rise that arises under ILPV terms (the scale of which depends on the tariff price).

Table 3.5 Reduction in contract lengths: illustrative results

Tariff name	Change in cost to consumer (over the 24-month period)	
	Including headline price rise	Excluding headline price rise

[81] We present our results in undiscounted terms, and therefore do not take into account the time-value of money.

Tariff name	Change in cost to consumer (over the 24-month period)	
O2 – 6GB	£36.76	£22.73
O2 – 150GB Plus	£31.17	£11.68
O2 – Unlimited Plus	£125.50	£98.21

Note: The results are presented in undiscounted terms.
Source: Oxera analysis.

Shorter contract lengths: fixed tariffs

We do not model Virgin Media fixed tariffs as all tariffs offered on its website (in January 2024) have an 18-month contract, meaning we cannot impute the premium it would charge for shorter contact length. However, we consider that a move to shorter contract lengths could also lead to an increase in the headline prices of fixed products, since fixed operators would experience the same reduction in certainty over future revenue streams and may need to spread the upfront acquisition costs incurred over a shorter period, if the reduction in contract lengths leads to a reduction in average customer lifetime (ACL).

To consider the potential magnitude of such a change, we have produced a stylised example to assess the potential impact on monthly prices if operators need to recover upfront acquisition costs over a shorter ACL. We consider the following two upfront acquisition costs, based on internal data from Virgin Media O2.

- Installation costs (blended average): £[✂];[82]
- Broadband router costs (blended average): £[✂].[83]

In Table 3.6 below, we present the amortised monthly cost of each of the items across an assumed four-year and three-year ACL, reflecting the potential downward effect of shorter contract lengths on the ACL.[84] This also presents the delta between the amortised costs for each assumed ACL, which provides an indication of the scale of the monthly

[82] This represents the blended average across three bundle types (solus, dual-play and triple-play) and three different levels of installation (depending on whether the customer already has a Virgin Media connection and the status of this connection).
[83] This represents the blended average of the broadband router costs across the products sold by Virgin Media which include a broadband service.
[84] To amortise the total cost, we spread this evenly across the number of months in the assumed ACL. We do not discount the results to reflect the time-value of money.

price rise that may occur if shorter contracts lead to a reduction in the ACL.

Table 3.6 Reduction in contract lengths: illustrative results

Cost item	Total cost	[a] Amortised monthly cost (4-year ACL)	[b] Amortised monthly cost (3-year ACL)	[c] = [b] – [a] Delta
Installation costs	£[✂]	£[✂]	£[✂]	£[✂]
Broadband CPE	£[✂]	£[✂]	£[✂]	£[✂]

Note: The results are presented in undiscounted terms.
Source: Oxera analysis based on Virgin Media O2 internal data.

We note that these estimates do not include the following.

1 A range of other upfront acquisition costs, such as the costs of supplying a TV set-top box and other marketing and sales costs.
2 Any assessment of the other factors that lead to telecoms operators offering discounts for shorter contracts (the effect we capture for mobile customers above).

If these costs were also included, the implied price increases from shorter contracts could potentially be higher.

3.7 Conclusions

We have discussed the importance of impact assessments to regulatory decisions, particularly when those decisions involve intervention at the retail level of the market.

In our view, an appropriate impact assessment of Ofcom's proposed prohibition of ILPV contracts would include a robust analysis of the possible unintended consequences of its intervention (to avoid a similar situation to Ofgem's 2013 intervention in the UK retail energy market).

To illustrate some potential unintended consequences, we consider four examples where a risk averse telecoms operator reacts to Ofcom's proposals in a way in which it has not anticipated, leading to detrimental outcomes for, at least, a proportion of consumers. An impact assessment should weigh up such feasible outcomes against the perceived theory of harm.

4 An assessment of the relevant consumer research and behavioural economics

4.1 Summary of our assessment of the relevant consumer research and behavioural economics

As we discuss in Section 3.3, Ofcom's impact assessment is based on a perceived consumer harm derived from behavioural economic theory and supporting consumer research. In this section, we consider the evidence underpinning this.

Two main concerns emerge from Ofcom's assessment in relation to consumer biases. First, it considers that consumers in telecoms markets may lack awareness of ILPV terms, as they are often presented towards the end of a consumer's purchasing journey. Second, consumers may lack understanding of ILPV terms as they are complex and involve uncertainty, technical terms and percentage calculations. Ofcom's view is that these might impede effective competition and lead to poor outcomes for consumers.

While the economic literature recognises that demand-side limitations linked to consumer biases can impact the effective functioning of markets, the extent to which these biases lead to undesired outcomes for consumers and its magnitude depend on the specific market context and firms' strategic responses. If market forces alone are not sufficient to restore good consumer outcomes, a remedy might be considered to promote a particular behaviour.

Not all remedies intended to promote particular behaviours or outcomes are effective in achieving these goals—the efficacy of different types of intervention continue to be debated. These interventions range from more traditional methods for addressing demand-side problems[85] to more complex interventions directly targeting consumer engagement.[86] The design and implementation of these remedies are not straightforward, and the relative merits of each intervention must be evaluated in the specific context. For example, as we discuss in Section 3.4, the CMA found little evidence that Ofgem's 2013 intervention in the energy market was effective in improving consumer engagement and, importantly, outcomes.[87] There is currently limited evidence on the

[85] Such as disclosure requirements, comparison tools, switching interventions and absolute bans on certain practices.
[86] Such as attention triggers, comparison metrics, choice architecture and outcome control.
[87] CMA (2016), 'Energy market investigation: Final report', 24 June.

effectiveness of interventions to stimulate consumer engagement, with further research and testing of the resulting outcomes required.

Ofcom's theory of harm is predicated on assumptions regarding the demand- and supply-side of the market. Our assessment identifies areas where these assumptions may be too strong in this particular context. In particular, there exists a wider range of behavioural biases and insights that are relevant for (i) Ofcom's assessment of ILPV contracts, (ii) the justification for intervention, (iii) the effectiveness of the proposed intervention to trigger particular behaviour and (iv) the consequences of its proposed remedy specifically in telecoms markets. There also exist strong mechanisms on both the demand and supply side that could generate greater consumer awareness and understanding of ILPV contracts as an outcome in competitive UK telecoms markets.

The survey design and framing of Ofcom's questions in its consumer surveys are also likely to have influenced the evidence underpinning its justification for intervention. Moreover, it is not clear that Ofcom's proposals to remove the option for consumers to choose between contracts with and without ILPV terms will benefit all consumers, with some consumers expressing an appetite for bearing inflation risk and expressing concerns about being tied into contracts with fixed price increases that may turn out to be more expensive.

In our view, Ofcom's proposals would benefit from a more detailed assessment and understanding of consumers' and firms' behaviour, as well as market outcomes, to better inform the identification of consumer harm and the justification for intervention, specifically in the UK telecoms market.

This section is structured as follows.

- Section 4.2 discusses Ofcom's assessment of consumers' awareness and the effects of sequential presentation of pricing terms, from a behavioural economics perspective.
- Section 4.3 discusses Ofcom's assessment of the behavioural economics insights in relation to consumers' understanding of ILPV terms and their framing.
- Section 4.4 provides an assessment of Ofcom's quantitative survey results.
- Section 4.5 presents an assessment of Ofcom's qualitative fieldwork.
- Section 4.6 discusses why, in our view, Ofcom's assessment of behavioural economics insights and the quantitative evidence

underlying its theory of harm lack robustness and require deeper assessment/testing.

4.2 Consumer awareness of inflation-linked price variation terms

One of the concerns outlined by Ofcom is that consumers might be unaware of ILPV terms and fail to take them into account when making their purchasing decisions. Ofcom's view is that telecoms operators tend to present ILPV terms only towards the end of the customer's purchasing journey.[88] According to Ofcom, delaying the revelation of ILPV terms or making them less prominent may reinforce consumers' biases, and limit consumer engagement when consumers are making their purchasing decisions.[89]

We first note that Ofcom's view that ILPV terms are not presented to consumers until towards the end of the sales journey does not appear to factor in operator responses to recent policy changes. As we discuss in Section 3.3, the CAP and BCAP recently provided guidance on the advertising of telecoms contracts with ILPV terms, which took effect on 15 December 2023, to increase the prominence of in-contract price rises.[90] Where potential consumer unawareness is triggered by a lack of prominence with respect to ILPV terms and where telecoms providers comply with the CAP/BCAP recommendation, this should be sufficient to increase consumer awareness and potentially increase consumer engagement. A review of telecoms operators' websites indicates that many do currently prominently advertise ILPV terms in a way that is consistent with the CAP/BCAP guidance.[91]

While the rest of this section considers the behavioural economic theory in relation to sequential pricing (as set out in Ofcom's theory of harm), we note that this is only relevant if, in fact, it reflects the reality today in the presence of operator responses to the CAP/BCAP guidance.

Ofcom provides examples of relevant biases and their potential effects. It identifies the following insights as being relevant to its theory of harm.

- **Salience bias** can cause consumers to pay attention only to the most salient and prominent information.

[88] Ofcom (2023) 'Prohibiting inflation-linked price rises,' para. 3.33.
[89] Ofcom (2023) 'Prohibiting inflation-linked price rises,' paras 3.31–3.41,.
[90] Advertising Standards Authority (2023) 'Mid-contract price increases in telecoms,' 22 November.
[91] See, for example, Vodafone website, https://www.vodafone.co.uk/broadband (accessed 7 February 2024); Plusnet website, https://www.plus.net/broadband/ (accessed 7 February 2024).

- **Anchoring** can cause consumers to base their decision only on the initial piece of information they receive (such as the headline price of a product).
- **Inertia, loss aversion, and the goal gradient effect** can cause consumers to be reluctant to consider changing their mind, and search the market again once they reach the point where an ILPV clause is finally presented to them.

While it is established in the literature that consumers can be sensitive to the sequential revelation of different price components due to their biases, the extent to which sequential revelation may lead to undesired consumer outcomes depends on the specific market characteristics and the context in which consumers make decisions.[92] Therefore, Ofcom's analysis could benefit from a more detailed assessment of the effects of sequential pricing on consumers in the specific context of telecoms markets.

Indeed, economic literature highlights that in some markets the sequential revelation of price or product components may lead to consumers not taking this information fully into account when choosing the best offer.[93] In this context, firms will tend to compete only on the advertised base price information rather than on the total price.[94] In some cases, this might lead to better outcomes for engaged and informed consumers at the expense of consumers that pay less attention, and thus, do not obtain the best deals. However, these results are often obtained in the context of particular markets, such as bookings for hotels and airline tickets.[95] The existing literature provides limited insights as to the applicability of these results to broader markets (such as telecoms). Some studies show that the effects of sequential pricing can differ depending on the nature of the product and specific market characteristics.[96]

For example, there are market environments where sequential revelation of price or product information is justified by the nature of the product (e.g. where prices depend on multiple contingencies). The negative

[92] Rhodes, A. (2023) 'A survey on drip pricing and other false advertising,' *TSE Working Paper*, n. 23-1434.
[93] This practice is referred to in the literature as drip pricing. For a literature review, see Rhodes, A. (2023), 'A survey on drip pricing and other false advertising,' TSE Working Paper, n. 23-1434.
94 Gabaix, X. and Laibson, D. (2006), 'Shrouded attributes, consumer myopia and information suppression in competitive markets,' *The Quarterly Journal of Economics*, **121**:2, pp. 505–40; Ellison, G. and Ellison, S. F. (2009), 'Search, obfuscation and price elasticities on the internet,' *Econometrica*, **77**: 2, pp. 427–52.
[95] Rhodes, A. (2023) 'A survey on drip pricing and other false advertising,' *TSE Working Paper*, n. 23-1434.
[96] Rhodes, A. (2023) 'A survey on drip pricing and other false advertising,' *TSE Working Paper*, n. 23-1434.

effects of sequential revelation of pricing components would be limited in markets where consumer learning is strong and timely, and where firms care for their reputation. Importantly, the literature shows that in some markets competition for engaged and informed consumers might be sufficient to ensure good outcomes for less engaged and informed consumers.[97] Particularly where a 'less prominent' product component cannot be avoided or obtained from an alternative seller after the purchase. Therefore, even in markets where some consumers might lack awareness about certain price components, competition for consumers that are aware and firms' reputational concerns can be sufficient to deliver good outcomes for all consumers.

In light of the above discussion, the actual effects of sequential pricing in relation to ILPV contracts (if it currently exists) should be assessed in the context of telecoms markets. We provide an assessment of sequential pricing in telecoms contracts below.

4.2.1 Sequential pricing in the context of telecoms markets

In telecoms markets, consumers make repeated purchases. This leaves an opportunity for consumers to learn over time from their personal experiences, the experience of others or from information provided by the competing operators. These learning effects might have been particularly strong recently since high inflation and growing cost of living pressures have become prominent topics in the news, which may attract more attention to ILPV components from consumers.

Furthermore, in the case of telecoms contracts, to the extent that they still exist following operator responses to CAP/BCAP guidance, the sequential revelation of ILPV terms can be explained by their contingent nature. In this case, the effects on consumers may differ depending on whether ILPV contracts are assessed during a low- or high-inflation environment. For example, in a low-inflation environment, which the UK is forecast to move towards according to the OBR,[98] sequential

[97] Ellison, G. and Ellison, S. F. (2018), 'Search and Obfuscation in a Technologically Changing Retail Environment: Some Thoughts on Implications and Policy,' *Innovation Policy and the Economy,* 18, pp. 1–25; Lal, R. and Matutes, C. (1994), 'Retail Pricing and Advertising Strategies,' *The Journal of Business*, **67**:3, pp. 345–70.

[98] OBR (2023) 'Economic and fiscal outlook,' November, p. 6, https://obr.uk/docs/dlm_uploads/E03004355_November-Economic-and-Fiscal-Outlook_Web-Accessible.pdf (accessed 7 February 2024). The OBR forecast indicates that inflation is expected to decrease towards the Bank of England's target of 2% over the next year.

presentation of inflation-contingent price components may simplify decision-making for consumers by reducing choice overload.[99]

Finally, reputational concerns provide additional incentives for firms to ensure good consumer outcomes and to educate consumers. For example, some literature suggests that making some price components less prominent for strategic reasons risks negatively affecting a firm's reputation, which, in turn, reduces revenue and profits.[100] The strength of such effects will vary between contexts, and is expected to be more pronounced in environments where consumers make repeated purchase decisions and there exists a clear mechanism for consumer feedback to impact demand. Therefore, a thorough assessment to inform Ofcom's approach should explore the strength of these effects specifically in the telecoms market. Moreover, some providers that offer contracts without ILPV terms inform consumers about the presence of ILPV contracts. For example, Tesco Mobile advertises prominently on its website:

We know how important it is to offer you frozen prices [...] you won't need to worry about your bill going up mid-contract – because we promise to freeze your basic monthly price for the length of your contract. That's supermarket value.[101]

In our view, Ofcom's analysis would benefit from a more detailed assessment of the extent to which competition, consumer learning and firms' reputational concerns would increase consumer awareness over time in telecoms markets. If there is enough evidence pointing to the fact that sequential revelation of ILPV terms results in undesired consumer outcomes, and raising awareness alone remedies the issue, an obligation to reveal all the price components at the same time (similar to that in the CAP/BCAP's recent guidance) should be sufficient to ensure good consumer outcomes. A comprehensive impact assessment of Ofcom's proposed remedy should also include a discussion of the implications for the contracts providers will

[99] For insights on the consequences of choice overload, see Agnew, J. R. and Szykman, L. R. (2005), 'Asset allocation and information overload: The influence of information display, asset choice and investor experience', *Journal of Behavioral Finance,* **6**:2, pp. 57–70; Chernev, A., Bockenholt, U. and Goodman, J. (2015), 'Choice overload: A conceptual review and meta-analysis', *Journal of Consumer Psychology,* **25**:2, pp. 333–58; Iyengar, S. S. and Lepper, M. R. (2000), 'When choice is demotivating: Can one desire too much of a good thing?', *Journal of Personality and Social Psychology,* **79**, pp. 995–1006.
[100] Chiles, B. (2020), 'Shrouded prices and firm reputation: Evidence from the U.S. hotel industry', *Management Science,* **67**:2, pp. 964–83. Chiles (2020) finds that hotels that choose to conceal unavoidable resort fees from consumers when they make their booking, subsequently receive a 0.15 percentage point decrease in their rating on a 1-5 scale, which is estimated to reduce revenue by 1-2%.
[101] Tesco Mobile, 'Fixed prices', https://www.tescomobile.com/why-tesco-mobile/fixed-prices (accessed 7 February 2024).

subsequently offer. In particular, if Ofcom's intervention leads to greater variation in contract structure than current contracts that include ILPV terms, it is not clear that this will benefit consumers' engagement, awareness and ability to compare telecoms contracts. We discuss the role of consumer understanding further in Section 4.3.

An important consideration when designing a remedy that increases awareness is whether awareness alone is sufficient for consumers to engage with the market and to better understand the total costs of purchase. Other alternative remedies have been shown to be effective in treating several issues simultaneously, such as awareness, understanding and the ability to compare alternatives. For example, one might consider designing a single metric that would summarise multiple price dimensions for various inflation states and purchasing patterns.[102]

4.3 Consumer understanding of ILPV terms

Ofcom's second concern is that, even if consumers are aware of the ILPV terms, they might be too complex for consumers to understand and to estimate the total cost of different contracts. Furthermore, Ofcom is concerned that price increases presented in a percentage format are particularly difficult for consumers to understand and compare.

We first discuss Ofcom's concern about inflation-linked price increases. We then comment on the complexity of price structures more generally, with the specific focus on percentage-framing of price changes.

4.3.1 Ofcom's concerns with inflation-linked price increases

With respect to price increases linked to inflation, the literature suggests that consumers may struggle to differentiate between various inflationary measures such as CPI and RPI.[103] However, recent evidence from other markets shows that consumers have a good understanding of the concept of a 'price increase in line with inflation'.[104]

This understanding could be attributed to the recent media coverage surrounding inflation, driven by the ongoing cost-of-living crisis, which has led to widespread public awareness and understanding of the concept. However, it is also possible that this high level of reported

[102] See, for example, Oxera (2017) 'Goodbye tension, hello pension! Metrics to help consumers choose the best deals,' 16 August (Available at: www.oxera.com/insights/agenda/articles/goodbye-tension-hello-pension-metrics-to-help-consumers-choose-the-best-deals/#_ftn3 [Accessed 7 February 2024])
[103] Ashley-Fenn, Catherall, Damstra and Pirounaki (2023), 'How might a high-inflation era affect rail demand forecasting?' *European Transport Conference 2023.*
[104] Ashley-Fenn, Catherall, Damstra and Pirounaki (2023), 'How might a high-inflation era affect rail demand forecasting?' *European Transport Conference 2023.*

understanding arose from the use of simple terminology (i.e. 'inflation' rather than CPI or RPI), which reinforces the importance of understanding consumers' biases and framing effects when evaluating consumer behaviour.

Evidence from other markets also indicates that consumers perceive price rises linked to inflation as justified in environments where the level of inflation is low or moderate.[105] Therefore, in a high-inflation environment, consumers may respond more significantly to price increases linked to inflation. This might limit the incentives of firms to sell contracts with ILPV terms.

4.3.2 The complexity of pricing structures

The evidence on pricing complexity is mixed. Price complexity is shown in the literature to affect consumers' ability to compare prices and choose the best offer.[106] Consumers in some markets have been shown to dislike complexity and respond by choosing products with a simpler price structure.[107]

If price complexity is an issue, some consumers may exhibit complexity aversion that causes them to avoid purchasing products that feature complicated pricing terms. Therefore, in a competitive market such as telecoms,[108] market forces could be expected to lead to simpler pricing structures over time, even in the absence of regulatory intervention.[109] We may not, however, necessarily expect all providers to remove ILPV terms from all contracts due to variations in consumers' preferences with respect to risk and complexity.

The above argument also applies to the use of percentage price-framing, which can be considered a specific form of complex pricing. Ofcom's view is that percentage-framing may be too complex for some consumers to accurately understand. However, evidence also indicates that consumers are less likely to purchase a product that uses

[105] Ashley-Fenn, E., Catherall, R., Damstra, L. and Pirounaki, I. (2023), 'How might a high-inflation era affect rail demand forecasting?' *European Transport Conference 2023.*
[106] Carlin, B. I. (2009) 'Strategic price complexity in retail financial markets,' *Journal of Financial Economics,* **91**, pp. 278–87. For literature surveys, see Grubb, M. D. (2015), 'Failing to choose the best price: Theory, evidence and policy', *Review of Industrial Organization,* **47**, pp. 303–40; Spiegler, R. (2016), 'Choice complexity and market competition', *Annual Review of Economics,* **8**, pp. 1–25.
[107] Fletcher, A. (2023) 'The role of behavioural economics in competition policy,' *Draft chapter for Cambridge Handbook on the Theoretical Foundations of Antitrust and Competition Law,* forthcoming.
[108] Ofcom (2023), 'Prohibiting inflation-linked price rises,' 12 December, p. 3, para. 1.7.
[109] The extent to which simpler pricing leads to better outcomes for consumers would require further testing to establish.

percentage-framing for price rises, compared with absolute values.[110] Presenting the price increase in absolute rather than percentage terms may potentially decrease consumers' sensitivity to price increases (price elasticity), which may soften competition as an unintended consequence. This is particularly relevant in the context of potentially higher prices which might arise as an unintended consequence of Ofcom's preferred pounds and pence remedy (due to the risk premium we discuss in Section 3.5). Therefore, a thorough assessment of Ofcom's proposed remedy should include a discussion of how it may affect consumers' responsiveness to future price increases.

It is also important to consider the reasons why consumers might find comparing prices challenging. The literature considers that consumers can become confused by the intrinsic complexity of some pricing schemes, but also variations between the pricing schemes of different providers.[111] While ILPV contracts may be difficult for some consumers to translate into absolute terms, they are easy to compare between providers due to standardisation (e.g. operators that offer ILPV contracts typically set them according to a simple, consistent formula i.e. CPI/RPI + ~3.9%).

As discussed in Section 4.2.1, Ofcom's proposed intervention could lead to less standardisation and greater variance in the structure of telecoms pricing schemes and/or the value of mid-term price increases. This could make comparing different contracts more challenging for consumers, and lead to different outcomes for different consumers. In particular, those consumers which are less comfortable making comparisons across a variety of contracts with different pricing structures may not be able to identify the cheapest tariff or the one that best suits their needs.[112]

[110] Homburg, C., Koschate, N. and Totzek, D. (2010), 'How price increases affect future purchases: The role of mental budgeting, income, and framing', *Psychology & Marketing*, **27**:1, pp. 36–53. One explanation given for this is that consumers may be more likely to evaluate price increases relative to the base price when the increase is framed as a percentage, but may be more likely to evaluate the increase relative to income when it is framed in absolute terms. Another potential explanation is complexity aversion of consumers.

111 Chioveanu, I. and Zhou, J. (2013) 'Price competition with consumer confusion,' *Management Science*, **59**:11, pp. 2450–69; Gaudeul, A. and Sugden, R. (2012), 'Spurious complexity and common standards in markets for consumer goods,' *Economica*, **79**:314, pp. 208–25.

[112] Note that this variation is different to the options available in the market today, where consumers have significant choice across tariff components and the option of whether to bear inflation uncertainty or not. Under Ofcom's proposals there could be a greater dispersion in the terms of contracts where telecoms providers attempt to mitigate the inflation uncertainty. This could lead to greater consumer confusion than they are subject to when the decision is simply whether to choose an ILPV contract or not.

Our assessment is that more evidence is required to understand how consumers would react over time to complex pricing structures in telecoms markets.

4.3.3 The implications from Ofcom's consumer research

In order to demonstrate the perceived lack of understanding by consumers to the terms in telecoms contracts, Ofcom refers to the results of its switching experience tracker research (2022). The findings of this study can be interpreted as:

- 75% of individuals are confident that they can understand the language and terminology in telecoms contracts;
- 90% of individuals are confident that they can compare costs.

This would imply that a large proportion of the population can understand and compare telecoms contracts. This raises the question of the magnitude of the current problem caused by ILPV terms in relation to Ofcom's perceived theory of harm. In particular, as we discuss in Section 4.2, it may not be necessary for all consumers to be fully informed to deliver good outcomes for all consumers. In some environments, competition driven by informed consumers may generate good outcomes for consumers who are potentially less informed or less engaged.[113]

A thorough assessment to inform Ofcom's approach could provide further evidence on consumer engagement in the telecoms market, and the extent to which non-engagement by some consumers or groups of consumers affects the outcomes these consumers face.

4.4 Assessment of Ofcom's survey results

In this section, we discuss the results and robustness of Ofcom's consumer survey, which Ofcom used to provide empirical support for its behavioural economic insights. Ofcom conducted two iterations of its consumer survey. The first part of the survey took place in January 2023, and the second in October 2023.

[113] Ellison, G. and S.F. Ellison (2018) 'Search and Obfuscation in a Technologically Changing Retail Environment: Some Thoughts on Implications and Policy,' *Innovation Policy and the Economy*, **18**: 1-25 and Lal, R. and C. Matutes (1994) 'Retail Pricing and Advertising Strategies,' *The Journal of Business*, **67(3)**: 345-70.

Both mobile and broadband surveys revealed similar insights. For ease of presentation, we focus our discussion on the results of the mobile survey. The main results which Ofcom relies on are set out below. [114]

- 42% of consumers contracted with providers that use ILPV contracts were unaware that their provider could increase their monthly price. 78% of consumers who were aware were unable to state how their price would increase.
- Only 12% of consumers that contracted with providers which use ILPV terms were both aware of price rises and could identify how their provider would increase prices in the future.
- 58% of 'pay monthly' customers did not know that CPI and RPI measure inflation. Of those that did know, 79% did not understand the difference between the measures.
- Most consumers also reported that a fixed price, or a tariff with price increases stated in pounds and pence, would be easier to understand. Ofcom further interprets this result as the evidence of low consumer awareness and limited understanding of ILPV terms.

While consumer surveys provide a practical tool to gain an understanding of the factors affecting the demand-side of the market, there regularly exist limitations linked to the survey design and interpretation of the results. In the same way as consumers are subject to behavioural biases when making their purchasing decisions, they are subject to similar biases triggered by the framing and nature of the questions.

For example, to assess consumer awareness about ILPV terms, instead of asking a direct question as to whether consumers are aware that operators can raise prices in response to increased inflation, Ofcom asks the following question:

Do you know whether (your provider) can increase your monthly payment?[115]

The framing of this question contains ambiguity. This is because participants may interpret this question as asking whether their provider could adjust their monthly payment regularly and without reason, beyond an inflationary price change. This could influence the number of

[114] Ofcom (2023) 'Inflation-linked in-contract price rises – Mobile: Summary of January 2023 and October 2023 research findings'.
[115] Ofcom (2023), 'January 2023 Mobile Survey', Questions 10 and 11. For participants with an active fixed contract the question includes: '[…] during your minimum contract period'.

consumers who respond that they are unsure, potentially impacting Ofcom's inference.

Furthermore, the responses to this question might be influenced by the limited recall of participants, i.e. individuals tend to forget about nuanced information that they possessed when choosing their contract. For effective market competition, one would expect it is most important that consumers hold this information when making their contract decision, rather than whether they retain it at a later date.

The framing of the available responses might also have contributed to more consumers stating that they do not know how price rises are calculated. Individuals are presented with five options: (i) 'Yes, by a set amount decided by the provider'; (ii) 'Yes, by the rate of inflation'; (iii) 'Yes, by a set percentage decided by the provider'; (iv) 'Yes, by the rate of inflation plus a set percentage decided by the provider'; (v) 'No'. The number of subtly differentiated alternatives used to describe ILPV contracts may create information overload and impact consumers' responses.

Ofcom also finds that 58% of 'pay monthly' (mobile) customers did not know that CPI and RPI measure inflation, and 79% of those who did know did not understand the difference between the measures.[116] As we discussed in Section 4.3.1, empirical insights from other markets suggest that consumers have a good understanding of inflation mechanisms when asked about inflation in general, rather than technical inflation indexes. Therefore, consumers' stated understanding of inflation may vary depending on the level of technical terminology included in the question.

With respect to consumers' overall perceptions of ILPV terms, Ofcom reports that 36% of mobile consumers (who were aware of the price rise) selected the option that they were 'annoyed by the price rise'.[117] Ofcom interprets this as evidence for poor consumer outcomes.

However, this may not indicate poor consumer outcomes. Consumers might report being annoyed at any price rise, even where they anticipate it and understand its cause. Instead, it would be helpful to

[116] Ofcom (2023) 'Inflation-linked in-contract price rises – Mobile: Summary of January 2023 and October 2023 research findings'.
[117] Ofcom (2023) 'Inflation-linked in-contract price rises – Mobile: Summary of January 2023 and October 2023 research findings'.
Ofcom (2023) 'Inflation-linked in-contract price rises – Broadband: Summary of January 2023 and October 2023 research findings'.

understand whether consumers understood the price rise in line with inflation terms that they agreed to and whether they would have made a different purchasing decision if the information were presented differently (based on the inflation information available at the time).[118]

In this context, a recent Oxera study explored consumers' perceptions towards rail fare price rises.[119] Consumers reported that inflation-linked price rises are perceived to be more fair as they are connected with costs.

To understand the persistence of Ofcom's theories of harm, it would also be helpful to explore consumer learning over time further. For mobile customers currently in contract, the proportion of consumers who did not know whether their provider could increase their monthly payment decreased from 32% in January to 29% in October 2023.[120] Similarly, for consumers who were out of contract, 40% were unaware in January, decreasing to 35% in October 2023. It is feasible that more consumers would continue to learn about ILPV contracts over time, potentially overcoming Ofcom's concerns about consumers' understanding of ILPV price increases.

4.5 Assessment of Ofcom's fieldwork study

Ofcom's qualitative research focuses on the behaviour and experiences of 54 individuals, who were intending to purchase or renew either their mobile or broadband contract in the next six months, or who had completed this in the previous six months. Participants completed online activities simulating the search and decision process, followed by eight online focus groups. Individuals were split between a focus on mobile and broadband products, and across different age groups, socio-economic groups, ethnicities, geographical locations, and presence of disability or health condition.[121]

[118] This would also be consistent with the definition of unfair marketing set out by the CAP and BCAP. In particular, 'The question of whether advertising material is misleading is determined by whether it will cause consumers to take a different transaction'. Advertising Standards Authority (2023), 'Guidance on the presentation of mid-contract price increases in advertising for telecoms contracts, 15 June, p. 3, https://www.asa.org.uk/static/46a96782-028a-4f5a-ad3a2ad01c149324/Guidance-on-the-presentation-of-mid-contract-price-increases.pdf, (accessed 7 February 2024).
[119] Ashley-Fenn, E., Catherall, R., Damstra, L. and Pirounaki, I. (2023), 'How might a high-inflation era affect rail demand forecasting?' *European Transport Conference 2023*.
[120] Ofcom (2023) 'Inflation-linked in-contract price rises – Mobile: Summary of January 2023 and October 2023 research findings'.
[121] It is therefore important to highlight Ofcom's acknowledgement that 'this research cannot – and does not set out to be – representative of the wider population'. Ofcom (2023), 'Inflation-linked in-contract price rises: Qualitative research report,' December, p. 8.

Ofcom finds that searching for a new telecoms contract is time consuming and confusing, as participants must evaluate alternative contracts on several dimensions.[122] In terms of awareness, most participants held contracts with ILPV terms and held 'some vague awareness'[123] of ILPV contracts, but they were unclear on how they worked.

In terms of price complexity, 25% of consumers reported difficulties calculating the resulting price from ILPV contracts, with 50% reporting the calculation to be easy and 25% responding neutrally. Therefore, calculating inflation-linked price rises does not appear to be particularly challenging for many participants. There is, however, evidence of over-confidence as only approximately one third calculated the correct price.[124] It would be prudent for Ofcom to understand the source and magnitude of these errors to inform its assessment of the requirement for intervention and evaluate the effectiveness of its proposed remedy.

In terms of perceptions towards ILPV contracts, most participants stated they were happy or very happy with their current contract. 'Of the five individuals who stated they were unhappy, only one of these attributed this to a price rise'.[125] It is, therefore, not immediately obvious from this evidence how widespread consumer dissatisfaction is with ILPV contracts. Furthermore, the true origins of any potential dissatisfaction are unclear—for example, dissatisfaction could be caused by the price rise itself, the magnitude of the price rise, the absolute price level, the connection between inflation and price rises, or broader perceptions regarding telecoms providers and the services they provide.

Ofcom also notes that participants became hostile towards these terms, and questioned the motives of providers choosing to include them. However, these discussions only occurred once the researchers prompted participants to consider their use in more depth.

Ofcom also finds that 'most participants were resigned to in-contract price rises—they often assumed that all providers applied these terms,

[122] Ofcom places a time limit of 20 minutes for participants to complete a simulated research and decision-making process for a mobile/broadband contract. Ofcom (2023), 'Inflation-linked in-contract price rises: Qualitative research report', December, p. 11.
[123] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report', December, p. 3.
[124] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report', December, p. 18.
[125] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report', December, p. 10.

and therefore they had no alternative but to accept them'.[126] However, it is not clear that we should interpret this result as frustration with ILPV terms. Similar to the result that consumers are annoyed by price rises in Ofcom's quantitative survey, an alternative interpretation could be that consumers are resigned to higher inflation than in previous years. We might expect that consumers also felt resigned to paying higher prices for other products due to inflation.

Ofcom also finds that some consumers are sufficiently forward-looking to anticipate that prohibiting ILPV terms might lead firms to increase prices to hedge against inflation.[127] Therefore, some consumers anticipate potential negative consequences of Ofcom's proposals, and understand the interaction between prices, inflation and risk—as we discuss in Section 3.6.

The discussion forums also indicate that some consumers may have an appetite for bearing inflation risk, as we discussed in Section 2.4. Participants noted that fixed price contracts without ILPV terms could lead to consumers being 'tied into overpriced contracts if inflation were to fall'.[128] There was an assumption among some participants that inflation would be likely to come down, and so it may be worth taking the risk of inflation-linked in-contract price terms if offered the choice'.[129]

Therefore, it is not clear that removing the opportunity to purchase a contract with ILPV terms will benefit all consumers. Indeed, this is consistent with the findings of our analysis in section 3.6 above, which highlighted how some groups of customers might ultimately be worse off without the option of ILPV contracts.

Many consumers in Ofcom's studies also displayed sufficient sophistication to understand the potential wider dynamics of the telecoms market. Some consumers hypothesised that Ofcom's proposal to remove ILPVs might increase transparency, stimulate competition and reduce prices. Similarly, some consumers were able to anticipate that choosing a fixed price or shorter term contract might be more expensive than a longer term contract that includes ILPV terms. These

[126] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report', December, p. 4.
[127] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report,' December, p. 37.
[128] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report,' December, p. 33.
[129] Ofcom (2023) 'Inflation-linked in-contract price rises: Qualitative research report,' December, p. 33.

observations challenge the idea that consumers cannot understand ILPV contracts.

4.6 Conclusions

We have highlighted the importance of considering the specific characteristics of the telecoms market when assessing the impact of the structure and framing of prices on consumer decision-making and market outcomes.

While Ofcom's behavioural analysis identifies a potential theory of harm arising from ILPV contracts, a thorough assessment would take into account a wider range of behavioural biases, specifically applied to the telecoms market, to identify the existence of consumer harm and understand the possible consequences of Ofcom's proposed remedy.

Ofcom's assessment should also consider the extent to which market forces and existing regulations could overcome its perceived concerns, without requiring further intervention. Complexity aversion of consumers, reputational concerns of firms and the incentives for providers to educate consumers to advertise their product differentiation, provide strong mechanisms for a highly competitive telecoms market to deliver greater consumer awareness and understanding of ILPV terms over time.

Ofcom's quantitative evidence indicates that some consumers report that they are unaware of ILPV terms, and find contracts with ILPV terms to be difficult to understand and compare. However, our discussion identifies that the survey design and framing of questions is likely to have influenced Ofcom's results. As a consequence, Ofcom's conclusions on the existence of consumer harm from ILPV contracts, its justification for intervention and the impact of the proposed remedy, may be misplaced.

Ofcom's evidence also reveals that many consumers do not perceive price rises linked with inflation to be difficult to calculate. Furthermore, some consumers have a preference for bearing inflation risk in their telecoms contract to avoid being tied to a potentially more expensive fixed price contract. It is, therefore, unclear whether Ofcom's proposal to reduce consumer choice and prohibit ILPV contracts will benefit all consumers.

A1 Unintended consequences modelling

In this annex, we provide further details on the methodology that we used to model the illustrative impact from the possible unintended consequences (Section A1.1). We also present sensitivities on the results included in the main body (Section A1.2).

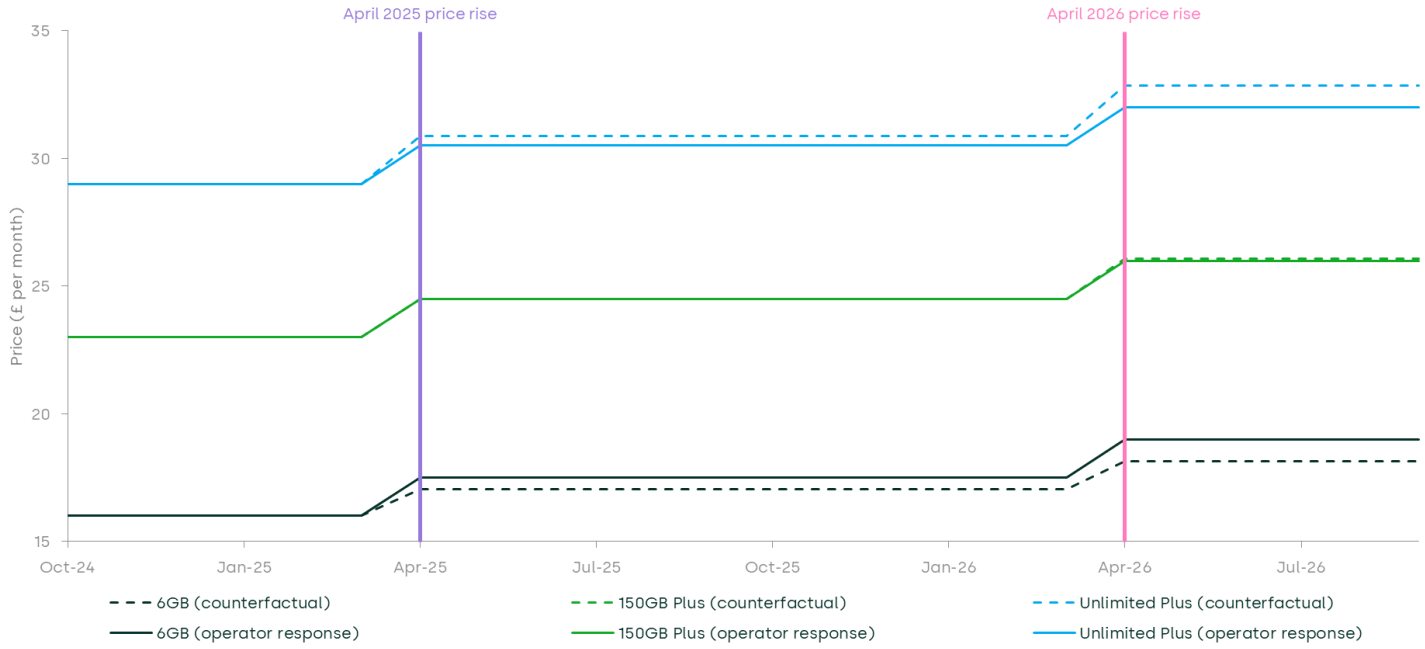
A1.1 Methodology

A1.1.1 £/p increase based on BT's price rise announcement

In Section 3.6.1, we described the full methodology used to estimate the scale of the increase from a move to £/p terms, where the scale of the price rise was informed by the future price rises announced by BT.

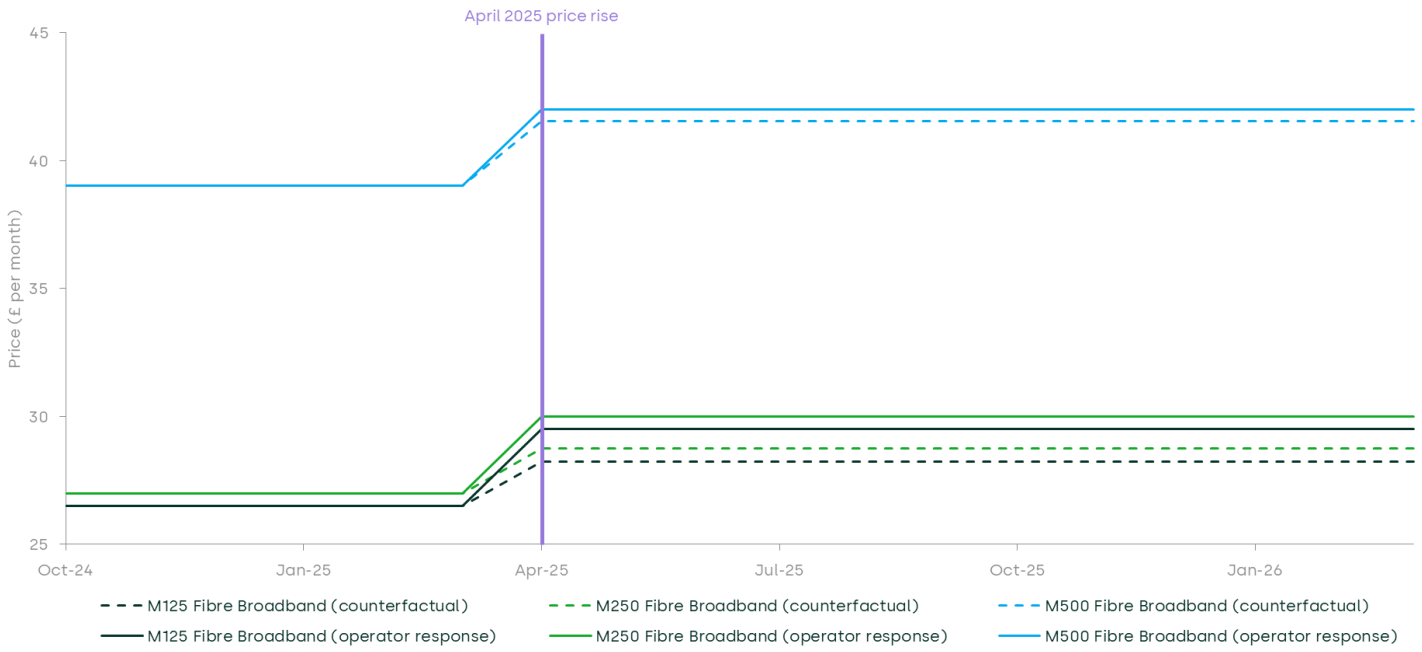
To complement the description of our methodology, below we present the price paths for each tariff modelled, in both the counterfactual scenario with ILPV terms and the operator response scenario with £/p terms. Figure A1.1 presents the price paths for the O2 mobile tariffs and Figure A1.2 presents the price paths for the Virgin Media fixed broadband tariffs. The total impact of the operator response, as presented in Table 3.2 is given by the sum of the difference in prices over the total contract duration.

Figure A1.1 £/p increase: BT price rise announcement (O2 tariffs)



Note: Y-axis does not start at zero. Results are presented in undiscounted terms.
Source: Oxera analysis.

Figure A1.2 £/p increase: BT price rise announcement (Virgin Media tariffs)



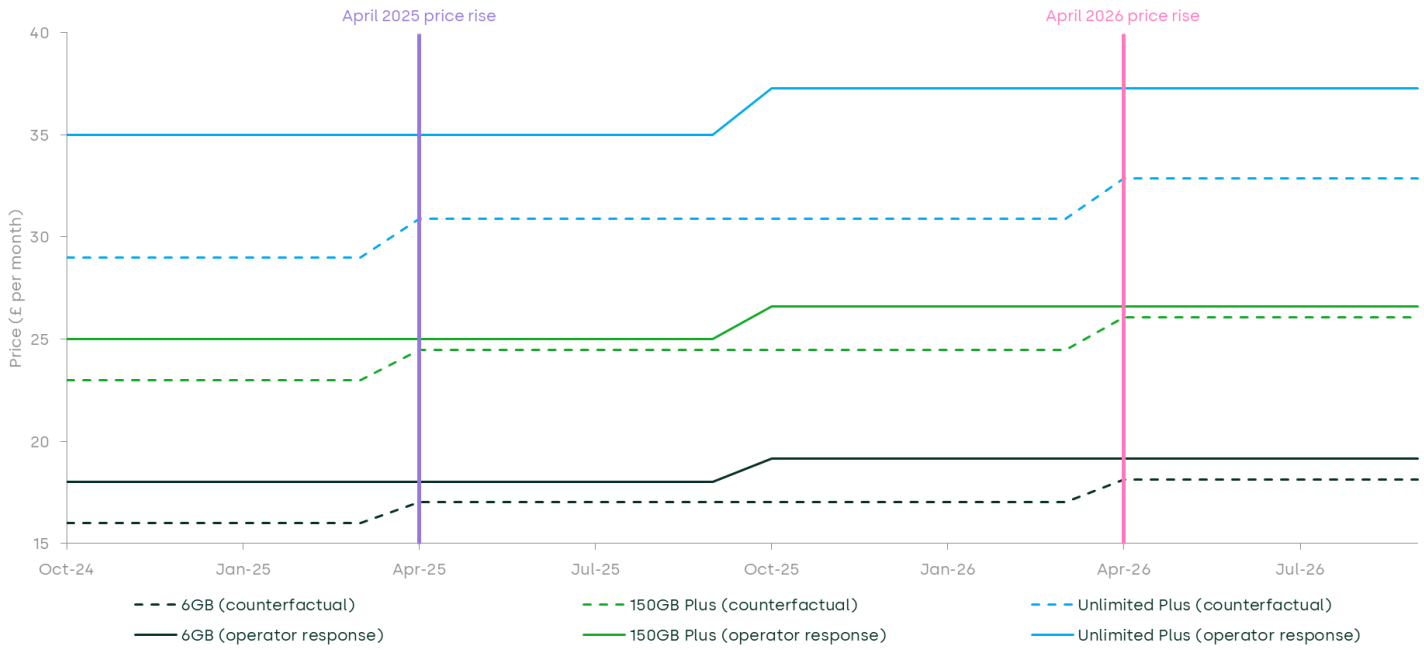
Note: Y-axis does not start at zero. Results are presented in undiscounted terms.
Source: Oxera analysis.

A1.1.2 Reduction in contract lengths

In Section 3.6.2, we described the full methodology used to estimate the scale of the increase from a move to shorter contract lengths.

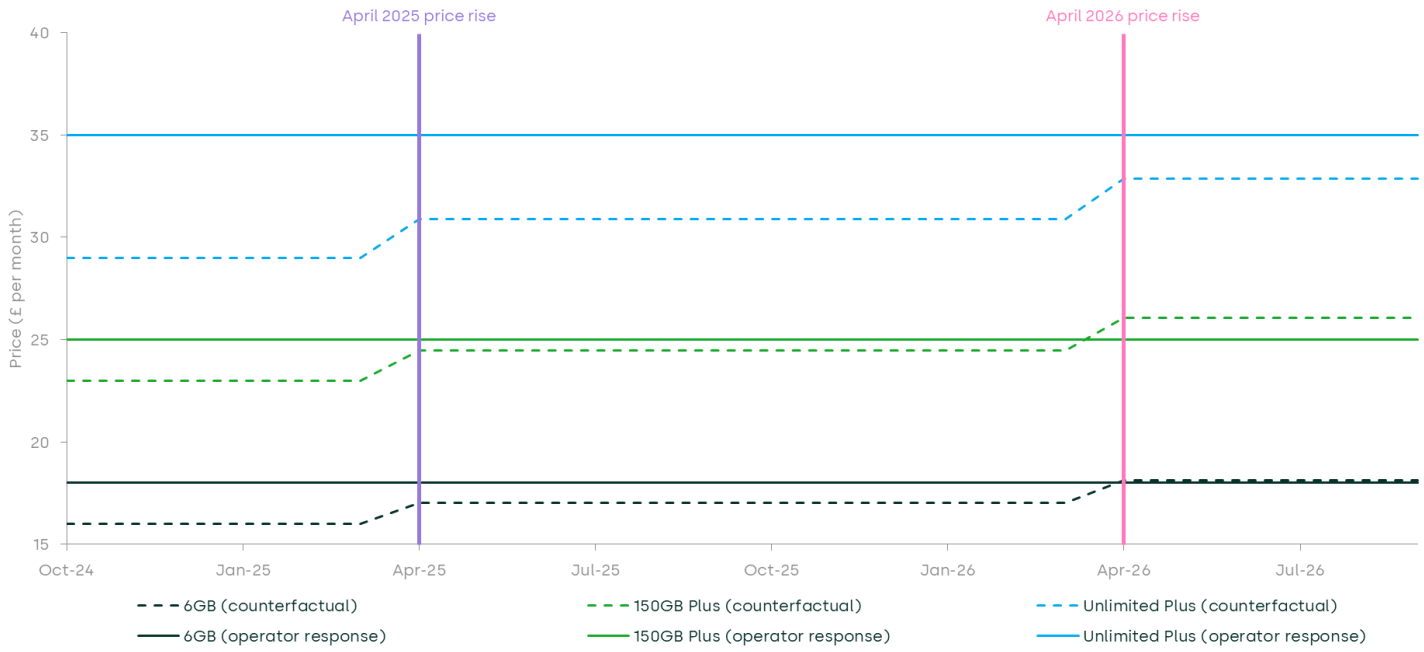
To complement the description of our methodology, below we present the price paths for each O2 tariff modelled, in both the counterfactual scenario with ILPV terms and the operator response scenario with shorter contract lengths. Figure A1.3 presents the price paths including an increase in the headline prices and Figure A1.4 presents the price paths excluding an increase in the headline prices. The total impact of the operator response, as presented in Table 3.5, is given by the sum of the difference in prices over the total contract duration.

Figure A1.3 Shorter contract lengths: including headline price rise (O2 mobile tariffs)



Note: Y-axis does not start at zero. Results are presented in undiscounted terms.
Source: Oxera analysis.

Figure A1.4 Shorter contract lengths: excluding headline price rise (O2 mobile tariffs)



Note: Y-axis does not start at zero. Results are presented in undiscounted terms.
Source: Oxera analysis.

A1.1.3 £/p increase based on modelled risk premium

In Section 3.6.1, we provided an overview of the methodology used to estimate the scale of the increase from a move to £/p terms, where the scale of the price rise was informed by a modelled risk premium. Below we provide a more detailed explanation of the approach used.

Tariffs modelled

In this illustrative example, we model one O2 SIM-only tariff and one Virgin Media broadband tariff. The price and contract duration of each tariff is summarised in Table A1.1 below. In order to estimate the costs, we assume the tariff prices include a 25% profit margin, and use this to impute the costs. This is also summarised in Table A1.1.

Table A1.1 Risk premium analysis: tariffs modelled

	O2: SIM-only – 25GB	VM: M500 Fibre Broadband
Contract length	24 months	18 months
Monthly price	£17.00	£39.00
Imputed monthly costs	£13.60	£31.20

Source: Oxera based on O2's website. See O2 website, https://www.o2.co.uk/shop/sim-cards/sim-only-deals (accessed 29 January 2024); Virgin Media website, https://www.virginmedia.com/broadband/broadband-only (accessed 29 January 2024).

Counterfactual scenario: ILPV terms

In the counterfactual scenario with ILPV terms, we assume the monthly prices and costs remain fixed for the first half of the contract. In the second half of the contract, we assume that the operator's costs increase by 10% (reflecting an assumed 10% inflation rate). We assume that this cost increase automatically passed on (in absolute terms) through an increase in prices. This generates the same absolute profit. Therefore, in the counterfactual scenario with ILPV terms, the operator essentially faces no uncertainty over the outturn inflation rate, since its prices automatically adjust to reflect this. Table A1.2 summarises the key parameters in the counterfactual scenario.

Table A1.2 Counterfactual scenario: key parameters

	O2: SIM-only – 25GB		VM: M500 Fibre Broadband	
	Months 1–12	Months 13–24	Months 1–9	Months 10–18
Monthly price	£17.00	£18.36	£39.00	£42.12
Monthly costs	£13.60	£14.96	£31.20	£34.32
Monthly profit	£3.40	£3.40	£7.80	£7.80
Total profit (per contract period)	£40.80	£40.80	£70.20	£70.20

Source: Oxera analysis.

To reflect that the firm is risk averse, we assume it faces a concave utility function, given by: $u = profit^{1/2}$. Therefore, in each period of the contract,[130] the operator achieves the following utility from its profit:

- O2: SIM-only 25GB: $u = 6.39$;
- VM: M500 Fibre Broadband: $u = 8.38$.

Since the operator does not face any uncertainty in this scenario, i.e. achieves the same absolute level of profit with certainty, there is no distinction between the utility it achieves and its expected utility.

Operator response scenario: £/p terms

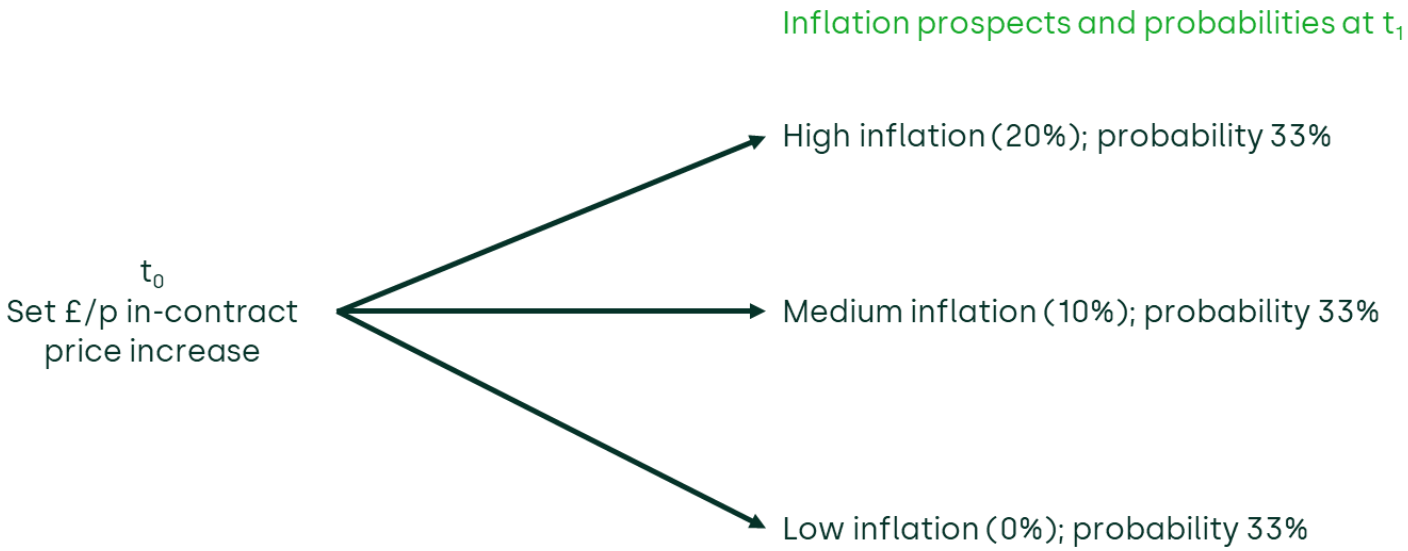
In the operator response scenario, the operator must specify the in-contract price rise in £/p terms at the start of the contract (t_0).

For simplicity, we assume that the in-contract price rise in this scenario also takes place at the mid-point of the contract term (t_1). We also assume that, for the first half of the contract, the operator faces the same costs and charges the same prices as in the counterfactual scenario, but will experience an increase in costs (as a result of inflation) from the mid-point of the contract (t_1).

At the point of having to specify the £/p increase in prices (at t_0), the operator faces uncertainty over the future inflation rate (at t_1). We make the stylised assumption that the operator faces the uncertain inflation prospects as described in Figure A1.5 below. The operator faces a medium inflation rate prospect (which is the actual outturn scenario, consistent with the counterfactual), but also faces the risk of there being a high or low inflation rate, each with equal probability. For simplicity, this example is constructed so that the inflation rate in expected terms (i.e. the inflation prospects multiplied by their respective probabilities) is 10%, in line with the counterfactual scenario.

[130] By period, we refer separately to the first half and second half of each contract. That is, for the O2 tariff, the two periods are months 1–12 and months 13–24; for the Virgin Media tariff, the two periods are months 1–9 and months 10–18.

Figure A1.5 Uncertain inflation prospects faced by the operator



Source: Oxera.

When compared against the counterfactual scenario, the level of profit for the second half of the contract is the same *in expected terms*. This is because the expected inflation rate is 10% (the same as in the counterfactual scenario). However, since the firm is assumed to be risk averse, the same level of profit (in expected terms) yields a lower level of expected utility.[131] Therefore, in order to achieve the same level of expected utility as it achieves in the counterfactual, when faced with the uncertain outcomes as described in Figure A1.5, the operator will need to achieve a higher level of profit in expected terms.

In order to do so, the £/p price increase it specifies at t_0 will be higher than in the counterfactual scenario, since this will generate higher profit in expected terms. This additional increase represent the 'risk premium'.[132]

To identify the risk premium, we solve for the price that the operator would set for the second half of the contract (i.e. from point t_1), such

[131] When faced with the lottery described in Figure A1.5, the operators expected utility for the O2 tariff is now 6.30 (as opposed to 6.39 in the counterfactual) and for the Virgin Media tariff is now 8.26 (as opposed to 8.38 in the counterfactual).
[132] In typically textbook settings of decisions under uncertainty, the risk premium is defined by the amount a consumer is willing to give up to avoid facing the uncertain scenario. In this setting, the setting is reversed (i.e. the operator moves from a setting of certainty to uncertainty) and therefore the risk premium should be interpreted as the increase in expected profit required to achieve the same level of expected utility when faced with uncertainty.

that it achieves an expected level of profit that provides the same expected utility as in the counterfactual scenario. We summarise the key outputs from this exercise, for the second half of each modelled contract, in Table A1.3 below.

Table A1.3 Modelled risk premium: illustrative results

	O2: SIM-only – 25GB	VM: M500 Fibre Broadband
Monthly price (start of contract)	£17.00	£39.00
Monthly price increase: ILPV terms	£1.36	£3.12
Monthly price increase: £/p terms	£1.45	£3.33
Monthly risk premium	£0.09	£0.21
Risk premium (over the contract duration)	£1.11	£1.90

Source: Oxera analysis.

A1.2 Results sensitivities

In this section, we present sensitivities on the following two scenarios:

- £/p increase based on BT's price rise announcement;
- reduction in contract lengths.

A1.2.1 £/p increase based on BT's price rise announcement

In the baseline results presented in Table 3.2, we assume that the consumer purchases their contract in October 2024, i.e. six months before the first price rise.

As explained, given that the price increase (under ILPV and £/p terms) takes place in a specific month of the year (April, in the case of Virgin Media O2), the month in which the consumer is assumed to purchase the contract will affect the scale of the impact, as it affects the number of months in which the consumer pays different prices across the two scenarios.

Below, we present two sensitivities on this assumption.

1 Assume the consumer purchases the contract in the month of the April 2025 price rise, such that the consumer pays different prices throughout the full contract duration across the counterfactual scenario and operator response scenario.
2 Assume the consumer purchases the contract 12 months before the April 2025 price rise (April 2024), such that the consumer pays the same prices the counterfactual scenario and operator response scenario for the first 12 months.

We present the results from these sensitivities in Table A1.4 below. For completeness, we also present the baseline results (assuming the contract is purchased in October 2024).

Table A1.4 £/p in-contract price rise: sensitivity results

Tariff name	Change in cost to consumer (over the contract duration)		
	April 2024 purchase	October 2024 purchase	April 2025 purchase
O2			
SIM-only: 6GB	£5.52	£10.73	£15.93
SIM-only: 150GB Plus	£0.07	- £0.32	- £0.70
SIM-only: Unlimited Plus	- £4.61	- £9.79	- £14.98
Virgin Media			
M125 Fibre Broadband	£7.67	£15.33	£30.14
M250 Fibre Broadband	£7.47	£14.94	£29.35
M500 Fibre Broadband	£2.79	£5.58	£10.39

Note: The results are presented in undiscounted terms.
Source: Oxera analysis.

A1.2.2 Reduction in contract lengths

In the baseline results presented in Table 3.5, we assume that the consumer purchases their contract in October 2024, i.e. six months before the first price rise.

We present the same two sensitivities described above regarding the assumed purchase date of the contact. Table A1.5 presents the sensitivity results including the headline price rise. Table A1.6 presents

the sensitivity results excluding the headline price rise. For completeness, we also present the baseline results (assuming the contract is purchased in October 2024).

In these scenarios, the effect of changing the contract purchase date on the scale of the impact is the opposite to the £/p scenario. In these scenarios, there is a price premium associated with the shorter contract lengths from the purchase date of the contract. Therefore, the earlier the contract is purchase, the larger the number of months before the price increases in the counterfactual scenario and, therefore, the longer the price premium from shorter contract persists.

Table A1.5 Reduction in contract lengths (including headline price rise): sensitivity results

Tariff name	**Change in cost to consumer (over the 24-month period)**		
	April 2024 purchase	October 2024 purchase	April 2025 purchase
SIM-only: 6GB	£49.56	£36.76	£23.97
SIM-only: 150GB Plus	£49.56	£31.17	£12.79
SIM-only: Unlimited Plus	£148.68	£125.50	£102.31

Note: The results are presented in undiscounted terms.
Source: Oxera analysis.

Table A1.6 Reduction in contract lengths (excluding headline price rise): sensitivity results

Tariff name	Change in cost to consumer (over the 24-month period)		
	April 2024 purchase	October 2024 purchase	April 2025 purchase
SIM-only: 6GB	£35.52	£22.73	£9.93
SIM-only: 150GB Plus	£30.07	£11.68	- £6.70
SIM-only: Unlimited Plus	£121.39	£98.21	£75.02

Note: The results are presented in undiscounted terms.
Source: Oxera analysis.

Contact

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