

**Before the
OFFICE OF MANAGEMENT AND BUDGET
Washington, D.C.**

In the Matter of)	
)	
Information Collection Being)	OMB Control No. 3060-XXXX
Submitted for Review and Approval to)	
the Office of Management and Budget)	ICR Reference No: 201311-3060-001
)	
Comprehensive Market Data)	
Collection for Interstate Special Access)	
Services, FCC 12-153)	
)	

Submitted in Response to 78 Fed. Reg. 73861 (2013)

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**PAPERWORK REDUCTION ACT COMMENTS OF AT&T INC.
REGARDING COMPREHENSIVE MARKET DATA COLLECTION
FOR INTERSTATE SPECIAL ACCESS SERVICES**

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January 8, 2014

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AT&T Services, Inc., on behalf of the subsidiaries and affiliates of AT&T Inc. (hereinafter collectively referred to as “AT&T”), respectfully submits these comments regarding the Federal Communication Commission’s (“FCC”) compliance with the Paperwork Reduction Act (“PRA”) in response to the Notice and Request for Comments¹ regarding a proposed data collection.

INTRODUCTION

The FCC requests authority to collect a variety of data that it says will allow it to evaluate competition in the market for services known as “special access.”² The PRA requires that any

¹ See Information Collection Being Submitted for Review and Approval to the Office of Management and Budget (OMB) by the Federal Communications Commission, Notice and Request for Comments, 78 Fed. Reg. 73861 (Dec. 9, 2013) (“*Federal Register Notice*”).

² “Special access” generally consists of a dedicated transmission link between two locations, and it is often provisioned using high-capacity lines (or circuits) that can carry large volumes of voice or data traffic.

such information collection have “practical utility” and that the requesting agency have the capability to process the information “in a timely and useful fashion.”³

As AT&T explained in comments that it submitted to the FCC and that also have been entered into the record in this Office of Management and Budget (“OMB”) proceeding,⁴ a key aspect of the proposed data request – specifically the FCC’s request for detailed data regarding the network facilities of all special access providers – easily satisfies the PRA. That data is both necessary and practically useful for resolving the competition questions raised in the FCC’s proceeding.⁵

At issue in the FCC’s proceeding are pricing rules that provide larger incumbent providers (including AT&T) with some of same flexibility as other types of special access providers (*e.g.*, cable companies, competitive local carriers, fixed wireless providers) in tailoring the terms and conditions of special access services to meet customers’ individualized needs. Some special access purchasers contend that the FCC’s existing rules are over-inclusive by granting pricing flexibility relief throughout a metropolitan area when competition may exist in only a portion of that area. Conversely, some special access providers contend that the existing pricing flexibility rules are, in fact, under-inclusive by failing to account for widespread facilities-based competition from cable, microwave wireless and other more recent entrants. The FCC has concluded that it does not have enough information to determine the true scope of

³ 44 U.S.C. §§ 3508, 3502(11).

⁴ Paperwork Reduction Act Comments of AT&T Inc., FCC WC Docket 05-25, (filed Apr. 15, 2013) (“AT&T PRA Comments”), available at http://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=201311-3060-001.

⁵ See generally *id.* at 2-3, 10-13.

competing facilities,⁶ in large part because many competitive providers of special access services have not voluntarily provided the agency with complete data on the scope and reach of their networks.⁷ The FCC thus appropriately determined that it was “necessary to obtain data from special access providers and purchasers *of all sizes*” to provide a comprehensive view of the facilities that are (or could be) used to provide special access services.⁸

So long as respondents fully and fairly comply with the FCC’s requests relating to special access facilities, this data meets the standards of the PRA, because it will allow the FCC to evaluate the extent of actual and potential facilities-based competition and to determine appropriate triggers for pricing flexibility regulatory relief. In particular, the facilities information collected in this process should allow the FCC to make administratively workable adjustments to its existing rules to the extent necessary. Further, because collecting data only from some providers would present an inaccurate and incomplete picture of competition, it is plainly necessary for the FCC to collect complete facilities information from *all* providers of special access services.

Another aspect of the proposed data collection effort, however, entails extraordinarily burdensome data requests that fail to satisfy the PRA. Specifically, the FCC proposes to ask

⁶ Report and Order, *Special Access for Price Cap Local Exchange Carriers*, 27 FCC Rcd. 10557, ¶ 7 (2012) (“*Pricing Flexibility Suspension Order*”); see also Government Accountability Office, Report to the Chairman of the House of Representatives Committee on Government Reform, *Telecommunications: FCC Needs to Improve Its Ability to Monitor and Determine the Extent of Competition in Dedicated Access Services*, GAO-07-80, at 42 (Nov. 2006).

⁷ See, e.g., Opp. of Federal Communications Commission to Petition for Writ of Mandamus at 21-23, *In re Comptel*, No. 11-1262 (D.C. Cir., filed Oct. 6, 2011) (“the Commission has faced obstacles in its efforts to gather the data it needs to make an informed decision on special access. For instance, in response to the FCC’s October 2010 request for special access data, fewer than 10 percent” of competitive service providers “submitted data concerning their experience in the special access market”).

⁸ Report and Order & FNPRM, *Special Access for Price Cap Local Exchange Carriers*, 27 FCC Rcd. 16318, ¶ 22 (2012) (emphasis added) (“*2012 Notice*”).

special access providers to compile extensively detailed monthly information, manually and at “very granular level[s],” concerning all of their charges billed for special access services at every building and location in the country,⁹ as well as any rate “adjustment, rebate, or true-up” and the “scope” and “reason” for each such rate adjustment.¹⁰ In all, the proposed pricing requests may include up to *thirty-four* sub-parts of information for *each* of the millions of dedicated special access circuits in place.¹¹ According to the FCC, it hopes to “massag[e]” these data¹² and then attempt a highly complex “multi-faceted market analysis” comprised of “panel regressions designed to determine how the intensity of competition (or lack thereof), whether actual or potential, affects prices, controlling for all other factors that affect prices.”¹³

As explained in more detail below and in AT&T’s FCC PRA comments, for several reasons these pricing requests have no “practical utility.”¹⁴ *First*, the FCC proposes to require providers to report pricing data “by circuit,” but most special access services are not priced on such terms. Instead, customers negotiate individual contracts that cover multiple locations (and often many thousands of circuits) and that offer “lump” discounts and credits applicable to a range of services (including services other than special access). There is no rational way to

⁹ *Id.*, ¶ 38, App. A ¶ II.B.4 (requesting pricing information “by rate element by circuit billed”); Federal Communications Commission, Wireline Competition Bureau, *Comprehensive Market Data Collection for Interstate Special Access Services*, Supporting Statement, Part A, at 9 (Dec. 7, 2013), available at http://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=201311-3060-001 (“Statement”).

¹⁰ *2012 Notice*, App. A ¶ II.B.5 (requesting information “whether the adjustment applies to a single rate element,” to “multiple circuits” or is “an overall adjustment that applies to every rate element on every circuit”).

¹¹ *Id.* ¶ II.B.4 (25 sub-parts); *id.* ¶ II.B.5 (9 sub-parts).

¹² Statement at 31.

¹³ *Id.* ¶ 68; *see id.* ¶ 67 (claiming that regressions will “determine where and when special access prices are just and reasonable, and whether [the Commission’s] current special access regulations help or hinder this desired outcome”).

¹⁴ AT&T PRA Comments at 4-8, 13-24.

derive a non-arbitrary “by circuit” price from these contracts, and thus the data has no practical utility. AT&T submitted to the FCC a declaration from two leading economists, Dr. Igal Hendel and Dr. Mark A. Israel (attached hereto as Exhibit A), who explain the numerous methodological problems with the regression approach the FCC proposes, given the realities of how special access services are provided and priced. *Second*, the FCC could not use the data in a timely manner. The FCC’s proposed pricing requests are so complex, detailed, and burdensome, and the work that would be required to “process” the data for use in the proposed regression analyses is so daunting, that it could take years before the regressions would yield any “results,” by which time the data and resulting analyses would be outdated.¹⁵ *Third*, the requested pricing information is not “necessary for the proper performance” of the agency’s regulatory functions.¹⁶ The FCC can adjust its pricing flexibility rules on the basis of the facilities data from all providers (and data from purchasers), and – especially because the FCC already possesses extensive pricing data in the tariffs and contract tariffs that are filed with the agency – it is simply not necessary to put the industry to the undue burden of developing detailed prices for each of millions of individual special access circuits (that are, in fact, typically purchased in bulk on negotiated terms).

The FCC does not refute these concerns. To the contrary, the supporting statements that the FCC submitted to OMB highlight the fact that the proposed pricing data collection effort cannot pass muster under the PRA. For example, FCC concedes that it is an “open question”

¹⁵ AT&T PRA Comments at 5-6, 17-19. The fact that the data to be collected will be at least 4 years old and no more recent than 2012 vintage simply underscores this concern.

¹⁶ 44 U.S.C. § 3508 (“Before approving a proposed collection of information, [OMB] shall determine whether the collection of information by the agency is necessary for the proper performance of the functions of the agency . . .”).

whether the proposed regressions will “yield meaningful or coherent patterns,”¹⁷ thus acknowledging that the collection would provide no more than a speculative potential or theoretical use, neither of which satisfies the PRA or OMB’s rules. Moreover, the FCC admits that, by collecting data on a very granular level, some respondents “will inevitably incur a significant burden,” and that, in particular, respondents “cannot simply upload automated records” and thus significant manual work, by “in-house resources or by hiring consultants,” will be necessary to respond to the many sub-parts of the proposed pricing data requests.¹⁸ These admissions demonstrate that the FCC’s pricing data collection is the type of speculative, cost-shifting information request that the PRA was intended to prevent.

The FCC nevertheless has declined to modify the pricing data it seeks to collect and requests that OMB approve this massive, burdensome, and ultimately pointless data collection, arguing – even in the face of its concession that the pricing data has at best only a theoretical and possible use in developing workable regressions – that there might be other uses for this information. As explained below, however, the FCC’s speculative claims do not satisfy the PRA’s requirements. Accordingly, while OMB should approve the FCC’s data requests regarding locations of network facilities, OMB should deny the FCC permission to collect the detailed and burdensome pricing data.

ARGUMENT

The PRA was enacted to “enhance the public benefit of the information collection process” and, in particular, to “minimize the paperwork burden” resulting from federal data collection efforts.¹⁹ Accordingly, an agency must obtain OMB approval before it can require the

¹⁷ Statement at 15.

¹⁸ *Id.* at 11, 16.

¹⁹ *Tozzi v. EPA*, 148 F. Supp. 2d 35, 38 (D.D.C. 2001); 44 U.S.C. § 3501(1).

submission of information.²⁰ OMB, in turn, should not approve an agency's data collection efforts unless the requested information satisfies the standards of the PRA. Under the PRA, OMB must determine whether proposed information collections are "necessary" for the "proper performance of the functions of the agency, including whether the information shall have practical utility."²¹ The PRA defines "practical utility" as "the ability of an agency to use information, particularly the capability to process such information in a timely and useful fashion."²² OMB's regulations further provide that "[p]ractical utility means *the actual, not merely the theoretical or potential, usefulness of information* to or for an agency, taking into account its accuracy, validity, adequacy, and reliability, and the agency's ability to process the information it collects . . . in a useful and timely fashion."²³

Under these standards, the FCC's proposed collection of massive amounts of "per circuit" pricing data does not satisfy the PRA, and OMB should not approve those requests.

As AT&T has explained and other commenters have echoed (*e.g.*, NCTA, ACA, SCS), it would be extremely burdensome, or even impossible, to provide meaningful location-based pricing. Special access providers typically do not sell special access "by circuit," particularly

²⁰ See 44 U.S.C. 3512; see also *Saco River Cellular, Inc. v. FCC*, 133 F.3d 25, 29-31 (D.C. Cir. 1998) (without OMB approval, an agency's data collection requests need not be followed).

²¹ 44 U.S.C. § 3508; see also *Tozzi*, 148 F. Supp. 2d at 38 ("The OMB must determine whether the [information collection] request is necessary to enable the agency to function and of public utility.").

²² *Id.* § 3502(11).

²³ 5 C.F.R. § 1320.3(l) (emphasis added). See also *id.* ("In determining whether information will have 'practical utility,' OMB must 'take into account whether the agency demonstrates actual timely use for the information . . . to carry out its functions'").

with respect to the large customers that account for the bulk of their business.²⁴ Specifically, special access tariffs and contracts routinely cover multiple locations and provide uniform prices, discounts, and credits, and also routinely cover multiple services in addition to special access services, including unregulated services.²⁵ With these bundled contract offerings, there simply are no meaningful “by circuit” special access prices that providers can collect and report.

Further, any attempt to derive “by circuit” prices in these circumstances would be a wholly artificial and arbitrary exercise. In many contracts, the parties have negotiated year-end customer credits (*i.e.*, rebates) that depend upon the customer’s annual aggregate purchases of all of the services – including services other than special access – and locations covered by the agreement.²⁶ Such contract-wide discounts could not be allocated to individual circuits – much less to individual services or locations – in any non-arbitrary way. In addition to such year-end credits and adjustments, customers often receive various credits and adjustments to their bills throughout the contract period to address particular issues and resolve disputes. Like the year-end credits, these credits and adjustments often cannot be attributed to individual circuits.

These problems are compounded by the fact that the FCC proposes to collect data from what it estimates to be between 1,700 to 1,800 different providers. As AT&T explained – and the FCC did not refute – companies maintain this data in different formats, and thus the agency would need to engage in a very long process to standardize tens of millions of records.²⁷ OMB

²⁴ AT&T PRA Comments at 25-26 (citing Igal Hendel and Mark A. Israel, *Econometric Principles That Should Guide The Commission’s Analysis of Competition for Special Access Services*, ¶¶ 29-33, 56-58 (Feb. 11, 2013) (“Hendel-Israel Decl.”), Attachment A to Comments of AT&T Inc., *Special Access Rates for Price Cap Local Exchange Carriers*, WC Docket No. 05-25 (filed Feb. 11, 2013) (“AT&T February 11 Comments”)).

²⁵ *Id.* at 25; *see also* Hendel-Israel Decl. ¶¶ 30-31.

²⁶ *See* AT&T February 11 Comments at 25 (citing Hendel-Israel Decl. ¶ 32).

²⁷ AT&T PRA Comments at 15-16.

already has disapproved an information collection request regarding the FCC's emergency backup power proceeding that posed similar problems.²⁸ In that disapproval, OMB found that the FCC had not demonstrated the practical utility of the information because of "the expected volume of submitted reports" and "the non-standardized format the information will be submitted in."²⁹ These threshold problems are, if anything, worse here.

Additionally, the FCC already possesses a substantial volume of pricing information for incumbents' special access services, in the form of tariffs and contract tariffs filed with the FCC.³⁰ If it were possible to derive meaningful, non-arbitrary per-circuit prices, the FCC could do so itself by reviewing these tariffs and the other location-based information the FCC is collecting. Collecting even more detailed pricing information from incumbents thus violates the PRA in an additional respect, because agencies may not ask regulated entities for information that the government already possesses.³¹

AT&T also has explained that it is highly unlikely the FCC could actually use the data, in a timely manner, to perform meaningful "panel regressions" to evaluate the market for special access services. The process of formulating, running, and interpreting the results of the regressions would be a lengthy one, particularly because running multiple regressions would

²⁸ See Notice of Office of Management and Budget Action, *Information Collection Regarding Emergency Backup Power for Communications Assets as Set Forth in the Commission's Rules (47 CFR 12.2)*, ICR Reference Number 200802-3060-019 (Nov. 28, 2008) ("Emergency Backup Power PRA Disapproval"), available at <http://www.reginfo.gov/public/do/DownloadNOA?requestID=212660>.

²⁹ *Id.* at 1.

³⁰ See 47 U.S.C. § 203 (requiring filing of tariffs for common carrier services).

³¹ See *Dole v. United Steelworkers of Am.*, 494 U.S. 26, 32 (1990) (the PRA "prohibits any federal agency from adopting regulations which impose paperwork requirements on the public unless the information is not available to the agency from another source within the Federal Government").

necessarily be an “iterative process,”³² and because accepted professional practice requires that the FCC conduct its modeling and analysis in a transparent manner.³³ This would require rigorous peer review and “a procedure that facilitates comments by interested parties *at each step of the process.*”³⁴ This course of action will also require many months. Given the rapidity with which the special access marketplace is changing, an analysis of historical *pricing* behavior would merely capture a snapshot of past market dynamics that would have little or no relevance for any forward-looking rules. The PRA is designed to prevent precisely this sort of enormous data compilation exercise that, upon its completion, offers little prospect of contributing a practical benefit to the core objectives of this proceeding. Indeed, in disapproving the FCC’s information collection request in the emergency backup power proceeding, OMB stated that the information “is subject to potential change before the FCC can process it.”³⁵ The same is true here.

The FCC’s responses to these points in its Supporting Statement only confirm that the pricing data requests violate the PRA. *First*, in response to AT&T’s showing that the agency could not conduct a meaningful and timely regression analysis because location-specific pricing data does not exist, the FCC makes a remarkable concession: it admits that “[i]t is an open question whether or not the results of a regression analysis will yield meaningful or coherent patterns from which inferences can be drawn.”³⁶ This concession alone establishes that the proposed pricing data requests violate the PRA. Under the PRA, an agency cannot subject

³² Hendel-Israel Decl. ¶ 39.

³³ *See id.* ¶¶ 35-40.

³⁴ *Id.* ¶ 39 (emphasis in original); *see also id.* ¶ 36 (“All aspects of analysis—from processing of raw data through final regression results—are generally subject to review by other experts.”).

³⁵ Emergency Backup Power PRA Disapproval at 1.

³⁶ Statement at 15.

entities to burdensome data requests on the mere grounds that the agency has a “potential” or “theoretical” use for the data; the data must have “actual . . . usefulness.”³⁷ But by admitting that it is – at best – an “open question” whether the requested data will “yield meaningful or coherent patterns,” the FCC’s Supporting Statement concedes that the proposed pricing data has only a potential or theoretical use, which is inadequate under OMB’s rules.³⁸

Second, the Supporting Statement contends that, even if (as is almost certainly true) the regressions would not result in meaningful or timely information, the requested “pricing data are still vital to any market analysis.”³⁹ According to the Statement, the FCC could use the data for three purposes: “to compare prices for similar services supplied at similar locations by different carriers;” to “compare prices for similar services supplied across different territories by the same carriers;” and to “compare price structures for similar services supplied at similar locations by different carriers.”⁴⁰ It is equally speculative, however, to believe that the pricing data – which, again, generally does not exist on a circuit-specific basis – can be easily used to make such comparisons. Among other problems, in order to “compare prices for similar services supplied at similar locations by different carriers,” the FCC would have to (1) determine what services are sufficiently “similar” to be compared (keeping in mind that AT&T alone offers 50 classes of

³⁷ See 5 C.F.R. § 1320.3(l).

³⁸ The Supporting Statement’s claim (at 15) that “there is no insight into whether or where competition disciplines price without first collecting information indicating what those prices are” is inaccurate. Competition *always* “disciplines” price, and, in a marketplace with multiple, competing, facilities-based providers, there is no need to collect information about prices to validate a claim that the prices are reasonable or appropriate. The FCC’s claim seems to indicate its belief that, if it collects all per circuit prices, it can then decide which price is “right” and which areas are sufficiently competitive. But there is no such “right” price. In competitive markets, prices go up and down, and vary from provider to provider, and purchaser to purchaser, based on a host of factors. See AT&T PRA Comments at 5.

³⁹ Statement at 15.

⁴⁰ *Id.* at 15-16.

special access service); (2) determine what locations are “similar” enough to warrant comparison, and (3) despite the difficulties described above, derive a non-arbitrary price for the specific circuits.

In any event, to the extent the FCC believes that it can in fact identify and compare “similar” services and locations, it could do so without collecting massive volumes of pricing data. Instead, the FCC could attempt to perform each of these comparisons by examining the tariff and contract terms on which special access services are offered by each provider. Particularly given the FCC’s extensive existing data on tariff and contract tariff prices, the additional collection of tens of millions of location specific prices is unnecessary and thus not permitted under the standards of the PRA.⁴¹

Third, in response to AT&T’s showing that the pricing data requests will substantially delay final agency action – to the point that, by the time the FCC completes its analysis, any conclusions will be outdated⁴² – the FCC counters only with a strawman, stating that “any data collection can be disparaged as a snapshot of the past and not the future.”⁴³ But AT&T has not claimed either that the FCC should collect no data or that the data it collects must be prospective. AT&T’s actual argument – to which the FCC has no meaningful response – is that the collection and analysis of the location data is all that is needed to address the regulatory task before the agency. That data collection could indisputably be accomplished on a much more timely basis

⁴¹ 44 U.S.C. § 3508 (“Before approving a proposed collection of information, [OMB] shall determine whether the collection of information by the agency is necessary for the proper performance of the functions of the agency”); *Dole*, 494 U.S. at 32 (the government cannot request information that it already has).

⁴² See AT&T PRA Comments at 5-6, 17-19.

⁴³ Statement at 16.

than the unprecedented – and pointless – pricing regression analysis the FCC claims it will undertake.

Fourth, the FCC’s Supporting Statement argues that, without pricing data, the FCC would be “forced to largely rely on a market structure analysis.”⁴⁴ But that is the FCC’s standard approach to assessing the need for and appropriate types of regulation.⁴⁵ A proper market structure analysis – one that accounts for competition through the extension of existing networks and rapidly evolving technologies and that uses available market conduct data – is fully capable of answering the FCC’s questions about special access services, as confirmed by established economics and decades of experience by the FCC and the Department of Justice.

Fifth, as to the burden, the FCC’s Supporting Statement admits that responding to the pricing data requests will be an extraordinarily labor-intensive, manual process.⁴⁶ AT&T’s prior comments provide additional detail regarding those processes and the massive amount of data to be processed.⁴⁷ The FCC’s blithe response is to say that, since it is inconceivable to believe the government could perform this work, it should be performed by private industry because it is “at least possible” for them to undertake these tasks by using “in-house resources or by hiring consultants.”⁴⁸ But Congress’s purpose in enacting the PRA was to avoid such burden-shifting,

⁴⁴ *Id.*

⁴⁵ See, e.g., *Pricing Flexibility Suspension Order*, ¶¶ 87-89 (citing to FCC proceedings, including merger proceedings, non-dominance orders, the *Qwest Phoenix Forbearance Order*, 25 FCC Rcd. 8622 (2010), and the *Competitive Carrier Proceeding*, in which the FCC performed a “structural market analysis” and examined “clearly identifiable market features,” such as market share, the number and size of competing firms, barriers to entry, demand elasticity, substitute services, and the existence of bottleneck facilities); see also FTC/DOJ Horizontal Merger Guidelines.

⁴⁶ Statement at 16 (“respondents cannot simply upload automated records”).

⁴⁷ AT&T PRA Comments at 22-24.

⁴⁸ Statement at 16.

to preclude private entities from “being buried under demands for paperwork,” and to “minimize the paperwork burden” on private industry to what was “actual[ly] useful” and “necessary.”⁴⁹ The fact that the FCC claims that “no amount of Commission resources”⁵⁰ could be marshaled to compile this data is a telling concession that the FCC’s requests are overbroad and extremely burdensome.

In this regard, the FCC’s burden estimates are substantially understated, even as an average.⁵¹ While the burden associated with compiling the locations of special access facilities is itself large, compiling such data from all providers is actually useful and strictly necessary, as AT&T and the FCC have explained. However, from AT&T’s perspective, the vast majority of the burden that would arise from the FCC’s proposed requests is associated with the pricing requests, which could require AT&T to compile up to 34 sub-parts of pricing data for each of the millions of circuits AT&T provisions.⁵²

As AT&T explained, during the 24 month period covered by the proposed data collection effort (all of 2010 and 2012), AT&T offered nearly 50 different classes of special access services and provisioned millions of individual circuits across all of its service areas. Even for those aspects of the information request that could be mechanized, a substantial amount of work will

⁴⁹ *Dole*, 494 U.S. at 32; 44 U.S.C. § 3501(1); 5 C.F.R. § 1320.3(l).

⁵⁰ Statement at 16.

⁵¹ See AT&T PRA Comments at 7, 21-24.

⁵² The burden analysis set forth in the FCC’s Supporting Statement is skewed in no small part by its selective reliance on certain sources of data. For example, the Supporting Statement chose BT Americas as the fixed cost baseline, despite the fact this North American outpost of the U.K. telecom incumbent does not appear to be either a significant provider or purchaser of facilities-based U.S. special access services. If the FCC had instead used the average estimated times of the U.S. based provider/purchasers that filed jointly with BT, its estimated fixed cost would have more than doubled. Similarly, the FCC appears to have disregarded high estimates it viewed as outliers (*e.g.*, Comcast, one of the largest cable entities in the country, which also is a significant supplier of special access), but left in the lowest estimates, even where they were unsupported (*e.g.*, BT, tw telecom).

be required to develop and run queries – and to verify the results manually. In this regard, AT&T would need to develop queries for each of its five regions, which in turn would need to be run against *16 different billing tables*.

This mechanized work by itself is complex and substantial, but it pales in comparison with the effort associated with the vast amounts of manual processing that would need to occur, primarily to answer the sub-parts of the data requests relating to discounts, adjustments, and other credits.⁵³ Assuming, *arguendo*, it is even possible to derive a meaningful way to apply lump-sum, region-wide, or multi-service discounts to individual circuits, performing the actual work would require teams of people to engage in the manual review of tens of millions of billing records. It simply is not feasible for providers to undertake such a process. Instead, if the requests stood in their present form, providers likely would have to employ some workaround or shortcut to approximate the information sought in these subparts of the request or perhaps even just submit a “data dump” of the gross billing information. But the problem posed by the pricing data requests cannot be cured through such shortcuts or even simply by excising the subparts of the requests that would entail significant manual intervention. Obviously, either approach would result in a compromised data set and even more deeply flawed regression analyses. The only correct solution under the PRA is to eliminate the set of pricing questions in its entirety.

⁵³ *E.g.*, 2012 Notice, App. A, ¶¶ II.B.4.v-aa; II.B.5.b-i.

CONCLUSION

For the foregoing reasons, the Office of Management and Budget should conclude that pricing requests described and cited herein violate the PRA and should be withdrawn, but should otherwise approve the FCC's data requests.

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EXHIBIT A

**ECONOMETRIC PRINCIPLES THAT SHOULD GUIDE THE
COMMISSION'S ANALYSIS OF COMPETITION FOR SPECIAL
ACCESS SERVICE**

Declaration of Igal Hendel and Mark A. Israel

February 11, 2013

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I. INTRODUCTION AND OVERVIEW

A. QUALIFICATIONS

1. Igal Hendel

1. I am Igal Hendel. I am Ida C. Cook Professor of Economics at Northwestern University. I received my Ph.D. from Harvard University in 1994. From 1994 to 2000, I taught at the Economics Department at Princeton University, and from 2000 to 2004, I was a member of the Economics Department at the University of Wisconsin-Madison.
2. I currently teach Industrial Organization, the area of economics that studies imperfectly competitive markets, at both the graduate and undergraduate level. I have previously taught Microeconomics, Econometrics, and Industrial Organization.
3. I am currently Associate Editor of the *American Economic Review* (since 2009). I have previously served as Editor of the *International Journal of Industrial Organization* (2002 to 2004), as Editor of the *Rand Journal of Economics* (2005 to 2011), as Associate Editor of the *Journal of Industrial Economics* (2001 to 2006), on the editorial board of the *Journal of Economic Literature* (2004 to 2008), and on the Board of Editors of the *American Economic Journal: Microeconomics* (2008 to 2009).
4. My research (primarily industry studies) has focused on demand estimation, contracting, price discrimination, non-linear pricing, and markets with asymmetric information. It has appeared in leading economic journals, including the *American Economic Review*, *Econometrica*, the *Journal of Political Economy*, the *Quarterly Journal of Economics*, the *Review of Economic Studies*, and the *Rand Journal of Economics*.
5. My consulting activities have involved econometric analysis and demand estimation.

2. Mark A. Israel

6. I am a Mark A. Israel. I am a Senior Vice President at Compass Lexecon, an economic consulting firm, as well as Managing Director of the Washington, DC office. From August 2000 to June 2006, I served as a full-time member of the faculty at Kellogg School of Management, Northwestern University. I received my Ph.D. in economics from Stanford University in 2001.

7. At Kellogg and Stanford, I taught graduate level courses covering topics including business strategy, industrial organization economics, and econometrics. I specialize in the economics of industrial organization, which is the study of imperfectly competitive markets and includes the study of antitrust and regulatory issues, as well as applied econometrics and the economics of information. My research has been published in leading economics journals including the *American Economic Review*, the *Rand Journal of Economics*, the *Review of Industrial Organization*, and *Antitrust Source*.

8. I have worked in consulting at Compass Lexecon since 2006, where I have applied theoretical and econometric methods to the analysis of mergers and related antitrust issues, intellectual property, class certification, and damages calculations. My work has involved a range of industries such as communications, cable television, various other high technology industries, airlines, railroads, consumer beverages, financial markets, pharmaceuticals, and publishing. My consulting work has included submission of expert reports, declarations, and affidavits to multiple government agencies and federal courts.

B. OVERVIEW AND ASSIGNMENT

9. Special access services are dedicated local communications circuits provided by incumbent local exchange carriers (“ILECs”).¹ Other communications service providers frequently use these services (or substitutes) as inputs to offer services to their retail customers. In 1999, in response to developing competition, the Federal Communications Commission (“Commission”) adopted “pricing flexibility” rules designed to relax regulation of ILEC special access services. The Commission adopted triggers for pricing flexibility based on the extent to which competitive local exchange carriers (“CLECs”) have collocated portions of their competing fiber networks at ILEC central offices. The Commission is now reviewing whether its 1999 rules are “working as predicted.”²

10. As part of its review of special access rules, the Commission has initiated a process that will require “providers and purchasers of special access service and certain other services to submit data, information, and documents to allow the Commission to conduct a comprehensive evaluation of competition in the special access market.”³ The Commission proposes a “one-time, multi-faceted market analysis,” the purpose of which is to “determine

¹ Special access services can be used either for interstate services, which are regulated by the Commission, or for intrastate services, which are regulated by state public utility commissions. In this Declaration, unless otherwise specified, we limit our discussion of special access service to the interstate services regulated by the Commission.

² *In the Matter of 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*, WC Docket No. 05-25, RM-10593, Report and Order and Further Notice of Proposed Rulemaking, December 18, 2012 (hereinafter *FNPRM*), ¶ 12.

³ *FNPRM*, ¶ 13.

where and when special access prices are just and reasonable, and whether our current special access regulations help or hinder this desired outcome.”⁴

11. We have been asked by counsel for AT&T Services, Inc. (“AT&T”) to review and comment upon the econometric analyses proposed by the Commission, particularly with regard to steps that can be taken to improve the prospects that these analyses yield accurate results. We have also been asked to consider whether the Commission should consider alternative analyses either in lieu of, or in addition to, the “one-time, multi-faceted” regression approach proposed in the *FNPRM*.

C. ECONOMETRIC CONSIDERATIONS AND CONCLUSIONS

12. A key component of the market analysis proposed by the Commission is an econometric analysis, built around the estimation of panel data regressions.⁵ Panel data regressions are a type of statistical analysis that uses data consisting of repeated observations on a cross-section of objects (*e.g.*, areas or products).⁶ The use of panel data can, in certain circumstances, allow the analyst to control for unobservable variables. In particular, by using comparisons over time within the same unit, “fixed effect” panel regressions attempt to hold the other relevant unobservable variables constant.

⁴ *FNPRM*, ¶ 67.

⁵ *FNPRM*, ¶ 68.

⁶ Jeffrey M. Wooldridge (2002), *Econometric Analysis of Cross Section and Panel Data*, The MIT Press: Cambridge, Chapter 1. The cross-section of objects can be defined at various levels of detail—for example, one could consider a cross-section of average prices by MSA, or a cross section of prices of specific products, sold by particular providers, to particular buyers, in particular MSAs.

13. In the present context, the Commission proposes to study the determinants of special access prices by relating changes in special access prices over time to changes in market structure (*e.g.*, number of competitors) over the same time period within the same cross-sectional unit. Much of the discussion in this Declaration identifies where there is a significant risk that this proposed regression analysis will generate misleading results because the assumptions required for the validity of the estimation do not hold.

14. The Commission proposes to collect two years' worth of data on facilities locations and billings (including the type and amount of service, the price paid and the identity of the customer).⁷ Specifically, the Commission proposes to collect data for special access services including DS1s and DS3s, and packet-based dedicated services (*e.g.*, Ethernet), as well as best efforts business broadband Internet access services and fixed wireless broadband services. The Commission proposes to use the collected data from 2010 and 2012 to construct measures of market structure (*e.g.*, locations and nature of network connections serving locations), price (based on monthly billing data), and demand (*e.g.*, sales and characteristics of the services provided).⁸

⁷ The Commission proposes to collect year-end data from 2010 and 2012 on facilities information (*e.g.*, location data) and monthly billing data for 2010 and 2012. As we discuss below, the fact that the Commission only proposes to collect end-of-year data on locations means that it will effectively only have at most two observations for each cross-sectional unit of observation. (*FNPRM*, Appendix A, § II.)

⁸ *FNPRM*, ¶ 68. Notably, the Commission in the *FNPRM* did not propose to seek information about buyer characteristics, eliminating any ability to control for pricing differences based on differences in buyer power or other buyer characteristics.

15. Using these data, the Commission proposes to estimate panel regressions designed to assess the effect on price of actual and potential competition between facilities-based providers, controlling for other factors that influence the price of special access services including, among other things, the characteristics of the service and factors affecting the costs of providing the service.⁹ Recognizing the burdensome data collection required to conduct its analysis, the Commission characterizes its approach as a “one-time” analysis. Therefore, one important goal of the Commission’s proposed analysis is to “identify reliable new proxies for special access competition, which could be employed going forward to evaluate petitions for pricing flexibility in a consistent, streamlined manner.”¹⁰

16. The *FNPRM* describes in only general terms the type of econometric analysis that the Commission anticipates conducting: It notes that “[t]he precise form of econometric modeling we conduct will be dependent, in large part, on the nature and the quality of the data produced in response to the Order.”¹¹ Given the uncertainty inherent in the Commission’s proposed approach, it is critical that the Commission engages in a transparent process designed to reach well-supported conclusions based on robust and replicable analysis.

17. In the remainder of this Declaration, we discuss general econometric principles that should guide the Commission’s efforts, the specific and substantial challenges the Commission faces should it proceed with its proposed approach, and the potential value of

⁹ *FNPRM*, ¶ 68.

¹⁰ *FNPRM*, ¶ 78.

¹¹ *FNPRM*, ¶ 68.

certain alternative approaches that are consistent with the Commission's stated logic for its pricing flexibility rules and that may be more straightforward and more robust than the analysis the Commission has proposed to undertake. We reach the following conclusions:

- *The economic profession has well-accepted scientific methods that need to be applied to develop reliable results from any econometric analysis, particularly complex analyses like the Commission proposes to undertake.* These methods include:
 - full transparency of the research process, including transparency regarding all procedures used for data collection, data cleaning, model specification and statistical analysis, with each step subject to peer review;
 - econometric models based on sound economic theory that are designed to test *a priori* specified hypotheses; and
 - principled decisions about data cleaning, processing, and reconciliation (including treatment of outliers), again subject to vetting and testing by other experts.
- *Sound techniques must be applied to any data reconciliation and data processing undertaken by the Commission.* Data reconciliation is likely to be particularly important given the complexity of the data that the Commission has requested and the likelihood that responding parties may not store and produce data in compatible formats or not even have some data that will be requested by the Commission. As in any complex econometric study, the possibility of inappropriate conclusions exists if

appropriate data reconciliation and processing methodologies are not carefully and transparently applied, with methods and findings subject to extensive review.

- *The proposed panel data regressions raise important methodological issues that require the use of well-accepted professional methods, transparently applied.* The Commission will have to deal with a number of significant technical issues, any one of which could, if not overcome (which may or may not be possible), render its approach invalid. These issues include:

- *Intricate linkages in special access pricing across geographic regions, products and time:* Contracts may cover multiple locations and geographic areas with little or no variation in base unit prices, many different products (including a combination of special access products and, in some cases, other unregulated services), and many time periods. Contracts also often contain fixed percentage or lump sum term and volume credits. Hence, observable variation in the dependent variable may be limited, may fail to reflect meaningful location-specific differences, and may introduce systematic error related to the explanatory variables.
- *Sample selection bias:* To the extent the study focuses on prices in those areas that have been granted regulatory relief (as we believe it should), such an approach creates a non-random sample and thus may result in biased estimates.
- *Endogeneity of the key explanatory variables:* The extent of competition in a given area is jointly determined, along with price, in “equilibrium,” based on

the underlying supply and demand characteristics. The resulting “endogeneity” is known to lead to biased econometric estimates if not properly addressed.

- *Omission of relevant variables:* Some economic factors that affect prices (e.g., quality of service and costs) may be difficult or impossible to observe and may vary within geographic units across the sample in ways that are correlated with market structure. In a manner analogous to endogeneity concerns, omitting important variables is known to lead to biased econometric estimates.
- *Potentially unstable economic relationships in the underlying data:* The time period on which the Commission is collecting data (2010 and 2012) covers a period of significant change in technology and consumer preferences for special access services, with many providers shifting from traditional DS_n services toward Ethernet and other IP-based services. This raises the possibility that the underlying economic relationships have changed in unobservable ways, which could invalidate the panel regression approach.
- *The ability of the Commission to deal with these issues will depend, to some extent, on the quality of the data collected.* It is possible that the available data may not allow the Commission fully to deal with certain technical issues. In those instances, the Commission must be cautious in the conclusions it draws from its analysis. In all cases, it will be important for any results to be subject to rigorous sensitivity and diagnostic testing, including by outside economists.

- *The Commission should bear in mind the ultimate objective of the analysis and should keep an open mind with respect to the findings of the study, including the possibility that the relation between price and measures of competition cannot be identified given data limitations.* Ultimately, the analysis proposed by the Commission must guide the implementation of easily administered regulations. With this objective in mind, there is a real risk that the type of regression analysis that the Commission proposes will fail to generate statistically meaningful or interpretable results. It is also uncertain whether the proposed analysis can be used to develop an easily administered regulatory standard that can account for future changes in market structure.
- *The Commission should consider the use of alternative, potentially simpler, analyses to assess whether the existing or alternative pricing flexibility triggers are reasonably accurate measures of the extent of competition (including the presence of sunk investments by non-ILEC competitors).* In particular, the Commission should consider whether alternative approaches—including the use of dependent variables other than price—may provide more reliable results, or results which can more pragmatically be implemented as triggers for regulatory relief going forward. At a minimum, the Commission should examine the extent to which its existing collocation “triggers” functioned as intended in identifying the presence of alternative network facilities.

18. In the remainder of this Declaration, we develop these points in more detail. We begin in Section II with some background information on special access and related services and we discuss the Commission’s current regulatory framework. In Section III, we describe appropriate professional standards for undertaking complex econometric research, which

should guide the Commission’s research in this proceeding. In Section IV, we describe some specific and substantial difficulties likely to arise as the Commission undertakes its proposed empirical analysis (recognizing that it is likely that more issues will be uncovered throughout the process), which heighten the need for transparency and for application of appropriate research standards in this proceeding. In Section V, we explain that the Commission should also study the extent to which its existing triggers are functioning as intended and, more generally, consider alternative empirical approaches that may prove superior to the “one-time, multi-faceted market analysis” it is proposing.

II. BACKGROUND ON SPECIAL ACCESS SERVICES AND THE COMMISSION’S REGULATORY FRAMEWORK

19. This section provides a brief overview of special access services, their regulation by the Commission, and pricing practices for these services.

A. BACKGROUND ON SPECIAL ACCESS AND RELATED SERVICES

20. ILECs provide the DS1 and DS3 high-speed dedicated lines known as “special access” services using legacy, non-packet-based “TDM” technology. Such special access circuits consist of both channel terminations and interoffice transport. Customers purchase these “rate elements” in various combinations. Providers sell many special access services to other communications service providers, including CLECs or wireless carriers, which use them as inputs in providing a broad range of communications services to their retail customers. ILECs also sell special access circuits to large business customers and use these circuits as inputs to their own retail services.

21. ILECs face competition in the provision of high-speed dedicated lines.¹²

Traditionally, this competition came from CLECs deploying alternative fiber network facilities and offering TDM-based services. But increasingly, providers can offer competing wireline and wireless services based on Ethernet and other packet-based technologies that are distinct from the TDM-based technology that the ILECs use in providing the DS-1 and DS-3 services that are at issue in this proceeding. Additionally, other providers that compete with the ILECs may provide different quality of service commitments, including “best efforts” broadband Internet access services.

22. Specific examples of competition faced by ILECs include:

- CLECs have deployed local networks to provide special access services in many metropolitan areas. CLECs bid for customers’ special access business both at locations already connected to their fiber networks and at locations that can be reached by extensions from those networks. When they win contracts for this business, they may then build “lateral” connections from their network to the customer locations they do not already serve.
- Wireless spectrum also increasingly is used to provide dedicated high-speed connections both in downtown and in other areas. These fixed wireless services can be used both to provide “backhaul” for mobile wireless service firms—connecting

¹² For a general discussion of competition for special access services, see *In the Matter of 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*, WC Docket No. 05-25, RM-10593, Declaration of Dennis W. Carlton and Hal S. Sider, January 19, 2010 (hereinafter *Carlton-Sider Declaration*).

their radio towers to their terrestrial networks—and to provide other services that otherwise would use LEC-provided special access as an input.

- Using their widespread networks, cable companies provide high-speed connections to business and communications services providers that compete with ILEC-provided special access services.

23. By requiring that “competitive providers”—defined to include any “competitive local exchange carrier (CLEC), interexchange carrier, cable operator, wireless provider or any other provider that is not an incumbent LEC operating within its incumbent service territory”—comply with its data request, the Commission appears to have recognized that all of these types of firms compete at least to some extent with the ILECs in the provision of high speed circuits.¹³

B. BACKGROUND ON THE COMMISSION’S CURRENT REGULATORY FRAMEWORK FOR SPECIAL ACCESS

24. Since 1991, ILECs’ pricing of interstate special access services has been regulated by the Commission’s price cap rules.¹⁴ Under price cap regulation, interstate access services were grouped in different “baskets,” such as the “common line” and “special access” baskets. Each basket was subject to a Price Cap Index that caps the total charges an ILEC may impose for services in the basket in a given area.¹⁵ Under price cap regulation, the maximum price

¹³ *FNPRM*, ¶ 21.

¹⁴ *FNPRM*, ¶ 2.

¹⁵ *In the Matter of Access Charge Reform*, CC Docket 96-262, Fifth Report and Order and Further Notice of Proposed Rule Making, August 5, 1999, ¶ 12 (hereinafter *Pricing Flexibility Order*).

that an ILEC can charge for its overall basket of special access services is adjusted annually based on the rate of inflation less an “X” factor that was initially based on estimates of historical rates of industry productivity growth. Price caps for special access services were initially based on price levels established under rate-of-return regulation.¹⁶

25. In 1999, as ILECs began to face increasing competition for their special access services, the Commission modified its regulation of special access rates and adopted pricing flexibility rules, which allow ILECs, based on competitive showings, certain relief from the Commission’s price cap regulations.¹⁷ In “Phase I” relief, ILECs may offer contract tariff and volume and term discounts, while remaining subject to price caps. In “Phase II” relief, the ILEC is freed from all rate structure and price cap rules, although it still must provide its services pursuant to tariff and dominant carrier regulations, including the obligation (enforceable in administrative complaint proceedings) to offer rates and other terms that are “just and reasonable.”¹⁸ Both types of relief are based on the ILEC showing certain levels of competitive entry, as measured by the extent of facilities-based collocation in an ILEC’s wire centers in a Metropolitan Statistical Area (“MSA”). Pricing flexibility is granted separately for interoffice transport and channel terminations on an MSA-specific basis.

26. Table 1 summarizes the collocation levels, or “triggers,” required for Phase I and Phase II relief for interoffice transport and channel terminations.

¹⁶ *In the Matter of Policy and Rates for Dominant Carriers*, CC Docket 87-313, September 19, 1990, ¶ 17 (hereafter, “LEC Price Cap Order”).

¹⁷ *FNPRM*, ¶ 4.

¹⁸ *FNPRM*, ¶ 2.

Table 1: Summary of FCC Pricing Flexibility Collocation Triggers

	Interoffice Transport		Channel Terminations to End Users	
	Revenue Test	Area Test	Revenue Test	Area Test
Phase I Pricing Flexibility	30% of Revenues	15% of Wire Centers	65% of Revenues	50% of Wire Centers
Phase II Pricing Flexibility	65% of Revenues	50% of Wire Centers	85% of Revenues	65% of Wire Centers

Source: Pricing Flexibility Order, ¶¶ 93, 100

27. Although ILECs have obtained Phase II relief for dedicated transport and channel termination in many MSAs across the country, Table 2 indicates that a significant number of MSAs remain subject to price caps. Notably, some of the areas that have attracted substantial competitive entry, such as New York, Los Angeles, and Chicago, have not been granted Phase II relief for channel terminations. Only 34 percent of MSAs, accounting for 37 percent of the U.S population living in MSAs, have been granted full Phase II pricing flexibility for both channel terminations and interoffice transport.¹⁹

¹⁹ These calculations exclude the non-MSA portions of the United States.

Table 2: Number of Areas with Different Special Access Regulatory Status

Price Flexibility Relief				
Transport	Channel Terminations	Number of MSAs	Percent of MSAs	Percent of Population
No Relief	No Relief	133	35.7%	9.3%
Phase I	No Relief	13	3.5%	1.3%
Phase I	Phase I	7	1.9%	1.8%
Phase II	No Relief	18	4.8%	4.6%
Phase II	Phase I	75	20.1%	46.2%
Phase II	Phase II	127	34.0%	36.8%
Total		373	100.0%	100.0%

Source: USTelecom.

28. Table 2 also reflects the fact that the two components of special access service, interoffice transport and channel terminations, are frequently subject to different levels of regulation. For example, 20 percent of MSAs, accounting for 46 percent of the U.S. population living in MSAs, have been granted Phase II relief for interoffice transport but only Phase I relief for channel terminations. As discussed in Section IV.A, such differences in regulatory regimes for rate elements that are bundled into a single service complicate the calculation of the price variable that the Commission intends to use in its regression model.

C. OVERVIEW OF ILEC PRICING OF SPECIAL ACCESS SERVICES

29. Both the fact that ILECs face multiple forms of price regulation—that differ by geography and component of special access service (*i.e.*, channel terminations and interoffice transport—and the way in which ILECs negotiate and sell special access services greatly

complicate the calculation of prices for special access service for purposes of conducting a panel regression analysis. Additionally, to the extent other firms, such as CLECs or cable companies, follow different pricing practices for their high speed services (and we understand that they do), there may be additional issues in constructing price measures that are consistent across providers.

30. For its DSN-level special access services, AT&T publishes tariffs that generally correspond to the Regional Bell Operating Company (“RBOC”) regions of its legacy ILEC operations.^{20,21} These special access tariffs provide different pricing density zones, but tariffed rates within a density zone are typically uniform throughout a legacy RBOC region (or at least within a state), though they may differ across regions. For example, AT&T’s generally applicable tariffs for DSN-level special access services may specify different rates for rural and urban areas, but do not specify different rates for Dallas and Little Rock, let alone different rates for individual customer locations. AT&T’s tariffs offer discounts off of the month-to-month base special access rates for customers that commit to purchasing services for longer terms, up to an eight-year commitment.

31. Although AT&T maintains base special access tariffs that allow the purchase of individual DSN circuits, AT&T typically sells special access service to customers on a much broader basis. AT&T’s large customers, which make up the bulk of its special access

²⁰ The information in ¶¶ 30-33 is based on interviews with managers in the AT&T Business Solutions division at AT&T, February 1, 2013.

²¹ For higher-speed special access services that have been de-tariffed and are not price-regulated, AT&T publishes an Interstate Access Guidebook to describe those services to purchasers.

revenue, often negotiate a single contract that covers all purchases of special access services throughout a multi-state region. Such agreements cover any location within that region and may involve purchases by a single customer of hundreds or even thousands of individual dedicated circuits. Contracts typically have terms of three to five years.

32. AT&T and its customers often negotiate a single percentage discount off of the “base” rates when a customer agrees to make expenditures that meet or exceed a Minimum Annual Revenue Commitment (“MARC”). The negotiated revenue commitment can be based on all services covered by the contract, including, for example, purchases of special access services that are covered by price caps and by Phase I and Phase II price flexibility rules, as well as non-price regulated services such as OCn circuits and Ethernet services. Under some contracts, AT&T applies the discount as a credit to the customer in the form of a lump sum payment at year end. Given the bundled nature of the offerings (both in terms of locations and services) and, potentially, a single credit (or fixed percentage discount) that applies based on total spend from all services and all locations, it is not possible to observe a price for individual circuits or areas without making arbitrary accounting allocations that do not necessarily reflect the underlying competitive conditions for any particular service in any particular area.

33. In addition to negotiating base rates and discounts, AT&T’s contracts can also specify other non-standard price terms, such as waivers of non-recurring charges (“NRCs”), which can be used to cover costs such as fixed installation costs. AT&T’s contracts can also provide customers with non-price benefits (that provide financial value to the customer), such as

increased quality of service commitments, termination liability waivers for upgrades to other services, and circuit “portability.”²²

III. APPROPRIATE PROFESSIONAL STANDARDS SHOULD GUIDE THE COMMISSION’S STUDY

34. In this section, we enumerate some general principles that sound econometric analysis should follow. Although the panel data regressions proposed by the Commission are a well-established form of econometric analysis, the results generated by such an analysis can be invalid absent adherence to sound econometric and economic principles tied to a clear understanding of the underlying facts of the industry being studied. And, as detailed below, the complex nature of special access pricing, the regulatory overlay, and the variability in the type of data likely to be available mean that the Commission’s proposed analysis is not a simple undertaking.

A. ACCEPTED PROFESSIONAL PRACTICE CALLS FOR TRANSPARENCY THROUGHOUT THE RESEARCH PROCESS AND FULL REVIEW BY OUTSIDE ECONOMISTS

35. Econometric methods of the sort proposed by the Commission—whether panel data regressions like the Commission proposes here or other econometric methodologies—are standard in the academic literature as well as in the context of antitrust litigation and merger review. Such methodologies can be highly informative, particularly due to their ability to

²² Circuit portability refers to the ability of a customer to terminate up to a certain number of circuits without paying early termination charges and still satisfy applicable revenue or quantity requirements as long as certain revenue and/or quantity of in-service circuit commitments are maintained. Circuit portability provides a customer with greater flexibility to satisfy term commitments as the location of its demand shifts.

hold many factors fixed in order to isolate relationships of economic interest. But they can also be complicated to implement and to interpret, with results potentially sensitive to a wide variety of embedded data processing and analytical decisions. Indeed, inadequate data and inappropriate methods can lead to biases or results whose apparent statistical significance is spurious.

36. In both academic and antitrust (whether regulatory or litigation) settings, such complexity and sensitivity of results is dealt with in part by transparency, which facilitates full review of the empirical analysis by outside economists. All aspects of analysis—from processing of raw data through final regression results—are generally subject to review by other experts. For example, academic papers submitted to journals for publication are subject to review by other academics. Moreover, it is increasingly common for journals to require authors to make available the underlying data and computer code used to generate the results so that other academics and interested parties can replicate and test the robustness of the results.²³ Similarly, in the litigation and merger review context, expert economists are often required to make available to opposing experts their underlying data and code.

37. The peer review process is designed to identify potential weaknesses in analyses and to suggest improvements. It allows a variety of experts with knowledge in related areas to provide input into the analytic process. A well-designed peer review process can lead to more

²³ For example, a leading economics journal, the *American Economic Review*, will publish a paper only if “the data used in the analysis are clearly and precisely documented and are readily available to any researcher for purposes of replication.” See <http://www.aeaweb.org/aer/data.php>. *Site Visited*, February 11, 2013.

robust and well-supported conclusions. This can only occur when regression analysis is subject to review by other researchers, with the specification and relevant data available to reviewers.

38. For the same reasons that transparency and peer review is standard professional practice—to obtain input to improve the research methodology and reliability of results and to increase confidence in those results by all parties—transparency is critical to the Commission’s proposed panel regressions. In particular, in this proceeding, transparency has several key elements:

- *Full electronic access (subject to appropriate protective order and confidentiality obligations) to the raw data by outside counsel and outside experts.* Raw data includes both the data submitted by industry in response to data requests and any Commission or third-party data that may be used in the regression analyses (*e.g.*, measures of business density, population, wage, income.). We understand that some of the data that will be submitted in response to the Commission’s data requests is highly confidential and that measures to protect confidentiality that go beyond the Commission’s standard protective order terms may be considered. We note only that it is essential that any such restrictions do not limit the ability of outside economists to replicate and evaluate the Commission’s analyses or to use the data to test alternative hypotheses or econometric models.
- *Access to algorithms developed and implemented by the Commission to process the raw data.* Data processing includes supplemental data requests, efforts to audit or test the completeness and accuracy of submitted data, efforts to reconcile data across

submissions by multiple carriers, removal of outliers, any other procedures used to clean the raw data, and computer code used to create the estimation dataset from the raw data.

- *Access to the processed data used by the Commission in its regression analysis.* The processed data includes the final estimation sample(s) used by the Commission to conduct its economic analysis, including all observations and variables generated or relied upon by the Commission.
- *Access to computer algorithms used to run regressions and other analysis.* Computer code must be sufficient to replicate any results relied upon by the Commission.
- *Explanation of any significant modifications made to the tested hypotheses or modeling approach during the course of the analysis.* In particular, the Commission should specify in advance the hypotheses it intends to test and the basic modeling approach it intends to use. Then, when results of the analysis are published, if the tested hypotheses or modeling approach has changed from the initial plan, the Commission should state what hypotheses it ultimately tested and the modeling approach it ultimately used. To the extent the hypotheses or approach changed significantly during the course of the analysis, the Commission should describe the changes and explain what motivated those changes.

39. The Commission has indicated that it expects the analysis to be conducted via an iterative process. As a result, it is necessary to establish a procedure that facilitates comments by interested parties *at each step of the process* and not just at the end of the process.

40. The importance of transparency, as well as the ability of other researchers to replicate analyses, especially econometric analyses, is widely recognized. For example, the National Research Council has stated that the “ability to replicate a study is typically the gold standard by which the reliability of scientific claims are judged.”²⁴ As Anderson *et al.* (2008) have noted:²⁵

[a]t a minimum, the results of an endeavor – if it is to be labeled ‘scientific’ – should be replicable, *i.e.*, another researcher using the same methods should be able to reach the same result. In the case of applied economics using econometric software, this means that another researcher using the same data and the same computer software should achieve the same results. Yet, it is well known that the likelihood of replication by a reader, or subsequent researcher, without the original authors’ programs and data is near zero.

The academic literature also recognizes that principles of transparency should be applied in the legal setting as well. For example, Rubinfeld (2000) argues:²⁶

In evaluating the admissibility of statistical evidence, courts should consider the following issues: 1. Has the expert provided sufficient information to replicate the multiple regression analysis? 2. Are the methodological choices that the expert made reasonable, or are they arbitrary and unjustified?

To assist the decision maker making these determinations, Professor Rubinfeld proposes that parties share data and methods of analysis to ensure the reliability of the results.

²⁴ National Research Council (2002), *Access to Research Data in the 21st Century: An Ongoing Dialogue Among Interested Parties: Report of a Workshop*, National Academy Press, at 7.

²⁵ Richard G. Anderson, William H. Greene, B. D. McCullough & H. D. Vinod (2008), “The Role of Data/Code Archives in the Future of Economic Research,” 15 *Journal of Economic Methodology* 99-119 (March), at 100.

²⁶ Daniel L. Rubinfeld (2000), “Reference Guide on Multiple Regression,” in Federal Judicial Center, ed., *Reference Manual on Scientific Evidence*, at 201.

B. SPECIFICATION OF REGRESSION MODEL AND INTERPRETATION OF RESULTS SHOULD BE GROUNDED IN ECONOMIC THEORY AND SHOULD AVOID DATA MINING

41. A defining aspect of good econometric analyses—which separates them from purely statistical searches for patterns or correlations in the data—is that the models estimated and the inferences drawn from the models are grounded in economic theory. Panel regressions of the sort proposed by the Commission must rely on both economic theory and knowledge of the industry to determine how to specify the regressions and which variables to include as explanatory factors.²⁷

42. It is especially important that one use care to ensure that any patterns identified in an econometric analysis represent true economic relationships rather than spurious correlations. Section IV elaborates on potential hurdles to the interpretation of the results due to endogeneity, sample selection, model instability, and other factors. Economic theory and institutional knowledge help with proper interpretation of the results in a way that accounts for these concerns.

43. A clear model selection procedure, which avoids testing many different hypotheses in a search for “statistical significance,” is essential to avoid false positives.²⁸ To understand the problems associated with testing multiple hypotheses on the same sample data, note that the standard “five percent level” for statistical significance means that a relationship as strong as

²⁷ See, e.g., Peter C. Reiss and Frank A. Wolak (2007), “Structural Econometric Modeling: Rationales and Examples from Industrial Organization,” *Handbook of Econometrics, Volume 6A*, Chapter 64.

²⁸ Arthur S. Goldberger (1991), *A Course in Econometrics*, Harvard University Press: Cambridge, MA, Chapter 24.

the observed relationship could be found purely by chance—in the absence of any true relationship—five percent of the time. This means that if an analyst ran 20 different specifications of the regressions, it would not be surprising to find that one of these specifications may show a certain explanatory variable to be statistically significant, even if no true relationship existed. In this proceeding, the problems of testing multiple hypotheses may be unavoidable because no single economic theory dictates how market structure affects prices and multiple dimensions of market structure could affect prices. It might seem natural to try many specifications to see how the different dimensions of competition affect prices, but there may be a large number of specifications to try and testing multiple hypotheses on the same underlying data increases the likelihood of spurious findings of significance. Such complexity highlights the importance of adherence to pre-specified model selection procedures, and validation methods such as split samples, whereby the estimation is done on one part of the data and then validated on another part. It also highlights the need for transparency so that independent validation can be conducted.

C. DATA PROCESSING SHOULD FOLLOW GENERALLY ACCEPTED METHODS

44. To reach sound conclusions and therefore provide a valid basis for forward-looking policy-making, the statistical analysis must also follow generally accepted principles for data processing. Although it may not always receive sufficient attention in discussions of econometric methodology, the steps taken to process and “clean” the data received in response to a survey can be determinative of the results that will be obtained (put more colloquially, “garbage in, garbage out”). As discussed more fully below, the data in this proceeding are likely to require substantial manipulation before they are usable: Billing

records are notoriously “messy,” with different firms maintaining information in incompatible forms, prices reported by specific firms containing unexplained outliers such as negative or unreasonably large prices, important record values missing altogether, and so on.

45. The Commission is likely to have to deal with multiple issues when reconciling data submissions across providers. Possible complications include:

- Circuit design, rate structure and service quality may differ across providers;
- Credits may be accounted for differently across providers;
- Data elements may vary across providers;
- Business rules may be codified differently across providers;
- Providers may use different conventions for recording and reporting customer locations;
- The protocols employed by providers may vary over time as systems are changed;
- Providers may simply lack key data sought by the Commission;
- Affiliates may be treated differently across providers.

46. It is likely that the data will require substantial processing and cleaning before any regressions can be run. As noted above, such cleaning should be done in a transparent way, with the raw data and data processing code made available to outside researchers who can explore the sensitivity of results to decisions made.

47. Data cleaning and processing (including treatment of outliers) should also be fully documented, and done in a manner consistent with standard professional practice. For

example, Kennedy (2003) indicates a number of questions that should be asked when dealing with complex data:²⁹

Even if a researcher knows the context, he or she needs to become intimately familiar with the specific data with which he or she is working Data cleaning looks for inconsistencies in the data – are any observations impossible, unrealistic, or suspicious? The questions here are mostly simple, but could become more complicated in a particular context. Do you know how missing data were coded? Are dummies all coded zero or one? Are all observations consistent with applicable minimum or maximum values? Do all observations obey logical constraints they must satisfy?

It is important to review the data using a variety of statistical tests ranging from computing simple summary statistics to running more advanced diagnostic tests. Kennedy (2003) further notes:³⁰

Inspecting the data involves summary statistics, graphs, and data cleaning, to both check and ‘get a feel for’ the data. Summary statistics can be very simple, such as calculating means, standard errors, maximums, minimums, and correlation matrices, or more complicated, such as computing condition indices and influential observation diagnostics. The advantage to graphing is that a picture can force us to notice what we never expected to see. Researchers should supplement their summary statistics with simple graphs: histograms, residual plots, scatterplots of residualized data, and graphs against time.

Failure to adhere to appropriate data processing principles means that sound conclusions cannot be drawn from any results derived from the data.

²⁹ Kennedy (2003) at 392.

³⁰ *Id.*.

IV. THE PROPOSED PANEL REGRESSIONS RAISE IMPORTANT METHODOLOGICAL ISSUES

48. Although the panel data regressions proposed by the Commission may appear straightforward at first glance, those implementing the analysis will have to grapple with numerous and sometimes subtle complexities in the data and the underlying economic relationships between prices, market structure, and the supply and demand conditions in each area. The *FNPRM* itself mentions a few of the challenges that the Commission is likely to face. For example, the *FNPRM* notes that “prices, which regulation impacts, likely play a role in entry decisions.”³¹ Although the Commission indicates that it expects to control for such issues in its econometric specifications, doing so is not likely to be easy. In many instances, the necessary working assumptions are likely to have important implications for the interpretation of the results.

49. In this section, we outline some (but surely not all) of the econometric challenges that the Commission’s proposed analysis will have to address. Unless sufficient steps are taken to address each of these issues—something that may or may not be possible, depending among other things on the nature of the data received—any one of them will make it likely that the Commission’s study produces results that are biased, imprecise, and/or misleading.

A. PRICES ARE NOT INDEPENDENT ACROSS GEOGRAPHIC AREAS, TIME, OR PRODUCTS, MAKING MODEL SPECIFICATION AND INFERENCE DIFFICULT

50. The Commission’s panel regression approach would be best implemented if a specific data structure—in which each MSA (or a smaller geographic area) in each year represented a

³¹ *FNPRM*, ¶ 68.

distinct observation, for which a well-defined price (or a well-defined set of prices) could be identified, with that price determined by competitive conditions in the specific area/time-period combination—held. However, on multiple dimensions, the relevant data structure for special access services is much more complex than this simple picture. In this section, we describe some aspects of this complexity and their implications for econometric analysis.

51. As discussed in Section II.C, pricing for special access services is extremely complex. Unlike in some other industries (*e.g.*, retail products) in which panel data regressions are often used to study the determinants of prices, contracts for special access services are typically negotiated on a long-term basis for a bundle of services that span multiple geographic areas and multiple products. Increasing the complexity, different geographic areas and different products in a bundle may be subject to different regulatory regimes. The complex way in which special access services are offered and priced causes several econometric complications.

1. Linkages across Geography

52. A first complication, arising from the linkage of prices across geographic areas, is that recorded prices across areas may show no meaningful variation. When a contract covers several areas, as is the case for large purchasers that account for a large percentage of sales in the industry, the tariffed or negotiated price is often common to multiple areas and thus cannot meaningfully be attributed to a specific location. In such cases, prices will not just reflect local market conditions.

53. Even more problematic, in many circumstances credits, which are a significant factor in the overall price paid by the purchaser, can be attributed to specific locations only through

arbitrary allocations. As noted above, in many of AT&T's special access agreements a purchaser that meets a MARC is entitled to a fixed percentage or lump sum credit. Because the MARC is ordinarily calculated based on the aggregate of *all* purchases under the contract at all locations—whether “price flex” or “non-price flex” and whether DS_n or higher capacity, non-price regulated services—the credit cannot be readily associated with any particular location or service such that it accurately reflects economic conditions in that location or for that service. The Commission's rules and/or accounting conventions might require that the credit be attributed to particular services or geographic areas (such as DS_n-level services in areas subject to pricing flexibility). But such an allocation would not mean that the prices for DS_n level service would necessarily reflect competitive conditions just in those areas. In the extreme case, if firms use different accounting rules, the variation in prices across firms in the same region may reflect pure accounting considerations as opposed to the impact of market forces.

54. Especially pernicious effects could occur if the allocation is not random. Accounting rules may mean discounts are recorded in a way that correlates with competition and market conditions. For example, consider the following hypothetical but plausible scenario. A large communications service provider purchases special access services from an ILEC in locations throughout a multi-state region under a single negotiated contract. The contract covers the purchase of channel terminations and transport subject to a mix of price cap regulation and Phase I and Phase II relief. Furthermore, in addition to a term discount, the contract includes a lump sum credit—if the customer meets a negotiated annual revenue target, the customer gets a large lump sum credit at the end of the year. The ILEC allocates these discounts on a

pro rata basis to the services provided in areas subject to Phase I or Phase II pricing flexibility. To the extent that special access services with pricing flexibility are subject to systematically different levels of competition than services that have not been granted pricing flexibility (or full Phase II pricing flexibility), basing a regression analysis on this accounting convention could lead to biased results. This is because the error term—created by the artificial allocation of discounts—would be correlated with measures of competition, leading to endogeneity concerns (discussed further below).

55. One potential approach to address the linkages across cities would be to include controls for the competitive situation in other cities, but this is likely to add substantial complexity to the model specification. Indeed, such an approach may effectively be infeasible, as contracts between different buyer/seller combinations may cover different combinations of cities (with the set of cities potentially determined as part of the negotiation process), making it nearly impossible to determine the appropriate set of variables describing the competition for any particular contract. If the prices in the different cities covered by the panel regression are interconnected in complex enough ways via multi-area contracts, a panel regression to explain prices by city (or smaller geographic area) may prove infeasible.

2. Linkages across Products

56. As discussed above, contracts sometimes include not only special access services, but also other unregulated services (like OCn service, packet service, *etc.*). Again the “bundled” nature of the offering means prices are unlikely to reflect the economic conditions for any particular product or service.

57. Further, even considering special access services by themselves, the nature of how these services are offered and regulated creates additional complexity for any regression using price as the dependent variable. For example, as described above, for purposes of regulation, ILEC special access services are commonly divided into interoffice transport and channel terminations. Although the *FNPRM* did not specify how the Commission will deal with this distinction in its regressions, the two types of products will likely need to be included in a single regression because they are often included together in single contracts, with a single discount potentially applying to both (potentially along with other products), and because many CLECs and other providers do not break their circuits out in this way when setting and recording prices.³² However, because competitive conditions may vary across different special access products (thus motivating different regulatory triggers for the two products) the appropriate explanatory variables to explain interoffice transport prices and channel termination prices may vary. Given that different contracts may have different combinations of these products, the differences in competitive conditions across products may create difficulties in model specification like those created by price linkages across areas.

³² See, e.g., *In the Matter of 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*, WC Docket No. 05-25, RM-10593, tw telecom Ex Parte Letter, January 10, 2013 ("the Commission should account for the fact that competitive providers of special access do not bill separately for the same special access rate elements as the incumbent LECs.") We understand the ILEC and CLEC pricing may vary on multiple dimensions—for example, ILEC prices typically contain a mileage component, meaning that ILECs charge more for longer circuits, whereas CLECs generally do not charge mileage based rates.

58. Even more basically, as discussed in Section II.C, pricing flexibility is granted separately for interoffice transport and channel terminations, so it is possible for an area to have, say, price caps for channel terminations, but Phase I relief for transport, or Phase I for channel terms and Phase II for interoffice transport. It is unclear how the commission would specify its regressions in such cases and, in any case, the decisions made should be subject to testing and review by outside economists.

3. Linkages across Time

59. Finally, a significant complication arises because special access contracts often cover multiple years, with AT&T's special access contracts typically having terms of three to five years.³³ This means that in any given time period, observed prices will generally reflect competitive conditions from some previous point in time. Moreover, to the extent that contract terms are staggered across observations, the analysis will be further complicated in ways similar to the complexities arising from price linkages across areas and the presence of multiple special access products in contracts.

60. In addition, the presence of long-term contracts means that prices cannot react fully to competitive conditions immediately because some subset of prices in an area may be unable to adjust immediately. In such a situation, one might find no (or a limited) relationship between price and market structure because price changes do not occur immediately. At a

³³ Interview with managers in the AT&T Business Solutions division at AT&T, February 2, 2013.

minimum, the Commission may need to consider some lag structure to deal with this issue.³⁴ However, the limited scope of the sample (two time periods, 24 months apart) coupled with the length of the relevant contracts limits the ability of the Commission to implement such lags effectively. And again, with no single “right answer” to address such concerns, any decisions would need to be subject to testing and review.

61. In summary, these price linkages across geographic areas, products, and time mean that:

- The appropriate explanatory variables to explain special access prices may include some combination of variables from different time periods in other geographic areas and for different products, making model specification quite difficult.
- Econometric error terms (capturing unobserved variation in prices) are likely correlated across cities, products, and time, making inference more difficult.
- Competitive effects may take time to show up and may show up across many geographies and/or products. In other words, changes in the competitive environment for a particular product in a particular geographic area may affect only a portion of the price being observed. Thus, any relations between price and market structure are likely to be muted in the data.

³⁴ That is, the Commission may need to allow for the possibility that prices at a point in time are determined not just by current competitive conditions, but by competitive conditions in previous periods when many of the contracts determining current prices were signed.

B. SELECTING A SAMPLE OF MSAs IN WHICH COMPETITIVE EFFECTS CAN BE STUDIED IS LIKELY TO YIELD BIASED ESTIMATES

62. As discussed in Section II.B, a large fraction of the population resides in areas covered by price cap regulation. In such areas, prices will certainly reflect regulation while, in areas where full pricing flexibility relief has been granted, prices will more fully reflect market forces. To assess the effect of competition on prices, it makes most sense to evaluate products and geographic areas where firms have substantial flexibility to set prices in response to competitive conditions, not in areas subject to price regulation. This is because price regulation could result in price outcomes that have no necessary relationship to market structure or the degree of competition in an area. However, as seen in Table II, above, only roughly one-third of MSAs (covering roughly one-third of the U.S. population living in MSAs) have such relief for both channel terminations and transport, meaning that the sample available for study is unlikely to be representative of the full set of MSAs. Even if the analysis pooled areas subject to different regulatory regimes, it would be necessary, at a minimum, to treat observations differently depending on the nature of price regulation (no relief, Phase I, Phase II).

63. Treating MSAs separately depending on the regulatory regime creates complications for the type of panel regression proposed by the Commission.³⁵ To determine whether the triggers are set in an effective way one would like to observe flexibly set prices in areas where the triggers have not been met, something that is not possible. Indeed, given that the pricing

³⁵ On the other hand, this does not present problems for a simpler study of whether the triggers have served as a reasonably accurate proxy for alternative competitive deployment by CLECs.

flexibility exists only in areas that have met the triggers, there will be no useful information about how prices vary in areas that have not met the triggers.

64. More generally, even if one wants to study the relationship between prices and economic characteristics other than the triggers, the problem remains that the set of MSAs in which Phase II regulatory relief has been granted—such that prices are determined by competitive conditions without regard to price caps—is a non-random sample of all MSAs. To see the issues this creates, notice that pricing flexibility relief is granted based on a “trigger” that measures alternative facilities deployment. The extent of facilities deployment of rival competitive facilities (which triggers relief) is naturally determined by local market conditions (such as demand and costs). These local conditions, however, cannot be considered broadly representative; otherwise every area in the country would have qualified for pricing flexibility. Thus, basing regression estimation on MSAs where the ILEC has been given Phase II pricing flexibility amounts to restricting the sample to areas that may be better suited to competitive entry. Unless these local area characteristics that lead to entry are fully accounted for, they will end up in the error term. Hence measuring the effect of a trigger variable based on such areas will lead to biased estimates and thus serve as a poor basis for regulatory policy.³⁶ Indeed, the Commission is cognizant of the need to study a representative

³⁶ This is an example of the well-known econometric problem of endogenous sample selection. See, *e.g.*, Kennedy (2003) at 286.

set of MSAs,³⁷ but the need to focus a study on areas that have received regulatory relief (or at least to allow separate estimates in such areas) may make this difficult or impossible.

C. MEASURES OF COMPETITION ARE LIKELY TO BE ENDOGENOUS, YIELDING BIASED ESTIMATES

65. The measures of competition proposed by the Commission (*e.g.*, counts of actual and potential competitors) are likely to be endogenous. Endogeneity arises when one or more explanatory variables is correlated with the statistical error term, a situation that is known to lead to biased estimates of the modeling parameters and thus to cause economic inferences drawn from these parameters to be misleading.³⁸

66. The specific endogeneity concern for the regression methodology proposed in the *FNPRM* is that the number of competitors not only affects price but is itself determined by the underlying market conditions. Put differently, the number of competitors is jointly determined along with price in market equilibrium. The problem this causes is that, when running a regression of price on number of competitors, one might not just capture any true “causal” relationship between the number of competitors and prices. Rather, one might also capture the effect on price of the variables that determine the number of competitors. For example:

³⁷ See *FNPRM*, ¶ 24, “With respect to a sample of geographic regions, it is very difficult to design a representative sample without coming close to covering the entire country.”

³⁸ All standard regression models include statistical error terms. These error terms account for unobserved factors that affect the dependent variable. (See Wooldridge (2002), Chapter 1.)

- If fewer competitors operate in areas with high costs, the econometric estimates may overstate the extent to which competition lowers prices, as a larger number of competitors in an area may simply reflect the fact that the cost of providing service are low. Thus, the measured effect of the number of competitors on prices may end up capturing the effect of low costs on prices.
- Conversely, if more competitors operate in areas with higher demand, the econometric estimates may understate the extent to which more competitors lowers prices, as more competitors may end up being a proxy for high demand to the extent that demand is not perfectly controlled for in the regression.

67. The previous discussion highlights the importance of rich controls, which can help attenuate the potential biases; or at least help diagnose the presence and extent of these biases. In practice, however, because controls for cost and demand conditions are unlikely to be perfect, the measured effect of market structure on price is likely to be some complex combination of the true causal effect of market structure and the effects of underlying demand and cost conditions. Since unobservable cost and demand factors can contaminate the estimated relation between structure and prices in either direction (depending on whether cost or demand unobservables enter the error term), it is challenging even to determine in which direction the bias goes.

68. It may be particularly problematic to rely on endogenous measures of competition as a guide for regulatory decisions. This is because the ultimate goal of the proposed analysis is to identify proxies for competition that may be used on an ongoing basis to regulate special access services. To the extent that these proxies are subject to control by market participants,

the introduction of regulation may affect decisions by firms, and thus changes in regulations may alter the historical relationships on which the regulation was based. As one example, in order to prevent ILECs from being given the freedom to compete fully, CLECs or other firms could avoid expanding or investing in particular ways to avoid tripping particular triggers. If that were the case, such regulation based on endogenous triggers would create inefficiency by providing incentives to refrain from investing.

69. We are confident that the Commission Staff recognizes these endogeneity concerns and is, at least in part, relying on the use of a panel regression to overcome them. The logic of this approach is that a panel regression permits inclusion of controls for time-invariant differences across cross-sectional units of observations (*e.g.*, a geographic area) and thus relies only on changes within a unit over time to identify the effect of market structure on prices. By controlling for differences in supply and demand conditions across units, this approach might lessen endogeneity concerns. However, there are several limitations to this approach:

- First, the relatively short panel (only two years of data in a three-year time period) creates challenges for this approach.³⁹ In particular, given this data structure, most of the observed variation in price and market structure is likely to be across geographic areas. In a two-year period, there might be little change in market structure within any given area. This concern is heightened by the use of long-term contracts in the

³⁹ Although the Commission proposes to collect monthly billing data for the two years covered by its request, it only proposes to collect end-of-year data on location and competition. Therefore, each cross-sectional observation has, at most, two observations over time.

industry. If there is no change in market structure, or if contracts prevent a quick price response to a change in market structure, the panel approach yields no “experiment” to study—meaning that changes in market structure cannot explain observed price changes.

- Second, relying on intertemporal variation within an area may not overcome the concerns about endogeneity since changes in the number of actual and potential competitors over time are also driven by changes in market conditions. When we observe changes in market structure, we have to ask: “What drove the changes?” The answer leads to the same endogeneity concerns, just discussed, regarding a cross-section of areas.

The bottom line is that, even in a panel structure, there is a significant risk that the measured effect of market structure on price will reflect endogeneity bias. As with the other econometric issues described in this section, Commission Staff are likely aware of these issues and they do not necessarily invalidate all results from the study. But these concerns further highlight the need for transparency and careful review of the methods the Commission employs, including a consideration of the impact of endogeneity on observed results.

D. RELEVANT EXPLANATORY VARIABLES MAY BE UNOBSERVABLE

70. Omitting a relevant variable can induce endogeneity because the statistical error term will account for the omitted variable.⁴⁰ If the omitted variable is correlated with other

⁴⁰ Wooldridge (2002), Chapter 4.3.

explanatory variables in the model, this omission will induce correlation between the statistical error term and the included explanatory variable with which the omitted variable is correlated. As a general matter, absent more information, it can be difficult to ascertain either the direction or the magnitude of the bias.

71. In this case, both quality and costs are likely to be factors that affect price and may be particularly hard to measure. For example, for Ethernet-based special access services, customers can generally choose between a wide variety throughput rates and, more generally, between different “classes” of service quality, with higher speeds and service quality levels associated with higher prices. Such quality differences will be particularly problematic for the Commission’s analysis if, for example, ILECs provide higher quality service where competition is greater. In such cases, if quality is not fully observable, the regression analysis might underestimate the effect of competition on price because prices will reflect higher quality levels (or, put differently, the appropriately quality-adjusted price may react more strongly to competition than the measured nominal price).

E. UNDERLYING ECONOMIC RELATIONSHIPS MAY NOT BE STABLE

72. As described above, one purpose of using panel data is to control for unobservable factors that differentiate cities from one another. As such, a maintained assumption of this approach is generally that such unobservable factors remain constant over the relevant time period so that results can be identified from the observed relationships between changes in the dependent variable (price) and changes in the explanatory variables (*e.g.*, underlying market conditions).

73. If underlying unobservable factors are not stable, the panel regression method will not yield reliable results. And in the case of special access services, it is unlikely that unobservable factors remained constant over the relevant sample period. In particular, between 2010 and 2012, there was a substantial shift from TDM-based services to Ethernet or other IP-based services. This is because, “Ethernet is being adopted as the underlying service transport by enterprises, consumer triple-play platforms, and more recently, wireless backhaul Ethernet is replacing legacy services such as SONET, Frame Relay and ATM because it provides more flexible bandwidth options and is highly scalable, which in turn makes it highly cost efficient.”⁴¹ For example, AT&T has increasingly shifted its wireless backhaul from traditional TDM services to alternative technologies. Deutsche Bank indicates that “[a]s of 2Q12, AT&T ran 90% of its wireless data traffic over Ethernet or other ‘enhanced’ backhaul. The company has said that its cost per bit is about 50% lower using enhanced backhaul instead of copper.”⁴² Cowen, an industry analyst, forecasted that spending on Ethernet services would increase from under \$2.0 billion in 2006 to over \$10 billion in 2014.⁴³ This shift likely resulted in changes in the factors that determine the profitability of offering service in ways that may not be fully captured by observable variables.

74. To the extent that relevant factors did change in ways that are correlated with competitive conditions, this may lead to bias in the estimated effects of competitive

⁴¹ Cowen and Company (2010), “Telecom and Data Services – Fiber: A Sector Evolves,” at 14.

⁴² Deutsche Bank Securities (2012), “US Telecom Services: 2012Q3 Earnings Survival Guide,” at 12.

⁴³ Cowen and Company (2010), “Telecom and Data Services – Fiber: A Sector Evolves,” at 15.

conditions, as explained above. For example, a change in technology that expands the number of buildings that a CLEC can profitably serve with its existing network increases the scope and intensity of “potential” competition and, therefore, changes the link between market structure and price. When one pools the two periods, it is not clear how to interpret the results because each period has a different relationship between market structure and price, so a standard panel data approach does not work.

75. Moreover, to the extent that the Commission intends to use the results of its analysis on an ongoing basis, the lack of stability causes additional concern because estimates based on economic relationships in 2010 to 2012 may have little bearing on economic relationships many years hence. For example, industry observers anticipate the shift toward Ethernet and other IP-based services to continue. Cowen forecasts that “Ethernet and IP VPN will represent nearly 80% of the data services market in 2014 versus 55% in 2010.”⁴⁴ Between 2006 and 2014, Cowen forecast that revenues from leased lines would fall by more than 50 percent.⁴⁵

V. THE COMMISSION SHOULD CONSIDER POTENTIAL ALTERNATIVE ANALYSES THAT MAY BE INFORMATIVE USING THE COLLECTED DATA

76. As discussed above in Section IV, many of the econometric concerns with the Commission’s proposed regression framework derive from use of price as the dependent

⁴⁴ Cowen and Company (2010), “Telecom and Data Services – Takeaways from the Ethernet Expo,” at 2.

⁴⁵ *Id.*.

variable and/or use of market structure as the independent variable(s). Moreover, even if these concerns could be appropriately addressed, it is unclear how the Commission's proposed regression framework could be used to determine whether the existing triggers for special access pricing flexibility relief are working as intended, or how the regression framework could be used to develop alternative triggers that are easily administered. Finally, it would appear that many of the key explanatory variables being considered by the Commission in its regression analysis (*e.g.*, number of competitors in a particular area) would not readily be observable when making regulatory decisions in the future, casting doubt as to whether the Commission's regression approach can possibly produce an administrable test for pricing flexibility (or broader deregulation) going forward as the relevant explanatory variables change.

77. We believe that a different approach from that currently proposed may ultimately prove easier to undertake and to implement going forward. Specifically, in addition to undertaking any price/market concentration regression analysis, the Commission should also consider a study of whether its existing pricing flexibility triggers, as currently framed or with appropriate modification, provide reasonably accurate proxies for the number of competitors and/or extent of sunk investments in a given area. If it turns out that collocations or another readily observable trigger serves as a reasonably effective proxy for competitive deployment, the Commission will then have available an administrable trigger based on economic principles it has already endorsed. To the extent such an inquiry demonstrates that the existing triggers have not worked as intended, the inquiry may also help to refine those (or alternative) triggers to improve their accuracy.

A. IMPORTANCE OF EASILY ADMINISTERED REGULATIONS

78. The Commission has long recognized the importance of adopting regulations that are not administratively burdensome when developing such regulations to govern the pricing of special access services. For example, when the Commission initially developed the current regulatory regime for special access in 1999, it concluded:⁴⁶

a collocation-based trigger for granting pricing flexibility for special access and dedicated transport reasonably balances our two goals: (1) having a clear picture of competitive conditions in the MSA, so that we can be certain that there is irreversible investment sufficient to discourage exclusionary pricing behavior; and (2) adopting an easily verifiable, bright line test to avoid excessive administrative burdens.

The use of collocation data as a proxy for sunk investments by competitors was endorsed by the Commission in part because “such a collocation-based standard is administratively simple because several BOCs have provided data of this type in support of pending forbearance petitions.”⁴⁷ That is, since the ILECs maintain records of the CLECs collocated at their wire centers for billing and other ordinary-course-of-business reasons, it is easy for ILECs to collect such data in support of petitions for pricing flexibility relief.

79. Other measures of CLEC investment and activity are not as readily available. For example, if the Commission developed triggers based on the number of CLECs serving a building or having fiber routes near a building, such data would have to be collected from third parties each time an ILEC filed for a grant of pricing flexibility. Similarly, if the Commission suggested that an ILEC had to make a showing that it lacked market power in

⁴⁶ *Pricing Flexibility Order*, ¶ 78.

⁴⁷ *Pricing Flexibility Order*, ¶ 85.

order to be granted pricing flexibility relief, such as performing a regression analysis similar to that the Commission is proposing to undertake, such regulations would turn a straightforward regulation process into a mini-merger review, which clearly would be administratively burdensome for the ILECs and the Commission, as well as for third parties that would need to provide their data for such an analysis. Thus, if the Commission decides to change the triggers for pricing flexibility relief, it is important to be mindful that any such change continue to be an “easily verifiable, bright line test” that avoids “excessive administrative burdens.”

B. THE COMMISSION SHOULD TEST THE EXTENT TO WHICH ITS EXISTING COLLOCATION TRIGGERS REASONABLY IDENTIFY ALTERNATIVE NETWORK DEPLOYMENT AND KEEP AN OPEN MIND AS TO OTHER ALTERNATIVES TO THE PROPOSED “MULTI-FACETED” REGRESSION

80. As noted above, although the “multi-faceted” regression proposed in the *FNPRM* may generate valuable insights into the special access marketplace, it is a highly challenging undertaking that may not yield economically meaningful results. However, even if the multi-faceted regression does not produce meaningful results—or as a supplement to any meaningful results it does produce—the Commission’s data collection efforts may still provide useful information about the extent of deployment of competitive facilities, including fiber, cable and wireless technologies. As the Commission has long recognized, the presence of competitors who have made sunk investments in deploying competitive facilities reduces the ability of incumbent providers to engage in anticompetitive pricing.⁴⁸ Following this

⁴⁸ In the *Pricing Flexibility Order* (¶ 80), the Commission noted that in “telecommunications, where variable costs are a small fraction of total costs, the presence of facilities-based

logic, the Commission adopted fiber-based collocation triggers as a proxy for the deployment of alternative network facilities in the areas where there is special access demand.

81. We do not understand proponents of special access regulation to be contesting the Commission's basic economic reasoning. Rather, we understand their primary complaint to be that the collocation triggers overstate actual competitive entry, or at least the geographic scope of competitive entry. We understand that ILECs, on the other hand, contend that the triggers are under-inclusive because they do not reflect competition from entities such as cable companies or fixed wireless providers.

82. Such disputes over the accuracy of collocations as a proxy for sunk investments in network deployment by non-ILEC providers seem relatively straightforward to resolve empirically using the market data that the Commission proposes to collect. Thus, the Commission should use the data it will be gathering to examine the relationship between fiber-based collocations and the level of competitive entry in different areas.

83. To be sure, this analysis might show that the collocation triggers have not functioned as intended. They may be over-inclusive, as regulatory proponents have claimed, or under-inclusive, as AT&T and other ILECs have contended. In either case, the Commission could consider whether more geographically targeted relief is sufficient to cure any deficiency in use of collocation as a proxy or ways of accounting for intermodal competition.⁴⁹ The

competition with significant sunk investment makes exclusionary pricing behavior costly and highly unlikely to succeed.”

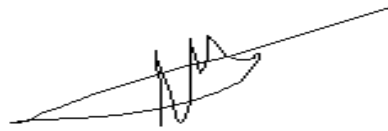
⁴⁹ Of course, if the existing triggers are under-inclusive, they would still serve as a conservative trigger for identifying where pricing flexibility was appropriate.

Commission could also consider undertaking alternative regression analyses that do not have the same methodological issues as one based on price/market structure and that might suggest proxies that might prove more administrable than what would obtain from the proposed regression analysis. The fundamental point is that any decision by the Commission to pursue a price/market structure regression analysis should not come at the expense of analyses that may be easier to conduct and ultimately generate more administrable rules.

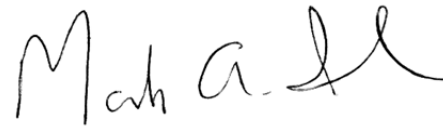
VI. CONCLUSION

84. As described in this Declaration, the Commission is proposing to undertake a potentially informative but also challenging econometric analysis. We have provided some suggestions regarding ways to maximize the value of this undertaking. We look forward to continuing to work with the Commission in a collaborative process as the data collection and analysis continues.

I declare, under penalty of perjury, that the foregoing is true and correct.

A handwritten signature in black ink, appearing to be 'Igal Hendel', written over a horizontal line.

Igal Hendel

A handwritten signature in black ink, appearing to be 'Mark A. Israel', written over a horizontal line.

Mark A. Israel

February 11, 2013