



October 31, 2016

**VIA ECFS**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW, Room TW-A325  
Washington, DC 20554

**Re: *Business Data Services in an Internet Protocol Environment, WC Docket No. 16-143; Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans, WC Docket No. 15-247; Special Access Rates for Price Cap Local Exchange Carriers, WC Docket No. 05-25; AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, RM-10593***

Dear Ms. Dortch:

As Prof. Jonathan Baker has explained in numerous declarations filed in the above-referenced proceedings, the structure of the business data services market and the results of regression analysis demonstrate that incumbent LECs exercise market power in the provision of business data services, including the high-bandwidth (above 50 Mbps) and Ethernet services. In an ex parte letter filed on October 6, 2016, AT&T responds to Prof. Baker's most recent declarations by once again attempting to discredit the results of Prof. Baker's regression analysis.<sup>1</sup> But AT&T relies on inappropriate interpretations of specific components of the regression results. Moreover, AT&T fails to come to grips with the fact that the overall pattern of the regression results shows that incumbent LECs exercise market power in the provision of those services. That overall pattern is the key to interpreting the regression results and must not be ignored. When considered in light of market structure evidence that shows virtually no actual or potential competition, the regressions confirm that incumbent LECs have market power in the provision of business data services.

Much of AT&T's argument is based upon a basic error in interpreting regression results. AT&T incorrectly supposes that if a regression coefficient is not significant statistically, it must be zero in economic magnitude.<sup>2</sup> In fact, the coefficient itself is the best linear unbiased estimate of the magnitude of the effect in an ordinary least squares regression, whether significant

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<sup>1</sup> See Letter from Christopher T. Shenk, Counsel for AT&T, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 16-143 & 05-25, RM-10593 (filed Oct. 6, 2016) ("AT&T Letter").

<sup>2</sup> See *id.* at 5.

statistically or not.<sup>3</sup> Although the absence of statistical significance means that it is not possible to rule out a magnitude of zero, it is equally not possible to rule out statistically any other magnitude within the confidence interval implied by the significance test.<sup>4</sup> Thus, for example, the best interpretation of the estimate from the first regression equation for high bandwidth connections in the attached table, which is discussed in more detail below, is that competition from both in-building and in-block rivals leads to a cumulative 24.7 percent reduction in incumbent LEC prices. Although that particular estimate of the cumulative price reduction is not significant statistically (at a 5 percent level), and thus a magnitude of zero cannot be ruled out from this equation taken in isolation, it is also not possible to rule out a cumulative reduction in incumbent LEC prices as large as 51.0 percent. Moreover, as Prof. Baker has previously explained, when coefficients on measures of rivalry are statistically significant “in one regulatory treatment subsample but not another, or when one set of fixed effects are employed but not another, the estimated results that are not significant statistically do not preclude finding an inverse relationship” between price and rivalry.<sup>5</sup> In any event, Prof. Baker presents regression estimates of the cumulative effect of the presence of multiple in-building competitors on incumbent LEC prices that *are* statistically significant,<sup>6</sup> and “estimates of cumulative effects are in general more reliable than estimates of individual incremental effects with respect to precision and robustness.”<sup>7</sup>

In addition, AT&T implicitly suggests that the Commission should not draw conclusions from any regression result if there is any possibility, however unlikely, that the best interpretation could be wrong. That is not the standard the Commission should apply when evaluating evidence, statistical or otherwise. To do so would permit those opposing regulation—usually the incumbents—to prevail even if it is far more likely that consumer benefits will flow from new policies rather than Commission abstention. The Commission has the obligation to consider the regression results as a whole, along with other record evidence, when drawing conclusions about incumbent LEC market power. As Prof. Baker has explained, criticisms like AT&T’s that question whether the regression results are valid and informative “look at the trees without seeing the forest.”<sup>8</sup>

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<sup>3</sup> Supplemental Reply Declaration of Jonathan B. Baker on Competition and Market Power in the Provision of Business Data Services ¶ 14, WC Docket Nos. 16-143, 15-247, & 05-25, RM-10593 (filed Sept. 21, 2016) (“Baker Supp. FNPRM Reply Decl.”).

<sup>4</sup> *See id.*

<sup>5</sup> *Id.*

<sup>6</sup> *See* Reply Declaration of Jonathan B. Baker on Competition and Market Power in the Provision of Business Data Services at 39 tbl.1, WC Docket Nos. 16-143, 15-247, & 05-25, RM-10593 (filed Aug. 9, 2016) (“Baker FNPRM Reply Decl.”). In Phase II areas, the cumulative effects are significant with both county and census tract fixed effects. *See* Baker Supp. FNPRM Reply Decl. ¶ 12.

<sup>7</sup> Baker Supp. FNPRM Reply Decl. ¶ 19.

<sup>8</sup> *Id.* ¶ 11.

The attached table summarizes the cumulative effects of rivalry in all regressions for high-bandwidth connections presented in Prof. Baker's Aug. 9, 2016 declaration. The most important information in the table is reported in the last column: the regression results consistently show that the cumulative effect of rivalry on incumbent LEC prices for high-bandwidth connections are substantial—a price reduction between 25 percent and 50 percent—regardless of the way the regression is estimated. Not all of the reported estimates are significant statistically, but those that are not significant are large, much like those that are significant. Prof. Baker provides the best interpretation of these results in his Aug. 9, 2016 and Sept. 21, 2016 declarations: (1) greater competitive LEC rivalry reduces incumbent LEC prices for high-bandwidth connections (*i.e.* there is an inverse relationship between incumbent LEC prices and rivalry),<sup>9</sup> and (2) substantial rivalry (at least four in-building and four in-block rivals) leads to a substantial reduction in incumbent LEC prices (between 25 percent and 50 percent).<sup>10</sup>

AT&T also asks the Commission to suspend its judgment with respect to technical econometric issues involving the sample, fixed effects, clustering of standard errors, and the direction of biases. *First*, AT&T dismisses Prof. Baker's results because they differ from Prof. Rysman's without recognizing that Prof. Baker refined, rather than merely replicated, Prof. Rysman's approach.<sup>11</sup> Prof. Baker limited the sample to major providers and bandwidths and added controls to account for differences in the relationship between price and competition across those bandwidths and providers.<sup>12</sup> He also modified the way rivalry was accounted for and the way nearby rivals were identified.<sup>13</sup> AT&T does not question the appropriateness of these refinements.

To similar effect, AT&T claims that there is no evidence that the incumbent LECs exercise market power in Ethernet services.<sup>14</sup> But it is reasonable for the Commission to interpret Prof. Baker's results finding incumbent LEC market power at high bandwidths as showing that incumbent LECs exercise market power in the provision of Ethernet because most high-bandwidth connections are Ethernet connections. Moreover, AT&T's claim relies on regressions reported by Dr. Israel and Profs. Rubinfeld and Woroch that replicate Prof. Rysman's approach but are ill-suited for analyzing this issue because they do not employ Prof. Baker's refinements. Most notably, AT&T counts all firms with nearby fiber as "competitors" when evaluating the impact of competition on incumbent LEC prices for various service tiers, even though many owners of these facilities are not capable of providing service at the specific

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<sup>9</sup> *See id.* ¶ 12.

<sup>10</sup> *See* Baker FNPRM Reply Decl. ¶ 5; Baker Supp. FNPRM Reply Decl. ¶ 17.

<sup>11</sup> *See* AT&T Letter at 10.

<sup>12</sup> *See* Declaration of Jonathan B. Baker on Competition and Market Power in the Provision of Business Data Services ¶ 15, WC Docket Nos. 16-143, 15-247, & 05-25, RM-10593 (filed June 28, 2016) (refiled Jul. 14, 2016) ("Baker FNPRM Decl.").

<sup>13</sup> *See id.* ¶ 14.

<sup>14</sup> *See* AT&T Letter at 10.

bandwidth tiers they assess.<sup>15</sup> Analyses that include these irrelevant facilities obscure the competitive impact of nearby rivals on the price of incumbent LECs' business data service offerings. Refining the list of competitors assessed to correct for this deficiency, which Prof. Baker did in his regressions and which was not questioned or disputed by Prof. Rysman, shows evidence of incumbent LEC market power at bandwidths of up to 1 Gbps.<sup>16</sup> Specifically, Prof. Baker found that "the cumulative effect of competition from four in-building and four nearby providers is to lower prices for high-bandwidth connections by 25% or 43% (depending on which location fixed effects are employed)."<sup>17</sup>

*Second*, AT&T's discussion of the choice of fixed effects ignores Prof. Rysman's insightful observation:

Whether census-tract fixed effects or county fixed effects are more appropriate is difficult to say. Naturally, census-tract fixed effects better insulate regression results against unobserved heterogeneity. However, highly granular fixed effects can capture too much variation in the sense that they prevent us from making use of any regional variation in market structure, even if that variation is large or useful for identification purposes. Ideally, we look for results that are robust across specifications, and those become more apparent as we dig deep into these regressions.<sup>18</sup>

As the attached table indicates, the magnitude of the effect of rivalry on incumbent LEC prices reported by Prof. Baker is "robust across specifications" and therefore should be credited. It is instructive and appropriate to synthesize all results when interpreting the data, not just the results that AT&T favors. Even looking only to regressions with census tract fixed effects, as AT&T advocates, the cumulative price reduction from rivalry is both substantial and significant in the subsample for regions subject to Phase II price regulation.

*Third*, AT&T dismisses regression results that do not cluster standard errors by census tract rather than census block, but they do not show empirically that the choice of region over

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<sup>15</sup> See Baker FNPRM Reply Decl. ¶ 14. See also Reply Declaration of Jonathan B. Baker on Market Power in the Provision of Dedicated (Special Access) Services ¶¶ 6-7, WC Docket Nos. 05-25, RM-10593 (filed Feb. 19, 2016) (refiled Apr. 14, 2016).

<sup>16</sup> See Baker FNPRM Reply Decl. ¶¶ 8-10. See also Baker FNPRM Decl. ¶¶ 11-15 & nn.22-23.

<sup>17</sup> Baker FNPRM Reply Decl. ¶ 9.

<sup>18</sup> Prof. Marc Rysman, *Empirics of Business Data Services*, 31 FCC Rcd. at 4940, attached as Appendix B to *Business Data Services in an Internet Protocol Environment; Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans; Special Access for Price Cap Local Exchange Carriers; AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, Tariff Investigation Order and Further Notice of Proposed Rulemaking, FCC 16-54, 31 FCC Rcd. 4723 (2016).

which clustering is performed matters.<sup>19</sup> By contrast, Prof. Baker tested the consequences of clustering by census tract on the regressions he reported for the full sample of high bandwidth connections and found that doing so generally increased standard errors slightly without changing the results of any reported significance test.<sup>20</sup>

*Fourth*, AT&T's criticisms of Prof. Baker's regression results would have the Commission interpret empirical results with blinders as to market structure evidence and the likely direction of bias in the empirical analysis. Market structure evidence shows that (1) in most locations, incumbent LECs are the only last-mile providers of business data services; (2) in most of the remaining locations, incumbent LECs compete with only one competitive LEC rival; and (3) rivalry from nearby providers and other potential entrants is insufficient to ensure competitive prices.<sup>21</sup> With such limited rivalry, it is not surprising that the regression results show that incumbent LECs exercise market power in providing business data services.

*Finally*, AT&T ignores Prof. Baker's demonstration that regressions estimated on the business data services data are likely biased away from identifying an inverse relationship between price and rivalry. In his declarations, Prof. Baker provides a number of reasons why this is the case and refutes the arguments that have been offered to suggest otherwise.<sup>22</sup> Therefore, the Commission can reasonably credit the regression analyses even when some results are not significant statistically and when the occasional coefficient estimate has an implausible sign.

Please contact the undersigned with any questions regarding this submission.

Sincerely,



John T. Nakahata  
*Counsel to Windstream Services, LLC*

Attachment

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<sup>19</sup> See AT&T Letter at 8-9.

<sup>20</sup> See Baker FNPRM Reply Decl. ¶¶ 38-39 & n.81.

<sup>21</sup> See Baker Supp. FNPRM Reply Decl. ¶ 11.

<sup>22</sup> See *id.* ¶ 27; Declaration of Jonathan B. Baker on Market Power in the Provision of Dedicated (Special Access) Services ¶¶ 68-94, WC Docket No. 05-25, RM-10593 (filed Jan. 27, 2016) (refiled Apr. 14, 2016).

**CUMULATIVE ILEC PRICE REDUCTIONS FROM IN-BUILDING AND IN-BLOCK RIVALRY:**

**HIGH BANDWIDTH CONNECTIONS**

Source (Baker FNPRM Reply Decl.)	Type of Fixed Effects	Accounts for HFC Ethernet Availability	Subsample	Sum of Coefficients on Rivalry	Statistical Significance at 5% Level (Clustered robust standard errors)	Cumulative ILEC Price Reduction from Rivalry
Tbl. 1 Col. 3	Census tract	No	---	-0.284	No	24.7%
Tbl. 1 Col. 4	County	No	---	-0.56	Yes	42.9%
Tbl. 2b Col. 3	Census tract	Yes	---	-0.282	No	24.6%
Tbl. 2b Col. 6	County	Yes	---	-0.558	Yes	42.8%
Tbl. 3 Col. 3	Census tract	No	Customer is a provider	-0.562	No	43.0%
Tbl.3 Col. 4	County	No	Customer is a provider	-0.706	No	50.1%
Tbl. 3 Col. 7	Census tract	No	Region subject to Phase II regulation	-0.606	Yes	45.4%
Tbl. 3 Col. 8	County	No	Region subject to Phase II regulation	-0.752	Yes	52.8%