February 28, 2019

VIA EMAIL

The Honorable Jerrold Nadler, Chairman
House Judiciary Committee

The Honorable Doug Collins, Ranking Member
House Judiciary Committee

The Honorable David N. Cicilline, Chairman
Antitrust, Commercial and Administrative Law Subcommittee
House Judiciary Committee

The Honorable F. James Sensenbrenner, Ranking Member
Antitrust, Commercial and Administrative Law Subcommittee
House Judiciary Committee

Re: The proposed T-Mobile/Sprint merger and the state of the relevant economic literature

Dear Congressmen Nadler, Collins, Cicilline, and Sensenbrenner:

The International Center for Law and Economics (ICLE) is a nonprofit, nonpartisan research center whose work promotes the use of law & economics methodologies to inform public policy debates. We believe that intellectually rigorous, data-driven analysis will lead to efficient policy solutions that promote consumer welfare and global economic growth.[1]

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[1] ICLE has received support from telecom firms with diverse and often-divergent interests in the outcome of this merger review. We have also received support from non-telecom companies with similarly divergent interests in the merger. With few exceptions, all ICLE support is general support, and no company's donation represents more than 10% of our budget. This letter reflects the views of its authors and does not necessarily reflect the views of ICLE's board, donors, scholarly affiliates, or academic advisors.

We write to address a crucial question relevant to your upcoming, March 12 hearing on "The State of Competition in the Wireless Market: Examining the Impact of the Proposed Merger of T-Mobile and Sprint on Consumers, Workers, and the Internet": the likely effects on consumer welfare that a "4-to-3" merger among the largest US mobile carriers would have. We are currently working on a comprehensive literature review of economic studies looking at such mergers in other developed countries. Although that review is not yet completed, this letter shares several notable preliminary conclusions for consideration by the Subcommittee.

I. The consumer welfare effects of mobile communications mergers cannot be assessed by looking only at price

When analyzing mergers, the question at the heart of the enforcement inquiry is whether a transaction's potential benefits to consumers outweigh its potential costs. The most obvious potential cost is price increases, and these are, of course, central to the analysis. But increased prices are by no means inevitable, and they may be offset by other benefits, such as improvements in efficiency, reliability, and other qualitative factors. As the commentary on one recent study notes:

> [A] merger can be justified if there are large efficiency gains from the merger (e.g., because investments in the broadband networks increase). Hence, it is important to assess empirically the existence of this potential trade-off between efficiency gains and increases in prices charged to consumers.[2]

A fundamental tenet of most critics of this merger is that increased concentration will lead to higher prices. **But the only thing that can be concluded with certainty from the myriad findings of previous mobile carrier merger studies is that the relationship between concentration and price is simply not amenable to such facile inferences.**

Studies show a range of effects from telecom mergers in countries with different regulatory regimes, geographies, input prices, demand, and the like. These studies conclusively demonstrate only one thing: **a merger's effects on consumer welfare is a function of a great many factors other than simply the number of firms in a given market.** These other characteristics simply wouldn't loom so large in the studies

[2] Francesco Drago, Discussion of Christos Genakos, Tommaso Valletti & Frank Verboven, *Evaluating market consolidation in mobile communications*, 33 (93) ECON. POL'Y 86, 87 (2018).

we've reviewed if concentration were the sole, or even the most significant, determinant of an industry's competitiveness.

As the authors of one study conclude:

> [T]he main pay-off from an understanding of the expected efficiencies arising from a horizontal merger is likely to be the insights this gives about the nature of competitive rivalry in an industry, which in turn will assist in gathering evidence on market dynamics and likely supply-side responses. Such evidence should not be an after-thought. It deserves a central role in a unilateral effects assessment that justifies a departure from the constraints imposed by simple theoretical static models.[3]

Overall, enforcers and policymakers have to be careful drawing conclusions from cross-country comparisons. Some things *can* likely be inferred from the weight of the literature, but such inferences must account for differences that may suggest completely different effects would be seen in other countries. Because mobile carriers operate in markets facing their own unique set of regulations, costs, and market conditions, it is crucial to identify research that attempts to control for these factors. Thus, decisions should be informed by statistical analyses that properly account for these variables, rather than on narrative-driven anecdotes reported in trade journals or the popular press.

II. Overview of our preliminary review of the literature

Our initial review of the literature has revealed a number of important insights. In general, the literature appears to describe dynamic markets of steadily increasing consumer welfare driven by innovations that improve network quality and data speeds, expand coverage, and reduce prices. Each market faces its own unique set of regulations, costs, and market conditions. It is impossible for any single study to control for all of these factors, and the literature is a patchwork of research in which each study attempts to isolate the subset of factors that are of particular interest to the researchers.

Attempting to generalize from such a literature is a fraught endeavor.

Several variables can affect the outcome of a cost-benefit analysis of a 4-to-3 merger. Based on our initial literature review, particularly salient factors include:

[3] Christos Genakos, Tommaso Valletti & Frank Verboven, *Evaluating market consolidation in mobile communications*, 33 (93) ECON. POL'Y 45, 85 (2018).

- Differing characteristics of relevant regulatory regimes
- Industry characteristics that vary across jurisdictions
- Costs of network deployment in terms of the size of the network and the presence of scale economies
- Differential levels of expected and actual capital expenditure

Overall the studies find mixed results from the evaluated mergers, without any clear consensus concluding that increased concentration in mobile communications markets leads to higher prices.

Moreover, the consumer welfare effects of mobile industry mergers appear to be largely dependent on the specific market conditions (like the regulatory environment) in which a merger takes place, the size of the merging firms, and a number of other factors.[4]

- This is consistent with a study performed by the Body of European Regulators for Electronic Communications ("BEREC"), which found that the effect of mergers on relevant metrics, like price, are mixed, with several mergers resulting in *price decreases*.[5]
- Similarly, after controlling for capital expenditures (a measure of quality) and GDP (a measure of demand), a 2014 study found no statistically significant difference in prices among European markets with three carriers compared to those with four.[6] And the authors of that study found that markets with higher average prices were also markets with higher capital expenditures by carriers.
- Meanwhile, a 2015 study found that a 4-to-3 merger in Austria was associated with a *decrease* in the unit price of mobile data plans, while the entry of a fourth

[4] BODY OF EUROPEAN REGULATORS FOR ELECTRONIC COMMUNICATIONS (BEREC), REPORT ON POST-MERGER MARKET DEVELOPMENTS – PRICE EFFECTS OF MOBILE MERGERS IN AUSTRIA, IRELAND AND GERMANY 6-10 (June 15, 2018), https://berec.europa.eu/eng/document_register/subject_matter/berec/reports/8168-berec-report-on-post-merger-market-developments-price-effects-of-mobile-mergers-in-austria-ireland-and-germany.

[5] *Id.*

[6] Pauline Affeldt and Rainer Nitsche, *A price concentration study on European mobile telecom markets: Limitations and insights*, European School of Management and Technology Working Paper #14-07 (2014), https://www.esmt.org/pub/price-concentration-study-european-mobile-telecom-markets-limitations-and-insights. In fact, the authors' alternative statistical model found lower prices in markets with three carriers compared to those with four.

carrier in France was associated with an *increase* in unit price.[7] These results directly contradict a claim that 4-to-3 mergers necessarily result in price increases.

In addition to price effects, factors such as network coverage, investment, and speed of rollout are important considerations for mobile mergers.

- Several studies have found that 4-to-3 mergers have resulted in greater network quality, data speeds, network access, capital expenditures, and/or consumer welfare. For example, one study found that a 4-to-3 merger led to faster roll-out of 4G in Austria, increased upload and download speeds for the merging parties, and a general improvement industry-wide in Austria's upload and download speeds.[8]
- In other words, it is important to take account of the preferences of consumers—not merely to incorporate a regulator's abstract preference for lower prices irrespective of other qualitative effects. To this point, the authors of one study noted a potential pitfall for coverage and rollout when too many facilities-based competitors enter a particular market.[9]
- In line with this finding, other studies found that some 4-to-3 mergers can lead to more investment in buildout and coverage.[10]
- A recent review of the Hutchison/Orange merger in Austria specifically sought to evaluate the relevance of these quality effects on consumer welfare. It noted that, on average, consumers in Austria rate quality-related factors more highly than cost-related factors.[11] The review found that these quality-related factors improved following the merger: 4G network coverage increased 20-30 percent and 4G download and upload speeds increased. By this measure, and in this

[7] Georges Vivien Houngbonon, *The impact of entry and merger on the price of mobile telecommunications services,* 26th European Regional Conference of the International Telecommunications Society (ITS), Madrid, Spain, 24-27 (2015), http://hdl.handle.net/10419/127148.

[8] Xavier Pedros, Kalvin Bahia, Pau Castellas, Serfino Abate, *Assessing the Impact of Mobile Consolidation on Innovation and Quality: An Evaluation of the Hutchison/Orange Merger in Austria* (July 2017), https://bit.ly/2RQEOQK.

[9] Georges Vivien Houngbonon and Francois Jeanjean, *Is there a level of competition intensity that maximizes investment in the mobile telecommunications industry?*, 25th European Regional Conference of the International Telecommunications Society (ITS), Brussels, Belgium, 22-25 (2014), https://www.econstor.eu/bitstream/10419/101384/1/795228635.pdf.

[10] *See, e.g.*, HSBC Global Research, *Supersonic: European telecoms mergers will boost capex, driving prices lower and speeds higher* (Apr. 2015), https://www.orange.com/fr/content/download/33263/1086075/version/2/file/Supersonic+13.04.15.pdf.

[11] Xavier Pedros, Kalvin Bahia, Pau Castellas, Serfino Abate, *supra* note 8. By contrast, on average, consumers across all EU28 countries rated cost-related factors more highly than quality-related factors. In other words, consumer preferences vary across markets.

market, the merger appears to have improved consumer welfare in ways that a single-minded focus on price would miss.

- One notable recent analysis found that while a hypothetical 4-to-3 merger might lead to price increases (based on the authors' specific assumptions of market conditions), it would also be associated with significant efficiency improvements and increases in per-firm investment.[12]

Yet even with the complexities evident from the mixed results across different jurisdictions, some common themes are likely to emerge that can help guide the analysis of the T-Mobile/Sprint merger.

Notably, it appears that—contrary to the presumption that the presence of a larger number of carriers is always more desirable than fewer—there may in fact be an *optimal* number of carriers in a market for a given set of cost, demand, and regulatory factors.[13] For example, two studies conclude that there is an inverted U-shaped relationship between the "intensity" of competition and investment by mobile carriers.[14]

III. The pitfalls of some cross-country comparisons

Critics of the present merger often point to Canada as a cautionary example of a market served mostly by three carriers.[15] However, the Canadian market is very different from other markets, including the US. Canada is a large country with a small population. Population density in Canada is approximately 10 persons per square mile, while the US has more than 85 persons per square mile. In addition, Canadian regulations make it more difficult for mobile virtual network operators (MVNOs) to enter the market. **These and other factors that render market conditions in Canada substantially different than those the US, and, absent a**

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[12] Christos Genakos, Tommaso Valletti & Frank Verboven, *supra* note 3.

[13] *See generally* Rabah Amir, *Market structure, scale economies and industry performance*, CORE Discussion Paper 2003/65 (2003), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=995721 ("[O]ur results indicate that in the presence of scale economies... social welfare decreases if the number of firms exceeds some socially optimal level.").

[14] *See* HSBC Global Research, *supra* note 10; Georges Vivien Houngbonon and Francois Jeanjean, *supra* note 9.

[15] Testimony of Phillip Berenbroick, Senior Policy Counsel, Public Knowledge, Before the U.S. House of Representatives Committee on Energy & Commerce Subcommittee on Communications & Technology, *Protecting consumers and competition: An examination of the T-Mobil and Sprint merger* (Feb. 13, 2019), at 7.

much more careful analysis than we've seen, it is impossible to conclude that this merger would result in the same prices (and other outcomes) experienced there.

One critic of the merger cites the European Commission's analysis of a mobile carrier merger in the Netherlands and reports that the four to three merger between T-Mobile and Orange "led" to prices rising "as much" as 17 percent higher than they would have been otherwise.[16] This criticism fails to mention that this result applied only to the "high basket" of usage, with insignificant or small impacts in smaller "baskets" of usage. In fact, the Commission notes that prices actually decreased after the merger—albeit by less than in "control" countries studied. This is one reason that the Commission concluded that "some of the estimated price increase may not be causally linked to the T-Mobile/Orange merger."[17]

IV. The Rewheel study should not be relied upon

In his testimony before the House Committee on Energy & Commerce ,Subcommittee on Communications & Technology, Phillip Berenbroick of Public Knowledge referred to "[a]n October 2018 report from Finnish research firm Rewheel[, which] found that consumers in markets with three facilities-based providers paid twice as much per gigabyte as consumers in four firm markets."[18] **However, the Rewheel Study that Mr. Berenbroick relied upon appears to have a number of significant flaws**, including:

- The Rewheel study is essentially limited to price effects alone which, as we note above, can mislead the analysis by missing, among other things, innovation and quality effects.
- Rewheel's analysis is not based on an impartial assessment of relevant price data. Rather, it is based on two hypothetical measures: (1) the maximum amount of gigabytes of data an individual could purchase for €30 a month, and (2) the median price per gigabyte of data for plans with at least 1,000 minutes and

[16] *Id.* at 6.

[17] Directorate General for Competition, *Ex-post analysis of two mobile telecom mergers: T-Mobile/Tele.ring in Austria and T-Mobile/Orange in the Netherlands*, European Commission (2015), http://ec.europa.eu/competition/publications/reports/kd0215836enn.pdf.

[18] Philip Berenbroick, *supra* note 15, *citing*: Rewheel/research, *The state of 4G pricing – 2H2018*, Digital Fuel Monitor 10th Release (Oct. 26, 2018) at 6, http://research.rewheel.fi/downloads/The_state_of_4G_pricing_DFMonitor_10th_release_2H2018_PUBLIC.pdf.

3Mbit/s for HD video. Such comparisons say nothing about the plans chosen by consumers or the actual prices paid by consumers in those countries, rendering Rewheel's comparisons virtually meaningless. As Pauline Affeldt and Rainer Nitsche note in their assessment of the effects of concentration in mobile telecom markets:

> Such approaches are taken by Rewheel (2013) and also the Austrian regulator rtr (when tracking prices over time, see rtr (2014)). Such studies face the following problems: They may pick tariffs that are relatively meaningless in the country. They will have to assume one or more consumption baskets (voice minutes, data volume etc.) in order to compare tariffs. This may drive results. Apart from these difficulties such comparisons require very careful tracking of tariffs and their changes. Even if one assumes studying a sample of tariffs is potentially meaningful, a comparison across countries (or over time) would still require taking into account key differences across countries (or over time) like differences in demand, costs, network quality etc.[19]

- The Rewheel study bases its comparison on dissimilar service levels by not taking into account, for instance, relevant features like comparable network capacity, service security, and, perhaps most important, overall quality of service.

Ultimately, the Rewheel study elides far too many relevant distinctions between countries to make its data useful.

V. Conclusion

Looking at price effects alone in assessing mergers is troubling not only because different factors can lead to different price effects from mergers, but also because superficially higher prices may mask real competitive benefits. As one theorist explains:

> An alternative explanation for price increases or decreases instead may be that the merger led to changes in the quality of the merged firms' products. Thus, rather than market power, price increases may reflect

[19] Pauline Affeldt and Rainer Nitsche, *supra* note 6, at 3.

> quality improvements; and rather than cost reductions, price decreases may reflect quality degradation.[20]

Moreover, several studies that have looked beyond the simplistic concentration-price relationship have found that apparent price increases following mergers in several industries were offset by efficiency gains that ultimately led to lower prices.[21]

Our preliminary assessment of available studies suggests that it would be inappropriate to conclude that consumers would be harmed by a 4-to-3 merger. Indeed if, as appears to be the case in this merger, the resulting market structure is closer to the "optimal" structure, consumers stand to benefit considerably from improvements in access and quality, as well as continuing reductions in price.

However, cross-country comparisons may be of limited relevance to the assessment of any particular transaction because conditions can vary widely in ways that can decisively alter outcomes. **We caution against drawing simplistic conclusions regarding the possible effects on price based on inappropriate comparisons from other jurisdictions that fail to take into account relevant local factors**.

Respectfully submitted,

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[20] Michael D. Whinston, *Antitrust policy toward horizontal mergers*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2369, 2432 (Mark Armstrong & Robert H. Porter eds., 2007).

[21] *See, e.g.*, Orley Ashenfelter, *et al.*, *Efficiencies brewed: pricing and consolidation in the US beer industry*, 46 RAND. J. ECON. 328 (2015) (finding that "[a]ll else equal, the average predicted increase in concentration [from the 3-to-2 merger of brewers Miller and Coors] led to price increases of 2%, but at the mean this was offset by a nearly equal and opposite efficiency effect"); Dario Focarelli & Fabio Panetta, *Are mergers beneficial to consumers? Evidence from the market for bank deposits*, 93 AM. ECON. REV. 1152 (2003) (finding "strong evidence that, although [banking industry] consolidation does generate adverse price changes, these are temporary. In the long run, efficiency gains dominate over the market power effect, leading to more favorable prices for consumers").