



Before the  
**Federal Communications Commission**  
Washington, DC 20554

In the Matter of )  
 )  
Applications of T-Mobile US, Inc., ) WT Docket No. 18-197  
and Sprint Corporation )  
for Consent to Transfer Control of Licenses )  
and Authorizations )

**Comments of the  
International Center for Law and Economics  
in Opposition to Petitions to Deny**

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## I. Introduction

The proposed transaction between T-Mobile US, Inc. (T-Mobile) and Sprint Corporation (Sprint) appears to present few (if any) significant competitive harms (any of which would be redressable through common structural remedies) and carries the promise of potentially significant consumer benefits. Parties petitioning the Federal Communications Commission (Commission, or FCC) to deny the transaction do not present compelling evidence to the contrary, as we lay out below.

Because the objections of the petitioners are unavailing, the Commission should approve the transaction in its entirety, or, following a thorough, market-by-market competition review,<sup>1</sup> with limited structural remedies such as divestitures in local license areas as required to address credible, transaction-specific harms, if any.

The comments that follow respond to arguments submitted to the Commission by parties petitioning for denial of the transaction. The comments begin, in Part II, by focusing on the need to apply modern law and economics tools when undertaking antitrust analysis. In particular, it (1) rebuts the structural approach and analysis of petitioners, with their emphasis on the HHI and spectrum screen; (2) highlights petitioners' inappropriate use of and reliance upon poor empirical evidence regarding market concentration (including both generalized studies and inapt international comparisons); and (3) emphasizes the importance of getting market definition right (including the role of prepaid). Part III goes to the importance of understanding the merger in terms of dynamic competition, looking both to historic innovation effects and the importance of this transaction to investment in 5G and spectrum composition. Part IV considers evidence relating to the effect of the merger on mobile access and the "digital divide."

These comments, and the FCC's review of this transaction, are framed in terms of what is in the "public interest, convenience, and necessity"—the so-called public interest standard by which the Commission evaluates license transfers.<sup>2</sup> Under this

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<sup>1</sup> As we discuss below, *infra* notes 38 to 40 and accompanying text, the Commission's "further competitive analysis" must look beyond superficial structural indicia and address the actual competitive dynamics in each relevant geographic market.

<sup>2</sup> 47 U.S.C. §§ 309(a-d); 310(d).

standard, applicants to the Commission bear the burden of demonstrating to the Commission that the transaction is in the public interest.

This standard is broader than, but, as framed by the petitions opposing the transaction, largely subsumed by, the consumer welfare standard that governs the antitrust analysis of transactions. And, indeed, where opposition to a transaction is framed in traditional antitrust terms—as is predominantly the case here—there is little light between the public interest and consumer welfare evaluations. If critiques of a transaction fail on traditional antitrust grounds, then all that remains are the procompetitive—and therefore pro-consumer and pro-public interest—justifications proffered by the parties as the basis for the transaction.

In particular, and as discussed in more detail below, antitrust analysis of this transaction requires that the Commission account for the specific characteristics of the markets affected by the merger—including, most importantly, the dynamic, fast-moving nature of competition and the importance of high fixed costs of production and economies of scale. Overly-simplistic or mechanical application of obsolete market-share and concentration presumptions and other static market analyses produce unquestionably wrong outcomes. So too do analyses that draw artificially narrow definitions of the product market or naively broad definitions of the geographic market. Yet the petitions to deny this transaction are rife with such analyses.

These concerns are particularly relevant here given the clear importance to the parties' decision to merge of their intent to launch a competitive, national 5G network—and the role of the transaction in facilitating their efforts. If successful, the deal could yield a combined company that is a stronger competitor to AT&T and Verizon, which, in turn, could spur increased investment and competition in the market.

It is undeniable that all four of the major carriers currently compete in the purported national “mobile telephony/broadband services” market. But arguably only AT&T and Verizon are currently adequately positioned to compete in a national 5G market. In the past, the capital expenditures made by AT&T and Verizon have dwarfed those of T-Mobile and Sprint. In 2016, for example, the combined CAPEX of AT&T and Verizon totaled \$21 billion, while the combined CAPEX of Sprint and T-Mobile was

\$6.5 billion.<sup>3</sup> It is difficult to imagine that these numbers for Sprint and T-Mobile would increase substantially for 5G when it is a considerably riskier investment at this stage. Indeed, according to T-Mobile's Public Interest Statement, "Sprint plans to spend \$5-6 billion a year over the next three years to build a 5G network and, even with that spending, Sprint's 5G footprint would be geographically limited."<sup>4</sup>

If accurate, at least judged from the perspective of the likely future path of the U.S. mobile market, the merger of T-Mobile and Sprint would plausibly create a third truly national competitor in this market. In other words, in the market for nationwide 5G networks, this transaction amounts to a 2-to-3 merger, resulting in the creation of a viable, new market entrant, instead of the 4-to-3 transaction as characterized by opponents.<sup>5</sup>

While it is impossible to know with certainty the future effects of the proposed merger between T-Mobile and Sprint (just as it is impossible to know with certainty the effects of any complex, dynamic set of business activities), the potential benefits of the merger—including wider access to, and more timely deployment of, high speed wireless data at lower cost, as well as a host of other innovations<sup>6</sup>—are considerable. In order to ensure that such consumer benefits can be realized, it is crucial that the proposed merger not be thwarted by regulators inappropriately focused on short-term, static effects.

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<sup>3</sup> Twentieth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993 Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, 32 FCC Rcd. 8968 at Chart III.C.1 (Sep. 27, 2017) [hereinafter "Twentieth Mobile Competition Report"].

<sup>4</sup> Description of the Transaction, Public Interest Statement, and Related Demonstrations at 97, Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations (2018) (WT Docket No. 18-197) [hereinafter "Public Interest Statement"].

<sup>5</sup> As Larry Downes noted recently, "on Sprint-T-Mobile, I don't see this as going from four national carriers to three, I see this as going from two national carriers to three." Larry Downes, Panel discussion at TPI Aspen Summit on "What Infrastructure Will Power the Digital Economy and How Will We Get There?," (Aug. 21, 2018), available at <http://bit.ly/2xh1Y6t> (at 55:08).

<sup>6</sup> See, e.g., Caitlin McGarry, *The Truth About 5G: What's Coming (And What's Not) in 2018*, TOM'S GUIDE (Aug. 14, 2018), <https://www.tomsguide.com/us/5g-release-date,review-5063.html>.

## **II. Antitrust review of the merger must avoid the simplistic inference of competitive effects from market structure**

Several petitioners focus on the purported effect of the merger on market concentration. These petitioners assert further that increased concentration causes competitive harm. Free Press, for example, writes that: “[Applicants] have not shown that the deal would not lessen competition, far less that it could *enhance* competition. In fact, the merger would massively increase concentration in the U.S. wireless market and in critical market segments too.”<sup>7</sup> Communications Workers of America asserts, with marginally more measured language, that “the concentration levels and increases that would flow from the transaction are ‘a strong indicator of harm to competition and in antitrust analysis trigger a presumption of such harm—for good reason.’”<sup>8</sup>

These assertions are echoed in the oft-repeated claim that competition in the mobile market can be preserved *only* with four, not three, national competitors. Recently the claim was offered as a predominant concern with the deal by a group of Senators in a letter to Assistant Attorney General Delrahim and Chairman Pai.<sup>9</sup> The letter, in turn, cites former FCC Chairman Tom Wheeler’s assertion in 2014 (in response to the companies’ previous attempt to merge) that “[f]our national wireless providers are good for American consumers,”<sup>10</sup> as well as former Assistant Attorney General Bill Baer’s anticipatory public statement of opposition to the 2014 proposed merger: “[I]t’s going to be hard for someone to make a persuasive case that reducing four firms to three is actually going to improve competition for the benefit of American consumers.”

But there is no rigorous economic support for these claims. Instead, the assertions are based on a simple inference of competitive effects from the presumed future

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<sup>7</sup> Petition to Deny of Free Press at 2, Applications of T-Mobile US, Inc. and Sprint Corporation For Consent to Transfer Control of Licenses and Authorizations (2018), WT Docket No. 18-197 [hereinafter “Free Press Petition”].

<sup>8</sup> Comments of Communications Workers of America at 5, Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of the Licenses and Authorizations (2018), WT Docket No 18-197 (quoting AT&T/T-Mobile Staff Analysis and Findings) [hereinafter “CWA Comments”].

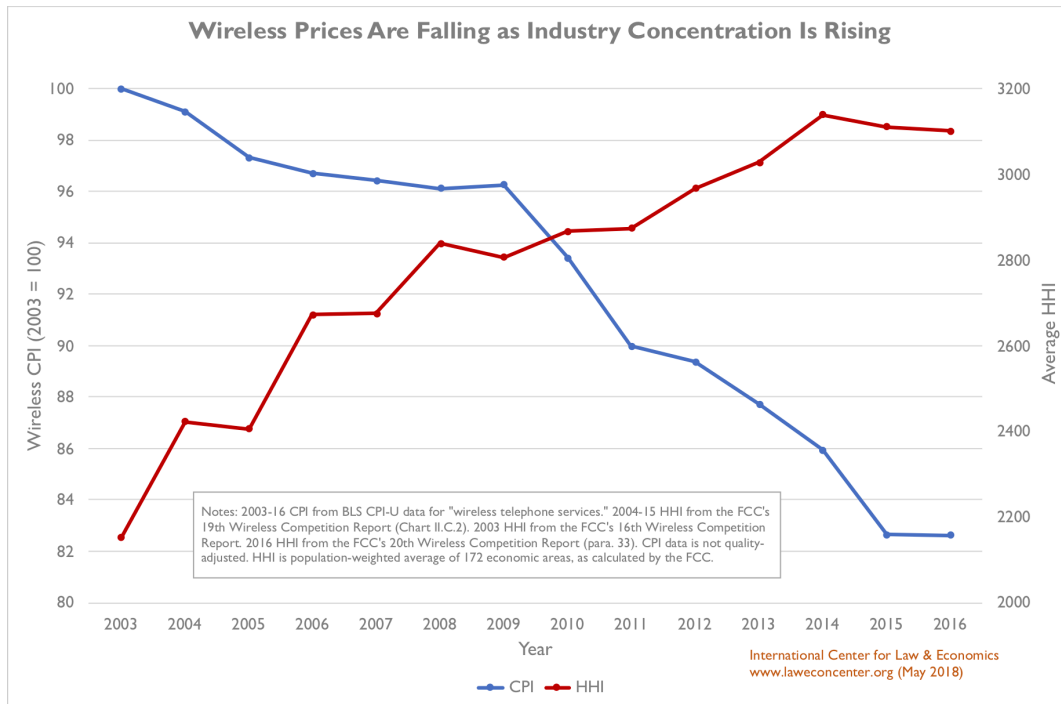
<sup>9</sup> Sen. Amy Klobuchar, *et al.*, Letter to Assistant Attorney General Makan Delrahim and FCC Chairman Ajit Pai (May 7, 2018), available at <http://bit.ly/2Kr4cVB>.

<sup>10</sup> *Id.*

structure of the market, and the unsupported assumption that an increase in concentration can mean *only* a reduction in competition. The problem is that no such inference can be made: “[I]t is presumptuous to conclude... that markets populated by fewer firms perform less well or offer competition that is less intense.”<sup>11</sup>

A mechanical “four-to-three” structural analysis is especially inappropriate here in light of empirical analysis in the wireless sector that shows that concentration is not a reliable predictor of either the health of competition or of consumer welfare. As shown in the graph below, as concentration in the industry increased, wireless communications prices to consumers *decreased*—precisely the opposite of what a concentration-based approach would predict.

Figure 1



<sup>11</sup> Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, *THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES* 137, 140-41 (1995).

The same trend is seen in the price of smartphone mobile data, which has fallen from \$49.00 per gigabit in 2010 to just over \$6.00 per gigabit in 2017.<sup>12</sup>

Properly considered, a superficial increase in concentration is just as consistent with an *increase* in competition as with a decrease; the contrary claim—that there is a clear causal link between increased concentration and reduced competition—simply disregards the weight of economic evidence.<sup>13</sup> Put simply: market share and industry concentration are poor predictors of competitive effects.<sup>14</sup>

The fact is that economists know very little about the relationships among market structure, firm size, competition, profits, prices, entrepreneurship, and innovation.<sup>15</sup> The rapidly evolving wireless telecommunications market is exactly the type of industry where market shares and structural presumptions are not capable of predicting competitive effects and, thus, of specifying optimal policy choices.

In particular, where competition occurs significantly through innovation—as the wireless industry exhibits in spades—the effect of increased concentration on competitiveness is ambivalent, at best.<sup>16</sup> And where effective competition requires significant up-

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<sup>12</sup> See Public Interest Statement, *supra* note 4, Appendix G: Declaration of David S. Evans [hereinafter “Evans Declaration”], at 41 (Table 8).

<sup>13</sup> See *infra* notes 14 to 18 and 41 to 64 and accompanying text. See also Douglas H. Ginsburg & Joshua D. Wright, *Philadelphia National Bank: Bad Economics, Bad Law, Good Riddance*, 80 ANTITRUST L. J. 2, 205 (2015) (noting that, during revision of the Horizontal Merger Guidelines in 2010, the FTC and DOJ were pressed by economists to abandon structural presumptions as they were poor indicators of market power).

<sup>14</sup> See, e.g., Luke M. Froeb, Former Director, Fed. Trade Comm’n Bureau of Econ., *From Theory to Praxis: Quantitative Methods in Merger Control*, at 6 (Oct. 30, 2014), available at [https://www.ftc.gov/sites/default/files/documents/public\\_statements/theory-praxis-quantitative-methods-merger-control/041030como.pdf](https://www.ftc.gov/sites/default/files/documents/public_statements/theory-praxis-quantitative-methods-merger-control/041030como.pdf).

<sup>15</sup> See, e.g., Richard Schmalensee, *Inter-Industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951 (Richard Schmalensee & Robert Willig eds., 1989); Tim Bresnahan, *Empirical Studies of Industries with Market Power*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION (Richard Schmalensee & Robert Willig eds., 1989).

<sup>16</sup> See, e.g., Richard Gilbert, *Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate?*, in INNOVATION POLICY AND THE ECONOMY (VOL. 6) 159, 206 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2006) (“There is little evidence that there is an optimal degree of competition to promote R&D. Empirical studies that use market concentration as a proxy for competition fail to reach a robust conclusion about the relationship between market concentration and R&D when differences in industry characteristics, technological opportunities, and appropriability are taken into account.”); Michael L. Katz & Howard A. Shelanski, *Mergers and Innovation*, 74 ANTITRUST L.J. 1, 22 (2007) (“[T]he literature

front investment and economies of scale predominate (because of these high fixed costs)<sup>17</sup>—as here—the assumption that concentration leads to reduced competition is simply misplaced.<sup>18</sup> In fact, given the substantial advantages of scale enjoyed by AT&T and Verizon Wireless, if one insists on measuring this merger in superficial market share terms, it would be more accurate to describe it as moving the market from two to three national competitors than to describe (and decry) it as moving the market from four to three.<sup>19</sup>

Deputy Assistant Attorney General for the Antitrust Division, Donald G. Kempf, made this point well in a separate statement issued with the final report of the Antitrust Modernization Commission:

[T]he Merger Guidelines have rested on the erroneous notion that increasing concentration leads to decreasing competition. That may be true when two firms merge to monopoly. Short of that, however, most increases in concentration lead to an increase in competition, not a decrease. The reason for that, of course, is that the concentration-increasing mergers result in cost-saving efficiencies that enable the combined

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addressing how market structure affects innovation (and vice versa) in the end reveals an ambiguous relationship in which factors unrelated to competition play an important role.”); J. Gregory Sidak & David F. Teece, *Dynamic Competition in Antitrust Law*, 5 J. COMPETITION L. & ECON. 581, 588 (2009) (“[D]espite 50 years of research, economists do not appear to have found much evidence that market concentration has a statistically significant impact on innovation.”); Douglas H. Ginsburg & Joshua D. Wright, *Dynamic Analysis and the Limits of Antitrust Institutions*, 78 ANTITRUST L.J. 1, 4 (2012) (“To this day, however, the complex relationship between static product market competition and the incentive to innovate is not well understood.... [E]conomic theory does not support a confident conclusion as to which antitrust policies will elicit a higher rate of innovation.”).

<sup>17</sup> See generally Joseph P. Kendrick, Comment, *Does Sound Travel in Cyber Space*, 8 J. SMALL & EMERGING BUS. L. 39, 46-47 (2004); see also Mark A. Lemley and David McGowan, Legal Implications of Network Economic Effects, 86 Cal. L. Rev. 479, 595 (1998).

<sup>18</sup> See generally Harold Demsetz, *The Indivisibility Rent Theory of Measured Oligopoly Profit* in THE ORGANIZATION OF ECONOMIC ACTIVITY, VOLUME II: EFFICIENCY, COMPETITION, AND POLICY (Harold Demsetz ed., 1989); Val Eugene Lambson, *Is the Concentration-Profit Correlation Partly an Artifact of Lumpy Technology?*, 77 AM. ECON. REV. 731 (1987). See also Franklin M. Fisher, *Diagnosing Monopoly*, 19 Q. REV. ECON. & FIN. 7, 26 (1979) (“Suppose that the minimum scale which is necessary for efficient production is large relative to demand. In such a case, an incumbent firm may be able to earn monopoly profits because an entrant will... perceive that with one more minimum scale firm in the market the addition to supply will be such as to reduce prices below the point where profits cannot be earned.”)

<sup>19</sup> According to the FCC’s data, as of year-end 2016, Verizon had 36.8% and AT&T 32.8% of the wireless market (measured by revenue). Sprint and T-Mobile collectively had 27.8%. Twentieth Mobile Competition Report, *supra* note 3, at Table II.C.1.



firms to lower prices, increase quality and improve service. That is why opposition to such mergers usually comes from the combining firms' competitors, not from their customers.<sup>20</sup>

Excessive reliance on obsolete, market-share-based analysis to evaluate the proposed merger would be tantamount to a rejection of modern antitrust principles and the economic learning that undergirds them. This is particularly problematic in wireless markets, as former FCC economists Michelle Connolly and James Prieger have argued: “[t]raditional market definition analysis, based on whether a firm’s price is constrained by existing competitors, can give a seriously misleading picture of competitive relations in dynamic markets with rapidly developing technology.”<sup>21</sup> Such an analysis is likely to lead to decisions that *reduce* rather than *promote* consumer welfare and the public interest.

**A. HHIs and the spectrum screen are insufficient to guide decisions regarding the likely competitive effects of the merger**

In asserting that the Commission should deny the parties’ application because it will increase concentration (and therefore, they say, cause competitive harm), petitioners rely on claims regarding the deal’s assessment under the Herfindahl-Hirschman Index (HHI) and the Commission’s spectrum screen.

In contrast to Chairman Wheeler’s and AAG Baer’s successful efforts to thwart a Sprint/T-Mobile merger in 2014 before it even got off the ground,<sup>22</sup> the current FCC and DOJ leadership have made clear that they will not pre-judge the proposed deal

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<sup>20</sup> ANTITRUST MODERNIZATION COMM’N, REPORT AND RECOMMENDATIONS, SEPARATE STATEMENT OF COMM’R KEMPF, at 429 (Apr. 2, 2007), available at [https://govinfo.library.unt.edu/amc/report\\_recommendation/separate\\_statements.pdf](https://govinfo.library.unt.edu/amc/report_recommendation/separate_statements.pdf).

<sup>21</sup> Michelle Connolly & James Prieger, *Economics at the FCC, 2008-2009: Broadband and Merger Review*, 35 REV. INDUS. ORG. 387, 404 (2009).

<sup>22</sup> See, e.g., Brendan Sasso, *The Obama Administration Is on T-Mobile's Porch With a Shotgun*, THE ATLANTIC, Feb. 3, 2014, <https://www.theatlantic.com/politics/archive/2014/02/the-obama-administration-is-on-t-mobiles-porch-with-a-shotgun/457281/> (“Regulators have a message for Sprint and T-Mobile: Don’t even think about it.”); Brian Fung, *Why regulators are the big winners in the failed Sprint-T-Mobile deal*, THE WASHINGTON POST, Aug. 6, 2014, <https://www.washingtonpost.com/news/the-switch/wp/2014/08/06/why-regulators-are-the-big-winners-in-the-failed-sprint-t-mobile-deal> (“Merger talks between Sprint and T-Mobile—which were never formally announced—have reportedly collapsed under the weight of regulatory scrutiny.”).

without first evaluating the actual market evidence.<sup>23</sup> We applaud that position and urge the Commission to extend that circumspection to its assessment of the structural presumptions made by petitioners.

As noted, several petitioners rely substantially on this structural presumption. In particular, they urge consideration of the market's HHI and the transaction's purported effect on it, asserting that even the HHI alone counsels against this merger. But HHIs simply can't bear the weight put on them. The HHI is a "simplistic calculation that measures market shares and the arithmetic change in market concentration a transaction would yield."<sup>24</sup> It is decidedly *not* an analytical tool capable of evaluating a market's competitiveness. Indeed, the FCC itself has noted that "[m]arket share data are the beginning, not the end, of the competitive analysis."<sup>25</sup>

The antitrust agencies have also warned against the mechanical application of structural measures of concentration to infer likely competitive effects. In particular, the *Horizontal Merger Guidelines* developed by the agencies state:

The purpose of these [HHI] thresholds is not to provide a rigid screen to separate competitively benign mergers from anticompetitive ones, although high levels of concentration do raise concerns. Rather, they provide one way to identify some mergers unlikely to raise competitive concerns and some others for which it is particularly important to

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<sup>23</sup> See Recode Staff, *Full Transcript: FCC Chairman Ajit Pai on Recode Decode*, RECODE, May 5, 2017, <https://www.recode.net/2017/5/5/15560150/transcript-fcc-chairman-ajit-pai-net-neutrality-merger-recode-decode> ("Look, I don't take a preexisting view as to what the optimal market structure is. I don't think any regulator who embraces regulatory humility and intellectual honesty about economics can say whether three or four or five is the optimal number.") (emphasis added); David McLaughlin & Scott Moritz, *Antitrust Chief Discusses Sprint, Doesn't Close Door on Deal*, BLOOMBERG, June 1, 2018, <https://www.bloomberg.com/news/articles/2018-06-01/antitrust-chief-discusses-sprint-doesn-t-close-door-on-deal> ("I don't think there's any magical number that I'm smart enough to glean about any single market.").

<sup>24</sup> Larry Downes & Geoffrey A. Manne, *The FCC's Unstructured Role in Transaction Reviews*, CPI ANTITRUST CHRONICLE (Oct. 2012(1)) at 5, available at <https://laweconcenter.org/wp-content/uploads/2012/10/SSRN-id2163169.pdf>.

<sup>25</sup> Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations, WT Docket No. 04-70, *Memorandum Opinion and Order*, 19 FCC Rcd 21522, 21564-65 ¶ 96 (2004).

examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration.<sup>26</sup>

Thus, “[t]he measurement of market shares and market concentration is not an end in itself, but is useful to the extent it illuminates the merger’s likely competitive effects.”<sup>27</sup>

And the DOJ has *explicitly* warned against inferring competitive effects from concentration measures in broadband markets, in particular:

We do not find it especially helpful to define some abstract notion of whether or not broadband markets are “competitive.” Such a dichotomy makes little sense in the presence of large economies of scale, which preclude having many small suppliers and thus often lead to oligopolistic market structures. The operative question in competition policy is whether there are policy levers that can be used to produce superior outcomes, not whether the market resembles the textbook model of perfect competition.<sup>28</sup>

Such regulatory restraint is particularly appropriate in today’s wireless markets, where there is ample evidence that concentration has yielded considerable benefits for consumers. Even as the market has grown more concentrated, prices have fallen, networks have been expanded, innovation has increased, and there has been massive investment in the industry. And this isn’t surprising: Operation of wireless broadband isn’t cheap. “New T-Mobile is projecting it will invest nearly \$40 billion over the next three years to bring the company into the 5G era.”<sup>29</sup> Ensuring a return sufficient to enable that investment appears to entail taking advantage of economies of scale, tending the industry toward greater concentration. But it also begets a

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<sup>26</sup> DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES 19 (Aug. 19, 2010).

<sup>27</sup> *Id.* at 7. *See also id.* (“The Agencies’ analysis need not start with market definition. Some of the analytical tools used by the Agencies to assess competitive effects do not rely on market definition, although evaluation of competitive alternatives available to customers is always necessary at some point in the analysis.”); Carl Shapiro, *The 2010 Horizontal Merger Guidelines: From Hedgehog to Fox in Forty Years*, 77 ANTITRUST L.J. 701, 722 (2010) (“[E]conomic theory relates unilateral price effects with differentiated products more directly to diversion ratios and margins than to the combined market share of the merging firms.”).

<sup>28</sup> *Ex Parte* Submission of the United States Department of Justice, *In the Matter of Economic Issues in Broadband Competition*, GN Docket 09-51 (Jan. 4, 2010).

<sup>29</sup> Public Interest Statement, *supra* note 4, at 125.

competitive response in the form of increased investment and technological innovation by competitors (no matter how many there are), leading to an *actual* virtuous cycle in which investment, innovation, and quality increase along with increasing concentration. Indeed, there is evidence that this is already happening, as Verizon and AT&T jockey for position<sup>30</sup> (and spend billions<sup>31</sup>) in the 5G space. Yet these trends run precisely counter to the presumption that concentrated markets inexorably harm competition and consumers.

The facilities-based mobile network operator market, by the nature of the industry, will very likely be heavily concentrated in a small number of large companies, so an analysis that starts with the presumption that market concentration is inherently bad for competition is both unsupported by theory or evidence and an unwarranted thumb on the scale against what should be presumptively *acceptable* market structures.

These criticisms are particularly apposite to the “spectrum screen” applied by the Commission, which presumptively triggers a more comprehensive competitive analysis when the share of the spectrum held by a single entity exceeds one third of usable spectrum.<sup>32</sup> Yet as Manne, et al. have noted:

As far as the screen is concerned, there’s no evidence that a carrier that controls more than a third of the usable spectrum in a market has the ability to inflict harm on consumers. In essence, the screen is based on the notion that an increase in the number of wireless providers will yield lower prices or benefits to consumers. But the data consistently show that wireless markets have seen considerable increases in the relative concentration of the industry, accompanied not by consumer harm but by

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<sup>30</sup> Gina Narcisi, *Verizon Closes Hard-Fought Straight Path Communications Purchase*, CRN, Fed. 28, 2018, available at <https://www.crn.com/news/networking/300099936/verizon-closes-hard-fought-straight-path-communications-purchase.htm>

<sup>31</sup> Mike Dano, *AT&T, Verizon capex in 2018 higher than expected, says Wall Street firm*, FIERCEWIRELESS, Jun. 26, 2018, available at <https://www.fiercewireless.com/5g/at-t-verizon-capex-2018-higher-than-expected-says-wall-street-firm>

<sup>32</sup> Policies Regarding Mobile Spectrum Holdings et al., WT Docket No. 12-269, *Report and Order*, 29 FCC Rcd 6133, 6156 ¶ 44 (2014).

lower prices and increasing output indicative of a highly competitive market.<sup>33</sup>

Indeed, as Manne, et al. have further noted:

Both HHIs and the spectrum screen are born of the same outdated structural presumption that infers anticompetitive effects from high levels of concentration. But in markets characterized by technological innovation, multidimensional competition and economies of scale, the reality is that we have no idea what level of concentration is commensurate with optimal outcomes.... Rigid HHI calculations, rooted in the assumption that concentration levels that exceed a certain threshold are presumptively anticompetitive, are improper, and the history of market performance contradicts this assertion.<sup>34</sup>

A number of commenters, including Frontier & Windstream, CWA, and Common Cause, raise specific concerns about the amount of spectrum that New T-Mobile would have. (It is worth noting a contradiction between these commenters' concerns: Common Cause argues that the merger is unnecessary for T-Mobile to acquire spectrum that it argues it needs in order to launch its 5G network because it could instead turn to secondary markets, while Frontier and Windstream argue that that the merger will put them at a disadvantage compared to the merged firm because the secondary markets have proved unavailing as a source of needed spectrum).<sup>35</sup> CWA argues, for instance, that "[t]he spectrum holdings of the 'New T-Mobile'—almost 300 MHz on an average basis—would vastly exceed the Commission's spectrum screen and the holdings of other wireless carriers."<sup>36</sup>

This overly simplistic argument demonstrates the shortcomings inherent in the spectrum screen approach. While it is true that New T-Mobile would have a significant amount of spectrum, exceeding the holdings of either AT&T or Verizon if one

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<sup>33</sup> Geoffrey A. Manne, et al., *The Law and Economics of the FCC's Transaction Review Process*, TPRC Working Paper (Aug. 23, 2013) at 24, available at <https://ssrn.com/abstract=2242681>.

<sup>34</sup> *Id.*

<sup>35</sup> *Cf.* Petition to Deny of Common Cause et al. at 36, Applications of T-Mobile US, Inc., and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations (2018) (WT No. 18-197) [hereinafter "Common Cause Petition"] with Comments of Frontier Communications Corporation and Windstream Services, LLC at 5-6, Applications of T-Mobile US, Inc., and Sprint Corporation for Consent to Transfer Control of Licenses and Authorizations (2018) (WT No. 18-197).

<sup>36</sup> CWA Comments, *supra*, note 8 at 22.

excludes millimeter-wave (mmWave) frequencies, the composition of that spectrum is unique. The vast majority of Sprint's spectrum is high-band. Indeed, not only does Sprint have more high-band spectrum than any other carrier, but it has more high-band spectrum than any other carrier has total non-mmWave spectrum. This alone is a critical factor: while it may have more of this spectrum in capacity terms, making use of this spectrum will require proportionally greater costs in terms of capital, build-out time, and network complexity due to the denser network required to accommodate this spectrum's propagation characteristics. And, again, Sprint and T-Mobile combined have significantly less mmWave spectrum than either AT&T or Verizon. At the same time, AT&T and Verizon have relatively similar compositions of different spectrum frequencies in their portfolios.

This is all to say that the network that New T-Mobile builds using its spectrum portfolio would be dramatically different than that built by either AT&T or Verizon (whose networks will likely be relatively similar to each other). It will have different technical, performance, and cost characteristics. And this is a good thing. There remains a great deal unknown about how 5G will work. It will almost certainly be beneficial to have a range of networks with different characteristics deployed to serve different segments of the market. Some architectures may prove entirely satisfactory (or unsatisfactory) for all use cases; or it may be that differentiated networks will prove to be preferable for differentiated use cases. In either event, the different portfolio of spectrum brought to bear by the new T-Mobile will be beneficial for the market overall as 5G technology is deployed and improved.

All of this suggests that the FCC should abandon its focus on the *percentage of spectrum* held by a company and instead evaluate how different agglomerations of spectrum would likely affect consumers. Such an analysis should focus particular attention on the potential efficiencies and (pro)competitive effects of a license transfer. Competition from other wireless providers is certainly part of the analysis, but a number of other factors should be considered including, among other things, how and when spectrum would be deployed with and without a transfer, how efficiently it would be used with and without a transfer, and whether its deployment is better supported by the requisite technological, physical and organizational apparatus—including the scale needed to do so—to deliver quality service to consumers before or after a transfer.

Perhaps most important, this competitive analysis simply can't generate reliable conclusions if spectrum is analyzed independently from broader competitive conditions. To take one striking example, in their eagerness to dismiss the potential competition from wholesale buyers of spectrum, some commenters dismiss such competition as incapable of disciplining the prices of facilities-based carriers.<sup>37</sup> Yet this view fails to take account of the market reality that wholesale buyers themselves exert power over the providers insofar as the market for excess capacity in the incumbents' networks is limited to a relatively small pool of buyers.

Thus, a proper competitive analysis would also include assessment of competition from imperfect substitutes (e.g., fixed wireless and fixed terrestrial broadband), technological developments that may or will alter spectrum efficiency and entry, product (and quality) differentiation among competitors, historical price and quality changes in the market, the likelihood of coordinated effects, the presence of buyer power, constraints arising from other layers of the network (e.g., device makers and content providers), the presence and extent of switching costs, and possible intellectual property-based constraints on competition—among others.

Perhaps the most important factor to consider in such an analysis is the benefit to consumers from expanded rather than contracted network holdings. The ability of a wireless provider to meet its customers' future data demands (and to deploy the resources necessary to capitalize on spectrum holdings sufficient to do so) is crucial to a sensible analysis. “[Me]rely possessing spectrum licenses is only a small fraction of what it takes to succeed in the wireless industry. Making effective use of that spectrum requires towers, switches, routers, security, maintenance, customer service, innovation and risky investment in all of these.”<sup>38</sup>

And yet such factors play little or no role in the current approach and most definitely no role in the purported analyses offered by petitioners. The structural presumption downplays or neglects entirely these sorts of qualitative factors.

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<sup>37</sup> See, e.g., Common Cause Petition, *supra* note 33, at 12-13 (“Though MVNOs provide valuable alternatives for consumers, they are customers of the major carriers and resellers of their services, not true competitors in the wireless market.”); Petition to Deny of Dish Network Corporation at 6, Applications of T-Mobile US, Inc. and Sprint Corporation Consolidated Applications for Consent to Transfer Control of Licenses and Authorizations, (2018) (WT Docket No. 18-197) [hereinafter “DISH Petition to Deny”].

<sup>38</sup> Manne, et al., *The Law and Economics of the FCC's Transaction Review Process*, *supra* note 33, at 25-26.

Indeed—and problematically—the Commission’s spectrum screen analysis in recent years has not nominally moved beyond a structural analysis even when it undertakes the market-by-market, “further competitive analysis” in transaction reviews where the screen is triggered. Despite paying lip service to consideration of factors other than market shares and concentration to assess likely competitive effects, the Commission has consistently cited as the relevant (although *nominally* not exclusive) variables for assessing competitive effects:

[T]he total number of rival service providers; the number of rival firms that can offer competitive service plans; the coverage by technology of the firms’ respective networks; the rival firms’ market shares; the combined entity’s post-transaction market share and how that share changes as a result of the transaction; the amount of spectrum suitable for the provision of mobile telephony/broadband services controlled by the combined entity; and the spectrum holdings of each of the rival service providers.<sup>39</sup>

Yet, none of these factors investigates any aspect of competition *other* than market or spectrum concentration; they simply restate in more detail precisely the structural analysis implied by the HHI test and spectrum screen.

It was not always this way. In fact, the Commission has, in previous years, acknowledged the clear limitations of HHIs and the spectrum screen, and undertaken a much fuller competitive analysis in its review of wireless transactions. Thus the Commission’s 2004 Order consenting (with conditions) to Cingular’s purchase of AT&T Wireless spends some 24 pages evaluating the likelihood and potential effects of horizontal and vertical conduct following the merger, and notes that:

[A] calculation of the HHI in a market is only the beginning of our analysis of the competitive effects of the merger, because its purpose is to eliminate from further analysis markets in which there is no potential for competitive harm. In our analyses of potential unilateral effects, coordinated interaction, and vertical issues, above, we have undertaken a

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<sup>39</sup> Application of AT&T Mobility Spectrum LLC and Eastern Colorado Wireless, LLC for Consent to Assign License, WT Docket No. 16-189, *Memorandum Opinion and Order*, 32 FCC Rcd. 64, 70 ¶ 15 (2017).



general assessment of factors beyond concentration that are important to determining likely competitive effects of the merger.<sup>40</sup>

This is as it should be, and we strongly urge the Commission to return to this approach in its review of New T-Mobile's spectrum holdings in the various local markets where the spectrum screen is triggered.

We do not have enough information to know what the real competitive effects of the proposed transaction would be in any relevant markets—so we do not here argue that the transaction would clearly be procompetitive in any (or all) particular markets. But, more importantly, *neither do any of the petitioners* who are asking the Commission to block this transaction—and to do so on the basis of unsupported and unsupported presumptions drawn from superficial and misleading market and spectrum shares. The Commission should dismiss these requests and engage in an actual competitive analysis of the sort it has performed in the past—and in contrast to its more recent practice of simply rehashing concentration analysis under the guise of competitive effects analysis.

**B. Simplistic inferences of competitive effects based on theoretical or econometric evidence from other industries are inappropriate and unpersuasive**

At least three petitioners assert that empirical and/or theoretical research shows that increased concentration *does*, in fact, lead to higher prices or other competitive harm. “[T]he well-documented and widely-accepted economic reality [is] that a substantial increase in industry concentration generally promotes higher industry prices.”<sup>41</sup> “Economic analysis and empirical data demonstrate that the increase in concentration to be produced by the merger will likely result in significant price increases.”<sup>42</sup> “[A] substantial increase in industry concentration is highly likely to place upward pressure on the price of wireless data.”<sup>43</sup> “[T]he empirical evidence is stronger today than it was a few years ago that the Horizontal Merger Guidelines’ presumption is a valid

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<sup>40</sup> Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation for Consent to Transfer Control of Licenses and Authorizations, WT Docket No. 04-70, *Memorandum Opinion and Order*, 19 FCC Rcd 21522, 21593 ¶ 184 (2004).

<sup>41</sup> DISH Petition to Deny, *supra* note 37, Exhibit A: Declaration of David E.M. Sappington, at 110.

<sup>42</sup> DISH Petition to Deny, *supra* note 37, at 7.

<sup>43</sup> *Id.* at 36.

predictor of post-merger harm.”<sup>44</sup> “[T]he highly predictive nature of empirical evidence provides strong support for the concern that highly concentrative mergers are harmful.”<sup>45</sup>

All of these petitioners rely on a recent merger retrospective study by Professor John Kwoka to justify their claims that empirical evidence supports the structural presumption.<sup>46</sup> Unfortunately, Professor Kwoka’s study—and the econometric literature of which it is a part—cannot bear the weight placed upon it.

To begin with, it must be noted that economists have been studying the relationship between concentration and various potential indicia of anticompetitive effects—price, markup, profits, rate of return, etc.—for decades. There are, in fact, hundreds of empirical studies addressing this topic. Contrary to the claims of some petitioners, however, even taken as a whole this literature is singularly unhelpful in resolving our fundamental ignorance about the functional relationship between structure and performance: “Inter-industry research has taught us much about how markets *look*... even if it has not shown us exactly how markets *work*.”<sup>47</sup>

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<sup>44</sup> CWA Comments, *supra* note 8, at 20.

<sup>45</sup> Petition to Deny of the American Antitrust Institute at 13, Applications of T-Mobile US, Inc. and Sprint Corporation For Consent to Transfer Control of Licenses and Authorizations (2018) (WT Docket No. 18-197) [hereinafter, “AAI Petition”].

<sup>46</sup> John Kwoka, *The Structural Presumption and the Safe Harbor in Merger Review*, 81 ANTITRUST L. J. 837 (2017).

<sup>47</sup> Richard Schmalensee, *Inter-Industry Studies of Structure and Performance*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 951, 1000 (Richard Schmalensee & Robert Willig eds., 1989). *See also* Timothy F. Bresnahan, *Empirical Studies of Industries with Market Power*, in 2 HANDBOOK OF INDUSTRIAL ORGANIZATION 1011, 1053-54 (Richard Schmalensee & Robert Willig eds., 1989) (“[A]lthough the [most advanced empirical literature] has had a great deal to say about measuring market power, it has had very little, as yet, to say about the causes of market power.”); Richard Schmalensee, *Horizontal Merger Policy: Problems and Changes*, 1 J. ECON. PERSP. 41, 49 (1987) (“After all, the link between concentration and the exercise of market power, which once seemed the bedrock of industrial organization, is now widely recognized to be weak. About all that remains of the ‘old learning’... is the belief that high concentration is a necessary condition for the effective exercise of market power.”); Frank H. Easterbrook, *Workable Antitrust Policy*, 84 MICH. L. REV. 1696, 1698 (1986) (“Today it is hard to find an economist who believes the old structure-conduct-performance paradigm.”).

Individually, these empirical studies point in multiple directions simultaneously, and variously assign a wide range of causes to the same observed correlations between concentration and price or firm profits.

On methodological grounds alone, it is clear that essentially no confidence can be placed in any of the... studies done in this area.... [L]awyers, judges, and economists should accord the studies no more importance than they deserve. On a scale of one to ten, the studies merit only ‘two-and-a-half cheers.’”<sup>48</sup>

Although that assessment was made in 1986, it remains the dominant view among industrial organization economists<sup>49</sup>—and John Kwoka’s study is no more reliable as a guide to policy in any particular case than are previous studies. Kwoka’s study is, in fact, a meta-analysis of some 60 merger retrospectives, and not itself an empirical assessment of the relationship between concentration and price in any particular case or industry. While this may save it from some of the more damning critiques of the typical concentration-price study, it creates additional problems for its relevance to this or any other particular case.<sup>50</sup>

One problem with a meta-analysis (or a rather casual study derived from it, as is Kwoka’s Antitrust Law Journal article) is that it does not readily allow for consideration of industry- or firm-specific characteristics that might undercut the applicability in certain cases of broad claims based on the larger study (unless, of course, that were part of the meta-analysis, which is not the case here). Kwoka’s study does not distinguish between (or even identify at all) the industries at issue in each case. Thus, there is no way to tell from the article, for example, whether the cases in which the underlying study found price increases following a merger involved an industry with

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<sup>48</sup> Almarin Phillips, *Market Concentration and Performance: A Survey of the Evidence*, 61 NOTRE DAME L. REV. 1099, 1107 (1986).

<sup>49</sup> See, e.g., Jonathan Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power* 24, (John M. Olin Program in L. & Econ., Stanford Law Sch. Working Paper Sep. 2006) (“The Chicago identification argument has carried the day, and structure-conduct-performance empirical methods have largely been discarded in economics.”).

<sup>50</sup> It must also be noted that the larger meta-analysis on which Kwoka’s Antitrust Law Journal article was based has been devastatingly critiqued. See Michael Vita & David F. Osinski, *John Kwoka’s Mergers, Merger Control, and Remedies: A Critical Review*, 82 ANTITRUST L.J. 361 (2018); Michael Vita, *Kwoka’s Mergers, Merger Control, and Remedies: Rejoinder to Kwoka*, 28 RESEARCH IN L. & ECON. 433 (2018).

economies of scale, high rates of advertising, high fixed costs, significant transportation costs, etc.

As it happens, we do know that the prior meta-study from which Kwoka's sample was derived (with the exclusion of nine transactions from that study) was heavily concentrated in a few industries:

The concentration of Kwoka's sample in a small number of industries renders it remarkably unrepresentative of recent merger activity. The three industry groups discussed above (transportation, energy, and journal publishing) represent 32 of his 49 transactions, i.e., two-thirds of his sample.<sup>51</sup>

And a simple glance at the list of transactions from which the data for the study were drawn reveals not a single one in the telecommunications industry.<sup>52</sup>

This is a problem because,

[a]n 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 quality improvements; and rather than cost reductions, price decreases may reflect quality degradation.<sup>53</sup>

Obviously, this is particularly true in rapidly innovating, high-fixed-cost industries in which the very purpose of a merger is, as here, to facilitate the production of higher quality products. Indeed, 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.<sup>54</sup>

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<sup>51</sup> Michael Vita & David F. Osinski, *id.*, at 368.

<sup>52</sup> *Id.* at 387-88.

<sup>53</sup> Michael D. Whinston, *Antitrust Policy Toward Horizontal Mergers*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2369, 2432 (Mark Armstrong & Robert H. Porter eds., 2007).

<sup>54</sup> See Orley Ashenfelter, et al., *Efficiencies Brewed: Pricing and Consolidation in the US Beer Industry*, 46 RAND JOURNAL OF ECONOMICS 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 and Fabio

Most importantly, a recent econometric study of consolidation in the mobile industry across OECD countries suggests that may indeed be what tends to happen following mobile operator mergers.<sup>55</sup> In the study—the only comprehensive empirical evaluation of the effects of mobile industry concentration that we know of—the authors (including the current chief economist of the European Commission’s competition authority, Tommaso Valletti) find:

[A]n increase in market concentration in the mobile industry can potentially generate an important trade-off. While a merger will increase prices, investment per operator will also go up. Based on our estimates, a hypothetical 4-to-3 symmetric merger would increase the bill of end users by 16.3% on average. At the same time investment per operator significantly increases by 19.3%, while total industry investment does not change significantly.<sup>56</sup>

As the authors point out, this finding suggests several possible interpretations that add an important gloss to the purported implications of previous studies:

[O]ur finding that concentration has no effect on industry investment suggests that efficiencies from coordinating investment among fewer firms are present. An obvious possibility is that there are fixed cost savings, because fewer firms avoid duplicating the same fixed costs. Such savings can be welfare improving, but do not benefit consumers. A second possibility is that there are economies of scope or spill-overs that generate marginal cost savings or quality improvements to the benefit of consumers.<sup>57</sup>

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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”).

<sup>55</sup> See Christos Genakos, Tommaso Valletti & Frank Verboven, *Evaluating Market Consolidation in Mobile Communications*, 33 ECON. POL’Y 45 (2018).

<sup>56</sup> *Id.* (quotations taken from working paper version of the article: Christos Genakos, Tommaso Valletti & Frank Verboven, *Evaluating Market Consolidation in Mobile Communications*, CESifo Working Paper 6509 (May 2017) at 3-4, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2992480](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2992480)). Note: The T-Mobile/Sprint merger is not a symmetric merger. For this and many other reasons the results of the study should not be considered directly predictive.

<sup>57</sup> *Id.* at 38-39.

No study—even a study of the mobile industry itself—can actually convey the competitive implications of a particular merger. The study cited above, for example, deals with very different companies, operating under more than 30 widely varying regulatory regimes, merging over a span of 12 years, and facing disparate market conditions and demand and usage patterns—among other things. These wouldn’t matter if concentration were the sole, or even the most significant, determinant of an industry’s competitiveness. But it is not. As the authors of the 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.<sup>58</sup>

Even to the extent that some studies have plausibly shown that an increase in concentration in a particular case led to higher prices, assuming the same result from an increase in concentration in other industries or other contexts is simply not justified by the state of the literature: “The most plausible competitive or efficiency theory of any particular industry’s structure and business practices is as likely to be idiosyncratic to that industry as the most plausible strategic theory with market power.”<sup>59</sup> Similarly, even where post-Chicago economists have identified theoretical conditions under which certain business conduct (including some mergers) “could be understood as competitive under some conditions but as reflecting the exercise or creation of market power under others,”<sup>60</sup> these are merely “possibility theorems,” the application of which to any particular circumstance requires far more empirical evidence than casually constructed concentration ratios.

As it happens, at least one recent theory paper formalizes the sensible intuition that, in any given market, there is likely some optimal number of firms that maximizes social welfare—and that optimum is never “the maximum” and sometimes it is equal

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<sup>58</sup> *Id.* at 39.

<sup>59</sup> Baker & Bresnahan, *Economic Evidence in Antitrust*, *supra* note 49, at 26

<sup>60</sup> *Id.*

to one.<sup>61</sup> As that paper discusses, the optimal number of firms varies with the strength of scale economies, such that consumers may benefit from an increase in concentration, even up to monopoly (i.e., where there is a “natural monopoly”), if economies of scale are strong enough. Thus, as the paper notes, “[t]his conclusion clearly suggests that the HHI should be augmented by some measure of economies of scale in the industry that would allow appropriate balancing between the legitimate fears of market power and the desire for production efficiency.”<sup>62</sup>

One can appreciate the desire to reduce incomprehensibly complex systems like the market to the predictable effects of a very few, readily quantified variables—or a single variable, as so many of the petitioners seem to want to do. But just because such oversimplification is easier to comprehend doesn’t mean it is correct. As one recent, comprehensive canvas of the literature concludes: “In summary, the literature documenting price effects of mergers has shown that mergers can lead to either price increases or decreases, in keeping with the central market power versus efficiency trade-off.”<sup>63</sup> This is a far cry from the resolute conclusions some petitioners would like to draw. Perhaps more apt is the conclusion of one critic of the concentration-price literature: “All of these studies illustrate once again that the identification of concentration with monopoly power is indeed a fragile ‘mental construct.’”<sup>64</sup>

**C. Purported lessons from international markets do not support the inference of a causal relationship between concentration in cellular networks and anticompetitive pricing**

In their comments urging the Commission’s rejection of the deal, Common Cause, et al. point to Canada as a cautionary example on mobile pricing. They claim that in Canada:

Three wireless companies, Bell, Telus, and Rogers, dominate the market, with a combined 89 percent market share. And there are strong

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<sup>61</sup> Rabah Amir, *Market Structure, Scale Economies and Industry Performance*, (Indiana Univ. Dep’t of Econ., Working Paper, 2010), available at [http://www.indiana.edu/~econdept/workshops/Spring\\_2011\\_Papers/AmirMarketStructure.pdf](http://www.indiana.edu/~econdept/workshops/Spring_2011_Papers/AmirMarketStructure.pdf).

<sup>62</sup> *Id.* at 26.

<sup>63</sup> Whinston, *Antitrust Policy Toward Horizontal Mergers*, *supra* note 53, at 2433.

<sup>64</sup> Phillips, *Market Concentration and Performance*, *supra* note 48, at 1105.

indications of competitive complacency and “accommodating reactions.” Canada’s mobile phone rates are among the highest in the world. And when Bell hiked its monthly plans by \$5 per month in January 2016, Telus and Rogers followed suit with their own rate increases within a week—the opposite of what we saw happen in our country. As one tech analyst put it, the Canadian carriers raise prices “because they can.”<sup>65</sup>

Those assertions were made upon the strength of a 2017 study by Nordicity for the Government of Canada that compared Canada’s cellphone and Internet access pricing to those in several other countries.<sup>66</sup> While it is true that Canada has high mobile phone prices, the picture, as the Nordicity study shows, is much more complicated than that—and does not support the assertion that having more primary (facilities-based) mobile network operators necessarily results in lower prices. In fact, the far more subtle complexity is readily apparent just from looking at the study’s data on services offered *within* Canada itself.

Each Canadian province is served by the three major national operators, and some areas are also served by at least one significant regional operator.<sup>67</sup> Typical “Mobile Wireless Telephony” packages—what we would think of as post-paid cellular packages in the United States—vary in price by as much as 40% depending on location. For example, an unlimited talk and SMS plan with 2GB of data costs CAD56.43 per month in Regina, Saskatchewan, but the same package costs CAD93.98 in Halifax, Nova Scotia.<sup>68</sup>

But this pricing disparity does not obviously appear to be causally connected to the number of facilities-based providers in an area, although the two may be *correlated*. Thus, it is true that Regina, Winnipeg, and Montreal consistently have the lowest

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<sup>65</sup> Common Cause Petition, *supra* note 35, at 19.

<sup>66</sup> NGL NORDICITY GROUP LTD., 2017 PRICE COMPARISON STUDY OF TELECOMMUNICATIONS SERVICES IN CANADA AND SELECT FOREIGN JURISDICTIONS (2017), available at [https://www.ic.gc.ca/eic/site/693.nsf/vwapj/Nordicity2017EN.pdf/\\$file/Nordicity2017EN.pdf](https://www.ic.gc.ca/eic/site/693.nsf/vwapj/Nordicity2017EN.pdf/$file/Nordicity2017EN.pdf) [hereinafter “Nordicity Study”]

<sup>67</sup> CANADIAN RADIO-TELEVISION AND TELECOMMUNICATIONS COMMISSION (CRTC), COMMUNICATIONS MONITORING REPORT AT SECTION 5.5 (2017), available at <https://crtc.gc.ca/eng/publications/reports/policymonitoring/2017/cmr5.htm#s55> [hereinafter “CRTC Report”].

<sup>68</sup> *Id.* at 15.



prices for cellphone plans and that each had four providers as of 2016 (whereas the higher-priced cities tend to have only three).<sup>69</sup> But the market composition of providers for each province appears to be contingent on a complicated mix of factors, any of which may be driving pricing more than the number of competitors. For example:

- Regina is dominated by a single regional provider, SaskTel,<sup>70</sup> with a 67% market share. Rogers, Telus, and Bell each had 17% or less of the market.<sup>71</sup> And, as of 2015, only 720,000 individuals subscribed to a cellular data plan in Saskatchewan.<sup>72</sup>
- Nova Scotia, among the most expensive provinces, had just 552,000 subscribers as of 2015.<sup>73</sup> Its provider makeup was distinct from Saskatchewan: Bell had 53%, Telus 34%, and Rogers 13% of the market.<sup>74</sup>

Superficially, it might seem that the presence of a fourth facilities-based provider in Saskatchewan has led to lower prices compared with Nova Scotia. But this simple counting of firms would disregard the curiously lopsided and unique distribution of subscribers across the province's providers. As it happens, however, the dominant provider, SaskTel, is a Crown Corporation wholly owned by the government of Saskatchewan and thus not subject to the same commercial objectives and constraints faced by private companies—nor, notably, does it pay federal income tax. It seems at least as likely that that attribute, rather than the addition of a fourth firm per se, is driving the different subscription patterns and rates in Saskatchewan.

Another important factor ignored in the comment submissions that seek to use Canada as a cautionary example is the mix of rural and urban service areas. Canada, as compared to the U.S., U.K., and Japan, has the most rural area per Internet

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<sup>69</sup> *Id.* at table 5.5.8.

<sup>70</sup> David Baxter, *SaskTel sees slight revenue dip due to increase competition and changing habits*, GLOBAL NEWS (Jul. 11, 2018), <https://globalnews.ca/news/4325607/sasktel-sees-slight-revenue-dip-due-to-increased-competition-and-changing-habits/>.

<sup>71</sup> CRTC Report at table 5.5.8.

<sup>72</sup> *Id.* at table 5.5.11.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* at table 5.5.8.

exchange.<sup>75</sup> The U.S. has approximately 17% less rural area per exchange, the U.K. has 75% less rural area per exchange, and Japan has 94% less rural area per exchange.<sup>76</sup> Of course, provision of rural services tends to be considerably more expensive and offer less return on investment. Not surprisingly, the difference in rural area between the U.S., Japan, and Canada largely tracks the observed prices for cellular plans in the Nordicity report.

The study also makes comparisons with other nations, but these offer no stronger support for Common Cause's putative case. Take Japan, for example, whose mobile wireless industry has been dominated by three large companies since 2013, when SoftBank purchased eAccess.<sup>77</sup> Only recently has a new facilities-based competitor threatened to enter the market.<sup>78</sup> Yet, in the Nordicity study, the prices of some Japanese plans ranked *lowest*, and others were among the lowest, despite the country having only three major competitors.<sup>79</sup>

Commenters have also asserted that mobile virtual network operators (MVNOs) exert insufficient market pressure on facilities-based providers to warrant their inclusion in the calculation of market shares. Common Cause, et al., for example, assert that

Many of the companies that the Applicants allege are strong enough competitors to discipline the conduct of the nationwide firms are [MVNOs], or resellers that purchase wholesale access from the nationwide wireless carriers and then sell that re-packaged service to consumers. While MVNOs are not entirely irrelevant in the FCC's analysis of wireless competition, they only account for small fraction of all wireless subscribers, and therefore play a limited role.<sup>80</sup>

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<sup>75</sup> RICHARD BENNETT, G7 BROADBAND DYNAMICS: HOW POLICY AFFECTS BROADBAND QUALITY IN POWERHOUSE NATIONS at fig. 6, (2014), available at <http://www.aei.org/wp-content/uploads/2014/11/G7-Broadband-Dynamics-Final.pdf>.

<sup>76</sup> *Id.*

<sup>77</sup> See *Rakuten's mobile ambitions could shake up Japanese market*, NIKKEI ASIAN REVIEW (Dec. 15, 2017), <https://asia.nikkei.com/Business/Rakuten-s-mobile-ambitions-could-shake-up-Japanese-market>

<sup>78</sup> *Id.*

<sup>79</sup> Nordicity Study *supra* note 66, at 37.

<sup>80</sup> Common Cause Petition, *supra* note 35, at 12-13.

DISH voiced a similar objection:

Instead of directly addressing the unilateral effects that would likely result from the four-to-three market consolidation, the Applicants create an overly broad product market definition. They cite competition by [MVNOs] as relevant players in the market. But MVNOs are likely not effective competitors to facilities-based carriers in light of these operators' dependence on their landlord carriers' consent; indeed, they have proven inadequate in many other countries.<sup>81</sup>

The evidence from other countries actually seems to contradict these assertions, however. Most crucially, that evidence suggests that market characteristics *other than* structure (like the presence of MVNOs) may be far more determinative of competitive effects.

One striking feature of the Japanese market is the appearance of MVNOs, which seems to have disciplined plan pricing. Starting in 2014, MVNO upstarts such as Rakuten began issuing bargain-priced plans (albeit with fewer features).<sup>82</sup> However, as Michael Mandel notes, lower plan prices likely came in part as a result of pressure from the government of Japan for mobile operators to stop bundling cell phones with plans, which had the result of *increasing* the cost of phones and *reducing* consumer choice.<sup>83</sup> It is not clear how much of the reduction in plan prices was offset by device price increases.

MVNOs seem to have had a similar effect in the UK, which has four main mobile network providers and dozens of MVNOs competing for retail customers.<sup>84</sup> The Nordicity study found that the UK had the lowest rates for three of the six standardized cellphone packages it evaluated (and second lowest rates for the other three).<sup>85</sup>

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<sup>81</sup> DISH Petition to Deny, *supra* note 37, at 6.

<sup>82</sup> *Id.*

<sup>83</sup> Michael Mandel, *Japan's Mobile Policy: Path to the Future or Obstacle to Economic Growth?*, Progressive Policy Institute, 2016, available at [https://www.progressivepolicy.org/wp-content/uploads/2016/11/PPI\\_JapanPaper.pdf](https://www.progressivepolicy.org/wp-content/uploads/2016/11/PPI_JapanPaper.pdf).

<sup>84</sup> Joe Minihane, *MVNOs: a guide to virtual networks*, USWITCH, Dec. 21, 2016, available at <https://www.uswitch.com/mobiles/guides/mvnos-a-guide-to-coverage-and-pros-and-cons-of-virtual-networks/>.

<sup>85</sup> *Id.* at 5-6.

In Canada, by contrast, although MVNO carriers exist, they have faced more hurdles than in the U.K. or Japan. For example, Canadian MVNO's have had challenges establishing Wi-Fi-first MVNO networks, in part due to regulatory barriers.<sup>86</sup> As a result, they may not (yet) exert the same competitive pressure in Canada as in other countries.

Common Cause, et al. also offered Austria up as a cautionary tale for 4-to-3 mobile operator mergers:

Austria provides another clear example of harms that result when a wireless market consolidates from four providers to three. Vienna's telecoms regulator estimated that smartphone bills in 2013 and 2014 were 50 percent to 90 percent higher. Traditional phone users, without data services, received bills 20 percent to 31 percent higher. The Austrian example confirms analysis that found higher relative wireless prices in other countries that have undergone four-to-three mergers.<sup>87</sup>

However, the data in the report cited by Common Cause, et al. followed mobile plan price trends for just two years after closing of the merger.<sup>88</sup> As a result, it misses important parts of the story—especially the role of MVNOs.

Merger conditions were imposed on the 2012 Orange-H3G transaction that required the new company to facilitate entry by MVNOs.<sup>89</sup> As of 2014 (two years after the merger), there were only two MVNOs in operation in Austria.<sup>90</sup> By 2016, however, according to a report by the Body of European Regulators for Electronic Communications, the number of MVNOs had risen to at least sixteen and the effects of the merger on mobile phone plans had become “considerably smaller and statistically

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<sup>86</sup> Rose Behar, *Canadian carriers prepare for major wireless reselling decision*, MOBILESYRUP (Mar. 15, 2018) <https://mobilesyrup.com/2018/03/15/canada-carriers-wi-fi-first-mvno/>.

<sup>87</sup> Common Cause Petition, *supra* note 35, at 11.

<sup>88</sup> RTR-GmbH, *Ex-Post Analysis of the Merger Between H3G Austria and Orange Austria* (Mar. 2016), at n.3 [hereinafter “RTR Report”], *available at* [https://www.rtr.at/en/inf/Analysis\\_merger\\_H3G\\_Orange/Ex\\_post\\_analysis\\_merger\\_H3G\\_Orange\\_RT\\_R.pdf](https://www.rtr.at/en/inf/Analysis_merger_H3G_Orange/Ex_post_analysis_merger_H3G_Orange_RT_R.pdf).

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

insignificant,”—in large part due to the entry of MVNOs.<sup>91</sup> Other reports suggest that by 2016 prices had fallen to 10% below pre-merger levels.<sup>92</sup>

A more parsimonious assessment of the putative lessons from other countries put forward by petitioners, then, suggests that (1) the absolute number of primary facilities-based mobile network operators is not the decisive factor in pricing of cell phone plans; (2) other factors, such as geography, demographics, and local regulations play a significant role; and (3) the presence of MVNOs can keep prices in check, even when their market share is low and/or concentration is high.

#### **D. Prepaid mobile service is more properly considered part of the overall mobile market**

While several petitioners object to the T-Mobile-Sprint merger on the grounds that it would reduce the number of competitors at a national level, they also identify prepaid retail services as a separate, distinct market in which the merger poses a threat to competition.<sup>93</sup> Like other petitioners, CWA asserts that the merger creates a particular problem in this ostensible market, again based on superficial concentration metrics:

For prepaid services, concentration levels and the change in concentration from the merger would be even greater. We estimated national HHIs based on the number of prepaid wireless subscribers for the branded services of AT&T, Sprint, T-Mobile, Verizon, and U.S. Cellular, all of which are facilities-based providers, as of the end of the second quarter of 2018.<sup>94</sup>

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<sup>91</sup> BODY OF EUROPEAN REGULATORS FOR ELECTRONIC COMMUNICATIONS, BEREK REPORT ON POST-MERGER MARKET DEVELOPMENTS—PRICE EFFECTS OF MOBILE MERGERS IN AUSTRIA, IRELAND AND GERMANY 22 (Jun. 15, 2018), available at [https://berec.europa.eu/eng/document\\_register/subject\\_matter/berec/download/0/8168-berec-report-on-post-merger-market-devel\\_0.pdf](https://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/8168-berec-report-on-post-merger-market-devel_0.pdf).

<sup>92</sup> Christian Oliver & Daniel Thomas, *Austrian Data Raise Red Flags for UK Telecoms Merger*, FINANCIAL TIMES (Mar. 14, 2016), available at <https://www.ft.com/content/e536751e-e9fc-11e5-888e-2eadd5fbc4a4>

<sup>93</sup> See, e.g., CWA Comments, *supra* note 8, at 9 (“In addition to the mobile telephony/broadband services market, the parties also compete in a narrower market for prepaid wireless retail services. The mobile wireless marketplace is differentiated between prepaid and postpaid offerings.”).

<sup>94</sup> *Id.* at 18-19.

However, the assertions that prepaid and postpaid wireless are in separate markets and that the combined firm would have an untenable share of the prepaid market, in particular,<sup>95</sup> do not reflect the market realities. Perhaps even more so than in the broader market, the reliance on concentration ratios derived from past or present market shares to infer competitive effects in this allegedly separate market is unsupported. Claims that prepaid services constitute a separate market are questionable, at best. While at one time there might have been a fairly distinct divide between pre- and postpaid markets, today the line between them is at least blurry, and may not even be a meaningful divide at all.

To begin with, the arguments regarding any expected monopolization in the prepaid market appear to assume that the postpaid market imposes no competitive constraint on the prepaid market. But that can't literally be true. At the very least, postpaid plans put a ceiling on prepaid prices for many prepaid users. To be sure, there are some prepaid consumers who don't have the credit history required to participate in the postpaid market at all. But these are inframarginal consumers, and they will benefit from the extent of competition at the margins unless operators can effectively price discriminate in ways they have not in the past (and which no commenter has demonstrated is possible or likely).

Equally important to assessing the claims of potential prepaid market monopolization, it is by no means clear that Verizon and AT&T wouldn't enter that market if supracompetitive profits were on the table. Doing so requires no infrastructure investment or any other high fixed cost—and both operators are *already* in the prepaid market.<sup>96</sup> Undercutting an effort to overcharge in that market would be trivial and would check any attempt by New T-Mobile to do so.

This highlights a more fundamental point: Competition is always more complex than critics sometimes assume. Under the evolving conditions of mobile phone use today, it does not clearly make sense to separate pre- and postpaid into separate markets for competition assessment purposes. The extent of competition yesterday (to say

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<sup>95</sup> See Comments of Kim Keenan at 7, Applications of T-Mobile US, Inc. and Sprint Corporation for Consent to Transfer Control of Licenses and Authorization (2018), WT No. 18-197 [hereinafter "Kim Keenan Comments"]; Common Cause Petition, *supra* note 35, at 26-27.

<sup>96</sup> See AT&T Prepaid Phones and Plans, available at <https://www.att.com/prepaid/index.html> (last visited Sept. 16, 2018); Verizon Prepaid Plans, available at <https://www.verizonwireless.com/prepaid/> (last visited Sept. 16, 2018).

nothing of past or current market shares) does not tell you what the extent of competition will be tomorrow under different conditions.

In this case, rivals are already in the market, the product is identical (only the billing mechanism changes), and it is a virtual certainty that prepaid phone users do not choose their phones and data plans based on company brand; no doubt price is typically the decisive factor for most prepaid plan customers. The ability for these competitors to enter and/or enhance their competition means that, even if considered a separate market, there is no basis for inferring a heightened competitive risk on the basis of current market shares as, for example, the CWA petition does.<sup>97</sup>

But, all that said, it is untenable to treat pre- and postpaid as separate markets in the first place. Leaving aside the ready ability of firms that don't currently have a large share of the prepaid market to expand their efforts to compete there, the business models of the firms operating in both markets have increasingly blurred the lines between them.

It was once the case that prepaid plans were relatively stripped-down, focused on telephony, and generally of lower quality (and price) (although arguably more expensive on a per-minute basis) than postpaid plans.<sup>98</sup> Today pre- and postpaid plans are broadly equivalent.<sup>99</sup> There are virtually no options available on standard postpaid plans that aren't also available on prepaid plans. Cutting-edge phones are available on prepaid plans, as is access to the same data and speeds.<sup>100</sup> Prepaid plans are

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<sup>97</sup> CWA Comments, *supra* note 8, at 18-20. Of course, this presumption is problematic to begin with; it is merely even *more* problematic here. See, *supra*, notes 68-92 and accompanying text.

<sup>98</sup> See for example the description of the differences between pre- and postpaid plans from 2009 in Oren Bar-Gill and Rebecca Stone, *Mobile Misperceptions*, 23 HARV. J. LAW & TECH. 49, 79-80 (2009). Very few of the distinctions mentioned there are applicable today.

<sup>99</sup> See Twentieth Mobile Competition Report, *supra* note 3, at ¶ 54 (“As postpaid offerings have shifted away from term contracts and equipment subsidies, service providers have adopted pricing plans and promotions for their high-end prepaid monthly service offerings that are similar to those they have for postpaid offerings.”).

<sup>100</sup> See, e.g., Philip Michaels, *No-Contract and Prepaid Phone Plan Guide: What You Need to Know*, TOM'S GUIDE, Jul. 6, 2018, available at <https://www.tomsguide.com/us/no-contract-phone-plans,review-2489.html> (“In some instances, prepaid service can be subject to slowdowns if a cellular network is particularly congested. That said, when we've tested LTE speeds, we've noticed no difference between the speeds at prepaid provider MetroPCS and its parent company, T-Mobile, or between Boost and its parent company, Sprint.”).

available with unlimited text, data, and voice, just like postpaid plans.<sup>101</sup> They use the same networks as postpaid plans, and in some cases (as for some MVNOs) they use multiple networks.<sup>102</sup>

Perhaps more importantly, the pricing of prepaid and postpaid plans is growing increasingly similar.<sup>103</sup> Particularly for prepaid plans offering unlimited data, text, and voice, the pricing structure is virtually identical, except payments are made for the next month, in advance, rather than for the prior month, in arrears.<sup>104</sup> But with unlimited plans, typical use in either case results in an identical, repeated, monthly payment. It is true, of course, that postpaid plans allow for somewhat more flexibility and the ability to incur and pay additional charges for irregularly used services, e.g., for extended international use. But for the vast majority of users, the two are functionally the same.

Finally, and significantly, MVNOs—the recent surge in which is surely in part responsible for the simplified pricing of postpaid plans—represent an extreme blurring of the lines between pre- and postpaid plans, and have brought their pricing structures to bear on both markets.<sup>105</sup> Moreover, as suggested by the experience of the UK and Austria noted above, the existence of these MVNOs, even when their market share is low, seems to exert significant competitive pressure.

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<sup>101</sup> See Twentieth Mobile Competition Report, *supra* note 3, at ¶ 54 (“For example, in April 2017, Verizon Wireless introduced an \$80-a-month plan for prepaid users that included unlimited talk, text and data, as well as unlimited text to more than 200 international markets and unlimited talk to Mexico and Canada. The move followed the launch of unlimited-data prepaid plans by Verizon Wireless’s three main competitors.”).

<sup>102</sup> CWA and others claim that prepaid and postpaid are separate markets because, following something like the *Brown Shoe* factors, they are marketed differently, sometimes have different prices, etc. Not only is that approach roundly criticized and profoundly anti-economic, even on its own terms the characteristics of the two products most relevant to consumers’ purchasing decisions are rapidly and consistently disappearing.

<sup>103</sup> Twentieth Mobile Competition Report, *supra* note 3, at ¶ 54.

<sup>104</sup> For example, T-Mobile’s “T-Mobile ONE No Credit Check” postpaid plan, <https://www.t-mobile.com/no-credit-check>, is virtually identical to its “T-Mobile ONE Prepaid” plan, <https://prepaid.t-mobile.com/prepaid/plans/plan-details?familyId=monthly-prepaid>, except that the prepaid plan includes tethering at only 3G speeds.

<sup>105</sup> Typically, MVNOs offer “prepaid subscription” plans, which, as noted above, are virtually identical to postpaid plans. See *supra* notes 98 to 104 and accompanying text.



### **III. Antitrust review of the merger must consider dynamic competition and pricing**

The American Antitrust Institute (among others) claims in its petition that “the competition eliminated by the merger would likely result in higher prices, less choice, lower quality, and slower innovation—to the detriment of U.S. wireless subscribers”<sup>106</sup> Such criticisms ignore or misrepresent the history and competitive dynamics of the wireless industry and offer an unsupportable basis for assessing the merger.

David Evans, in his declaration accompanying the parties’ public interest statement, lays out the extent and rate of investment and innovation in the wireless industry.<sup>107</sup> As Evans catalogues in significant detail, the telecommunications industry has gone through technological developments from 1G to the current 4G standards, with each successive generation bringing significant—and often unanticipated—applications to the benefit of consumers.<sup>108</sup>

As Evans further documents, to maintain a competitive edge during times of transition, carriers have continually made long-term investments in their networks, in several cases through mergers.<sup>109</sup> Regardless of short-term concentration metrics, the history of the industry shows distinctly that investment produces innovation which, in turn, stimulates even more investment. Without it, firms struggle to maintain competitiveness in the rapidly evolving technological environment.<sup>110</sup> As Evans notes:

Because competition among carriers centers on network capacity and performance, and particularly on relative capacity and performance compared with rivals, carriers typically react quickly to rivals’ investments by increasing their own investments. A carrier’s decision to invest in its

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<sup>106</sup> AAI Comments, *supra* note 45, at 3.

<sup>107</sup> Evans Declaration § IV.

<sup>108</sup> *Id.* § II.

<sup>109</sup> *Id.* § IV.

<sup>110</sup> See, e.g., *As Unlimited Data Takes Center Stage, T-Mobile Widens Speed Gap Between the Network Built for Unlimited ... and Everyone Else*, T-MOBILE BLOG (Apr. 21, 2017) (“This [reduced speed] is what happens when you unleash unlimited data on a network that wasn’t built to handle it.”), available at <https://www.t-mobile.com/content/t-mobile/corporate/news/articles/2017/04/tmobile-widens-lte-speed-gap-over-verizon-att-unlimited-plans.html>.

network therefore tends to spur industry-wide improvements in network quality.<sup>111</sup>

The consumer benefits of this cycle of innovation and competitive investment manifest not only in the form of higher-quality, advanced networks and applications, but consistently lower prices for both telephony (as shown above)<sup>112</sup> and data, as well.<sup>113</sup> The Evans Declaration (as summarized in the table excerpted below)<sup>114</sup> amasses persuasive evidence that prior network investments in next generation technologies, of the type that the parties claim this deal will facilitate, have led to consistent and significant declines in mobile data prices.

Figure 2

**Table 8**  
**Average Price per GB of Mobile Data for U.S. Smartphone Users**  
**2010 – 2017**

<b>Year</b>	<b>Smartphone Mobile Data Revenue (\$ Millions)</b>	<b>Smartphone Mobile Data Traffic (PB)</b>	<b>Data ARPU</b>	<b>Data Traffic per Smartphone User (GB/Month)</b>	<b>Price per GB of Smartphone Mobile Data</b>
2010	\$13,778.4	281	\$17.01	0.3	\$49.07
2011	\$26,032.8	672	\$20.06	0.5	\$38.75
2012	\$39,197.1	1,277	\$21.71	0.7	\$30.70
2013	\$58,646.5	2,310	\$25.85	1.0	\$25.39
2014	\$77,853.4	4,884	\$29.67	1.9	\$15.94
2015	\$83,026.4	7,661	\$27.89	2.6	\$10.84
2016	\$99,006.0	12,262	\$30.71	3.8	\$8.07
2017	\$105,321.5	16,901	\$32.19	5.2	\$6.23

Source: Exhibit 5A.

A proper analysis of the transaction’s likely effect must assess and account for this type of dynamic investment competition and its consequences. Simple market share statistics fail to do so.

<sup>111</sup> Evans Declaration ¶ 174.

<sup>112</sup> See *supra*, Figure 1.

<sup>113</sup> *Id.* § II.C.

<sup>114</sup> *Id.* at 41.

Moreover, because the time horizon necessary to commercialize the fruits of ongoing innovation and network investments is so long, the Commission should consider the merger's competitive effects over a longer term than the artificial two-year time period that the DOJ often uses. Important technological changes that benefit consumers often occur over a longer time horizon. Indeed, empirical evidence discussed above suggests that, in at least some mergers (including in the European mobile market), the initial appearance of higher prices is ultimately swept away by longer-term efficiency benefits.<sup>115</sup> Arbitrarily truncating the time-period analyzed is likely to introduce erroneous predictions of the merger's likely effect on consumers and the public interest.

The parties' primary rationale for the proposed merger is the combination of their complementary spectrum for a faster, better 5G network. But the full extent of the consumer benefits from that network roll-out would take time to fully materialize. As Chairman Pai has recognized:

5G promises exponential growth.... It could enable mobile broadband consumers to download 4K movies in seconds. It could enable cooperative collision avoidance for cars. It could enable remote robotic surgery. *And those are just a few of the things we can already foresee. History tells us that there will be transformative 5G applications that we can't yet conceive.*<sup>116</sup>

If the Commission were to artificially limit its analysis to the short term (as urged by, for example, DISH<sup>117</sup>), it would fail to fully analyze the transaction's competitive effects and broader impact on the public interest. This could, quite obviously, lead to a costly under-counting of the likely benefits of the transaction, much to the detriment of consumers.

Moreover, as mentioned above and as has been discussed by others (including Sprint and T-Mobile), this merger is largely—arguably primarily—about facilitating New T-Mobile's build-out of a nationwide 5G network.<sup>118</sup> Neither T-Mobile nor Sprint's current network footprint or spectrum holdings are sufficient to build-out a network

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<sup>115</sup> See *supra* notes 54 to 58 and accompanying text.

<sup>116</sup> Ajit Pai, Chairman, Fed. Comm'n Comm'n, Remarks at the Institute for Policy Innovation's Hatton W. Sumners Distinguished Lecture Series (Sept. 7, 2017) (emphasis added), *available at* <https://www.fcc.gov/document/chairman-pai-remarks-institute-policy-innovation-event>.

<sup>117</sup> See DISH Petition to Deny, *supra* note 37, at 43-44.

<sup>118</sup> See *supra* notes 5 & 6 and accompanying text.

on the scale, of the capacity, or on the timeline comparable to what is possible for AT&T and Verizon. As carriers begin to deploy 5G networks at scale, they will be creating a market that does not exist today—something that is particularly true given that 5G supports a range of different users and use cases than previous generations of cellular networks.

It seems fair to say that, absent this merger, this new market will be dominated by just two firms (AT&T and Verizon); *with* this merger, however, New T-Mobile would have significantly greater viability as a competitor in this new market. As such, in the market for 5G network services, this transaction should be evaluated as a 2-to-3 merger, not as a 4-to-3 merger.<sup>119</sup>

Even were one to discount the spectrum arguments in favor of this transaction, there is little dispute that either Sprint or T-Mobile is relatively undercapitalized in its 5G buildout compared to AT&T and Verizon. Assuming New T-Mobile's 5G network would draw approximately as many customers as the sum of Sprint and T-Mobile's independent networks, on a per-customer basis, the build-out of a single 5G network by New T-Mobile would result, by definition, in roughly half the fixed costs needing to be recouped from each customer as would the build-out of two 5G networks by each company separately. This rationalization of fixed costs across the two firms would invariably position New T-Mobile as a much stronger competitor against AT&T and Verizon in this new market.

Indeed, 5G use-cases include (among myriad other applications) both fixed wireless service and wireless backhaul. Buildout of its 5G network, therefore, could also introduce New T-Mobile as a viable competitor in the backhaul and residential broadband markets—further indicia of the increased competition and consumer benefits that may result from this merger.

And, as discussed previously, both AT&T and Verizon have very similar spectrum portfolios as they begin deployment of their 5G networks, but New T-Mobile would have a dramatically different mix of spectrum in its portfolio (notably, very little mmWave spectrum but a great deal of 2.5 GHz spectrum). This mix would lead to the buildout of a differently architected 5G network than that built by AT&T and Verizon. Given the extensive uncertainty that still exists in how 5G should be

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<sup>119</sup> See Larry Downs, TPI conference remarks, *supra* note 5.

deployed, including the different use cases that may or may not find substantial uptake on these new networks, the sort of experimentation that would result from having New T-Mobile's differently-architected network in the fray in competition against those of AT&T and Verizon represents the sort of dynamic competition in innovation that the Commission should seek out and encourage.

Other critics of the merger evince a similarly myopic bias. The CWA petition, for example, claims that:

The proposed transaction would eliminate the substantial head-to-head competition that currently exists between T-Mobile and Sprint. T-Mobile and Sprint have a long history of targeting each other's customers. Both firms have an equally long history of responding to each other's competitive moves. Because of how closely T-Mobile and Sprint compete for subscribers through their respective product and service offerings, the products and services of these two companies are likely to be close substitutes for a large number of consumers. A merger between firms selling differentiated products may diminish competition by enabling the merged firm to profit by unilaterally raising the price of one or both products above the pre-merger level.<sup>120</sup>

While it is conceivable that T-Mobile's intent is to buy up the spectrum and hoard it, such a strategy seems unlikely given the enormous cost of the merger. The reality is that the only way New T-Mobile could recoup the investment in Sprint is by building out its network and charging for enhanced services over a wider geographic footprint. In other words, in order to recover its \$59 billion investment, New T-Mobile would need actually to roll out new product.

Meanwhile, it is noteworthy that Sprint's market share has fallen consistently since 2011, from over 17% to under 12.5%.<sup>121</sup> Were this trend to continue, Sprint's capacity to invest in the roll-out of new, competitive product offerings—including, importantly, 5G—could be constrained. As Sprint and T-Mobile noted in their Public Interest Statement:

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<sup>120</sup> CWA Comments, *supra* note 8, at ii.

<sup>121</sup> *Wireless subscriptions market share by carrier in the U.S. from 1<sup>st</sup> quarter 2011 to 2<sup>nd</sup> quarter 2018*, STATISTA, available at <https://www.statista.com/statistics/199359/market-share-of-wireless-carriers-in-the-us-by-subscriptions/> (last visited Sept. 16, 2018).

Sprint plans to spend \$5-6 billion a year over the next three years to build a 5G network and, even with that spending, Sprint's 5G footprint would be geographically limited as noted above. And though Sprint's massive cost reductions have stabilized the company's finances and yielded positive free cash flow for the first time in many years, the company achieved that result only by shrinking the company and reducing network investment to historically low levels. Put simply, Sprint lacks the scale and resources to expand its network capital spending (as required to avoid falling further behind in network quality and to begin deploying 5G network technologies) and continue its aggressive spending (in the form of promotional pricing and other incentives) on customer acquisition.<sup>122</sup>

#### **IV. The effects of the merger on access**

Critics of the merger have also claimed that it would worsen the "digital divide." CWA writes, for example:

As the attached declaration of Dr. Andrew Afflerbach demonstrates, based on the information in the Public Interest Statement, the merged "New T-Mobile" would only provide at most marginally better broadband options than standalone T-Mobile in much of rural America. Indeed, Dr. Afflerbach concludes that "for the great majority of rural Americans, the level of coverage and capacity would be similar for the merged New T-Mobile network as it would be for the standalone T-Mobile network." In short, the merger would have no impact on the vast majority of rural America.

Moreover, the data in the Applicants' Public Interest Statement demonstrates that even six years after a T-Mobile/Sprint merger, "most of New T-Mobile's rural customers would be forced to settle for a service that has significantly lower performance than the urban and suburban parts of the network." The "digital divide" is likely to worsen, not improve, post-merger.<sup>123</sup>

And later:

In summary, [according to Dr. Afflerbach] the merger, "does not by itself provide a meaningful solution to the lack of adequate broadband

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<sup>122</sup> Public Interest Statement, *supra* note 4, at 97.

<sup>123</sup> CWA Comments, *supra* note 8, at 47.

options in most parts of the country.” The “digital divide” would continue to grow. As Dr. Afflerbach concludes, even under the best-case scenarios presented by the Applicants, the merged firm’s rural offerings would still fall dramatically short of those in urban and suburban markets and would not be dramatically improved relative to standalone T-Mobile and Sprint.<sup>124</sup>

Looking at the evidence it puts forward, the only way CWA can justify its assertion that the rural-urban digital divide will grow following the merger, is that urban access will improve but rural access won’t (or, at least, not by as much). There is no real suggestion that the merger will *impede* rural access relative to a world in which T-Mobile and Sprint do not merge.

And yet, in the absence of a merger, Sprint would be *less* able to utilize its own spectrum in rural areas than would New T-Mobile, because utilization of that spectrum would require substantial investment in new infrastructure and additional, different spectrum. Yet much of that infrastructure and spectrum is already owned by T-Mobile. It seems far more likely that New T-Mobile would make that investment, given the cost savings that are expected to be realized through the merger. So, while it might be true that urban customers will benefit *more* from the merger, rural customers will also benefit. It is impossible to know, of course, by exactly how much each group will benefit. But, *prima facie*, the prospect of improvement in rural access seems a strong argument *in favor* of the merger from a public interest standpoint.

That said, for New T-Mobile to be motivated to make investments in rural infrastructure, it must reasonably expect a return. This in turn requires that there be sufficient demand for the services enabled by the investments. Because demand is almost inevitably higher in areas of higher population density, such as rural towns, investment in those areas is likely to be greater. For that and a host of other reasons, it would be unrealistic to expect the merger of T-Mobile and Sprint on its own to lead to a dramatic reduction in the urban-rural “digital divide”—especially in the short-term. Of course, solving the digital divide is not a prerequisite for approval of this (or any) transaction.

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<sup>124</sup> *Id.* at 52.

In the longer-term, however, the roll-out of 5G will require more widespread deployment of fiber backhaul.<sup>125</sup> That will then enable fixed wireless connections over 5G (and wireless backhaul) to be deployed at lower cost to more rural locations where the cost of running cables is prohibitive. That cost saving could dramatically expand access in more rural locations. To the extent that the merger of T-Mobile and Sprint facilitates this roll-out through greater scale economies and cost savings (as discussed above) it is, in fact, likely to reduce the urban-rural digital divide.

Moreover, to the extent that Afflerbach's claims turn on the lack of expected return—for any mobile provider—from extensive rural buildout, it must be noted (as Afflerbach does not) that demand for wireless data services in rural areas is certain to increase as new applications with particular benefits to rural customers, such as increased development and deployment of precision agriculture technologies,<sup>126</sup> become more widely available. This will increase the incentive for New T-Mobile to build out its rural infrastructure—which it will be better positioned to do than would either T-Mobile or Sprint standing alone.

The merger is also likely to reduce another digital divide: that between wealthier and poorer consumers in more urban areas. The proportion of U.S. households with access to the Internet has for several years been rising faster among those with lower incomes than those with higher incomes, thereby narrowing this divide. (Since 2011, access by households earning \$25,000 or less has risen from 52% to 62%, while access among the U.S. population as a whole has risen only from 72% to 78%.)<sup>127</sup> In

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<sup>125</sup> See Joan Engebretson, *CEO: Verizon Wireless Network Densification Will Drive Deployment of Largest Fiber Network Nationwide*, TELECOMPETITOR, May 9, 2017, available at <https://www.telecompetitor.com/ceo-verizon-wireless-network-densification-will-drive-deployment-of-largest-fiber-network-nationwide/>.

<sup>126</sup> For example, farm vehicle manufacturer John Deere sees 5G as essential to some of its new services. See, e.g., Sue Marek, *John Deere's 5G Aspirations Include Streaming Video and Autonomous Tractors*, SDX CENTRAL, Mar. 21, 2018, available at <https://www.sdxcentral.com/articles/news/john-deeres-5g-aspirations-include-streaming-video-autonomous-tractors/2018/03/>. Others have observed that Internet-connected, precision farming devices will allow constant communication with online data sources that help AI-driven farm implements to optimize production for actual market demand. JEHOON SUNG, *THE FOURTH INDUSTRIAL REVOLUTION AND PRECISION AGRICULTURE 8* (2017) available at <https://www.intechopen.com/books/automation-in-agriculture-securing-food-supplies-for-future-generations/the-fourth-industrial-revolution-and-precision-agriculture>.

<sup>127</sup> NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, *DIGITAL NATION DATA EXPLORER* (Jun. 06, 2018), available at <https://www.ntia.doc.gov/data/digital-nation-data-explorer#sel=internetUser&demo=income&pc=prop&disp=chart>.



part, this has likely resulted from increased mobile access (a greater proportion of Americans now access the Internet from mobile devices than from laptops),<sup>128</sup> which in turn is the result of widely available, low-cost smartphones and the declining cost of mobile data. By enabling the creation of a true, third national mobile (phone and data) network, the merger will almost certainly drive competition and innovation that will lead to better services at lower prices, thereby expanding access for all and, if current trends hold, *especially* those on lower incomes.

Beyond its effect on the “digital divide” per se, the merger is likely to have broadly positive effects on access more generally. By facilitating a faster, more competitive nationwide roll-out of 5G networks, the merger will enable new users (including, e.g., machine-to-machine communications), and use cases, as noted above.

## **V. Conclusion**

Ultimately, the principles described above must be tested against the facts and evidence, many of which are also discussed above. But the FCC should take special care not to blithely follow an outdated, concentration-based framework that fails to reflect the importance of dynamic investment competition and thus fails to account for what are sure to be the bulk of the merger’s likely consumer benefits. To its credit, the current Commission appears to recognize this danger, having made clear that it will approach decision-making with humility and without predetermined views of how the market should be structured.<sup>129</sup> This is appropriate. Conducting a rigorous, fact-specific analysis of the deal—rather than imposing outdated and economically unsound presumptions based upon a politically preferred market structure—will far more accurately assess the consumer benefits that the transaction is likely to engender and will thus better promote the public interest.

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<sup>128</sup> NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION, NEW DATA SHOW SUBSTANTIAL GAINS AND EVOLUTION IN INTERNET USE (Jun. 06, 2018), *available at* <https://www.ntia.doc.gov/blog/2018/new-data-show-substantial-gains-and-evolution-internet-use>.

<sup>129</sup> See *supra* note 23.