ICLE International Center for Law & Economics

FTC Hearings on Competition & Consumer Protection in the 21st Century

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Comments of the International Center for Law & Economics

Topic 2: Whether the U.S. economy has become more concentrated and less competitive

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We thank the Commission for the opportunity to comment on "Competition and Consumer Protection in the 21st Century Hearings, Project Number P181201."

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ICLE's scholars have written extensively on competition and consumer protection policy. Some of our writings are included as references in the comment below. Additional materials may be found at our website: www.laweconcenter.org.

In this comment, we primarily address the second topic highlighted by the Commission ("Whether the U.S. economy has become more concentrated and less competitive").

The comment begins by (I) arguing against the simplistic inference of competitive effects from market structure. It then (II) posits that HHI indicators are insufficient to establish the existence of anticompetitive effects in mergers. Finally, we (III) criticize recent empirical research which purports to show a link between market concentration and anticompetitive effects (including both generalized studies and inapt international comparisons).

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I. Antitrust policy must avoid the simplistic inference of competitive effects from market structure

There is no rigorous economic support for claims that high concentration levels are a strong indicator of harm to competition or that they trigger a presumption of such harm in antitrust analysis.[2] Instead, such assertions are based on a simple inference of competitive effects from market structures, 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."[3]

For example, empirical analysis in the wireless sector 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.

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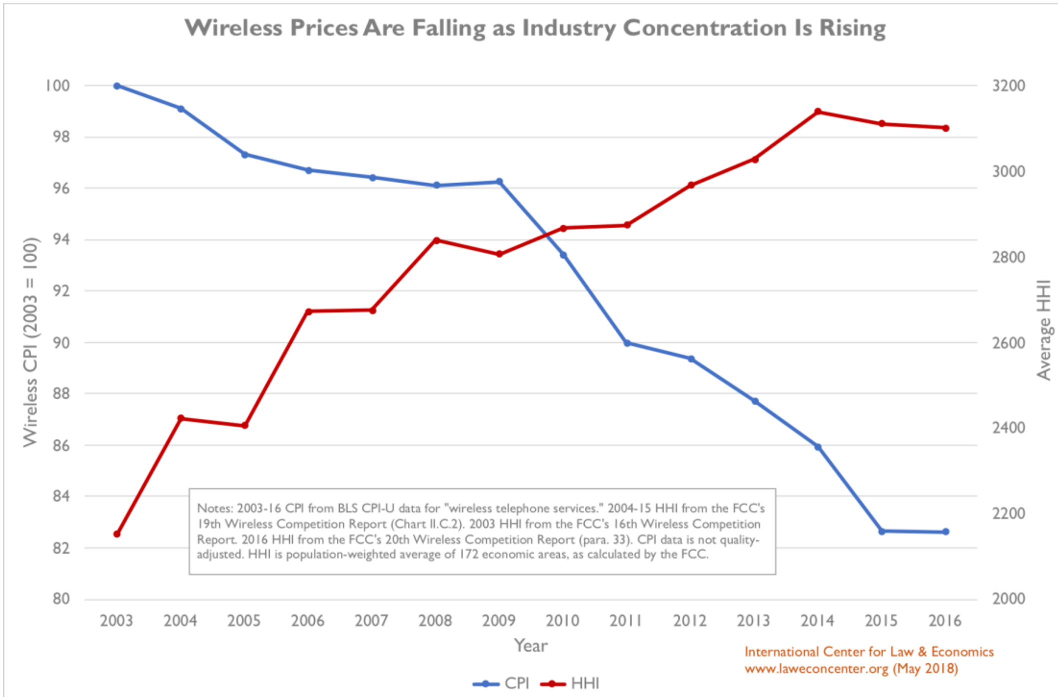
[2] In that regard, it should be noted that recent studies cast doubt on the idea that industry concentration has increased in the United States. *See, e.g.*, Rossi-Hansberg, Esteban, Pierre-Daniel Sarte & Nicholas Trachter, *Diverging Trends in National and Local Concentration*, NBER Working Paper No. w25066, 1-15 (2018) (The authors show that while concentration may have increased at a national level, it has decreased at a local level).

[3] *See* Harold Demsetz, *The Intensity and Dimensionality of Competition*, in HAROLD DEMSETZ, THE ECONOMICS OF THE BUSINESS FIRM: SEVEN CRITICAL COMMENTARIES 137, 140-41 (1995).

Figure 1



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.[4]

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.[5] Put simply: market share and industry concentration are poor predictors of competitive effects.[6]

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[4] 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"], Appendix G: Declaration of David S. Evans [hereinafter "Evans Declaration"], at 41 (Table 8).

[5] *See infra* notes 6 to 10 and **Error! Bookmark not defined.** to 39 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).

[6] *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.

The fact is that economists know very little about the relationships among market structure, firm size, competition, profits, prices, entrepreneurship, and innovation.[7] 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 the effect of increased concentration on competitiveness is ambivalent, at best.[8] And where effective competition requires significant up-front investment and economies of scale predominate (because of these high fixed costs)[9] the assumption that concentration leads to reduced competition is simply misplaced.[10]

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 firms to

[7] *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).

[8] *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 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.").

[9] *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).

[10] *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.")

> 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.[11]

Excessive reliance on obsolete, market-share-based analysis to evaluate antitrust practices would be tantamount to a rejection of modern antitrust principles and the economic learning that undergirds them. Moreover, such an analysis is likely to lead to decisions that *reduce* rather than *promote* consumer welfare and the public interest.

II. HHIs are insufficient to guide decisions regarding the likely competitive effects of mergers

Parties seeking to challenge mergers often rely substantially on structural presumptions, and notably on claims regarding a deal's assessment under the Herfindahl-Hirschman Index (HHI). In particular, they often urge consideration of the market's HHI and the transaction's purported effect on it, asserting that even the HHI alone counsels against a 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."[12] It is decidedly *not* an analytical tool capable of evaluating a market's competitiveness. This has notably been acknowledged by the FCC, which noted that "[m]arket share data are the beginning, not the end, of the competitive analysis."[13] Similarly, current FCC and DOJ leadership have made clear that they will not pre-judge the impact of mergers without first evaluating actual market evidence.[14] We applaud this position and urge policymakers to extend that circumspection to their assessment of the structural presumptions.

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:

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[11] 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.

[12] 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.

[13] 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).

[14] *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.").

> 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 examine whether other competitive factors confirm, reinforce, or counteract the potentially harmful effects of increased concentration.[15]

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."[16]

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.[17]

Today's wireless markets offer a neat case in point. In these markets, 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. For example, in its recently proposed merger, the new T-Mobile/Spring entity "is projecting it will invest nearly $40 billion over the next three years to bring the company into the 5G era."[18] 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 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

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[15] DEP'T OF JUSTICE & FED. TRADE COMM'N, HORIZONTAL MERGER GUIDELINES 19 (Aug. 19, 2010).

[16] *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.").

[17] *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).

[18] Public Interest Statement, *supra* note 4, at 125.

already happening, as Verizon and AT&T jockey for position[19] (and spend billions[20]) in the 5G space. Yet these trends run precisely counter to the presumption that concentrated markets inexorably harm competition and consumers.

For this reason, a proper competitive analysis should always include the assessment of competition from imperfect substitutes, technological developments that may or will alter potential 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, the presence and extent of switching costs, and possible intellectual property-based constraints on competition—among others.

Indeed—and problematically—the FCC's so-called "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 FCC 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.[21]

To summarize, structural presumptions, such as HHIs, are insufficient to establish the real competitive effects of a proposed transaction. It is thus always necessary to engage in an actual competitive analysis, and to avoid rehashing concentration analysis under the guise of competitive effects analysis.

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

[20] 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

[21] 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).

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

It is also important to address recent empirical research which claims to show that increased concentration *does*, in fact, lead to higher prices or other competitive harm. On such example is the recent merger retrospective study by Professor John Kwoka.[22]

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*."[23]

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.'"[24]

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[22] John Kwoka, *The Structural Presumption and the Safe Harbor in Merger Review*, 81 ANTITRUST L. J. 837 (2017).

[23] 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.").

[24] Almarin Phillips, *Market Concentration and Performance: A Survey of the Evidence*, 61 NOTRE DAME L. REV. 1099, 1107 (1986).

Although that assessment was made in 1986, it remains the dominant view among industrial organization economists[25]—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.[26]

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 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.[27]

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.[28]

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[25] *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.").

[26] 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).

[27] Michael Vita & David F. Osinski, *id.*, at 368.

[28] Michael D. Whinston, *Antitrust Policy Toward Horizontal Mergers*, in 3 HANDBOOK OF INDUSTRIAL ORGANIZATION 2369, 2432 (Mark Armstrong & Robert H. Porter eds., 2007).

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.[29]

For example, 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.[30] 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.[31]

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.[32]

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[29] *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 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").

[30] *See* Christos Genakos, Tommaso Valletti & Frank Verboven, *Evaluating Market Consolidation in Mobile Communications*, 33 ECON. POL'Y 45 (2018).

[31] *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). 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.

[32] *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.[33]

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."[34] 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,"[35] 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 to one.[36] 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

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[33] *Id.* at 39.

[34] Baker & Bresnahan, *Economic Evidence in Antitrust*, *supra* note 25, at 26

[35] *Id.*

[36] 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.

would allow appropriate balancing between the legitimate fears of market power and the desire for production efficiency."[37]

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."[38] This is a far cry from the resolute conclusions some scholars 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.'"[39]

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[37] *Id.* at 26.

[38] Whinston, *Antitrust Policy Toward Horizontal Mergers*, *supra* note 28, at 2433.

[39] Phillips, *Market Concentration and Performance*, *supra* note 24, at 1105.