

# Report: Why the proposed Vodafone – Three merger will harm Britain



*April 2022.* According to multiple media reports, Vodafone is soon expected to announce a merger with rival UK mobile operator Three, thus cutting the number of major mobile network operators in the market from four to three.

Drawing on extensive international evidence, we show that this this merger would increase market power and thus be expected to **cost each mobile user in the UK an extra £5-£25 a month, or £60 - £300 a year**. At the same time, all the evidence shows that it will **not lead to increased investment**, as company bosses like to claim.

It will thus likely worsen the cost of living crisis, harm UK businesses and weaken the UK economy overall, while delivering large rewards to Vodafone executives and shareholders, including its new activist financial investor Cevian that has been [pushing hard](#) for Vodafone to pursue monopolistic<sup>1</sup> acquisitions, not just in the UK.

The evidence also supports a conclusion that a merger would undermine the government’s levelling-up agenda.<sup>2</sup>

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<sup>1</sup> We do not define a monopoly according to the dictionary definition of a single merchant excluding all others, but instead as many [regulators do](#), as being a firm with sustained and significant market power that exercises that power to the detriment of others – in this case, primarily to consumers.

<sup>2</sup> See Note 12.

# 1. INTRODUCTION

## Merger plans

Rumours have been circulating of a possible Vodafone-Three merger for months. In February, Vodafone Chief Executive Nick Read [said](#): “We feel the UK needs to consolidate to give [us] industrial scale so we can improve returns . . . We are approaching consolidation with speed and resolve.”

## Bogus arguments

Executives of mobile companies in the UK have wanted to reduce competition in the mobile market for years, and mergers have been proposed or attempted before but blocked by UK and European regulators, for good reason. A merged entity as now proposed would result in a market well above levels that the UK government considers are “highly concentrated.”

Companies appear to be wielding the same arguments that we have seen in many markets before, none of which make sense.

The key common arguments are as follows.

**First**, they need to monopolise more if they are to invest more. For example, Robert Finnegan, CEO of mobile operator Three, [said in March](#) that the UK market with four players was "dysfunctional" and “requires a structural change to improve the overall quality of infrastructure."

**Second**, they make a related argument that overlapping coverage in sparsely populated areas is too expensive for multiple providers to serve.

**Third**, that they need to consolidate in order to compete with encroaching global tech monopolists such as Google and Facebook

None of these arguments stand up to scrutiny.

As regards the first, the extensive international evidence in this report shows an overwhelming pattern: that while capex investment from the *remaining* operators after a merger can sometimes increase, the removal of an investing player from the market cancels that out: the net effect, at the country level, is *zero*.

On the second argument, mobile phone operators routinely engage in network sharing deals which regulators do not consider anti-competitive: alternatives exist and there is no need to achieve better rural coverage through anti-competitive mergers. (See Note 6.)

On the third argument, digital giants like Google and Facebook do indeed pose severe competitive and monopolistic threats to mobile telecoms companies and to many other actors

across the economy – but the answer is not to respond to monopolisation with more monopolisation, but instead urgently to tackle the excessive economic power wielded by the tech giants. (UK regulators have a surprising amount of leeway and powers to act against global giants: see Note 11.)

Overall, the evidence simply does not back up their claims. Instead, the result of four-to-three mergers in mobile telecoms across multiple markets has always tended to be the same: benefits for the shareholders of telecoms firms, at the expense of higher prices and other costs to businesses and individuals. Four firms compete for customers more intensively than three do, and they feel more pressure give their customers good prices (and services.)

Four players in this market may be already too few: there are signs of similar pricing between operators,<sup>3</sup> suggesting that players could already be too close.

Indeed, there are strong grounds for arguing that the difference between four and three players marks a particularly dangerous threshold to cross, between (relatively) competitive markets and markets characterised by what has been called "[tacit semi-collusion](#)" between players which could involve, for example, de facto price-fixing and other coordinated activities. Price increases in some merger cases have been dramatic, and one [commercial study](#) has found that a shift from four to three operators results in a near doubling of prices to consumers.

### **Siren song**

Yet even though the proposed deal would inflict considerable harm on the UK, some regulators appear to be listening to the investors' calls.

Worryingly, Ofcom, which shares regulatory responsibilities for these markets with the Competition and Markets Authority (CMA)<sup>4</sup> has recently [appeared](#) to [soften its position](#) on mega-mergers in the sector. Ofcom [said](#) in February:

*"We are also clarifying our position on mobile consolidation. Our stance on a potential merger would be informed by the specific circumstances of that particular merger, rather than just the number of competitors."*

It is essential that Ofcom and the CMA consider very carefully the structure of this market, and ensure that the number of competitors remains high enough to ensure healthy and robust competition to benefit consumers, employees, and business users, and to guarantee adequate levels of investment for the long term.

The next sections lay out the nature of the damage from such mergers, and the evidence.

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<sup>3</sup> For instance, Richard Neudegg, head of Regulation at Uswitch.com, [said on March 31st](#) that consumers would see mid-contract price hikes for mobile and broadband of up to 12 percent, adding that "the majority include an additional increase of 3.9 per cent, often positioned by providers as towards infrastructure investment and service improvements."

<sup>4</sup> See Note 3 below.

## 2. THE DAMAGE FROM MEGA-MERGERS AND MONOPOLY POWER

Excessive consolidation in mobile telephony has always tended to lead to significant **price increases**, a stagnation of **investment**, often **poorer quality** and customer service, and **reduced employment** -- even while increasing the **profitability** of the firms in that market.

This contrast between higher profits, and worse outcomes for consumers, taxpayers and citizens, is a common outcome of excessive market power, and has been called the "[Profit Paradox](#)."

This standard monopolising playbook goes far beyond the technology sectors. If firms increase profits simply because they have more market power, then it is that same market power that allows them to channel those extra profits towards shareholders instead of into investment. (In a more competitive environment, they would have to invest more to protect market share in the competition against rivals.)

We now provide several examples using mainstream academic studies, which measure and illustrate the damage from consolidation among mobile network operators.

### **Evidence 1: 4-to-3 mergers in 33 countries**

[A peer-reviewed study](#) by Christos Genakos, Tommaso Valletti and Frank Verboven looked at 33 countries over 13 years. It found that a typical 4-to-3 merger would increase prices by 16.3% on average per customer, relative to the case where no merger happened.

The result is very robust across various statistical tests. The study also found that consolidation resulted in *zero* increase in investment at the country level.<sup>5</sup>

### **Evidence 2: United States versus Europe and the UK**

The U.S. market is [more concentrated](#) than the markets in the EU and UK (though this is complex to demonstrate: this is why the U.S. was excluded from the above 33-country study. The complexity is partly because the US was originally designed as a series of regional and local telco markets, not a 'national' one. Rapid consolidation has left the US with three dominant operators today following the recent T-Mobile/Sprint merger, with some regional and local markets more concentrated than these headline numbers would suggest<sup>6</sup>).

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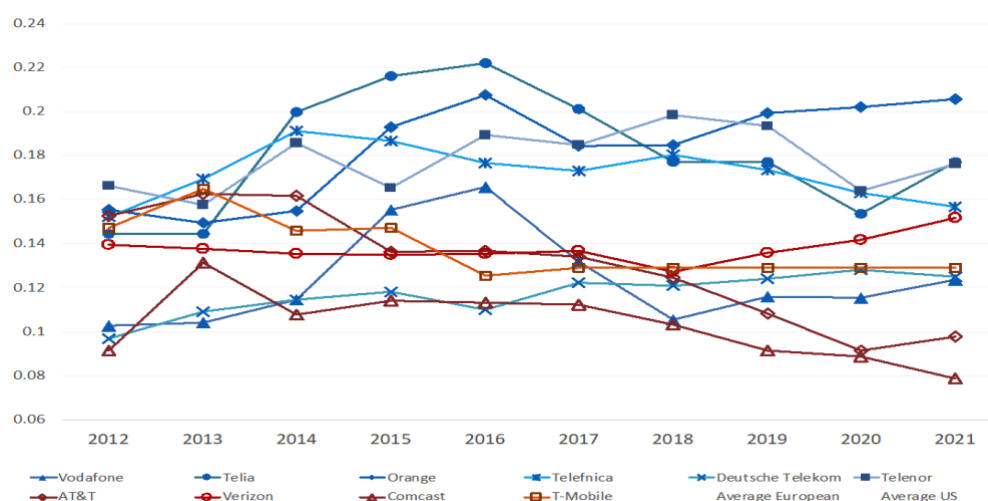
<sup>5</sup> The study states: "During the analysed period, when mobile markets became more concentrated, prices increased to end users with respect to the case in which no concentration happened (absolute prices actually decreased in all cases during the analysed period). At the same time, capital expenditures increased.... At the country level, we found an insignificant effect of market structure on total industry investments."

<sup>6</sup> For example, the U.S. Rural Wireless Association [estimated](#) that the T-Mobile/Sprint combination would exceed the Federal Communications Commission's "spectrum screen" for excessive concentration in over 63% of U.S. counties, including all of the 130 most populous counties.

In addition, the research organisation Fideres [has shown](#) that the main problem in the U.S. is not so much the number of carriers, but concentration in the supply chain: in particular, the market for business data services (“BDS”), which provides the connection between cell towers and the internet backbone, and can account for 30% of a carrier’s operating expense<sup>7</sup>. The US, says Fideres, “has some of the most expensive wireless plans in the developed world.”

According to latest data, investment rates have also been significantly higher in the Europe than in the U.S., as Figure 1 shows below. It is very likely that having more competition in Europe is the main reason for this.

**Figure 1: Capital Investment as a share of revenues: US vs Europe**



Source: Bloomberg

The red lines in Figure 1 represent U.S. mobile telecommunications companies, while the blue lines represent European ones. Capital investment as a share of revenues has been significantly lower for the more monopolised U.S. market than for Europe.

We also find that U.S. firms are more profitable than European firms, confirming the "Profit Paradox" that characterises monopolisation. Yet we can unpack this finding, to uncover another pattern too. European telecommunications firms are actually as profitable as their American counterparts *before* taking investments into account, but profitability (of European firms) goes *down* after taking investments into account, which is precisely what competition is expected to do. In other words, US telcos make more money but also keep most of that money, instead of investing in infrastructure. In Europe, greater competitive pressure encourages firms to invest more to stay competitive.

Moreover, the latest four-to-three merger in the U.S., between T-Mobile and Sprint, is [widely regarded](#) to have been disastrous for the U.S economy, exactly as [predicted](#).

<sup>7</sup> According to Fideres, it was reported that in 2016 Sprint, the fourth largest U.S. carrier, was paying up to \$1bn a year for BDS: much of this expense was revenue for its competitors AT&T and Verizon.

### **Evidence 3: Mobile consolidation in Austria and the Netherlands.**

Another academic [study](#) by Luca Aguzzoni, Benno Buehler, Luca Di Martile, Ron Kemp & Anton Schwarz looked at two consummated mergers in Austria and the Netherlands, approved by the European Commission.

The results show that for the five-to-four merger in Austria (that is, in a far less concentrated market), there was no significant price effect, whereas for the four-to-three merger in the Netherlands (that is, a more concentrated market like the one currently envisaged in the UK), prices rose by an estimated 10-15%, despite the "remedies" imposed on the players as a condition for merger approval.<sup>8</sup>

### **Evidence 4: Increased competition in the French mobile market**

An interesting [study](#) by Marc Bourreau, Yutec Sun and Frank Verboven recently published in the American Economic Review looked at what happened when French regulators forced open the market hitherto dominated by the dominant trio of Orange, SFR, and Bouyges Telecom, giving a fourth licence to Free Mobile (so that the market went from three up to four competitors, the opposite of the current plan in the UK).

A few months before the new entrant joined the market, the three incumbents began offering a range of better-priced services via new subsidiaries, which in the words of Orange CEO amounted to "a whole arsenal of projects." In studying the new market dynamics that emerged from bringing in the new entrant, they found:

*"a breakdown of tacit semi-collusion: in the absence of entry, the incumbents could successfully collude on restricting their product lines to avoid cannibalization; the new entry of the low-end competition made this outcome harder to sustain. . . .*

*all three incumbents not only introduced their subsidiaries simultaneously just before the entrant's arrival, but they also revamped their tariff offerings immediately upon the entry. . . .*

*Free Mobile's entry led to additional product variety and large consumer gains."*

### **Evidence 5: Politics and the telecommunications industry**

A [2022 study](#) by US based academics Mara Faccio and Luigi Zingales shows interesting relationships between political influence, competition rules, and outcomes for consumers and investment. It finds:

*"In countries in which mobile operators have deeper connections with local politicians, we find that rules promote competition less, even after we control for country fixed effects and a country's level of corruption. Rules that promote*

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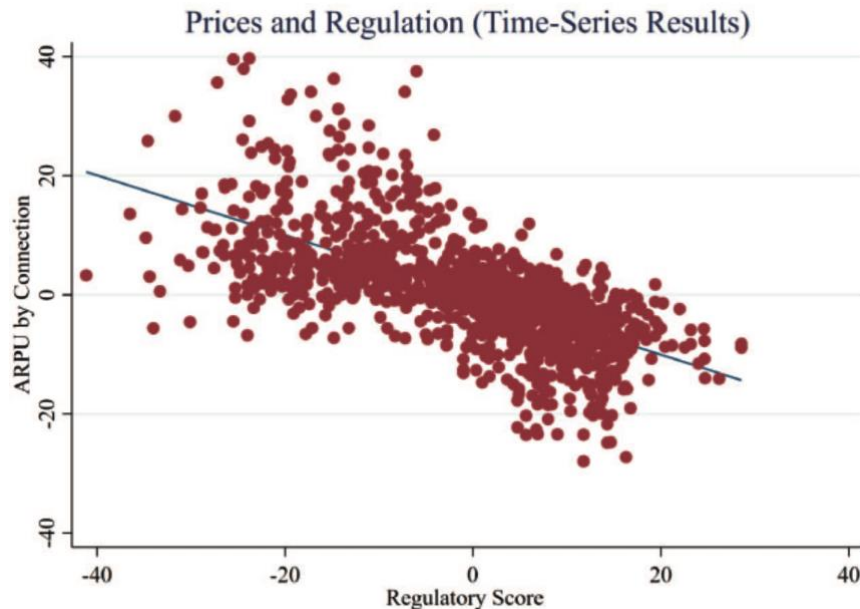
<sup>8</sup> The study notes imprecision in judging prices relative to a hypothetical scenario where no merger took place, and that there may have been differences in regulatory remedies as a condition for these mergers.

*competition are associated with lower concentration and lower prices.*

*There is no evidence that procompetition rules are associated with worse quality, lower investments, less employment, or lower wages."*

In this study, more regulation was associated with lower prices, as Figure 3 shows.

**Figure 3**



*ARPU = Average Revenue Per User*

Approval of a merger is a form of deregulation, and this would be consistent with the idea that a merger between Vodafone and 3 would deliver significant harm to UK consumers. The study includes three further important conclusions:

*"There is no evidence that more procompetition rules lead to lower coverage and lower quality in general. If anything, evidence points to the opposite relation. . . .*

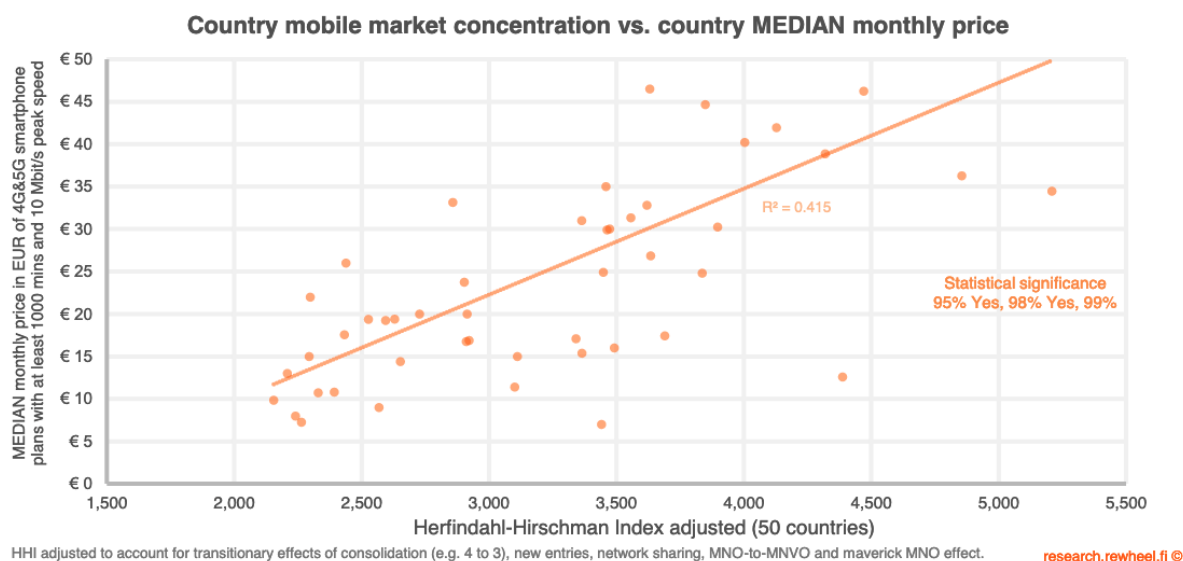
*there is no evidence that more procompetition regulation leads to lower investments. . . .*

*there is no evidence that more procompetition rules reduce wages or employment."*

The authors noted that in an earlier working paper they had compared mobile prices in the U.S. with Germany and Denmark, and found that higher US prices represented at \$44-65 billion a year transfer from consumers to shareholders.

### **Evidence 6: Concentration and prices, worldwide**

The telecom research firm Rewheel in January 2022 provided a [range of metrics](#) showing a clear relationship between market concentration and prices. This graph below is an example of one of six graphs in the study which show essentially the same relationship between concentration and prices.



Source: Rewheel, 2022. Average world prices are not directly comparable with the Ofcom and Uswitch data we use. Also, Rewheel includes a number of lower-income countries such as India and South Africa.

The Herfindahl-Hirschman Index (HHI) is a common measure of concentration<sup>9</sup>. A Vodafone-Three merger would leave the market with an HHI of around 3,300 (see Note 1), from 2,770 at current market share. The CMA [defines](#) a sector with an HHI over 1,000 as ‘concentrated’ and over 2,000 as ‘highly concentrated,’ and this further supports our recommendation that this merger should be stopped.

We should not rely heavily on HHI, as some economists regard it as potentially [flawed](#). Still, economists also agree that mergers that create a larger implied change in the HHI *within* the same market (which is the current UK case) also tend to create greater incentives for the merging firms to increase price. The change in the HHI is informative about merger price effects because it reflects the reduction in the number of competitors that would be caused by the merger, and the importance of that lost competition.<sup>10</sup>

### **Evidence 7: Three-MNO mergers versus Four-MNO markets**

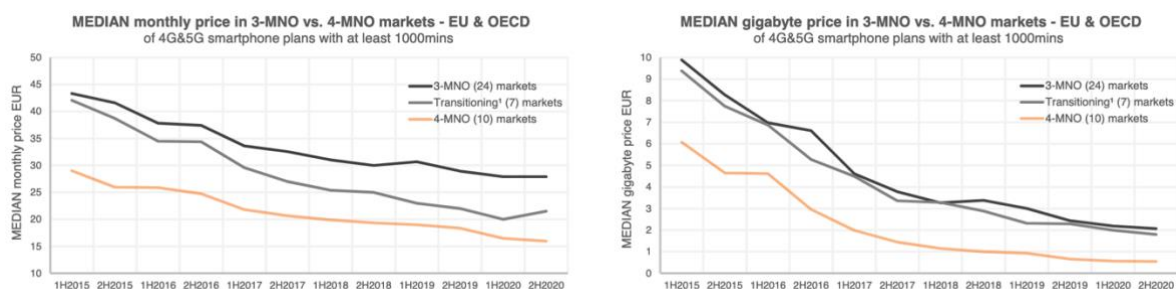
Rewheel published [another study in 2020](#) that looked specifically at the difference between markets with four MNOs and markets with three. Their conclusions were even more stark:

- i) The median monthly price of 4G and 5G plans with at least 1000 minutes in four-MNO markets was a little over a half the price of equivalent plans in three-MNO markets
- ii) The median gigabyte price in four-MNO markets was a quarter of the price in three-MNO markets.

<sup>9</sup> The HHI is calculated by squaring the market share of each firm competing in a market, then adding the resulting numbers. So if one firm had 100 percent of a market, it would have an HHI of 10,000 (100 squared.) If 100 firms each had 1 percent, the HHI would be 100 (100 times 1 squared).

<sup>10</sup> A recent paper forthcoming in the American Economic Review by Volker Nocke and Michael Whinston makes precisely this point (available at <http://www.volkernocke.com/NW-CSHM.pdf>).





Source: Rewheel

That is, monthly prices in three-MNO markets are nearly double the prices in four-MNO markets.

### 3. OUR CALCULATIONS

Predicting the future is, of course, a highly imprecise science. So we use a range of estimates from the above evidence, to predict the expected increase in prices from the proposed four-to-three merger.

**First**, we have used the the 16.3% estimate of the relative price increase due to a four-to-three merger from Example 1 as one base case scenario for this report, and we have rounded it down to 15 percent.

**Second**, we take the data from Rewheel to estimate the effect of a change from an HHI of 2,770 (in the current market) to 3,300 (if the Vodafone-Three merger went ahead.) The average price increase in the six graphs at the top of this report, for that 2,770-3,300 rise in HHI, was 38%. We conservatively **round this down to 30%**.<sup>11</sup>

**Third**, the separate and more dramatic Rewheel calculations states that monthly prices in 4-MNO markets are “nearly 2x lower than in 3-MNO markets.” Being conservative, we will use a **figure of 1.5 (i.e. 50% higher)** for our range.

So overall, using these three different measures, we conservatively conclude that the price increase resulting from a shift from four to three MNOs would likely lie in the range between 15 percent and 50 percent.

**Fourth**, data from Ofcom ([pp41-53](#)) show that the average monthly cost of mobile use is roughly £45-50 a month,<sup>12</sup> or roughly £550-600 a year. Separately, the comparison and

<sup>11</sup> Reading from top left to bottom right, visual estimations showed a move from HHI 2770 to 3300 resulting in a price increase of i) 32%; ii) 40%; iii) 31%, iv) 47%, v) 31%; vi) 50%. The simple average of these numbers is 38%. Conservatively, we round this down to 30%. (Average prices of monthly plans across countries are lower than in the UK because the sample includes a large number of lower-income countries.)

<sup>12</sup> This is not a straightforward calculation, given that the UK market is divided between contracts with handsets (44%), Sim-only contracts (39%), pre-paid (14%) and other (3%), which on a weighted average cost around £45

switching service uswitch.com provided us with consumer survey data, which came in at around £30 per UK subscriber, or £360 per year.<sup>13</sup>

Applying this range of 15-50% to the average annual cost of mobile use of £30-£50 per month, **we would expect that a merger between Vodafone and Three in the UK would lead to a £5-£25 rise in the average per-user monthly cost of mobile phones.** This is equivalent to a £60-300 average annual rise per user.

Given an estimated 65 million mobile users in the UK, this would imply £4 billion-£20 billion taken out of the pockets of UK consumers and businesses, each year, with much of this flowing to shareholders overseas.

## 4. CONCLUSION

There is extensive evidence that consolidation in mobile telephone markets have led to worse outcomes for consumers, as well as no improvement and possibly a reduction in investment. It appears that consolidation from four to three operators appears to be an especially dangerous threshold to cross.

The overall result of any merger is likely to be sharply increased profits (and executive compensation) for the merging parties, and significant price rises and potentially lower quality for everyone else.

These price rises are equivalent to applying a tax on every household – but with one crucial difference. Taxes are transfers *inside* the economy, from the private sector to government. Higher tax revenues may lead to more spending on health & care, infrastructure, or other national priorities. By contrast, the billions drained annually from consumers and businesses by a Vodafone-Three merger would flow substantially to shareholders overseas,<sup>14</sup> thus draining the UK economy of resources.

A merger would thus overall increase inequality *and* reduce economic growth, while applying intolerable pressure especially to smaller businesses and lower-income households.

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per month in 2020 (see p43). In addition, there are monthly average costs for mobile use excluding handsets of £10.96 (p41), but these apply variably in different situations so cannot simply be added to the £45. We take £50 as our base case.

<sup>13</sup> Rianna York, uswitch.com, via email, April 1, 2022. She gave a figure of £29.76 per subscriber.

<sup>14</sup> According to the [Office for National Statistics](#) (ONS), 56% of UK quoted shares were owned by overseas investors in 2020. In addition, Three is Hong Kong-owned.

## 5. RECOMMENDATIONS

**We recommend that this merger is stopped, at all costs,** on behalf of Britain's hard-pressed consumers and businesses.

### NOTES

#### Note 1.

Currently, the UK mobile market is dominated by four firms: **EE** (32 million customers); **O2** (with 24 million); **Three/3** (10 million); and **Vodafone** (17.5 million). (Source: [Which?](#)) Other firms exist, but these four have a combined monopoly on the mobile spectrum licences, so other firms must partner with them to power their sim cards. According to [Ofcom](#), there are about 85 million active subscriptions (some people have multiple subscriptions.)

#### Note 2.

Since 2012, Vodafone Chief Executive Vittorio Colao and his successor Nick Read received a combined £ 68.1 million in total personal remuneration from 2012-2021, for an average of £6.8 million a year ([Annual Report 2021](#), p100.)

The mobile operator **Three**, Britain's fourth largest, is [owned](#) by CK Hutchison Holdings, whose Chairman and Group Managing Director Victor T K Li took HK\$ 86 million in 2020, worth £ 8.4 million at current rates. ([Annual report 2020](#), p117.)

#### Note 3.

The decision whether or not to approve telecoms mergers is for the Competition and Markets Authority (CMA). Final responsibility for merger control lies with the CMA; Ofcom has an advisory role ([Ofcom](#), 2022, p18).

#### Note 4.

According to Ofcom, £1.8bn [was invested](#) in UK mobile network infrastructure in 2020. According to [Statista](#), total UK telecoms revenue in 2020 was £31.5bn.

#### Note 5.

Mobile prices in the UK are not regulated. There are some licence (and other) small conditions, but by and large, firms do what they want within the competitive landscape they operate in. Competition is supposed to be the force that keeps prices low. Prices per call and per data unit have been falling steadily for years, because of rapid improvements in technology and rising data and call use.

#### Note 6.

New technology requires more dense mobile coverage (and you need lots of cells in rural areas, which is expensive). It is possible to have network sharing deals that are not anticompetitive, and which can and will be used, as they have been in the past. There is no

need for any merger to tackle the problem of coverage. For example, the UK government in March 2020 [agreed](#) with EE, O2, Three and Vodafone to create the Shared Rural Network (SRN) to end poor rural mobile connections, with binding commitments for coverage and investment.

**Note 7.**

Consolidation *across* markets would probably be approved (e.g. a UK firm entering Germany or France). But the industry is constantly asking for *within* market consolidation, because that's where they can reduce competitive pressure.

**Note 8.**

The European General Court overturned the European Commission's prohibition decision of the 2015 [UK mobile case](#). A worrying implication of this judgment is that it imposes a standard of proof on the Commission that appears almost impossible to meet in oligopoly mergers (i.e., cases short of dominance). This despite an abundance of evidence that anti-competitive mergers [often occur in oligopolistic markets](#) and that oligopolistic market power has [increased over recent decades](#). This decision is currently under appeal.

**Note 9.**

Of 8083 mergers notified to the European Commission since 1990, just 30, or 0.4 percent had been blocked as of January. Of around 1,000 mergers and acquisitions worldwide, by the GAFAM big tech firms (Google, Apple, Facebook, Amazon and Microsoft) in the past 20 years, only ONE has been blocked or reversed. It is to the UK's credit that the one exception worldwide is the CMA. (For more, click [here](#).)

**Note 10.**

The pro-monopoly paradigm emerged in the 1970s, led by Chicago-School thinkers led by Robert Bork. They argued that regulators and courts should stop worrying about power, the structure of markets, or the wide public interest, and instead narrow their focus down to consumer outcomes and the internal efficiency of corporations. This stance unleashed a wave of mergers and acquisitions, as it was assumed that larger firms would generate "efficiencies" that would trickle down to consumers.

The result of the massive consolidation has not been improved fortunes for consumers, but instead rising inequality, slower innovation and lower economic growth (For more on that, please click [here](#)).

An influential new U.S. anti-monopoly movement has emerged in recent years, seeking to return the focus back on the wider public interest, the structure of markets, the interests not just of consumers but of other stakeholders such as workers and citizens, and above all the dangers of excessive concentrations of power. (For more on that, please click [here](#).)

**Note 11.**

Mobile operators also like to argue that they need to merge in the face of rising encroachment on their businesses by giants such as Google or Facebook. They also correctly argue that profits in the "attention value chain" are distributed very asymmetrically:

essentially, the telcos make large investment but the big tech firms, in large part due to their enormous economic power, get to use the infrastructure almost “for free.” Yet does it make sense to respond to monopolisation in one part of the chain (in this case, by the big tech firms) by allowing monopolisation in another part (the telcos?). No. The answer, instead, is to reduce the excessive power of those with most power. The CMA has a surprising amount of power to do this, as it has shown in its [laudable but little-noticed move](#) to force Facebook to sell Giphy. We hope that the incoming Digital Markets Unit in the UK, and the Digital Markets Act in Europe, will prove effective in curbing the powers of the big tech firms.

**Note 12.**

Users of mobile phones are distributed extremely widely across the country: almost every adult has one. These would be the ‘losers’ from a merger, given that it would not boost investment. The ‘winners’ from such a merger would be a much smaller group of shareholders and executives of the mobile firms, who are far more geographically concentrated in and around wealthy parts of London, overseas and offshore. Thus from the perspective of economic geography, the net effect of this merger would be to drain resources from the UK’s regions, for the benefit of a small group in wealthier parts of London and overseas. Thus, it would undermine the government’s current ‘levelling up’ agenda.