

FCC SPECTRUM ALLOCATION RULES THAT PROMOTE COMPETITION ARE IN THE PUBLIC INTEREST

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I have been asked by T-Mobile US, Inc. (T-Mobile) to review and comment on a report recently published by George S. Ford & Lawrence J. Spiwak² that responds to a submission by the Department of Justice (DOJ) to the Federal Communications Commission (FCC) in the FCC's proceeding concerning mobile spectrum holdings.³ In its submission, DOJ identified a "serious potential" that large incumbents bidding in spectrum auctions would pursue an input foreclosure strategy against smaller rivals,⁴ and recommended that the FCC address this problem by adopting appropriate spectrum auction rules to promote competition in mobile wireless services markets.⁵

The Phoenix Report first contends that the FCC, in specifying auction rules, should ignore the Justice Department's concern that large incumbent wireless providers would recognize and incorporate the "foreclosure value" they would receive from spectrum acquisitions when formulating their bidding strategies.⁶ Second, it contends that incremental spectrum would best be allocated to larger incumbent providers.⁷ These claims are based primarily on a simulation model purporting to capture the significance (or lack thereof) of

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² George S. Ford, PhD, and Lawrence J. Spiwak, J.D., *Phoenix Center Policy Bulletin No. 33: Equalizing Competition Among Competitors: A Review of the DOJ's Spectrum Screen Ex Parte Filing* (May 2013) ("Phoenix Report"), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB33Final.pdf>.

³ *Ex Parte* Submission of the United States Department of Justice, WT Docket No. 12-269 (filed April 11, 2013) ("DOJ Submission"); *Policies Regarding Mobile Spectrum Holdings*, Notice of Proposed Rulemaking, 27 FCC Rcd 11710 (2012).

⁴ DOJ Submission at 16. DOJ explained that strong incumbents bidding in a spectrum auction will base their bids on more than the "use value" they would obtain from spectrum, but also on the "foreclosure value" they would receive from "forestalling entry or expansion that threatens to inject additional competition into the market." *Id.* at 11. Under such circumstances, auctioning the spectrum to the highest bidder may not lead to market outcomes that maximize consumer welfare. *Id.* at 10.

⁵ *Id.* at 1, 23; see also *id.* at 14 ("The Commission's policies, particularly regarding auction of new low-frequency spectrum, can potentially improve the competitive landscape by preventing the leading carriers from foreclosing their rivals from access to low-frequency spectrum.").

⁶ *E.g.*, Phoenix Report at 21 ("The DOJ's 'foreclosure' argument is alone an inadequate justification for intervention, and . . . its recommendations may be counterproductive.").

⁷ *E.g.*, *id.* at 11 ("As we show above, society is better off if the spectrum goes to the larger and more efficient providers of service, since basic economic analysis suggests that the use value of the bigger firms is larger than for the smaller firms.").

foreclosure value for auction bidding.⁸ As explained below, however, the Phoenix Report supports neither of these contentions.

In the Phoenix Report's discussion, the first of these conclusions – that the FCC should not be concerned with foreclosure – comes from simply assuming away the foreclosure problem. That is, the Report's model assumes that there is no benefit to consumers when larger firms are prevented from foreclosing smaller rivals from access to spectrum. The model is inherently uninformative because it was constructed to ignore the consumer benefits from enhancing competition.

In particular, the model's arbitrary assumptions⁹ of a homogenous product, linear demand, constant marginal cost, and a Cournot oligopoly solution concept predetermine its conclusion that the market price and aggregate consumer surplus cannot change regardless of whether larger firms or smaller firms obtain spectrum added to the market.¹⁰ These assumptions preclude the possibility that smaller firms would use new spectrum to compete more vigorously with larger ones, resulting in lower consumer prices and greater consumer surplus. The Phoenix Report model thus rules out the realistic possibility, highlighted by DOJ, that larger firms could protect prices from eroding by foreclosing smaller firms from access to new spectrum.¹¹

By effectively ignoring the substantial competitive threat that smaller firms could pose, the Phoenix Report also fails to account for the benefits to consumers that would be lost if large incumbents foreclosed smaller ones from access to additional spectrum, through an unreasonable assumption relating production efficiency to market share.¹² This assumption implies that smaller wireless services firms must be markedly less efficient than larger ones –

⁸ *Id.* at 6-10 (Section II.B). The Report also describes a second model not analyzed here. *Id.* at 14-16.

⁹ The Phoenix Report incorrectly asserts that DOJ presumes that wireless service providers sell a homogenous product and interact as Cournot competitors (*id.* at 6), citing in support DOJ's recent complaint challenging AT&T's acquisition of T-Mobile and its use of the Herfindahl-Hirschman Index (HHI) of market concentration. Yet that complaint contradicts both assumptions: it asserts that wireless service providers sell differentiated products and alleges coordinated competitive effects (which provides an economic basis for its reliance on the Herfindahl-Hirschman Index (HHI) of market concentration that does not presume a Cournot-Nash oligopoly interaction). See Complaint, *United States v. AT&T, Inc.*, No. 1:11-cv-01560 (Aug. 31, 2011), available at <http://www.justice.gov/atr/cases/f274600/274613.htm>.

¹⁰ Cournot models with linear demand and constant marginal costs (see Phoenix Report at 7) generate equilibrium prices that depend only on the sum of marginal costs and the number of competitors, not on how those costs are distributed. For example, in a model with two firms, the market price is the same whether there are two firms with marginal costs of 100 each or one firm with marginal costs of zero and another with marginal costs of 200.

¹¹ The Phoenix Report also claims, incorrectly, that DOJ assumes that large firms obtain zero use value from spectrum (*id.* at 9); contends, implausibly, that smaller providers "may well" have greater incentive to foreclose larger providers than the reverse (*id.*); and suggests, incorrectly, that an incumbent firm would be unable practically to foreclose a rival if it is required to build out and provide service on the spectrum it acquires. *Id.* at 11.

¹² *Id.* at 7 (smaller firms have roughly double the marginal costs of larger firms).

contrary to the conclusion of the FCC staff in its report on AT&T's proposed acquisition of T-Mobile, which highlighted the disruptive competitive role played by T-Mobile, a smaller firm, in pricing and technical innovation.¹³

The Phoenix Report's second conclusion – that incremental spectrum should be awarded to the largest firms – flows from the same suspect claim that competition offers no consumer benefits, after adding another suspect assumption: that smaller firms cannot lower costs or improve service quality as much as larger firms through a given spectrum block acquisition. In particular, the model assumes that spectrum acquisition is equivalent to a reduction in wireless provider marginal cost, and that this reduction is the same – in dollars – regardless of the size of the provider. The implication of this assumption is that a firm's benefit from acquiring a fixed amount of spectrum (more specifically, the cost savings to the wireless services provider) is the same *per customer at every firm* regardless of the number of customers each firm has. In other words, this assumption presumes, without proper justification, that the *total* benefit a firm receives from a given amount of spectrum is proportional to the firm's size: large benefits for a large firm and small benefits for a small firm.¹⁴

This assumption is inconsistent with the evidence suggesting that smaller providers can use incremental spectrum more efficiently than larger providers (independent of the small firms' role in enhancing competition). Mobile wireless services of any given geographic coverage and quality typically can be provided more efficiently using a mix of low and high spectrum frequencies rather than using either frequency exclusively.¹⁵ Moreover, the cost penalty for providing service without using a mix of spectrum frequencies is likely to be particularly high for the smaller providers, as they mainly employ high-frequency spectrum, with limited use of low-frequency spectrum.¹⁶ Given that the incremental spectrum at issue in the upcoming incentive auctions is in low-frequency bands, adding that spectrum would be expected to increase production efficiency more for small providers than for large ones.¹⁷

¹³ *Bureau Staff Analysis and Findings, attached to Applications of AT&T, Inc. and Deutsche Telekom AG for Consent to Assign or Transfer Control of Licenses or Authorization*, Order, 26 FCC Rcd 16184, ¶¶ 21-28 (2011), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DA-11-1955A2.pdf.

¹⁴ Phoenix Report at 7.

¹⁵ See *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*, Sixteenth Report, 28 FCC Rcd 3700, ¶ 127 (2013) (“[B]ecause the properties of lower and higher frequency spectrum are complementary, both types of spectrum may be helpful for the development of an effective nationwide competitor that can address both coverage and capacity needs.”).

¹⁶ See Jonathan B. Baker, “Spectrum Auction Rules That Foster Mobile Wireless Competition,” at 3 (March 12, 2013) (“Baker Report”), attached to Letter from Howard J. Symons, Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., to Marlene H. Dortch, Secretary, FCC, WT Docket No. 12-269 (filed March 12, 2013).

¹⁷ See DOJ Submission at 12 (“Absent compelling evidence that the largest incumbent carriers are already using their existing spectrum licenses efficiently and their networks are still capacity-constrained, the Department would normally expect the highest use value for new spectrum that is in the public interest to come from rivals to the

By assuming that consumers would not benefit if a large incumbent wireless provider is prevented from foreclosing the ability of smaller rivals to obtain additional spectrum and become more aggressive competitors, and by assuming that a given spectrum acquisition would lower cost or improve service quality more for larger firms than for smaller firms, the Phoenix Report reaches the preordained conclusion that any additional spectrum should be allocated to larger firms.¹⁸ In consequence, the Phoenix Report does not illuminate the question now before the FCC of how to specify rules governing its upcoming incentive auctions.¹⁹



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leading firms that could effectively make use of additional spectrum to expand capacity, improve coverage, or introduce new services in an effort to challenge the dominant firms.”).

¹⁸ A second model discussed in the Phoenix Report and not analyzed here goes farther to justify allocating spectrum to larger firms: it implies that society would be best served if smaller firms closed shop and handed out their existing spectrum to their larger rivals. Phoenix Report at 14 (“Specifically, if wireless firms face a binding spectrum constraint, then using standard models of Cournot competition, *fewer firms will lead to lower process, less congestion and higher quality* – turning the standard antitrust view that more competitors leads to lower prices on its head”) (emphasis in original) (“process” is presumably intended to be “prices”).

¹⁹ For my views on ways those rules can foster mobile wireless competition, see Baker Report.