

SET IT AND FORGET IT?
MARKET POWER AND THE CONSEQUENCES
OF PREMATURE DEREGULATION IN
TELECOMMUNICATIONS MARKETS

GEORGE S. FORD, PHD* & LAWRENCE J. SPIWAK, ESQ.†

ABSTRACT

Fifty years ago, U.S. Supreme Court Justice Felix Frankfurter warned the Federal Communications Commission not to view "competition" in an "abstract, sterile way." To illustrate the dangers of using such an "abstract" approach to the key issue of Incumbent Local Exchange Carrier ("ILEC") market power, this paper uses the Commission's 1999 decision to deregulate the prices for Special Access telecommunications services as a case study, wherein the Commission abandoned its own general framework for competition analysis in favor of using abstract notions of potential competition. As demonstrated herein, the Commission's deregulatory scheme for Special Access services has produced substantial and sustained price increases for Special Access services where pricing flexibility is granted. Based on the results of an econometric model, these price increases are found to be the consequence of ILEC market power rather than price adjustments reflecting costs. This evidence suggests that while admittedly imperfect prognostications about competition and market power may be acceptable ex ante, continued agency review of incumbent market power is not only warranted, but virtually mandatory. Further, when abstract measures of competition are found, ex post, to be inadequate checks on market power such as in the case of Special Access services, the continued use of such abstractions by regulatory agencies should be immediately reviewed and potentially eliminated, particularly where such failure has a significant adverse impact on consumer welfare and a deleterious effect on U.S. telecoms competition and, by extension, the economy overall.

* Chief Economist, The Phoenix Center for Advanced Legal & Economic Public Policy Studies and President, Applied Economic Studies.

† President, The Phoenix Center for Advanced Legal & Economic Public Policy Studies. The views expressed in this paper are the authors' alone and do not represent the views of the Phoenix Center, its Adjunct Fellows, or any of its individual Editorial Advisory Board members.

I. INTRODUCTION

While the inherent economic characteristics of telecoms make it impossible to achieve "perfect" competition,¹ it is still a bedrock precept that incumbent firms should demonstrate at least some degree of workable competition as a prerequisite for deregulation.² While conceptually straightforward, knowing when the conditions are right for deregulation is practically very difficult. Indeed, choosing when to deregulate has proven immensely problematic in the dynamic telecommunications industry, particularly given the ubiquity and magnitude of barriers to entry (*e.g.*, necessity of committing significant sunk costs and the presence of asymmetrical regulation).

Assuming that regulation is intended to protect consumers by placing a check on the exercise of market power, it follows that deregulation is appropriate only when competitive entry is sufficient to substantially attenuate the exercise of market power by incumbent firms. Yet, rather than conduct a meaningful inquiry into whether there are actual close economic substitutes for various products and services, the FCC and others are increasingly justifying deregulation by the concept of "inter-modal competition"—where differentiated services supplied by dissimilar technologies (*e.g.*, wireless and

1. See generally David S. Evans & Richard Schmalensee, *A Guide to the Antitrust Economics of Networks*, 10 ANTITRUST 36, 38 (1996). The authors explain that because many network industries are characterized by high fixed costs and low marginal costs, firms that price at marginal cost:

would not recover their fixed costs, which are often the costs of developing innovative new products and services. To survive, they have to price well in excess of marginal cost. And, since they are making a profit at the margin on almost every unit, they often engage in price discrimination. Volume discounts, special deals, and complex pricing systems are common.

See also Stephen Martin, INDUSTRIAL ECONOMICS: ECONOMIC ANALYSIS AND PUBLIC POLICY 16 (1988) ("[perfect] competition is a Shangri-La up to which no real-world market can measure").

2. See, *e.g.*, *In re* Competition in the Interstate Interexchange Marketplace, 6 F.C.C. Rcd. 5880 (1991); *In re* Revisions to Price Cap Rules for AT&T Corp., 10 F.C.C. Rcd. 3009 (1995); *In re* Motion of AT&T Corp. to Be Reclassified as a Non-Dominant Carrier, 11 F.C.C. Rcd. 3271 (1995).

wireline telephony) are considered close substitutes—using little more than theoretical oversimplifications.³

The increasingly obvious disconnect between (de)regulatory policy and rigorous market power analysis ignores U.S. Supreme Court Justice Felix Frankfurter's fifty-year-old warning to the Commission not to view "competition" in an "abstract, sterile way."⁴ Indeed, policies implemented by relying exclusively on textbook notions of competition and regulation in an industry with traits incompatible with such naïve theories fail to satisfy the Commission's statutory mandate.⁵ Further, the Commission must not ignore the effects of its decisions on consumers and social welfare. Thus, the current Commission's preoccupation with maximizing industry inputs (e.g., jobs and the sales of equipment from vendors) rather than the efficient production and distribution of industry output (i.e., lower prices and more innovation) is misplaced.

While the notion of "market power" of Incumbent Local Exchange Carriers ("ILECs") has disappeared from the FCC's lexicon today,⁶ the sustainability of this philosophical stance is

3. For example, the FCC was quick to use anecdotal evidence of wireless inter-modal competition to justify granting the Regional Bell Operating Companies' ("RBOCs") collective petitions and forbear from enforcing and applying the independent § 271 unbundling obligations enumerated in the Triennial Review proceeding to the broadband elements the Commission removed from unbundling under § 251. See *In re* Petition for Forbearance of the Verizon Tel. Cos. Pursuant to 47 U.S.C. § 160(c), 19 F.C.C. Rcd. 21496, 22 (2004). Yet, the FCC quickly backed away from calling fixed and mobile close substitutes when it approved Cingular Wireless' (a.k.a. SBC and Bell South) acquisition of AT&T Wireless, *In re* Application of AT&T Wireless Servs., Inc. & Cingular Wireless Corp., 19 F.C.C. Rcd. 21522 (2004), even though post-merger the Bells would serve 70% of all U.S. consumers who take service from a national wireless carrier, see Phoenix Center for Advanced Legal & Economic Public Policy Studies, Higher Prices Expected from the Cingular/AT&T Wireless Merger 2 (May 26, 2004), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB11Final.pdf>, and would be able to discriminate against non-Bell controlled wireless carriers for Special Access services. Thus, correct policy inquiry would appear not to be intermodal competition, but rather upon the potential for intermodal collusion.

4. FCC v. RCA Communications, Inc., 346 U.S. 86, 93–95 (1953).

5. See 47 U.S.C. § 151 (2001) (listing the general purposes of the FCC).

6. See, e.g., Michael K. Powell, The Great Digital Broadband Migration, Remarks Before the Progress & Freedom Foundation (Dec. 8, 2000), available at <http://ftp.fcc.gov/Speeches/Powell/2000/spmcp003.html>; Michael K. Powell, Digital Broadband Migration Part II, Address Prepared for Delivery

dubious given the inevitable review of FCC decisions by a panel less dogmatic than former Chairman Michael K. Powell.⁷ In other words, deregulation by the FCC requires a thorough inquiry as to whether there are sufficient regulatory safeguards and/or competition to constrain the incumbents' market power under current market conditions (thereby allowing the regulator to forbear from its authority to "manage" market forces).⁸ Further, given the dynamic nature of the telecom industry, the Commission should examine and monitor the impacts of the decisions the FCC makes today (and in the past) on the long-term performance of the industry as a whole.⁹

at FCC Press Conference (Oct. 23, 2001), *available at* <http://ftp.fcc.gov/Speeches/Powell/2001/spmcp109.html>; Michael K. Powell, Hear Ye Hear Ye Read All About It, Remarks at the Associated Press Annual Meeting and General Session of the Newspaper Association of America Annual Convention (Apr. 28, 2003), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-233732A1.pdf; Michael K. Powell, Oral Statement Before the Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, United States House of Representatives (Feb. 26, 2003), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231577A1.pdf; Michael K. Powell, Remarks Prepared for Delivery at the Goldman Sachs Communicopia XI Conference (Oct. 2, 2002), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-226929A1.pdf. *See also* Kathleen Q. Abernathy, Health of the Telecommunications Sector: A Perspective from the Commissioners of the Federal Communications Commission, Written Statement Before the Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, United States House of Representatives (Feb. 26, 2003), *available at* http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231535A2.pdf.

7. *See* Robert Kuttner, *Deregulation: Why Michael Powell is Wrong*, *BUS. WEEK*, Apr. 14, 2003, at 18.

8. Some argue, sometimes convincingly, that unregulated monopoly is an improvement over regulated monopoly. *See, e.g.*, THOMAS W. HAZLETT & MATTHEW L. SPITZER, *PUBLIC POLICY TOWARD CABLE TELEVISION: THE ECONOMICS OF RATE CONTROLS* (1997).

9. *See, e.g.*, *Verizon Communications, Inc. v. FCC*, 535 U.S. 467, 489 (2002) ("For the first time, Congress passed a rate setting statute with the aim not just to balance interests between sellers and buyers, but to reorganize markets by rendering regulated utilities' monopolies vulnerable to interlopers . . ."). *See also* *Town of Concord v. Boston Edison Co.*, 915 F.2d 17, 22 (1st Cir. 1990) (Breyer, J.), *cert. denied*, 499 U.S. 931 (1991) ("After all, should the regulator decide that new entry is warranted, it typically has the legal authority to prevent an existing 'two-level' monopolist from improperly disadvantaging a new 'second-level' competitor by, say, refusing to deal to [sic] with it or by charging unreasonably high prices."); WALTER G. BOLTER ET AL., *TELECOMMUNICATIONS POLICY FOR THE 1980'S: THE TRANSITION TO COMPETITION* 359-60 (1984).

Understanding that this daunting task is easier said than done, particularly as administrative decision-making is a political process with political pressures for action,¹⁰ the courts consistently hold that the FCC need not meet a “standard of perfection” or to “identify the optimal threshold with pinpoint precision” when promulgating its rules; but, if the Commission is going to depend on predictive forecasts, then the FCC must “identify the standard and explain its relationship to the underlying regulatory concerns.”¹¹ The foregoing statement of law also raises a corollary but unanswered question: if the Commission, as the expert agency, is entitled to such great deference and latitude in implementing the provisions of the Communications Act, then doesn’t the Commission *a fortiori* also have a subsequent responsibility to monitor the consequences of its regulatory actions, particularly when it publicly admits that its regulatory actions are based on prognostications and imperfect measures of competition? As explained below, the obvious answer is “yes,” particularly when the Commission’s prognostications are based *ex ante* on flawed theory and can be shown *ex post* to be incorrect.¹²

10. *Cf.* United States v. FCC, 652 F.2d 72, 90–91 (D.C. Cir. 1980) (en banc) (“Someone must decide when enough data is enough. In the first instance that decision must be made by the Commission To allow others to force the Commission to conduct further evidentiary inquiry would be to arm interested parties with a potent instrument for delay.”).

11. *See, e.g.*, WorldCom, Inc. v. FCC, 238 F.3d 449, 461–62 (D.C. Cir. 2001).

12. Indeed, the courts have made clear that where the FCC regulates rates on the basis of predictive judgments, it is imperative that “the Commission . . . vigilantly monitor the consequences of its rate regulation rules.” *ACLU v. FCC*, 823 F.2d 1554, 1565 (D.C. Cir. 1987). Furthermore, “[i]f, in light of the actual market developments, the Commission determines that competition is not having the anticipated effect on access charges, the agency presumably will revisit the issue.” *Texas Office of Pub. Util. Counsel v. FCC*, 265 F.3d 313, 325 (5th Cir. 2001) (quoting *S.W. Bell Tel. Co. v. FCC*, 153 F.3d 523, 547 (8th Cir. 1998)). *See also* *Cellnet Communications, Inc. v. FCC*, 149 F.3d 429, 442 (6th Cir. 1998) (“If the FCC’s predictions about the level of competition do not materialize, then it will of course need to reconsider its [regulation] . . . in accordance with its continuing obligation to practice reasoned decision-making”); *Bechtel v. FCC*, 957 F.2d 873, 881 (D.C. Cir. 1992) (“[I]t is settled law that an agency may be forced to reexamine its approach ‘if a significant factual predicate of a prior decision . . . has been removed.’” (quoting *WWHT, Inc. v. FCC*, 656 F.2d 807, 819 (D.C. Cir. 1981))); *AFL-CIO v. Brock*, 835 F.2d 912, 917 (D.C. Cir. 1987) (“[C]ourts

To illustrate the dangers of using such an “abstract” approach to the key issue of ILEC market power, we will use as a case study the Commission’s 1999 decision to deregulate the prices for Special Access telecommunications services. The Commission justified this decision by abandoning its own general framework for competition analysis and, instead, using crude indicators of potential competition.¹³ This deregulatory scheme has produced *substantial* and *sustained* price increases for Special Access services where pricing flexibility is granted.¹⁴ Based on the results of an econometric model, these price increases are found to be the consequence of ILEC market power rather than price adjustments reflecting costs. This evidence suggests that while the FCC’s admittedly imperfect prognostications may be acceptable *ex ante*, continued agency review of incumbent market power is warranted. Further, and perhaps more important, when abstract measures of competition are found, *ex post*, to be inadequate checks on market power, such as in the case of Special Access services, the continued use of such abstractions by regulatory agencies should be immediately reviewed and potentially eliminated, particularly where such failure has a significant adverse impact on consumer welfare and a deleterious effect on competition in the U.S. telecommunications industry and, by extension, the economy overall.

The Commission’s failed deregulatory scheme in Special Access is particularly pertinent for modern telecommunications policy. The Commission applied the same deregulatory approach when developing the new set of rules governing rivals’ non-discriminatory access to unbundled network elements.¹⁵ Given the failure of this approach in the Special Access context, the FCC’s reapplication of the scheme to other

recognize that agencies must respond to changed circumstances to carry out Congress’ purposes”).

13. See *infra* notes 66-75 and accompanying text.

14. See *infra* notes 75-86 and accompanying text. See also *infra* at Table 1.

15. Press Release, Federal Communications Commission, FCC Adopts New Rules for Network Unbundling Obligations of Incumbent Local Phone Carriers (Sept. 15, 2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-255344A1.pdf. See also *In re* Unbundled Access to Network Elements, WC Docket No. 04-313, Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, CC Docket No. 01-338, FCC 04-290 (Dec. 15, 2004), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-04-290A1.pdf.

Bell-dominated network facilities is problematic (to say the least).¹⁶ Further, as entrants begin to lose access to high-capacity unbundled network elements at cost-based prices, the closest substitute facility/service is Special Access services.¹⁷ Thus, not only has the Commission reapplied a severely flawed deregulatory scheme to high-capacity unbundled network elements, but those firms no longer able to purchase the network elements must then deal with the consequences of a market-power liberating deregulatory approach for Special Access services.¹⁸

Our analysis proceeds as follows. In Part II, we describe the FCC's philosophical and analytical approach to deregulating Special Access services, paying particular attention to how the FCC approached the key issue of ILEC market power and market definition and why the D.C. Circuit upheld the Commission's rulemaking as lawful despite finding its policy decisions questionable.¹⁹ In light of the Commission's recent decision in its Triennial Review to remove some high capacity circuits from the list of unbundled elements, therefore preventing entrants from purchasing such circuits in many markets at cost-based prices,²⁰ a market power analysis of Special Access services is particularly timely.²¹

16. See *infra* note 118 and accompanying text.

17. Indeed, unlike the residential market where consumers ostensibly enjoy intermodal competition from VoIP/cable and wireless platforms, neither platform is even remotely a close substitute for high-capacity loops. See T. Randolph Beard, George S. Ford & Lawrence J. Spiwak, *Quantity-Discount Contracts as a Barrier to Entry* (Nov. 2004), available at <http://www.phoenix-center.org/pcpp/PCPP20Final.pdf>.

18. *Id.*

19. See *Worldcom, Inc. v. FCC*, 238 F.3d 449, 457–58 (D.C. Cir. 2001).

20. See *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability, Report and Order and Order on Remand and Further Notice of Proposed Rulemaking*, 18 F.C.C.R. 16978, 17027–28 (2003) [*hereinafter* "Triennial Review"].

21. Cf. MARK NAFTEL & LAWRENCE J. SPIWAK, *THE TELECOMS TRADE WAR: THE UNITED STATES, THE EUROPEAN UNION AND THE WORLD TRADE ORGANISATION* 207 (2001) ("[T]he FCC found that most CLECs had more success reselling selling [sic] specialized services, such as special access and local private line services, than they have had selling basic switched local service to end users. In other words, *they bleed red ink.*").

In Part III, we then specify an empirical model to estimate the extent to which the near ubiquitous price increases for Special Access services in deregulated markets can be attributed to market power rather than costs. This model suggests that the vast majority of observed price increases in deregulated markets can be credited to the increased exercise of market power, with cost variation contributing little to price increases.

Finally in Part IV, we briefly examine the legal and policy implications of the Commission's approach to ILEC market power in the Special Access context, with a focus on pending and future proceedings at the agency. As explained below, the Commission's deregulation experience for Special Access illustrates that although the Commission may rely on theoretical concepts of competition as a substitute for a rigorous analysis of market power to develop the initial parameters of a regulatory paradigm, it may not abrogate its statutory obligation under the Communications Act to monitor the subsequent consequences of its regulatory actions on the market. As such, we come back full circle, because if the evidence suggests a regulatory failure, then perhaps a more thorough look at the incumbents' market power in the first instance would have been in order.

II.

CASE STUDY: EXAMINING THE COMMISSION'S DEREGULATORY PARADIGM FOR SPECIAL ACCESS

What is Special Access?

Special Access is the backbone of the telecommunications network. These high capacity circuits—such as DS-0, T-1, DS-1, DS-3, and OC-N lines—are used to transport traffic between major interconnection points of the network (*e.g.*, switches, routers, *etc.*) and between such points and end-users.²² Special

22. The T-carrier system, introduced by the Bell System in the U.S. in the 1960s, was the first successful system that supported digitized voice transmission. The original transmission rate (1.544 Mbps) in the T-1 line is in common use today in Internet service provider (ISP) connections to the Internet. Another level, the T-3 line, providing 44.736 Mbps, is also commonly used by Internet service providers. Another commonly installed service is a fractional T-1, which is the rental of some portion of the 24 channels in a T-1 line, with the other channels going unused. Digital signal X is a term for the

Access services are typically priced as three components: (1) channel terminations, (2) interoffice transport, and (3) entrance facilities.²³ Channel terminations are the facilities between an ILEC serving wire center and an end-user customer.²⁴ Interoffice transport consists of the facilities connecting various ILEC serving wire centers. Entrance facilities connect interexchange carriers' or CLECs' point(s) of presence ("POP") with the ILEC-serving wire center.²⁵ Each of these components can have mileage charges, and interoffice transport almost always does.²⁶

series of standard digital transmission rates or levels based on DS0, a transmission rate of 64 Kbps, the bandwidth normally used for one telephone voice channel. Both the North American T-carrier system and the European E-carrier systems of transmission operate using the DS series as a base multiple. The digital signal is what is carried inside the carrier system. DS0 is the base for the digital signal X series. DS1, used as the signal in the T-1 carrier, is 24 DS0 (64 Kbps) signals transmitted using pulse-code modulation (PCM) and time-division multiplexing (TDM). DS2 is four DS1 signals multiplexed together to produce a rate of 6.312 Mbps. DS3, the signal in the T-3 carrier, carries a multiple of 28 DS1 signals or 672 DS0s or 44.736 Mbps. Digital signal X is based on the ANSI T1.107 guidelines. See T-Carrier System (2004), available at http://searchnetworking.techtarget.com/sDefinition/0,290660,sid7_gci213096,00.html (last visited Feb. 1, 2005).

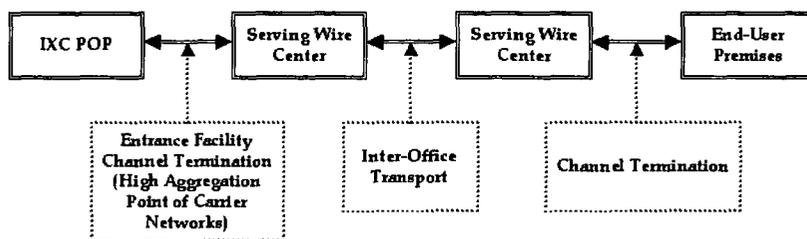
23. In the special access context, entrance facilities are also called "channel terminations." We use "entrance facilities" here to distinguish those channel terminations that provide the end user connection from those that provide the connection between carrier networks.

24. See, e.g., Daniel Kelley, *Deregulation of Special Access Services: Timing Is Everything* 6 (July 2, 1999), at <http://www.hainc.com/ALTS.pdf>.

25. *In re Access Charge Reform*, CC Docket No. 96-262, Price Cap Performance Review for Local Exchange Carriers, CC Docket No. 94-1, Interexchange Carrier Purchases of Switched Access Services Offered by Competitive Local Exchange Carriers, CCB/CPD File No. 98-63, Petition of U.S. West Communications, Inc. for Forbearance from Regulation as a Dominant Carrier in the Phoenix, Arizona MSA, CC Docket No. 98-157, FCC 990-206, ¶¶ 9-10 (Aug. 27, 1999), available at http://ftp.fcc.gov/Bureaus/Common_Carrier/Orders/1999/fcc99206.pdf [*hereinafter* "Pricing Flexibility Order"].

26. For a more thorough description, see *id.* ¶¶ 8-10.

ILLUSTRATION NO. 1

*The 1999 Pricing Flexibility Order*

In 1990, ILECs were required to geographically average the prices for Special Access services across geographic markets.²⁷ Subsequently, the Commission granted limited pricing flexibility—including de-averaging and volume and term discounts—provided there was at least some evidence of competition in the rate zone or study area.²⁸

In 1999, the FCC released its *Pricing Flexibility Order* in order to allow, *inter alia*, “incumbent LECs progressively greater pricing flexibility [for Special Access services] as they face increasing competition.”²⁹ Used often by the Commission, limited pricing flexibility is a mechanism that deregulates narrow portions of a dominant firm’s business as it presumably be-

27. *Id.* ¶ 14.

28. *In re* Expanded Interconnection with Local Telephone Company Facilities; Amendment of the Part 69 Allocation of General Support Facility Costs, 7 F.C.C. Rcd. 7369, 7454 n.411 (1992), *vacated in part and remanded*, Bell Atlantic Tel. Cos. v. FCC, 24 F.3d 1441, 1442 (D.C. Cir. 1994); *In re* Expanded Interconnection with Local Telephone Company Facilities, 9 F.C.C. Rcd. 5154, 5158, ¶ 7, 5196, ¶ 154 (1994) [*hereinafter* “Virtual Collocation Order”] (“Expanded interconnection” refers to the interconnection of one carrier’s circuits with those of a LEC at one of the LEC’s wire centers so that the carrier can provide certain facilities-based access services); *In re* Expanded Interconnection with Local Telephone Company Facilities, Amendment of Part 36 of the Commission’s Rules and Establishment of a Joint Board, 8 F.C.C. Rcd. 7374, 7425-32 (1993) (An expanded interconnection offering is deemed “operational” when at least one interconnector has taken a switched cross-connect element), *aff’d*, Virtual Collocation Order, 9 F.C.C. Rcd. 5196.

29. Pricing Flexibility Order, *supra* note 25, ¶ 67.

comes competitive without having to deregulate the entire firm.³⁰

In its *Pricing Flexibility Order*, the Commission established two phases of pricing flexibility for Special Access services, Phase I and Phase II.³¹ Under Phase I, the Commission would allow the ILEC to provide volume and term discounts of current rates or enter into contract tariffs,³² while Phase II pricing flexibility would remove the ILEC from price cap regulation altogether.³³

To obtain Phase I pricing flexibility under the Commission's regulations, a price cap LEC must show that in each Metropolitan Statistical Area ("MSA") competitors unaffiliated with the price cap LEC have collocated:

- (1) In fifteen percent of the petitioner's wire centers, and that at least one such collocater in each wire center is using transport facilities owned by a transport provider other than the price cap LEC to transport traffic from that wire center; or
- (2) In wire centers accounting for 30 percent of the petitioner's revenues from dedicated transport and Special Access services other than channel terminations between LEC end offices and customer premises, determined as specified in Sec. 69.725 of this part, and that at least one such collocater in each wire center is using transport facilities owned by a transport provider other than the price cap LEC to transport traffic from that wire center.³⁴

For channel terminations, a stricter standard is applied given that entry costs for channel terminations are higher.³⁵ Phase I relief for channel terminations requires collocations in

30. See, e.g., *In re* Competition in the Interstate Interexchange Marketplace, 6 F.C.C. Rcd. 5880, 5889 (1991) (distinguishing between AT&T's market share for business services and market share for other services); *In re* Revisions to Price Cap Rules for AT&T Corp., Report & Order, FCC Docket No. 95-18 (January 12, 1995); Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Second Report and Order, 5 F.C.C. Rcd. 6786, 6818-20 (1990).

31. Pricing Flexibility Order, *supra* note 25, ¶ 4.

32. See 47 C.F.R. § 69.727(a).

33. See *id.* § 69.727(b)(2).

34. See 47 C.F.R. § 69.709(b)-(c).

35. Pricing Flexibility Order, *supra* note 25, ¶¶ 100-02.

50 percent of wire centers or in wire centers accounting for 65 percent of revenues.³⁶

The standards for Phase II pricing flexibility are nearly identical except that non-affiliated carriers must have collocated in 50 percent of the petitioner's wire centers or in wire centers accounting for 65 percent of the petitioner's revenues from dedicated transport and Special Access services other than channel terminations between LEC end offices and customer premises.³⁷ Phase II flexibility requires a higher "competition" standard than Phase I, since the ILEC can remove services sold in such markets from price cap regulation, whereas Phase I flexibility retains price caps but allows the ILEC to provide volume and term discounts of current rates or enter into contract tariffs. Consumers can continue to purchase Special Access services at price-cap rates with Phase I relief, but this option is eliminated with Phase II relief.³⁸

The deregulatory paradigm for Special Access services established by the Commission consists of (at least) two primary components relevant to an economic and legal analysis. First, the Commission defined the geographic market over which flexibility is granted as an MSA.³⁹ MSAs are rather large geographic areas that extend well beyond the core population and business density of the cities contained therein.⁴⁰ Second, pricing flexibility is not granted in response to a reduction in market power, but in response to the number of central offices in which at least one competitor has collocated.⁴¹ While measurable, collocation is not necessarily related in a meaningful way to competition, so the Commission's deregulatory framework relies on a highly indirect measure of competition. Both features of the Commission's paradigm—large geographic markets and indirect measures of competition—create the potential for market power to be exercised by incumbent firms. Whether or not this potential is realized is an empirical question, which we turn to in Section III.

36. *Id.* ¶ 100.

37. *See* 47 C.F.R. § 69.709(c)(1)–(2).

38. Pricing Flexibility Order, *supra* note 25, ¶¶ 141, 153–57.

39. *Id.* ¶ 72.

40. *Id.*

41. Pricing Flexibility Order, *supra* note 25, ¶ 141.

1. *The FCC's Approach to Defining the Appropriate Geographic Market for Analysis*

According to the Commission, the relevant geographic market for regulatory purposes should be defined "narrowly enough so that the competitive conditions within each area are reasonably similar, yet broadly enough to be administratively workable."⁴² Agreeing with the ILECs,⁴³ the Commission chose Metropolitan Statistical Areas⁴⁴ as the relative geographic area for purposes of analysis because, reasoned the Commission, MSAs are a "logical basis for measuring the extent of competition" as MSAs "best reflect the scope of competitive entry."⁴⁵ Entrants, however, contested the notion that MSAs coincide with the scope of competitive entry and argued in favor of smaller geographic markets.⁴⁶ While the Commission recognized that telecommunications investment is "largely specific to a location," it did not place substantial weight on this fact when selecting market boundaries.⁴⁷

The Commission received various proposals, which included central-office-specific market boundaries and statewide market boundaries (among others).⁴⁸ Limiting the market to central offices was rejected on administrative grounds, with the Commission arguing that "defining geographic areas smaller than MSAs would force incumbents to file additional pricing flexibility petitions and, although these petitions might produce a more finely-tuned picture of competitive conditions, the record does not suggest that this level of detail justifies the increased expenses and administrative burdens associated with" such a definition.⁴⁹ Conversely, the Commission believed that providing state-wide pricing flexibility would "increase the likelihood of exclusionary behavior by incumbent LECs by giving them flexibility in areas where competitors have not yet made irreversible investments in facilities."⁵⁰ The

42. *Id.* ¶ 71.

43. *Id.* ¶ 72 n.196.

44. 47 C.F.R. § 22.909(a).

45. Pricing Flexibility Order, *supra* note 25, ¶ 72.

46. *Id.* ¶ 74 ("CTSI and KMC suggest that competition may exist in only a small part of an MSA . . .").

47. *Id.* ¶ 81.

48. *Id.* ¶¶ 72, 74.

49. *Id.* ¶ 74.

50. *Id.* ¶ 72.

Commission also recognized that its MSA definition potentially presented the same problem and might "lead to higher rates for access to some parts of an MSA that lack a competitive alternative. . . ."51

Selecting market boundaries turned on the tradeoff between the risk of increased market power in some parts of the market and the costs of administering a deregulatory paradigm (for both the Commission and the ILECs).52 Presumably, administrative costs increase as market size decreases, thereby increasing the number of markets and requiring more numerous applications for flexibility. The Commission believed that the MSA was appropriate because administrative costs were reasonable and its triggers were "sufficient to preclude the incumbent from exploiting any monopoly power over a sustained period."53 If, however, market power is observed under the Commission's deregulatory paradigm, then

51. *Id.* ¶ 142. The problem with overly broad market definitions is usefully evaluated using the economic theory of fragmented competition. To illustrate the concept, consider a simple example. Suppose there are two islands, A and B. On Island A, both firms 1 and 2 offer "Special Access" services to end users, but only Firm 1 offers service on Island B. Island A is a contested or competitive market, whereas Island B is a monopoly. Economists refer to this competitive scenario as fragmented duopoly or fragmented competition. See Kaushik Basu & Clive Bell, *Fragmented Duopoly: Theory and Applications to Backward Agriculture*, 36 JOURNAL OF DEVELOPMENT ECONOMICS 145, 147-48 (1991). The most interesting case of fragmented competition is when firms are required to offer services at the same price across the two segments (or islands). Firm 2, providing service only on Island A, behaves in a traditionally duopolistic fashion since its entire market is contested. Alternately, Firm 1, serving both contested and captured segments, must consider the implications from both markets when setting its single price. A cross-market balancing act by Firm 1 renders an equilibrium price that lies between the monopoly and competitive (duopolistic) price. Importantly, if prices can differ between islands, then the two islands are treated independently by Firm 1 with the monopoly price prevailing in the captured segment (Island B) and the competitive price prevailing in the contested segment (Island A). Firm 1's profits are higher if it can price-discriminate across markets, so Firm 1 prefers to segment the two markets. Oddly, despite the ability to exercise market power, segmenting the market was viewed as desirable by the Commission: "incumbent LECs are no longer required to choose between lowering a rate throughout the area at issue or not lowering the rate at all." Pricing Flexibility Order, *supra* note 25, ¶ 122.

52. Lawrence J. Spiwak, *What Hath Congress Wrought? Reorienting Economic Analysis of Telecommunications Markets After the 1996 Act*, ANTITRUST (Spring 1997) at 33-34.

53. Pricing Flexibility Order, *supra* note 25, ¶ 141.

either the Commission's triggers are inadequate indicators of competition or its market boundaries are too wide (or both).⁵⁴

One distinction between Phase I and II relief with respect to market definition is worth discussing. With Phase I relief, a customer may continue to purchase Special Access services at regulated (price cap) prices.⁵⁵ This option is eliminated with Phase II relief.⁵⁶ Because the administrative costs of price caps are incurred regardless of Phase I or Phase II relief (until, at least, all markets receive Phase II relief), the price-cap ceiling in Phase I markets is a very low cost stopgap measure against the exercise of market power in those markets. Why the Commission did not maintain this stopgap measure in Phase II markets is unclear, though probably related to the desire to completely deregulate prices. However, given the shaky competitive standards relied upon to deregulate this market and the failure to perform a market power analysis, the price-cap stopgap measure could have been a reasonable component of Phase II relief. The stopgap should have no effect on the ILECs' incentive to cut price. Unless Special Access circuits in different markets or areas of single market are substitutes or compliments in demand, the inability to raise price for some customers should not affect the decision to lower prices for others.⁵⁷ Therefore, downward price pressures should be unaffected by a price-cap ceiling on rates.

2. *Sunk Costs as a Proxy for Competition*

Perhaps the most puzzling aspect of the Commission's deregulatory paradigm is the decision to measure the extent of competition and the prospects for entry by the degree to

54. In contrast to its wide geographic market boundaries for high capacity circuits in the pricing flexibility context, for high capacity unbundled network elements ("UNEs") the Commission recently defined the relevant market for similar services on a point-to-point basis (*e.g.*, between two central offices or perhaps between two city-pairs) in their Triennial Review. *See infra* note 63 and accompanying text.

55. Pricing Flexibility Order, *supra* note 25, ¶ 122.

56. *Id.* ¶¶ 153–57.

57. *See* JEAN TIROLE, *THE THEORY OF INDUSTRIAL ORGANIZATION* 70 (1995). Prices also may be related across markets or areas if the marginal costs of providing the different services are related.

which entry requires sunk costs.⁵⁸ While economic theory does suggest that sunk investments represent a commitment by entrants thereby reducing the expected success of predatory actions by incumbent firms, the primary role of sunk costs in economic theory is as an entry barrier.⁵⁹ Entry is the driving force of competition, and impediments to entry are not usually (or legitimately) associated with the prospects for effective competition.⁶⁰ While the Commission has recognized this fact in other contexts, it completely ignored the entry deterring aspects of sunk costs in its *Pricing Flexibility Order*.⁶¹

In its *Pricing Flexibility Order*, the Commission adopted a "collocation-based trigger for granting pricing flexibility for special access [services]" because collocations required "irreversible, or 'sunk' investment in facilities used to provide competitive services."⁶²

[C]ollocation usually represents a financial investment by a competitor to establish facilities within a wire center. . . . [T]he investment in transmission facilities associated with collocation arrangements is largely specific to a location; the competitive LEC's facilities cannot, for the most part, easily be removed and used elsewhere if entry does not succeed.⁶³

58. See, e.g., *Pricing Flexibility Order*, *supra* note 25, ¶ 94 ("we conclude that it is appropriate to give incumbent LECs pricing flexibility when competitors have made irreversible, sunk investment in facilities").

59. See Tirole, *supra* note 58, at Ch. 8; John Sutton, *SUNK COST AND MARKET STRUCTURE* (1995).

60. Implementation of Section 19 of the Cable Television Consumer Protection and Competition Act of 1992, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, First Report, 9 F.C.C.R. 7442, 7622 (1994) [*hereinafter* "Section 19 Report"].

61. See, e.g., *In re Implementation of Local Competition in Telecommunications Act of 1996*, 11 F.C.C. Rcd. 15499, ¶ 704 (1990) [*hereinafter* "Section 251 First Report and Order"]; *In re Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, Third Report and Order and Fourth Further Notice of Proposed Rulemaking, 11 F.C.C. Rcd. 15499, 15857 (1996) [*hereinafter* "UNE Remand Order"]; Triennial Review, *supra* note 21, at 17027-28; Section 19 Report, *supra* note 61, at 7622.

62. *Pricing Flexibility Order*, *supra* note 25, ¶ 79. See also *id.* ¶ 94 ("we conclude that it is appropriate to give incumbent LECs pricing flexibility when competitors have made irreversible, sunk investment in facilities")

63. *Id.* ¶ 81. The Commission did note, however, that while "in the past, the presence of an operational collocation arrangement in a wire center almost always implied that a competitor [had] installed transmission facilities

As an initial matter, the FCC reasoned that it was appropriate to focus on the sunk investments because:

An incumbent monopolist will engage in exclusionary pricing behavior only if it believes that it will succeed in driving rivals from the market or deterring their entry altogether. . . . Once multiple rivals have entered the market and cannot be driven out, rules to prevent exclusionary pricing behavior are no longer necessary. Investment in facilities, particularly those that cannot be used for another purpose, is an important indicator of such irreversible entry. . . .

[T]he presence of facilities-based competition with significant sunk investment makes exclusionary pricing behavior costly and highly unlikely to succeed.⁶⁴

It is interesting to note that the Commission's logic addresses only the effect of sunk costs on *exit*, not entry. This selective use of economic theory produces an important analytical conflict in the Commission's decision. Specifically, the Commission recognized the possibility that its broadly defined markets might allow the ILEC to exploit market power in non-competitive segments of the MSA, stating "such relief might lead to higher rates for access to some parts of an MSA that lack a competitive alternative. . . ." ⁶⁵ Yet, the Commission dismisses the importance of the non-competitive segments by contending "unreasonably high rates. . . will induce competitive entry."⁶⁶ This expectation contradicts the fundamental premise of the Commission's deregulatory paradigm. Sunk

to compete with the incumbent . . . [such a] correlation between operational collocation arrangements and competitive transport facilities [had become] somewhat attenuated . . . by the advent of services such as digital subscriber line (DSL) services. Competitors providing these services [would] usually collocate in order to gain access to the incumbent's copper loops, a necessary input for DSL service, not to compete with the incumbent for the provision of transport services . . . Therefore, to ensure that [its] triggers [would] . . . provide a clear picture of competitive conditions on a going-forward basis, [the FCC] require[d] incumbent LECs to show that at least one competitor [would rely] on transport facilities provided by a transport provider other than the incumbent at each wire center listed in the incumbent's pricing flexibility petition as the site of an operational collocation arrangement. *Id.* ¶ 82.

64. *Id.* ¶ 80.

65. *Id.* ¶ 142.

66. *Id.*

costs deter entry and may allow market power to be exercised without fear of entry.⁶⁷ Because entry requires sunk costs, it is obviously unreasonable for the Commission to rely heavily on entry to remedy problems with an overly broad market definition. Ignorance is no defense. Despite ignoring the entry-detering effects of sunk costs in its *Pricing Flexibility Order*, the Commission has in many other cases relied heavily on these very effects to justify its other regulatory efforts.⁶⁸

There are other problems with the Commission's reasoning. First, while the Commission averred that its collocation triggers were "sufficient to preclude the incumbent from exploiting any monopoly power over a sustained period,"⁶⁹ the Commission engaged in no market power analysis to affirm its position. Without evidence, these statements are nothing more than unsupported assertions, and while expert agencies are entitled to substantial deference,⁷⁰ there must be a "rational connection between the facts found and the choice made."⁷¹ The Commission presented no evidence in support of its assertion that its collocation triggers represented sufficient competition to check ILEC market power.

Second, collocation is a necessary but not sufficient condition for Special Access competition.⁷² The presence of a collocator that uses its own transport to carry traffic from a LEC-serving wire center shows at most some competition for entrance facilities (*i.e.*, the connection between the ILECs and IXC or CLECs networks). It is in no way probative of competition for interoffice transport or channel terminations. The

67. Entry deterrence is even more likely when the ILEC can signal to entrants that post-entry competition will be tough. This signal is easily sent to entrants because the deregulatory paradigm allows the incumbent to cut price in contested segments.

68. See, *e.g.*, Triennial Review, *supra* note 21, ¶ 82; Section 251 First Report and Order, *supra* note 62, at 15689-90; UNE Remand Order, *supra* note 62, ¶¶ 377-78 ("It is generally recognized that the need to incur sunk costs can constitute a barrier to entry").

69. Pricing Flexibility Order, *supra* note 27, ¶ 141.

70. *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 167 (1962).

71. *Id.* at 168.

72. Even the Commission recognizes the potentially dubious link. See Pricing Flexibility Order, *supra* note 25, ¶ 82 ("[the] correlation between operational collocation arrangements and competitive transport facilities is somewhat attenuated . . .").

only competitive presence that any ILEC relied upon to gain pricing flexibility for Special Access was for entrance facilities. Yet, under the FCC's bright-line test, some competition for this one component of Special Access was sufficient to allow deregulation of interoffice transport and channel terminations as well.⁷³

Moreover, apart from this overriding flaw, the presence of collocation in a central office only indicates that an entrant *may* have *tried* to enter the Special Access market (or some other market) at some point in the past requiring collocation. Collocation triggers ignore what market the collocator actually served or serves, the likelihood of successful market entry, or the entrant's continued presence in the market. Continuing to ignore the profitability and continued success of collocations is odd, given that most facilities-based CLECs operating in 1999 are now either bankrupt or out of business altogether.⁷⁴

D.C. Circuit Review

The D.C. Circuit reviewed the Commission's *Pricing Flexibility Order* in *WorldCom, Inc. v. FCC*.⁷⁵ As a general rule of administrative law, a reviewing court is required to accord the FCC, as the expert agency, great deference when it administers its own statute, provided that it has shown the "whys and wherefores" of its reasoning.⁷⁶ For this reason, the D.C. Circuit

73. *Id.* ¶ 78.

74. See, e.g., Mitchell Pacelle and Dennis K. Berman, *Allegiance Telecom Seeks Bankruptcy Protection*, WALL ST. J., May 15, 2003, at B4. A similar error was made in the Commission's unbundled switching restriction for the top 50 MSA's. In its UNE Remand Order, the Commission removed from the minimum list of unbundled elements switching services in the top 50 MSAs for customers with more than three access lines at a single location. UNE Remand Order, *supra* note 62, at 3822-24. The decision was based on the number of CLEC switches deployed in large markets. UNE Remand Order, *supra* note 62, at 3824-25. Since the Commission's Order, nearly every CLEC that deployed switches has declared bankruptcy. Pacelle and Berman, *supra*, at B4.

75. 238 F.3d 449 (D.C. Cir. 2001).

76. See *City of Holyoke Gas & Elec. Dep't v. Fed. Energy Regulatory Comm'n*, 954 F.2d 740, 743 (D.C. Cir. 1992) ("Since it is already doing the relevant calculation, it is a small matter to abide by the injunction of the arithmetic teacher: Show your work! For the Commission to do less deprives the [consumer] of a rational explanation of its decision."). Specifically, the

stated that "it [was] not [their] role to second guess the FCC's policy judgment, so long as it comports with established standards of administrative practice" and, accordingly, reviewed the FCC's *Pricing Flexibility Order* in this light.⁷⁷

The D.C. Circuit responded to the allegations of several petitioners that the FCC's use of collocation as a proxy for competition was arbitrary and capricious.⁷⁸ Although the court observed that "[i]t may well be that collocation is a poor measure of market share as petitioners attest"⁷⁹ and may indeed have "faults as a measure of competition,"⁸⁰ the fact "that the FCC chose to rely upon an admittedly imperfect measure of competition does not render its use arbitrary and capricious."⁸¹ In the court's view, even though "the FCC readily admit[ted]. . . that its decision to adopt the thresholds contained in the *Pricing Flexibility Order* was dependent, at least in part, on the agency's predictive forecasts. . . [there is] no statutory requirement that the FCC be confident to a metaphysical certainty of its predictions about the future of competition in a given market before it [may] modify its regulatory scheme."⁸² According to the D.C. Circuit:

Despite their inherent uncertainty, there is little question that agency prognostications of this sort may be used in the formulation of policy; "it is within the scope of the agency's expertise to make such a prediction about the market it regulates, and a reasonable prediction deserves our deference notwithstanding that there might also be another reasonable view."⁸³

court must consider whether the FCC's actions were "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). This is a "deferential standard" that "presume[s] the validity of agency action." *Southwestern Bell Tel. Co. v. FCC*, 168 F.3d 1344, 1352 (D.C. Cir.1999); *accord* *Jersey Shore Broad. Corp. v. FCC*, 37 F.3d 1531, 1536-37 (D.C. Cir.1994).

77. *WorldCom, Inc.*, 238 F.3d at 457-58.

78. *Id.* at 457.

79. *Id.* at 458.

80. *Id.* at 459.

81. *Id.*

82. *Id.*

83. *Id.* (*citing* *Environmental Action, Inc. v. FERC*, 939 F.2d 1057, 1064 (D.C. Cir. 1991)).

Equally as significant, the court also found that the FCC's decision to make ease of administration and enforceability a consideration in setting its standard for regulatory relief was not arbitrary and capricious.⁸⁴ In the court's view, "[s]o long as the FCC's proxy is reasonable, as it is here, we have no basis upon which to require the FCC to engage in a more searching analysis of competition before granting pricing flexibility."⁸⁵

The court also gave the FCC great deference as to its choice of MSA's as the appropriate relevant market for analysis. In the court's opinion:

At bottom, petitioners' objection to the FCC's decision to offer pricing flexibility on an MSA-wide basis amounts to a difference in policy preferences. This is not a sufficient basis upon which to upset the FCC's determination. The FCC considered alternatives to MSA-wide relief and determined that, on balance, these alternatives would be less beneficial to consumers and regulated entities. As the FCC provided an adequate explanation for this conclusion, we uphold the Commission's conclusion.⁸⁶

The court rejected petitioners' claims regarding the trigger mechanisms adopted by the Commission on similar grounds:

Petitioners' objections to the specific collocation thresholds established by the FCC are no more than policy differences with the Commission. Like any agency, the FCC must provide a rational basis when setting a number for a standard, but it is not held to a standard of perfection.⁸⁷

In the court's view, the "FCC is not required to identify the optimal threshold with pinpoint precision. It is only required to identify the standard and explain its relationship to the underlying regulatory concerns."⁸⁸ As such, the court held that the Commission's approach in the *Pricing Flexibility Order* was "precisely the sort of 'rational legislative-type judgment'

84. *WorldCom, Inc.*, 238 F.3d at 459.

85. *Id.*

86. *Id.* at 461 (citations omitted).

87. *Id.*

88. *Id.* at 461-62.

the FCC is empowered to exercise and we are required to respect."⁸⁹

III. EMPIRICAL ANALYSIS

As noted above, the Commission believed that the combination of its collocation triggers and MSA market definition were "sufficient to preclude the incumbent from exploiting any monopoly power over a sustained period."⁹⁰ The D.C. Circuit, according the FCC great deference as the expert agency, upheld the Commission's overall policy approach, even though it expressed reservations as to the Commission's underlying methodologies.⁹¹ Now that the deregulatory paradigm has been implemented, it is worthwhile to evaluate the accuracy of the Commission's expectation and the court's caveats. If an increased exercise of market power is observed in Special Access markets, then either the Commission's triggers are inadequate indicators of competition, its market boundaries are too wide, or the sunk costs of entry prohibit an entry response to higher prices in uncompetitive segments of the deregulated market (or some combination of these).

Deregulated tariffed prices for Special Access services are ubiquitously higher than regulated prices (see Table 1 for examples), and for the data we collected, very few price reductions were observed over time for deregulated prices: only 12 of 135 prices fell with about a 5% reduction on average. Thus, the price increases have been sustained over no less than an 18-month period. Simply observing higher prices for Special Access services may not necessarily be reliable evidence of the exercise of market power. According to the Commission, price increases for deregulated Special Access services may arise from two sources: (1) costs differences within an MSA and (2) market power exercised in the non-competitive segments of the MSA.⁹² By incorporating data on costs and demand, the unique contributions of cost and market power can be approximated. The potential for cost differences also is minimized purposefully by comparing prices from identical

89. *Id.* at 462.

90. Pricing Flexibility Order, *supra* note 25, ¶ 141.

91. *Worldcom, Inc.*, 238 F.3d at 459.

92. *See, e.g.*, Pricing Flexibility Order, *supra* note 25, ¶ 142-44.

pricing zones (which are defined by the ILEC). Further, marginal (incremental) costs probably do not vary substantially across markets, even though average fixed costs may. The Commission noted, "variable costs are a small fraction of total costs."⁹³ Without much variation in marginal cost, optimal prices will not vary either. Given that the ILECs do very little de-averaging within states and—in some cases—across states, cost-based explanations for price differentials in deregulated markets lack force.

Though faced with a number of data limitations (*e.g.*, quantities of Special Access services consumed are not available), an exploratory empirical analysis of the effects of the Commission's deregulatory experiment is possible. This empirical analysis is based on the following simple conceptual framework. Let the regulated price be represented as a markup over incremental cost (λ), such that $P_R = \lambda C$, where C is incremental (marginal/variable) cost. The regulated markup λ can vary by jurisdiction. In the absence of regulation, the markup over cost will be a function of the own-price elasticity of demand (η), where profit maximization renders a deregulated price equal to $P_D = [\eta/(1+\eta)]C$.⁹⁴ The own-price elasticity of demand may vary by jurisdiction, but this variability need not directly be related to those factors causing λ to vary. Assuming there is some known set of factors that determine η and λ , it is possible to estimate both parameters.

Because $C = P_R/\lambda$, the deregulated price can be written as

$$P_D = \eta/(1+\eta) \cdot (1/\lambda) \cdot P_R \quad (1)$$

Substituting into Equation (1) specific functional forms and determining factors for the parameters of interest, Equation (1) can be rewritten as the regression equation,

$$P_D = \exp(\alpha_1 Y + \alpha_2 Z + \alpha_3 R) \cdot (\beta_0 + \beta_1 \mu_L + \beta_2 \sigma_L + \beta_3 \mu_T + \beta_4 \sigma_T) \cdot P_R + \varepsilon \quad (2)$$

where Y is per-capita income, Z is the percentage of the population living in cities, R is the share of non-business to

93. *Id.* ¶ 80.

94. The term $[\eta/(1+\eta)]$ is the profit-maximizing markup without regulatory constraint. See MICHAEL WATERSON, *ECONOMIC THEORY OF THE INDUSTRY* 3 (1984).

total access lines, the variables μ_i and σ_i are the averages and standard deviations of loop (subscript L) and transport costs in the state (subscript T), and ε is the econometric disturbance term. Because the profit maximizing markup $[(\eta/(1+\eta))]$ is a non-linear function [as is its proxy $\exp(\alpha x)$], Equation (2) is estimated by non-linear least squares. The linear function βx proxies the term $1/\lambda$ in Equation (1). The profit-maximizing markup is assumed to be a function of market income, density, and customer type. From the estimates of Equation (2), we can compare three different prices. First, we observe in tariffs the regulated and deregulated prices P_R and P_D . Second, the competitive price will equal cost, and cost can be estimated using $(P_R/\beta x)$, where $\beta x = 1/\lambda$ (and is computed using the estimated β coefficients from Equation (2) and the sample means of the relevant x 's).

The HAI Cost Model, Version 5.0, provides the cost data. The HAI model is designed primarily to compute the cost of DS0 loop plant and supporting facilities, so we limit our empirical analysis to DS0 digital special access circuits. Income and population data are from the Census Bureau, and the share of non-business lines is from ARMIS.⁹⁵ Further research should consider larger Special Access circuits (DS1, DS3, and OC-N circuits) that represent a greater share of market revenues.

Prices are computed for 10-mile circuits and include two channel terminations, a fixed mileage charge for transport, and a per-mile charge for transport (multiplied by 10).⁹⁶ Prices are interstate tariff rates effective as of May 1, 2002, August 1, 2002, December 31, 2002, and January 31, 2003. Prices for both a month-to-month service ("DS0-M") and an optional pricing plan ("DS0-OPP") were computed, where the optional pricing plan is based on a five-year term (or, if unavailable at that term, the longest term under five years). There were a total of 188 observations for each regression (*i.e.*, four sets of prices from 47 states).⁹⁷

95. ARMIS data are available (at no charge) from the Federal Communications Commission website, <http://www.fcc.gov/wcb/armis/descriptions.html> (last reviewed/updated Jan. 23, 2005). Census data are available at www.census.gov.

96. In states with prices for multiple zones, the Zone 1 rate is used.

97. Only the traditional Bell Company states are evaluated, so states excluded include Alaska, Connecticut, Hawaii, and Nevada.

The results of regression equation (2) are summarized in Table 2, along with the summary statistics. For both regressions, 99% of the variation in prices is explained and all estimates are statistically significant at the 5% level or better. The average of the dependent variable (P_D) is \$260.89 for DS0-M and \$181.54 for DS0-OPP. On the other hand, regulated prices are \$230.69 for DS0-M and \$158.80 for DS0-OPP. Deregulated prices across all states, therefore, are about 13-14% higher than regulated prices, though increases for particular Bell Operating Companies are often much larger (*see* Table 1).

The empirical model provides two sanity tests for its reasonableness. First, from the estimated β coefficients of Equation (2), cost per line can be estimated and compared to other measures of cost. At the sample means, cost per DS0 line is estimated to be about \$76 per circuit/month.⁹⁸ Across a number of states for which we had data, the TELRIC of DS0-Digital circuits ranged from a low of \$48 to a high of \$138. The average TELRIC for the sample was \$69. Thus, our estimated cost figure is reasonable. The cost calculation also provides an estimate of the competitive price (on average), because competition drives prices to cost. Second, the model provides a means by which to “back into” an estimate of the own-price elasticity of demand.⁹⁹ Since a monopolist is expected to price in the elastic region of demand, the estimated own-price demand elasticity should be smaller than -1.0. We discuss the estimated elasticities later in the text.

The regulatory markup (at the sample means) for the DS0-M circuit is about 2.90, and the deregulated markup is about 3.30. In other words, the price for Special Access service is priced at about three times its incremental cost.¹⁰⁰ The deregulated margin is about 14% above the regulated markup

98. Cost is computed as $P_R/\beta x$ for both regressions using sample means. The cost estimates are nearly identical across regressions, with a month-to-month cost of \$78.50 and an optional pricing plan cost of \$76.16. The similarity is encouraging.

99. The own-price elasticity is computed as: $\exp(\alpha x)/(1 - \exp(\alpha x))$.

100. *C.f.*, Paul N. Rappoport, Lester D. Taylor et al., *Macroeconomic Benefits from a Reduction in Special Access Prices 4* (June 12, 2003), available at http://www.comptelascet.org/public-policy/position-papers/documents/sparc_june12_2003_study.pdf (March 10, 2005) [*hereinafter* “Rappoport Report”] (showing Bells receive a rate of return of nearly 40 percent on Special Access on total revenues of \$13.3 billion).

over cost. Thus, it appears as if the increase in the markup accounts for the observed price increase. From the deregulated markup, the implied own-price elasticity of demand is about -1.40 , which is elastic ($\eta < -1$) as would be expected.

Prices (and thus margins) are lower for DS0-OPP circuits, with price being set at about twice cost. The regulatory markup for the DS0-OPP circuit is about 2.1, and the deregulated markup is about 2.3 (a 10% increase in markup), which is slightly below the 14% price increase. Again, the majority of the price increase for DS0-OPP circuits is accounted for by the increased ability of the ILEC to exercise its market power. The implied own-price elasticity of demand is about -1.8 , which is elastic ($\eta < -1$). Given the long contract term for DS0-OPP relative to the DS0-M, the larger elasticity is not surprising.

Our implied elasticities of demand for DS0 circuits compare favorably to those estimated by Rappaport, Taylor *et al.* using an entirely different estimation methodology.¹⁰¹ In that study, demand elasticities for DS1 and DS3 special access services were estimated to be -1.31 and -1.91 , respectively. While the elasticities are not directly comparable because of differences in services, they are all elastic and in the general vicinity of -1.5 . Note that the computation of the elasticity depends explicitly on the ILEC charging its theoretical (and naïve) profit-maximizing price. If the price for special access is constrained by some factor, such as the potential for regulation, then the elasticity estimates will be biased (they will be too elastic).

What is important about this empirical analysis is three-fold. First, it is the first empirical assessment (to our knowledge) of the Commission's deregulatory framework for Special Access services. Given the weaknesses in the Commission's deregulatory approach, a review of its deregulatory action seems prudent (not just by us, but by the Commission itself or the Government Accounting Office). Second, the price increases for Special Access services where pricing flexibility is granted appear to be predominately driven by market power and not costs. Consequently, it appears that the wide geographic markets and collocation triggers of the Commission's deregulatory paradigm have led to an increased exercise of market power in (at least some) Special Access markets, thus placing an unne-

101. *See id.*

essary drain on the U.S. economy. Third, this analysis is exploratory and limited. But, the results are sensible based on sanity checks. Obviously, a more thorough and rich empirical analysis of Special Access deregulation is warranted.

IV.

CONCLUSIONS AND POLICY IMPLICATIONS

The Commission's Special Access experiment provides a textbook example of the risk to consumers and to the economy of employing abstractions rather than rigorous market power analysis.¹⁰² As Rappoport, Taylor *et al.* indicate, the cost of this regulatory failure to the U.S. economy is significant.¹⁰³

102. Even more hypocritical is that the FCC's blasé approach towards Special Access/leased lines on the domestic front runs completely inapposite to the U.S. Government's pro-competitive approach towards Special Access/leased lines in the international arena. For example, the United States Trade Representative ("USTR") was appropriately quick to blast several countries in its recent Section 1377 Report for failing to make leased lines available on a competitive basis. Office of the United States Trade Representative, Results of 2003 "Section 1377" Review of Telecommunications Trade Agreements, *available at* http://www.ustr.gov/assets/Trade_Sectors/Services/Telecom/Section_1377/asset_upload_file97_6922.pdf (last visited March 11, 2005). In the USTR's own words:

Reasonable access to leased lines are critical for competitors in any telecommunications market—particularly for providing the "last mile" link competitors need to reach large customers. An inability to obtain these connections at reasonable rates and in a timely, non-discriminatory manner can significantly slow competitive entry. All countries cited have WTO commitments to ensure reasonable access to such lines. . . . Unreasonably high prices of leased lines in many markets . . . are adversely affecting U.S. suppliers in these markets. Evidence that rates charged in these markets are multiples of rates in the U.S. and "best practice" markets such as Sweden indicates that competitive pressures in these markets have failed to bring users the benefits of reasonable pricing.

Id. at 3–4. In addition, the U.S. Government has gone so far as to file a formal complaint against Mexico with the World Trade Organization (*WT/DS204*) for, *inter alia*, failing to make leased lines available to competitors at just and reasonable rates. (In fact, this is the very first complaint filed under the 1997 WTO Accord on Basic Telecoms Services.) Unfortunately, as before, this hypocritical "do as I say, not as I do" attitude erodes U.S. credibility abroad and correspondingly makes it more difficult for U.S. firms to compete overseas. See Mark Naftel & Lawrence J. Spiwak, *THE TELECOMS TRADE WAR: THE UNITED STATES, THE EUROPEAN UNION AND THE WORLD TRADE ORGANIZATION* (2001).

103. For example, Rappoport & Taylor *et al.* estimate that:

No doubt, market power determinations “are neither administratively simple nor easily verifiable” and “generate considerable controversy that is difficult to resolve.”¹⁰⁴ But, this fact does not *a fortiori* mean “that incumbent LECs [need not] demonstrate that they no longer possess market power in the provision of any access services to receive pricing flexibility,”¹⁰⁵ simply because “it would be administratively burdensome to require incumbent LECs to perform and the Commission to evaluate market share or supply elasticity analyses before the LECs may obtain any regulatory relief. . . .”¹⁰⁶ It would seem, therefore, that while “bright-line” tests resting on naïve expectations and untested correlations may make the Commission’s work easier, “bright line” tests based on *things that can be readily counted* may not always be the correct analytical solution as competition becomes increasingly multi-dimensional and the issues the Commission has to resolve become more complex.¹⁰⁷

Furthermore, while regulation does impose costs, such an observation does not *a fortiori* imply the “costs of delaying regulatory relief outweigh any costs associated with granting that relief before competitive alternatives have developed to the point that the incumbent lacks market power.”¹⁰⁸ The Special Access case proves the point. Market power cannot be assumed away as the Commission did in the case of Special Ac-

[a] reduction in Special Access prices of 42%, commensurate with an 11.25% rate-of-return on total investment, would generate 64,000 new jobs and \$11.6 billion in new economic activity in the first year alone. The total accumulated number of new jobs created would double to 132,000 in the second year as the benefits of the price reduction flows through the economy.

Rappoport Report, *supra* note 101, at 3–4.

104. Price Flexibility Order, *supra* note 25, ¶ 90.

105. *Id.* ¶ 90.

106. *Id.* ¶ 91.

107. *Accord Gratz v. Bollinger*, 539 U.S. 244, 275 (2003) (“[T]he fact that the implementation of a program capable of providing individualized consideration might present administrative challenges does not render constitutional an otherwise problematic system.”); *Richmond v. J.A. Croson Co.*, 488 U.S. 469, 508 (1989) *citing* *Frontiero v. Richardson*, 411 U.S. 677, 690 (1973) (plurality opinion of Brennan, J.) (rejecting “administrative convenience” as a determinant of constitutionality in the face of a suspect classification).

108. Pricing Flexibility Order, *supra* note 25, ¶ 90.

cess.¹⁰⁹ It seems that an effort at measuring the costs and benefits of regulatory or deregulatory action is required, particularly when the fruit of past decisions can be harvested.

A cornerstone of economic regulation is that—contrary to the antitrust context, which takes a static, case-specific approach—the Commission, as the “expert agency”, is charged with the responsibility of monitoring the dynamic U.S. telecommunications industry.¹¹⁰ For this precise reason, the Supreme Court recognized sixty years ago that Congress, through the Communications Act, “gave the Commission not niggardly but expansive powers” to monitor the long-term health of the U.S. telecom industry.¹¹¹ The courts make it crystal clear that the Commission has the legal obligation and mandate under the Communications Act to monitor the consequences of its regulatory actions.¹¹² As the D.C. Circuit rec-

109. See Lawrence J. Spiwak, *Outside View: Ideology Over Economics*, UNITED PRESS INTERNATIONAL (July 6, 2002) available at <http://www.phoenix-center.org/commentaries/UPI-IdeologyOverEconom.pdf> (last accessed March 10, 2005).

110. See, e.g., *P & R Temmer v. FCC*, 743 F.2d 918, 931 n.12 (D.C. Cir. 1984); *United States v. Storer Broadcasting Co.*, 351 U.S. 192, 203 (1956); *FCC v. Pottsville Broadcasting Co.*, 309 U.S. 134, 138 (1940).

111. *Nat'l Broad. Co. v. United States*, 319 U.S. 190, 219 (1943).

112. Unfortunately, given the FCC's less than vigilant approach to enforcing the law to prevent RBOC anticompetitive conduct, the FCC's assurances that aggrieved parties may file a complaint to challenge the RBOCs' special access rates, Pricing Flexibility Order, *supra* note 25, ¶ 41, will probably not provide much comfort. Indeed, in making a review of recent major FCC enforcement actions,

(which [were] supposed to be one of the centerpieces of [former] Chairman Michael Powell's agenda for the FCC), what is extremely important to recognize . . . is that these cases [are not true punitive actions, but] are the administrative equivalent of a “no contest” plea. Indeed, as there is no formal record kept of the proceeding and guilty parties are only required to make a “voluntary contribution to the U.S. Treasury” as part of the settlement, the FCC has very deliberately refused to make an explicit finding of fact. As a legal matter, therefore, these settlements have little or no probative weight in a subsequent criminal or civil court of law. Besides, if a firm perceives it will make one dollar more by deterrence than by competition, then that firm will always choose deterrence.

T. Randolph Beard, George S. Ford & Lawrence J. Spiwak, *Why ADCo? Why Now? An Economic Exploration into the Future of Industry Structure for the “Last Mile” in Local Telecommunications Markets*, 54 FED. COMM. L.J. 421, 436 n.44 (2002) (also giving a representative list of the type of actions discussed here). And, as per course, the FCC has not deviated from such an approach

ognized over twenty years ago, “[c]omplex regulation must still be credible regulation,” and any failure by the FCC to meaningfully enforce the Communications Act “deprive[s] regulated entities, their competitors [and] the public of rights and economic opportunities without the due process the Constitution requires.”¹¹³ Accordingly, it should come as no surprise that both the Communications Act and the Telecommunications Act of 1996 are replete with requirements that the Commission undertake periodic reviews of its regulations and to evaluate concurrently the economic health of the various industries under its jurisdiction.¹¹⁴

Indeed, the long-term sustainability of decisions vital to the health of the telecommunications sector by an administrative agency that chooses to avoid “undue administrative burdens” rather than carrying out its enabling statutes is dubious.¹¹⁵ More importantly, when an administrative agency openly admits to a lackadaisical and analytically imperfect approach, then it also behooves the Commission to examine and monitor the impacts of the decisions the FCC makes today on the long-term structure of the industry as a whole,¹¹⁶ particu-

in its most recent enforcement action either. *In re Qwest Communications International Inc.*, 18 F.C.C.R. 10,299, ¶¶ 7–19 (2003).

113. *MCI Telecomm. Corp. v. FCC*, 627 F.2d 322, 340–41 (D.C. Cir. 1980) *cited with approval in* *Telecomm. Research & Action Ctr. v. FCC*, 750 F.2d 70 (D.C. Cir. 1984).

114. *See* 47 U.S.C. § 157 (New technologies and services). *See also id.* § 161 (Regulatory reform); *id.* § 218 (Management of business; inquiries by Commission); *id.* § 219 (Reports by carriers; contents and requirements generally); *id.* § 257 (Market entry barriers proceeding); *id.* § 403 (Inquiry by Commission on its own motion); *id.* § 548(g) (Development of competition and diversity of video programming distribution); *c.f.*, Jerry B. Duvall & Michael D. Pelcovits, *Reforming Regulatory Policy for Private Line Telecommunications Services: Implications for Market Performance*, FCC Office of Plans and Policy Working Paper No. 4 (Dec. 1980), *available at* http://www.fcc.gov/Bureaus/OPP/working_papers/oppwp4.pdf (arguing that analysis should focus on market performance, rather than on market participants’ residual market power).

115. *See* 47 U.S.C. § 543(b)(2)(A) (requiring FCC to “seek to reduce the administrative burdens on subscribers, cable operators, franchising authorities, and the Commission”); *accord* *Time Warner Entm’t v. FCC*, 56 F.3d 151, 173-74 (D.C. Cir. 1995), *cert. denied*, 516 U.S. 1112 (1996) (finding FCC’s decision to preclude rate adjustment in order to avoid undue administrative costs to be arbitrary and capricious).

116. *See supra* notes 2-20 and accompanying text.

larly when *ex post* analysis suggests a significant regulatory failure as that found in the Special Access context.¹¹⁷

Like it or not, U.S. consumers deserve far more than a perfunctory “Ron Popiel—Chicken Rotisserie Oven” approach to the real problem of ILEC market power where the FCC simply “sets it and forgets it.” As such, it is incumbent upon the FCC to fulfill their core function under the Communications Act—to prevent dominant firms under their jurisdiction from gouging consumers and stymieing competition via the unfettered abuse of their market power—both immediately in the Special Access context as well as in their forthcoming broadband proceedings.

Equally as important, if the evidence suggests a regulatory failure to mitigate the incumbents’ market power that produces clear adverse effects on U.S. consumer welfare and the economy, then we come back full circle regarding the FCC’s overall analytical approach towards the complex issue of how we should move from “one” to “many.” Given the obvious fact that the ILEC’s can and will seek to exercise their market power to “deny, delay and degrade” new entry,¹¹⁸ a more thor-

117. Consider the comments of Commissioner Michael J. Copps regarding the FCC oversight of competition in the wireless industry:

Congress requires the Commission annually to “review competitive market conditions with respect to commercial mobile services” and “include in its annual report an analysis of those conditions,” in order to perform an “analysis of whether or not there is effective competition.” I believe that the Commission could do far better. The Report’s [sic] contains insufficient data. Much of the limited data included are unverifiable and are derived from sources with a stake in the outcome of our determination. And the Commission does not establish any standard for determining when “effective competition” exists or even to define what “effective competition” is. These problems leave the Report vulnerable to the charge of being results-oriented, and mean that the hard and good work of the Commission’s staff is underutilized.

Federal Communications Commission, FCC Adopts Annual Report on State of Competition in the Wireless Industry, WT Docket No. 02-379, 2003 WL 21467528 (June 26, 2003) (Statement of Commissioner Michael J. Copps, concurring).

118. *See, e.g.*, Covad Communications Co., Comments Before the Information Communications Authority of Singapore, available at www.ida.gov.sg/ida/web/doc/download/I247/CovadCom.pdf (“[I]ncumbent local exchange companies . . . have demonstrated a common pattern to ‘[d]eny, [d]elay, and [d]egrade’ the provisioning of inputs essential to the competitive provision of DSL service.”).

ough look at the incumbents' market power by the Commission in the first instance is in order.

TABLE 1. PRICE CHANGES FOR SPECIAL ACCESS SERVICES
(DS0-Digital, DS1, and DS3, Optional Pricing Plan Only,
Jan. 31, 2003)

	BellSouth	SBC	Verizon	Qwest
DS0-Digital				
Average Regulated Price	\$202	\$126	\$170	\$140
Average Deregulated Price	\$202	\$155	\$220	\$158
Average Price Increase	0%	23%	29%	14%
DS1				
Average Regulated Price	\$380	\$338	\$448	\$332
Average Deregulated Price	\$391	\$371	\$510	\$399
Average Price Increase	3%	10%	14%	20%
DS3				
Average Regulated Price	\$4,075	\$2,562	\$3,421	\$2,783
Average Deregulated Price	\$4,575	\$2,817	\$3,752	\$2,783
Average Price Increase	12%	10%	10%	0%

TABLE 2. SUMMARY OF REGRESSION RESULTS

(asym. *t*-scores in parenthesis)

	DS0, Month-to-Month	DS0, Opt. Pricing Plan	Variable	Mean St. Dev.
α_1	0.00001 (9.00)	0.00001 (7.86)	<i>Y</i>	40827 (6037.9)
α_2	0.292 (6.30)	0.261 (4.87)	<i>Z</i>	0.276 (0.14)
α_3	0.9346 (6.64)	0.532 (3.23)	<i>R</i>	0.747 (0.05)
β_0	0.3392 (7.40)	0.455 (6.38)	Constant	...
β_1	-0.0014 (-2.64)	-0.0017 (-2.51)	μ_L	37.53 (25.82)
β_2	0.00046 (2.66)	0.00048 (2.24)	σ_L	40.61 (64.46)
β_3	0.0084 (5.21)	0.0121 (4.90)	μ_T	11.83 (4.73)
β_4	-0.0037 (-5.25)	-0.00488 (4.90)	σ_T	14.96 (8.08)
P_D	260.89 (73.38)	181.54 (30.99)		
P_R	230.69 (56.65)	158.80 (28.08)		
R^2	0.994	0.993		
F-Stat	4028.9	3282.4		
N	188	188		

