

THE NEED FOR BETTER ANALYSIS OF HIGH CAPACITY SERVICES

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ABSTRACT

In 1999, the Federal Communications Commission (“FCC”) began to grant incumbent local exchange carriers (“LECs”) pricing flexibility on special access services in some Metropolitan Statistical Areas (“MSAs”) when specific evidence of competitive alternatives is present. The propriety of that deregulatory move by the FCC has been criticized by the purchasers of such services ever since. Proponents of special access price regulation rely on three central arguments to support a retreat to strict price regulation: (1) the market(s) for special access and similar services is unduly concentrated; (2) rates of return on special access services, computed using FCC ARMIS data, are very high; and (3) prices for special access services are lower in more heavily regulated markets than in markets with the most pricing flexibility. As shown in this article, these arguments, even if factually correct (which they are not), do not prove the presence of undue market power and, therefore, the need for additional price regulation. Moreover, those lines of inquiry do not consider the potential costs or risks of regulatory intervention, which must be part of any serious cost/benefit analysis. That said, given the importance of this issue, we provide several recommendations for policymakers that are evaluating the special access regulatory paradigm. First and foremost, data collection must be improved. Second, any revision to the special access price regulation paradigm must be subject to a stringent cost/benefit test, with explicit consideration of the costs of regulation. Finally, when gathering and analyzing more comprehensive data, policymakers should distinguish between economic definitions of “geographic

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market” and geographic areas for proper and efficient administration of its special access rules.

I. INTRODUCTION

One of the most vexing issues confronting policymakers for the last decade has been how much the Federal Communications Commission (“FCC”) should regulate the rates, terms, and conditions of high-capacity special access services sold by incumbent local exchange carriers (“LECs”). The prices for such services have been regulated in one form or another for decades, and remain so today in most areas. In 1999, however, the FCC began to grant incumbent LECs pricing flexibility on special access services in some Metropolitan Statistical Areas (“MSAs”) when specific evidence of competitive alternatives are proven to be present. As to be expected, the propriety of that deregulatory move by the FCC has been criticized by the purchasers of such services ever since.

Proponents of special access price regulation essentially rely on three central arguments to support their belief that there is a presence of excess market power and the need for a retreat to strict price regulation:

- (1) The market(s) for special access and similar services is unduly concentrated;
- (2) Rates of return on special access services, computed using FCC ARMIS data, are very high; and
- (3) Prices for special access services are lower in more heavily regulated markets than in markets with the most pricing flexibility.

Most analytical attempts to justify additional FCC intervention over special access services center around at least one of these lines of argument. Making any of these arguments, however, requires the collection and study of a substantial amount of data from competitive providers of high capacity services that, quite simply, have not been gathered. In particular, two studies, one by the U.S. Government Accountability Office (“GAO”) and the other by the National Regulatory Research Institute (“NRRI”), specifically note that despite serious efforts to do so, they did not collect sufficient data on competitive providers of high capacity services to make definitive findings on market power.¹

1. U. S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-80, TELECOMMUNICATIONS: FCC NEEDS TO IMPROVE ITS ABILITY TO MONITOR AND DETERMINE THE EXTENT OF COMPETITION IN DEDICATED ACCESS SERVICES (2006), *available at* <http://www.gao.gov/new.items/d0780.pdf> (hereinafter “GAO REPORT”); PETER BLUHM & ROBERT LOUBE, NAT'L REGULATORY RESEARCH INST., COMPETITIVE ISSUES IN SPECIAL ACCESS MARKETS (2009), *available at* http://www.naruc.org/Publications/09%200121%20NARUC%20NRRI_spcl_access_mkts_jan09-02%20_2_.pdf (hereinafter NRRI STUDY). The NRRI Study was commissioned by the National Association of Regulatory Utility Commissions (“NARUC”). This study was updated to correct for errors in the original version. Our analysis relies on the updated version.

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Moreover, these three lines of argument standing alone or together are insufficient to justify rate regulation. While proponents of additional regulation contend that these arguments—market concentration, rates of return from ARMIS data, and relative pricing—are relevant to different degrees, the application of modern economic and empirical analysis shows that they are insufficient to justify regulatory intervention. Even if established, they do not prove the presence of undue market power.² Additionally, those lines of inquiry do not consider the potential costs or risks of regulatory intervention, which must be part of any serious cost/benefit analysis.

This article discusses in detail the lines of inquiry and types of information that policymakers should be examining with regard to the regulation of high capacity services. Getting the regulatory framework for these services correct is paramount. High capacity services are a multi-billion dollar industry, and these services provide dedicated high capacity connections for businesses, competitive network providers, and wireless service networks. Moreover, despite the current financial situation, entry, competition and investment into these services is still occurring—a fact that is a testament to the importance of these services. Additional rate regulation can stifle investment and stop competitive entry in its tracks.

After a brief background on special access services and their regulation in Sections II and III, Section IV describes in detail the significant shortcomings in each of the three arguments used to support additional rate regulation of special access services. First, even if one sets aside the challenges of calculating market concentration indices when data is incomplete, the fact that a market is concentrated is not a *per se* indication of poor market performance or of market power. Second, rate of return statistics using the FCC's ARMIS data are an unreliable indicator of economic profits. The data is based on regulatory accounting standards and non-economic, often arbitrary, allocation rules. ARMIS is, in essence, an artifact of a bygone era. Finally, simple comparisons of prices in areas subject to different forms of regulation have little meaning as to whether market power is being exercised and indicate only that regulators can force a price lower than prevailing market prices. In fact, observing that regulated prices are different from market prices can, frankly, be an indictment of the rate regulation just as easily as it can be a criticism of deregulation.

That said, given the complexity of this important issue, Section V provides several recommendations for policymakers that are evaluating the special access regulatory paradigm. Our recommendations are rela-

2. The “relative prices” are contemplated across “more regulated” and “less regulated” areas and across time.

tively simple and straightforward. First and foremost, data collection must be improved. Indeed, it is impossible to get an accurate picture of the market when only few firms provide data, particularly given that data from only a few firms can present a radically different picture of the competitive landscape. The inability of the GAO and the NRRI to gather sufficient information strongly limits the ability to draw any justifiable conclusion from their analysis. Recently, several parties have asked the FCC to gather particular types of data from all industry participants, and that type of information-gather approach ought to continue. Second, any revision to the special access price regulation paradigm must be subject to a stringent cost/benefit test, particularly in this difficult current economic environment. Finally, when gathering and analyzing more comprehensive data, policymakers should distinguish between economic definitions of “geographic market” and “geographic areas” for proper and efficient administration of its special access rules. The two are not necessarily the same—the formal economic definition of a geographic market may reflect economic analysis but may be difficult to administer as a matter of policy efficiency. As a result, a cost/benefit analysis of the proper geographic scope of a regulatory policy does not necessarily have to be entirely consistent with the economic definition of a geographic market for these services.

II. BACKGROUND: THE REGULATION OF SPECIAL ACCESS SERVICES

Special access services are dedicated, high-speed data transmission lines that guarantee a certain level of capacity throughput between two points. Businesses and other telecom service providers, such as wireless carriers, use these special access circuits to provide dedicated bandwidth between business locations, cell phone towers and, increasingly, the public Internet. According to FCC data, the special access revenues of incumbent LECs alone totaled about \$16 billion annually.³ Given the lack of data on high capacity services provided by competitors to the LECs, it is not possible today to accurately size total expenditures for such high-capacity services.

When provided by incumbent local exchange carriers like AT&T and Verizon, these services are typically provided using time-division multiplexing (“TDM”) technology and are sold in bandwidth increments originally developed by Bell Labs for use over twisted copper wire infrastructure. These increments include Digital Service Level 1 (DS-1)

3. FED. COMMUNICATIONS COMM’N, STATISTICS OF COMMUNICATIONS COMMON CARRIERS, Table 2.11 (2006/2007), available at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-301505A1.pdf.

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of 1.544 Mbps and Digital Service Level 3 (DS-3) of 44.736 Mbps.⁴ While these service levels were originally developed to support the transmission of multiple voice signals over a common copper wire infrastructure, over time the use of these dedicated connections solely for data services, or for a combination of voice and data applications, has grown. Although incumbent LECs are significant suppliers of these connections nationwide, dozens of other firms—such as Time Warner Telecom and Comcast—now offer similar services, both over their own facilities or over facilities acquired from other carriers, including incumbent LECs.

Special access services are generally regulated as interstate telecommunications services subject to direct and exclusive FCC jurisdiction. Prior to 1991, like many other common carrier telecommunications services offered by incumbent LECs, special access services were subject to rate of return regulation. Under rate of return regulation, prices were set equal to the cost of production plus an allowable return on capital. It has been observed repeatedly that rate of return regulation does not encourage efficient production and can render inefficient cost structures as firms inflate the cost base to produce “soft” profits (art, planes, and so forth) or inflate capital expenditures to increase the volume of profits (the Averch-Johnson effect).⁵ So, in 1991, the FCC implemented price cap regulations for larger LECs for special access services.⁶ Price cap regulation sets maximum prices for services or baskets of services that allow firms to increase profits by improving efficiency.⁷ These price caps are adjusted over time both to account for inflation and to reflect improved efficiency. Profits for the regulated firm are allowed to rise, as long as the firm can be more efficient than the regulatory-mandated productivity factor. For special access services, price cap adjustments have generally resulted in a steady decrease in the prices for price-capped special access services.⁸ Under price cap regulation, there is theoretically

4. These service definitions were developed to facilitate the transmission of multiple voice circuits over copper wires—traditionally, DS-1 can support 24 digitized voice channels, each of which occupies 64 kbps, while a DS-3 can support 672 voice channels. These traditional bandwidth designations remain in place today even though special access circuits are no longer used exclusively for voice services and also are increasingly provided over optical fiber. Today, of course, with the tremendous capacity demands of the Internet, the capacities of circuits at higher levels of the network are substantially larger than DS-3.

5. Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV., 1052, 1061 (1962).

6. Policy and Rules Concerning Rates for Dominant Carriers, CC Docket No. 87-313, Second Report and Order, 5 FCC Rcd. 6786 (1990), available at <http://www.gpo.gov/fdsys/pkg/FR-1996-12-31/pdf/96-32934.pdf>.

7. See generally, the thorough analyses of price-cap regulation in MICHAEL A. EINHORN, PRICE CAPS AND INCENTIVE REGULATION IN TELECOMMUNICATIONS 1(1991).

8. In the *CALLS Order*, the FCC adjusted the special access price cap plan (by requiring separation into a separate “basket” and applying a separate X-factor to that basket). Access Charge Reform, CC Docket No. 96-262, Price Cap Performance Review for Local

no reference to the rate of return earned, though the FCC's approach originally deviated somewhat from this theoretical ideal by means of "sharing" rules and "low end adjustments."⁹ Practically, the debate over pricing under price caps, however, rarely strays too far from the rate of return mentality, even though the FCC no longer collects the data necessary to implement rate-of-return regulation.

After the 1996 Act, which mandated a deregulatory mentality at the FCC, competition and entry began to grow in the market and, in 1999, the FCC took a significant deregulatory step by granting "pricing flexibility" to incumbent LECs in metropolitan markets in which competition was (arguably) present and viable.¹⁰ The 1999 *Pricing Flexibility Order* is a significant example of the FCC's attempt to balance the goals of the 1996 Act of promoting competition and reducing regulation. Specifically, the FCC stated in the *Pricing Flexibility Order* that its policy:

was designed to grant greater flexibility to price cap LECs as competition develops, while ensuring that: (1) price cap LECs do not use pricing flexibility to deter efficient entry or engage in exclusionary pricing behavior; and (2) price cap LECs do not increase rates to unreasonable levels for customers that lack competitive alternatives.¹¹

Importantly, the FCC concluded that pricing flexibility was justified even in the presence of market power, noting that "regulation imposes costs on carriers and the public, and the cost of delaying regulatory relief outweighs any costs associated with granting that relief before competitive alternatives have developed to the point that the incumbent lacks market power."¹² The FCC also recognized that prices may rise as a result of eliminating price caps, noting its special access pricing rules "may

Exchange Carriers, CC Docket No. 94-1, Low-Volume Long Distance Users, CC Docket No. 99-249, Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Sixth Report and Order in CC Docket Nos. 96-262 and 94-1, Report and Order in CC Docket No. 99-249, Eleventh Report and Order in CC Docket No. 96-45, 15 FCC Rcd. 12962 (2000), available at <http://digital.library.unt.edu/ark:/67531/metadc2974/m1/367?q=15>. Those moves were made in the context of an industry-wide negotiation and compromise over a multitude of compensation issues well beyond special access regulation.

9. Under sharing, if the observed rate of return is "too high," the firm is forced to refund money to customers. Low end adjustments protect firms from returns that are "too low," by allowing price increases. See Gregory J. Vogt, *Cap-Sized: How the Promise of the Price Cap Voyage to Competition Was Lost in a Sea of Good Intentions*, 51 FED. COMM. L.J. 349, 373 (1999).

10. Access Charge Reform, *supra* note 8; *WorldCom, Inc. v. FCC*, 238 F.3d 449 (D.C. Cir. 2001).

11. Access Charge Reform, CC Docket No. 96-262, Fifth Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd. 14221 (1999) (hereinafter "Pricing Flexibility Order"), available at http://transition.fcc.gov/Bureaus/Common_Carrier/Orders/1999/fcc99206.txt.

12. Pricing Flexibility Order, *supra* note 11. The agency did not provide a detailed cost-benefit analysis to support its conclusion.

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have required incumbent LECs to price access services below cost.”¹³ With regard to price increases generally, the FCC explicitly voiced that its concern was focused upon preventing only price increases “to unreasonable levels” in areas that “lack competitive alternatives.”¹⁴

Under the FCC’s pricing flexibility regime, incumbent LEC’s obtain pricing flexibility for special access services in markets in which certain “triggers” designed to detect whether there are sufficiently robust competitive alternatives to incumbent LEC special access circuits are met. Pricing flexibility is granted in two phases: “Phase I” flexibility allows incumbent LECs to enter into contract tariffs and offer volume and term discounts for services which the incumbent LEC makes a specific competitive showing; and “Phase II” flexibility allows incumbent LECs to offer special access service at rates that are not subject to price caps, provided that those prices are posted as generally available tariffs or contract tariffs.

The trigger thresholds for Phase I and Phase II regulation differ. To obtain Phase I pricing flexibility, 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 (15%) of the petitioner’s wire centers, and that at least one such collocated provider 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 thirty percent (30%) of the petitioner’s revenues from dedicated transport and special access services other than channel terminations between LEC end offices and customer premises . . . and that at least one such collocated provider 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.¹⁵

For channel terminations, a stricter standard is applied. Phase I relief for channel terminations requires collocations in fifty percent (50%) of wire centers or in wire centers accounting for sixty-five percent (65%) of revenues.

The parameters for Phase II pricing flexibility are nearly identical except that non-affiliated carriers must have collocated in fifty percent (50%) of the petitioner’s wire centers or in wire centers accounting for sixty-five percent (65%) of the petitioner’s revenues from dedicated transport and special access services other than channel terminations between LEC end offices and customer premises.¹⁶ Phase II flexibility therefore requires a higher “competition” standard than Phase I, since

13. Pricing Flexibility Order, *supra* note 11.

14. *Id.*

15. See FCC Common Carrier Services, 47 C.F.R. § 69.709(b) (2011).

16. See 47 C.F.R. § 69.709(c).

the incumbent LEC 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 in areas subject to Phase I deregulation, but special access services are not subject to price caps in areas where Phase II relief has been granted. In other words, the price cap rates are no longer a backstop in Phase II markets.

Because the *Pricing Flexibility Order* was one of the FCC's first attempts to satisfy the statutory mandate of the 1996 Act to "reduce regulation," the effectiveness of the FCC's approach has been challenged virtually ever since the ink was dry on the *Order*. The FCC's *Pricing Flexibility Order* was appealed and eventually upheld by the D.C. Circuit Court.¹⁷ In 2002, only one year after the D.C. Circuit's decision, AT&T Corp. filed a petition for rulemaking to revise or repeal the rules.¹⁸ In 2003, the Phoenix Center released a study critical of the FCC's approach to special access pricing flexibility, arguing that the agency's treatment of sunk costs was incomplete.¹⁹ In that same year, the FCC responded to these requests and initiated its own investigation, which remains open at this point.²⁰ However, after a November 2006 report by the U.S. Government Accountability Office ("GAO"),²¹ the FCC requested additional information to refresh the record concerning special access competition, a proceeding that remains open to this day.²²

17. WorldCom, Inc., 238 F.3d 449; Pricing Flexibility Order, *supra* note 11.

18. AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services. WC Docket No. 02-250, Petition for Rulemaking (Oct. 15, 2002).

19. George S. Ford & Lawrence J. Spiwak, *Set it and Forget It? Market Power and the Consequences of Premature Deregulation in Telecommunications Markets*, PHOENIX CENTER POL'Y PAPER No. 18 (2003) available at <http://www.phoenix-center.org/pcpp/PCPP18.pdf>, reprinted in 1 N.Y.U. J.L. & BUS. 675 (2006). Unfortunately, the FCC has long-struggled with the concept of sunk costs. See also George S. Ford, *You're Not Impaired Because You Are Impaired*, PHOENIX CENTER PERSP. 04-05 (2004) available at <http://www.phoenix-center.org/perspectives/Perspective04-05Final.pdf>.

20. Special Access Rates for Price Cap Local Exchange Carriers, WC Docket No. 05-25, Order and Notice of Proposed Rulemaking, 20 FCC Rcd. 1994 (2005)(hereinafter "2005 Special Access NPRM") available at <http://digital.library.unt.edu/ark:/67531/metadc4105/m2768?q=20FCCrd>.

21. GAO REPORT, *supra* note 1.

22. Public Notice, FCC 07-123, Parties Asked to Refresh Record in the *Special Access Notice of Proposed Rulemaking*, 22 FCC Rcd. 13352 (2007), available at <http://digital.library.unt.edu/ark:/67531/metadc6030/m1/683/?q=22FCCrd>. The rates, terms and conditions of special access services have played a significant role in FCC merger review as well. AT&T Inc. and BellSouth Corporation, Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, 22 FCC Rcd. 5662 (2007), available at <http://digital.library.unt.edu/ark:/67531/metadc4134/ml/396/?q+22FCCrd5662>; Verizon Communications Inc. and MCI, Inc. Applications for Approval of Transfer of Control, WC Docket No.

III. RECENT STUDIES OF COMPETITION FOR HIGH CAPACITY SERVICES

In this Section, we summarize the findings of the two recent studies of the current state of competition for high capacity services: a 2006 study by the Government Accountability Office (“GAO”) and a 2008 study by the National Regulatory Research Institute (“NRRI”) that was commissioned by the National Association of Regulatory Utility Commissioners (“NARUC”). As noted below, while both the GAO and the NRRI studies acknowledge a severe deficiency in available data, both studies nonetheless focus on the same questions of market concentration and comparisons of prices in areas subject to price caps to those areas that are not subject to price caps. The NRRI Study calculates incumbent LEC rates of return using adjusted ARMIS data, but the GAO study does not.

A. THE 2006 GAO REPORT

The GAO Report studied the competitive conditions for special access services in sixteen major metropolitan areas. In particular, the GAO examined: (i) the extent that alternatives are available in areas where FCC granted pricing flexibility; and (ii) how prices have changed since the granting of pricing flexibility. Telcordia, a provider of telecommunications network software and services, and GeoResults, a firm that regularly analyzes Telcordia data, provided the GAO with data on the availability of alternative providers of special access services. Competitive alternatives were evaluated at the building level (implying a very narrow geographic market definition). Price data was gathered from tariffs and contracts filed at the FCC. The GAO recognized some limitations in their data, and explicitly observed that “the results are not generalizable to all MSAs in the United States.”²³ By this recognition, the GAO concluded that its findings were strictly limited to the sixteen MSA considered and could not be used to make statements about special access services generally.

For buildings in the sixteen MSAs studied, the GAO concluded that competitive alternatives for dedicated access were not widely available. Buildings with higher levels of demand (i.e., two DS3’s or more) had more alternatives, with fifteen to twenty-five percent of buildings show-

05-75, Memorandum Opinion and Order, 20 FCC Rcd. 18433 (2005) (hereinafter “Verizon and MCI Applications”), *available at* <http://digital.library.unt.edu/ark:/67531/metadc4087/m1/479?q+20FCCred18433>; SBC Communications Inc. and AT&T Corp. Applications for Transfer of Control, WC Docket No. 05-65, Memorandum Opinion and Order, 20 FCC Rcd. 18290 (2005), *available at* <http://digital.library.unt.edu/ark:/67531/metadc4087/m1/479?q+20FCCred18433>.

23. GAO REPORT, *supra* note 1.

ing competitive alternatives.²⁴ As for prices, the GAO concludes that both list prices and average revenues for special access services had decreased over the study period (2001 to 2005, adjusted for inflation). The GAO also found that prices were often higher in areas with Phase II pricing flexibility relative to areas that are still subject to price caps. The GAO's study estimated special access prices based on list price data to support its assertion that incumbent LEC prices in Phase II areas were higher than prices in non-Phase II areas.

Importantly, the GAO Report did not make sweeping claims on either competition or the need for regulation, noting in particular that “[w]e are not making a judgment on the legal sufficiency of competition in dedicated access services,” and that the report “does not call for the reregulation of dedicated access prices.”²⁵ Stronger recommendations were precluded, perhaps, by the GAO's recognition of the “limits of available data on the extent and effect of competition in the market for dedicated access services,”²⁶ and the inability to generalize their results from an analysis of sixteen MSAs to other areas. Final recommendations were limited. The GAO Report concludes that “in order to better meet its regulatory responsibilities, [the] FCC needs a more accurate measure of effective competition and needs to collect more meaningful data.”²⁷ The GAO's sentiment echoes the proposal in our 2003 study on special access regulation.²⁸

B. THE 2009 NRRI STUDY

In 2008, the National Association of Regulatory Utility Commissions (“NARUC”) commissioned the National Regulatory Research Institute (“NRRI”) to “conduct an analysis of the existing data focusing on whether incumbent local exchange carriers (ILECs) have market power” over special access services and “whether ILECs are using that market power to increase prices above competitive levels.”²⁹ Two efforts by NARUC to collect data from carriers and customers in 2007 received responses from

24. This finding is predictable from theory. See generally George S. Ford, et al., *Competition After Unbundling: Entry, Industry Structure and Convergence*, PHOENIX CENTER POL'Y PAPER No. 21 (2005), available at <http://www.phoenix-ceneter.org/pcpp/PCPP21Final.pdf>, reprinted in 59 FED. COMM. L.J. 331 (2007).

25. GAO REPORT, *supra* note 1.

26. *Id.*

27. *Id.*

28. Ford & Spiwak, *supra* note 19, at 3 (“responsible public policy requires the Commission to return the core unresolved issue of incumbent market power to center-stage and address it in an intellectually honest and definitive manner”).

29. PETER BLUHM & ROBERT LOUBE, NAT'L REGULATORY RESEARCH INST., *COMPETITIVE ISSUES IN SPECIAL ACCESS MARKETS 1-2* (2009) available at http://www.naruc.org/Publications/09%200121%20NARUC%20NRRI_spl_access_mkts_jan09-02%20_2_.pdf (hereinafter “NRRI STUDY”).

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only six firms, so NRRI was tasked in 2008 with collecting more data and providing a market power analysis.³⁰ This latest effort at data collection resulted in the January 2009 report entitled *Competitive Issues in Special Access Markets* by authors Peter Bluhm and Robert Loube.³¹

Unlike the GAO Report, which inferred the extent of competition from a large database, the NRRI sought data from both buyers and sellers in the fifty largest MSAs. However, the survey approach did not fare well: the NRRI received responses from only seven firms and did not receive any data from fixed wireless providers or cable companies that offer special access services—two alternatives that are the most significant competitors to LEC special access services.³² The NRRI admitted that the data it collected is “too incomplete to support a comprehensive analysis of long-term pricing trends between 2001 and 2006,” and that the incomplete data “limited [NRRI’s] ability to verify market concentrations and verify buyer reports on the prices charged.”³³

The evidence presented in the NRRI Study covers three main areas. First, the report summarizes the calculations of the Hirschman-Herfindahl Index (“HHI”) calculated from its survey responses.³⁴ The study defines four product markets: (i) DS1 transport; (ii) DS1 channel terminations; (iii) DS3 transport; and (iv) DS3 Channel Terminations. The NRRI Study never specifically defines the geographic market and instead calculates market concentration at the national, MSA, and city levels. While the NRRI found its measures of market concentration to be

30. NRRI STUDY, *supra* note 29, at 1-2, 35 (describing background of the study and NRRI’s role). McLeod USA, Sprint, Time Warner Telecom, T-Mobile and XO Communications responded to NARUC’s May 2007 survey of special access customers, and only AT&T responded to NARUC’s June 2007 survey of special access suppliers.

31. *Id.*

32. *Id.* at 36-37. Respondents included Covad, Sprint, T-Mobile, TW Telecom, XO, Verizon, and Embarq. The absence of any response from cable providers is significant, as cable networks tend to be the largest, nearly-ubiquitous landline high capacity network challenger to incumbent LECs. As the National Cable & Telecommunications Association recently told the FCC, “many cable operators provide high-capacity services that compete with special access services offered by incumbent local exchange carriers” and “many cable operators view such services as a growing segment of their business.” Letter from Stephen F. Morris, Assoc. Gen. Counsel, Nat’l Cable & Telecomms. Ass’n, to Marlene H. Dortch, Secretary, FCC (May 8, 2009) available at <http://fjallfoss.fcc.gov/ecfs/comment/view?id=5515360780>.

33. NRRI STUDY, *supra* note 29 at 37-38.

34. The HHI is an accepted measure of market concentration but has limitations in dynamic markets. The index is calculated by summing the squared market shares of each firm. For example, a market consisting of three equal sized firms has an HHI of 3,333 (= $33^2 + 33^2 + 33^2$). The number’s equivalent is simply $[1/(HHI/1000)]$, where this ratio measures the number of hypothetical, equally sized firms in a market (irrespective of the actual distribution of market shares). On the HHI, see U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES at §5.3 (2010), available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.pdf>.

very high in most instances, without a geographic market definition and comprehensive collection of data, it is not clear what those calculations mean.

Second, the NRRI Study computes a regulatory rate of return for the larger incumbent LECs (AT&T, Qwest, and Verizon). Using “adjusted” ARMIS data, these rates of return are estimated to be near 40% for Qwest and 30% for AT&T. Alternately, for Verizon, the rate of return is only 15%. These are large differences in returns, yet no explanation is provided to explain these differences across LECs.

Third, like the GAO Report, the NRRI Study compares the prices between areas with different regulatory schemes. The NRRI Study found that list prices were lower in markets with greater pricing flexibility.³⁵ This result conflicted with the GAO report, which found higher prices in Phase II areas. Discount prices, in contrast, were typically higher in Phase II markets, but rarely by a statistically significant amount.³⁶ However, as discussed in more detail below, the NRRI Study examined nominal pricing data, not real pricing data, which is a significant defect in the analysis.

Unlike the GAO Report before it, however, the NRRI issued several strong conclusions about market power in so-called “special access markets.” In particular, the NRRI claimed that ILECs “maintain strongly dominant market shares” for DS-1 and DS-3 channel terminations and transport.³⁷ As a consequence of this finding, the NRRI Study makes several policy recommendations, including a recommendation that the FCC should change its standard for granting price deregulation and that it should “reset” special access rates for AT&T, Verizon, and Qwest.³⁸

IV. DECONSTRUCTING THE ARGUMENTS FOR REGULATING SPECIAL ACCESS PRICES

Consistently, those calling for the elimination of pricing flexibility and strict price regulation of special access prices adopt a rather standard template for evaluating the potential for welfare improving regulation. The NRRI Study, for example, states its intent to “assess . . . whether ILECs have market power and, if so, whether they are using that power to increase prices above competitive levels.”³⁹ Market power, likewise, has a standard definition: “[m]arket power for a seller is the

35. NRRI STUDY, *supra* note 29, at 65. Mean discounted prices were found to be higher.

36. *Id.* The NRRI Study does not describe the statistical test employed or the sample sizes.

37. *Id.* at 45-46.

38. *Id.*

39. *Id.* at 2. (“A primary issue underlying this report is whether interstate special access rates are too high”).

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ability to profitably maintain prices above competitive levels for a significant period, without significant customer loss and without attracting entry by competitors.”⁴⁰ Market power, then, is quantified in the relationship of actual price to the competitive price.

If competitive prices are observable, then the quantification of market power is fairly straightforward. For example, economists have for years estimated the price and quality differentials between monopolistic and duopolistically-competitive cable television markets.⁴¹ Unfortunately, in many cases relevant to regulatory proceedings, it is difficult to find competitive prices for a particular product or service, typically due to the influence of existing or historical regulation on observed prices. Absent measurable prices of service or those for useful analogies, the debate becomes more theoretical. In fact, it is theory, not empirics, that provides the foundation for most of the pro-regulatory arguments for special access services today. As shown below, while theory can be informative and very useful for public policy, there are some limitations on the use of the theories invoked in the special access case.

A. A SINGULAR FOCUS ON MARKET CONCENTRATION IS MISGUIDED

While much of the empirical debate over special access regulation focuses upon the market concentration levels and the ostensible small share of rivals to incumbent LECs, this singular focus on market share is not a proper way to engage in a comprehensive competitive analysis. Indeed, as we show in this Section, the issue is not so simple. While concentration statistics certainly have their uses, economic theory,⁴² antitrust,⁴³ and FCC precedent⁴⁴ all make clear that such data is not the

40. *Id.* at 23.

41. *See, e.g.*, GAO REPORT, *supra* note 1; U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-04-8, TELECOMMUNICATIONS: ISSUES RELATED TO COMPETITION AND SUBSCRIBER RATES IN THE CABLE TELEVISION INDUSTRY (2003), *available at* <http://gao.gov/new.items/d048.pdf>; U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-03-130, TELECOMMUNICATIONS: ISSUES IN PROVIDING CABLE AND SATELLITE TELEVISION SERVICES (2002), *available at* <http://www.gao.gov/new.items/d03130.pdf>; U.S. GOV'T ACCOUNTABILITY OFFICE, GAO/RCED-00-164, TELECOMMUNICATIONS: THE EFFECT OF COMPETITION FROM SATELLITE PROVIDERS ON CABLE RATES (2000), *available at* <http://www.gao.gov/archive/2000/rc00164.pdf>; T. Randolph Beard, et al., *Fragmented Duopoly: A Conceptual and Empirical Investigation*, 78 J. BUS. 2377-96 (2005).

42. *See generally* Duncan Cameron & Mark Glick, *Market Share and Market Power in Merger and Monopolization Cases*, 17 MANAGERIAL & DECISION ECON. 193 (1996) (legal precedent requiring courts to draw inferences about market power based primarily or exclusively on market shares and/or market concentration can often be misleading; the only alternative to such bright line rules is to utilize modern economic tools to undertake more extensive competitive analyses); *see also* MICHAEL L. KATZ & HARVEY S. ROSEN, MICROECONOMICS 508 (2d ed. 1994); John E. Kwoka, Jr., *Regularity and Diversity of Firm Size Distribution in U.S. Industries*, 34 J. ECON. & BUS. 391 (1982).

43. *See, e.g.*, *United States v. Baker Hughes Inc.*, 908 F.2d 981, 986 (D.C. Cir. 1990) (Thomas, J.) (market share statistics “misleading” in a “volatile and shifting” market); S.

end of the analysis—it is merely the beginning.⁴⁵ As a result, the near-singular focus that the NRRI places upon (poorly constructed) market concentration measurements leads to a myopic interpretation of the actual competitive dynamic in the market.

1. *The Theory of Prices and Concentration*

The implicit theoretical underpinning of the argument for special access regulation based on industry concentration statistics is that more firms implies lower prices.⁴⁶ The concentration measure in the NRRI Study is the HHI, which is the sum of the squared market shares for the firms determined to be in both the product and geographic market of interest. The GAO Report, alternately, focuses solely on the market share of the incumbent LEC.

Of course, the key assumption in these studies is that there is a relationship between market concentration and above-market prices. In economic terms, this assumption is that firms in markets for high capacity services compete in what is commonly called “Cournot competition” or “competition in quantities.”⁴⁷ With Cournot competition, price and prof-

Pac. Commc'ns Co. v. AT&T, 740 F.2d 980, 1000 (D.C. Cir. 1984), *cert. denied*, 470 U.S. 1005 (1985) (When a “predominant market share may merely be the result of regulation, and regulatory control may preclude the exercise of market power . . . in such cases market share should be at most a point of departure in determining whether market power exists.”); *Metro Mobile CTS, Inc. v. NewVector Commc'ns Inc.*, 892 F.2d 62, 63 (9th Cir. 1989) (“Reliance on statistical market share in cases involving regulated industries is at best a tricky enterprise and is downright folly where . . . the predominant market share is the result of regulation.”).

44. *See, e.g.* Motion of AT&T Corp. to Be Reclassified as Non-Dominant Carrier, FCC 95-427, Order, 11 FCC Rcd. 3271 (1996) (hereinafter “Motion of AT&T Corp.”) available at <http://digital.library.unt.edu/ark:/67531/metadc2058/ml404?q=11FCCRcd3271>; In the Application of NYNEX Corporation, Transferor, and Bell Atlantic Corporation, Transferee, For Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries, File No. NSD-L96-10, Memorandum Opinion and Order, 12 FCC Rcd. 19985 (1997), available at <http://digital.library.unt.edu/ark:/67531/metadc2308/m1/583?q=12FCCRcd19985>. (“market share and concentration data provide only the starting point for analy[sis]”).

45. 2005 Special Access NPRM, *supra* note 20 (“According to the DOJ Merger Guidelines, a high market share does not necessarily confer market power, but it is generally a condition precedent to a finding of market power (at 19391).”).

46. The connection can be demonstrated theoretically under certain conditions. *See, e.g.*, STEPHEN MARTIN, *ADVANCED INDUSTRIAL ECONOMICS* 7 (1993).

47. In the Cournot setting, firms choose the quantities they will offer to the market, and then the market price is determined by the market that liquidates those quantities. (Such a setting is akin to firms that set sales targets.) With Cournot competition, price and profits fall as the number of firms increases, converging on the competitive equilibrium. This “more firms, lower price” mentality dominates regulatory debates, and it is reasonable to say that Cournot competition is the benchmark in regulatory settings. *See* MARTIN, *supra* note 46 at 17-35; DENNIS W. CARLTON AND JEFFERY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 157-187 (3d ed. 2000).

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its fall as the number of firms increases, converging on the competitive equilibrium as the number of firms gets large.⁴⁸ It is reasonable to say that Cournot competition is the benchmark of most regulatory settings, because its central hypothesis of “more firms, lower price” is echoed throughout most regulatory debates.

The assumption about the behavior of firms embedded in the Cournot model, however, does not necessarily comport with reality; Cournot competition is, in fact, just one set of assumptions as to how firms behave in concentrated markets. Firms need not behave in this fashion. An alternative and frequently employed formulation of competition is “Bertrand Competition” or “competition in prices.”⁴⁹ Here, firms choose price and sell whatever quantities consumers demand at that price. The differences in the assumptions (at least in the simple cases) have profound effects on equilibrium.⁵⁰ Unlike the Cournot model, where prices and profits fall gradually as the number of firms increases, with Bertrand competition the perfectly competitive outcome is obtained with only two firms. In this sense, Bertrand is often viewed as “more competitive” than Cournot. An interesting and important point is that in a Bertrand setting, the HHI is a meaningless indicator of market power, since after the second entrant, the number of firms has no impact on price.⁵¹

At the other extreme from Bertrand competition, firms may cooperate, implicitly or explicitly, to not compete at all. This outcome is collusion. If collusion is perfect, then prices and profits remain at the monopoly level irrespective of the number of firms. As a result, simply measuring the number of firms in an industry need not have a direct relationship to price—a highly collusive industry can have many partici-

48. In the Cournot framework, the price reductions (or quantity increases) from additional firms are very low after about five firms. JOHN SUTTON, *SUNK COST AND MARKET STRUCTURE* 30-34 (1995).

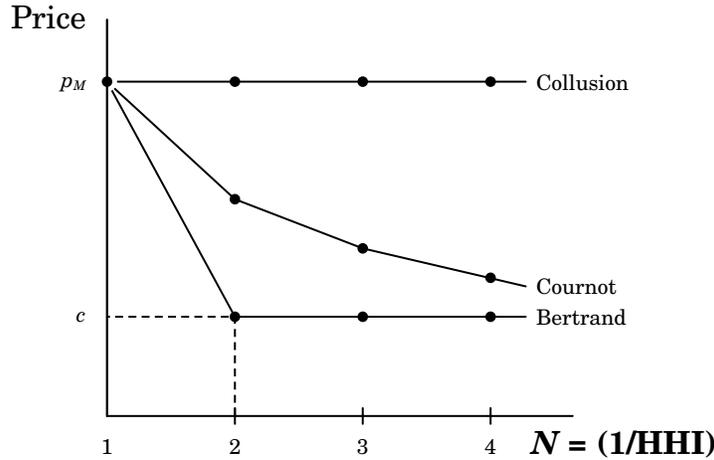
49. SUTTON, *supra* note 48, at 32; MARTIN, *supra* note 46, at 35-43; CARLTON & PERLOFF, *supra* note 47, at 157-187.

50. In more complex settings, they may be more alike. For example, if firms must first choose capacity levels prior to competing, the equilibrium of Bertrand competition in prices is identical to that of the simple Cournot model. See David M. Kreps & Jose A. Scheinkman, *Quantity Precommitment and Bertrand Competition Yield Cournot Outcomes*, 14 *BELL J. ECON.* 326, 326-37 (1983). Product differentiation also leads to prices above marginal cost under Bertrand Competition. See, e.g., MARTIN, *supra* note 46 at 39.

51. For example, moving from two to three firms reduces the HHI from 0.50 to 0.33, but the price is unchanged. Differences in the HHI do not lead to differences in the price or price-cost margin, except for the move from monopoly to duopoly. MARTIN, *supra* note 46, at 39 (“Cournot’s model of quantity-setting oligopoly suggests that market share and market concentration are the primary determinants of market performance. Bertrand’s model of price-setting oligopoly with standardized products suggests that these factors are irrelevant.”).

pants (think OPEC, with twelve members) while reasonably competitive industries can have very few major participants (think Coke and Pepsi).

Figure 1. Price and the Number of Firms



Indeed, under conditions of either Cournot or Bertrand competition, an industry does not require many firms to achieve price and output levels that approach conditions of perfect competition. Figure 1 illustrates this effect.⁵² In the figure, price is measured on the vertical and the number of firms N (or $1/HHI$) on the horizontal.⁵³ The monopoly price is labeled p_M and marginal cost is labeled c . First, consider the relationship between the number of firms and price under Cournot competition. As shown by the line labeled “Cournot,” as the number of firms increases the price gradually falls toward marginal cost (that is, the perfectly competitive outcome in the simplest settings). Note that while price continually falls with increases in N under Cournot competition, most of the price cuts from competition are realized with the first few firms.

In contrast to this steady decline in prices under Cournot competition, with Bertrand competition, marginal cost pricing is obtained with only two firms (i.e., duopoly).⁵⁴ The line labeled “Bertrand” reveals this sharp decline in price from p_M to c between the first and second firm. As

52. The figure adapted from SUTTON, *supra* note 48, at 34.

53. If firms are identical, then $HHI = 1/N$. If there are two equal sized firms, then the market shares are 50% and the HHI is 0.50. With three firms, the shares are 33% and the HHI is 0.33.

54. This intense competition creates an interesting predication called the Bertrand Paradox. If there are fixed costs, then the marginal cost pricing outcome with two firms ensures both firms earn negative profits. Thus, entry does not occur. Put simply, competi-

just mentioned, after the second entrant, additional firms have no effect on price, so the HHI and other measures of concentration are meaningless in the Bertrand framework. Finally, there is a line labeled “Collusion.” If firms are able to collude perfectly, then the price is held at the monopoly price regardless of the number of firms. As with Bertrand, the number of firms infers almost nothing about price.

Figure 1 illustrates a very simple point. Even at duopoly, the *theoretical* equilibrium price covers the entire range from perfect competition to monopoly.⁵⁵ Therefore, without first specifying the nature of competition, or better yet, estimating it, there is no *per se* relationship between the number of firms (or concentration statistic) and price. Backing out market power information from concentration data requires an assumption about or empirical estimate of the nature of competition. As we discuss later, in telecommunications markets, the linkage between market power and concentration is exceedingly complex. As the authors of the NRRI Study observe (and then ignore), “market concentration does not, by itself, prove that a seller has excessive market power.”⁵⁶

2. *The Threat of Entry*

Another problem with simple concentration/market power arguments is that high profits may attract entry, thereby encouraging incumbent firms to lower price to avoid attracting additional competitors. The exercise of market power may be limited if the threat of entry is high. The economic theory of contestability holds that efficient prices can be obtained even under monopoly supply, a conclusion supporting the relevance of entry to market outcomes.⁵⁷ The theory of contestability is widely accepted as a theory and widely contested in application. Indeed, even the NRRI Study observes that “government has less reason to intervene in regulating a contestable market, even if that market is concentrated.”⁵⁸

Practically, the theory of contestability simply demonstrates how the threat of entry can restrain prices, and the continuum of pricing out-

tion is so intense that it never happens. J. TIROLE, *THE THEORY OF INDUSTRIAL ECONOMICS* 205-6 (1995).

55. Economists have developed more general models of firm interactions than allow the interaction of firms to vary between monopoly and perfect competition. See, e.g., STEPHEN MARTIN, *ADVANCED INDUSTRIAL ECONOMICS* 13-46 (1993).

56. NRRI STUDY, *supra* note 29, at 44.

57. Contestability theory holds that competitive-like outcomes can be obtained with monopoly supply as long as there is a threat of hit-and-run entry. If the monopolist raises its price above average cost, then firms enter. If the price falls, then firms exit. The free-flow of profit seekers keeps price at average cost, thereby attracting no attention. WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY* (1982).

58. NRRI STUDY, *supra* note 29, at 48.

comes depends on entry and exit costs. If entry and exit costs are high, then entry is unlikely, and incumbent firms will have more pricing freedom. If entry is easy, then any attempt to extract profits in the market will attract new rivals.

Certainly, the ease of entry into markets for high capacity services is disputed. But in the recent NRRI Study, the conclusion is that entry and exit costs are low for some significant rivals in the markets for high capacity services. Markets for high capacity services are, according to NRRI, contestable to a significant degree. First, as the NRRI Study finds, “many firms compete in special access markets, including wireline CLECs, cable television providers, and fixed wireless providers. These competitors are claiming larger market shares.”⁵⁹ So, there are competitors already in the market, and they are growing.⁶⁰ The NRRI Study, however, wrongly concludes that this evidence is consistent with contestability theory. Contestability is about pricing decisions when entry does not occur, not when it does. The presence of competitors is actual, not potential, competition.

Second, the NRRI Study concludes that contestability is relevant in cases where entry has yet to occur. The Report states correctly that “[t]he economic forces that limit landline competition for channel terminations have little or no bearing on newer technologies,” and that these newer “technologies can provide *acceptable* substitutes for special access channel terminations, and their providers can have *lower entry and exit costs*.”⁶¹ In fact, for cable systems, the NRRI Study concludes that “entry cost is low,” since “[o]nce a cable television provider has made this transition, it can offer a substitute for special access at a small incremental cost. Cable television systems also have low exit costs for special access, so long as they remain in the underlying cable business.”⁶² In addition, the authors also claim that fixed wireless service has a “relatively low entry cost even in low-density areas. Since wireless transmitters can be used simultaneously for multiple customers, the cost of serving a single additional customer is usually very low. Likewise, where a provider serves multiple customers from a single broadcast unit, the provider faces little financial risk from losing a single customer.”⁶³

59. *Id.* at 53.

60. *C.f.*, Stephen Lawson, *Sprint Picks Wireless Backhaul for WiMax*, COMPUTERWORLD (Jul. 10, 2008), <http://news.idg.no/cw/art.cfm?id=0A60E6EC-17A4-0F78-310D53B63B82F16B> (quoting Sprint CTO Barry West’s observation that “relatively abundant and inexpensive T-1 lines” exist in the U.S. market); *see also* Letter from Stephen F. Morris, *supra* note 32.

61. NRRI STUDY, *supra* note 29, at 56.

62. *Id.*

63. *Id.* at 57.

These statements suggest that both actual and potential competition are relevant in markets for high capacity services today. Consequently, even though one might observe highly concentrated market shares for high capacity services, the *prices* for those services may not be at super-competitive (and therefore socially undesirable) levels. In deriving conclusions, however, the authors of the NRRI Study ignore their own discussion and evidence on contestability.

3. *Equilibrium Industry Structure*

Another key consideration for modern communications policy ignored in the NRRI Study is that the *sustainable* number of firms in a market *depends on the economic characteristics of the market*, and not the desired, arbitrarily selected number of firms by some group of policy-makers, trade group presidents, legislators, or other types of social reformers (no matter how well intentioned). Public policy cannot *choose* the long-run sustainable number of firms in a market, but can only take steps to affect the economic fundamentals of markets that influence the equilibrium number of firms.⁶⁴ One clear example is investment tax credits, which directly lower the fixed costs of entry by lowering taxes to offset (in part) such investments.⁶⁵ In addition, since the sustainable number of firms in a market is a function of the size of that market, public policy can help expand that market, say by removing international trade barriers (or ridding the influence of local franchise authorities over the entry decisions of those deploying advanced communications networks).⁶⁶

Given the supply-side and demand-side conditions of the communications markets (particularly the large fixed and sunk costs required by the business), these markets will always be relatively concentrated.⁶⁷

64. See Ford et al., *supra* note 24, at 10.

65. See, e.g., Anastassios Gentzoglani, *Sunk Costs, Innovation, and Spillover Effects in R&D-Intensive Industries*, 10 J. OF APPLIED BUS. RES. 1 (1994) (“grants, subsidies or tax credits reduce the sunk character of firms’ R&D investments”); SUTTON, *supra* note 48, at 31 (“the number of entrants to the market increases steadily as the level of setup costs falls”). Whether or not tax incentives are sufficient to actually change industry structure is an empirical question.

66. The ability of international trade to expand markets and thereby reduce industry concentration is shown empirically in William F. Chappell & Bruce Yandle, *An Entry Model of Import Penetration*, 19 ATLANTIC ECON. J. 22 (1991).

67. Ford et al., *supra* note 24; see also Timothy F. Bresnahan et al., *Do Entry Conditions Vary Across Markets?* 1987 BROOKINGS PAPERS ON ECON. ACTIVITY 833 (1987); Ioannis N. Kessides, *Market Concentration, Contestability, and Sunk Costs*, 72 REV. ECON. & STAT. 614 (1990); Ioannis N. Kessides, *Advertising, Sunk Costs, and Barriers to Entry*, 68 REV. ECON. & STAT. 84 (1986); Catherine J. Morrison Paul, *Cost Economies: A Driving Force for Consolidation and Concentration?*, 70 S. ECON. J. 110 (2003); Walter J. Mayer & William F. Chappell, *Determinants of Entry and Exit: An Application of the Compounded Bivariate Poisson Distribution to U.S. Industries, 1972-1977*, 58 S. ECON. J. 770 (1992); David Levy,

But this fact need not imply regulation is needed or efficacious.⁶⁸ The mobile telephone industry, for example, has an HHI of nearly 3,000 (the number's equivalent of about 3 equally sized firms), yet the industry performs well and has repeatedly been declared workably competitive by the FCC.⁶⁹ Even in what used to be the long-distance industry, the three largest firms (AT&T, MCI, and Sprint) controlled nearly 70% of that market for fifteen years after divestiture.⁷⁰ Yet, this industry was easily characterized as workably competitive, and the FCC did so.⁷¹ In essence, workably competitive implies that the market is sufficiently competitive that regulation is unlikely to create any improvement in market performance and, in fact, is likely to make things worse.

There is an analogy in markets for high capacity services. In the *Pricing Flexibility Order*, the FCC granted pricing flexibility based on a proxy for competition and did so across a large geographic footprint. This decision was made with full recognition that "even if competition had not fully developed, the cost of regulating special access pricing was still greater than the benefits."⁷² So, the motivation for special access services cannot be based on an exceedingly naïve view of competitive out-

Specifying the Dynamics of Industry Concentration, 34 J. INDUS. ECON. 55 (1985); Frederic Jenny and Andre-Paul Weber, *The Determinants of Concentration Trends in the French Manufacturing Sector*, 26 J. INDUS. ECON. 193 (1978); Douglas F. Greer, *The Causes of Concentration in the US Brewing Industry*, 21 Q. REV. ECON. & BUS. 87 (1981); Paul A. Geroski et al., *The Dynamics of Market Structure*, 5 INT'L J. OF INDUS. ORG. 93 (1987); E. Woodward Eckard, Jr., *Plant-level Scale Economies and Industrial Concentration*, 34 Q. REV. ECON. & FIN. 173 (1994); and Mita Bhattacharya, *Industrial Concentration and Competition in Malaysian Manufacturing*, 34 APPLIED ECON. 2127 (2002).

68. In fact, the threshold for abandoning regulation has historically been quite low, and the thresholds have not been set only by the FCC. For example, history has shown that the presence of duopoly is generally sufficient grounds for deregulation. Congress decided in the 1992 *Cable Act* that an HHI of 8,600 (or 1.16 symmetric firms) was sufficient to deregulate cable television prices. See Communications Act Section 623 (1)(B), 47 U.S.C. § 543(1)(B). In the 1996 *Telecommunications Act*, the regulation of cable television prices was largely abandoned as the effort was widely recognized as an abysmal failure, despite very little terrestrial competition in cable. Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996).

69. In the Matter of Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993, Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services, WT Docket 08-27, Thirteenth Report, DA 09-54 ¶¶ 1, 6 (2009), available at http://hraunfoss.fcc.edocs_public/attachmatch/DA-09-54A1.pdf (FCC found that "there is effective competition in the CMRS market" while noting that the HHI was 2674).

70. FCC, TRENDS IN TELEPHONE SERVICE (2003), available at http://transition.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/IAD/trend803.pdf.

71. Motion of AT&T Corp., *supra* note 44.

72. Letter from Anthony Dale, Managing Director, FCC, to Mark L. Goldstein, Director, GAO (Nov. 13, 2006), available at GAO REPORT, *supra* note 1 at 72.

comes or of regulatory effectiveness; intervention must be rooted in the realities of the market and the realities of regulatory intervention.

4. *The Literature on Rivalry in Concentrated Markets*

Empirical and experimental research has shown that there is substantial variation in the relationship between the number of firms (or industry concentration) and prices/profits across industries or over time.⁷³ There are many empirical studies showing a positive relationship between concentration and prices/profits, but there also exists a large literature showing no link between the two.

Econometric research finds support for the Cournot outcome, as well as more and less competitive outcomes. Iwata (1974) could not reject Cournot outcome in the Japanese glass industry, and Brander and Zhang (1990, 1993) find evidence of Cournot outcomes in the U.S. airline industry.⁷⁴ Haskel and Martin (1994) find support for Cournot over Bertrand behavior when firms face capacity constraints.⁷⁵ But, Berg and Kim (1994) reject Cournot behavior in the Norwegian banking industry, and Ford (2000) presents evidence that the international message telephone industry is more competitive than Cournot.⁷⁶ Karp and Perloff

73. See, e.g., Michael Salinger et al., *The Concentration-Margins Relationship Reconsidered*, 1990 BROOKINGS PAPERS ON ECON. ACTIVITY 287 (1990); Gary Whalen, *The Determinants and Performance Effects of Rivalry in Local Banking Markets*, 31 Q.J. BUS. & ECON. 38 (1992) ("concentration affected neither rivalry nor profitability in the expected manner"); Myron B. Slovin et al., *Deregulation, Contestability, and Airline Acquisitions*, 30 J. FIN. ECON. 231 (1991) ("changes in concentration after deregulation have no positive effect on carrier returns"); John R. Schroeter, *Estimating the Degree of Market Power in the Beef Packing Industry*, 70 REV. ECON. & STAT. 158 (1988) ("there has been no real worsening of the market's performance during the period of increasing concentration"); Stephan A. Rhoades, *Market Share as a Source of Market Power: Implications and Some Evidence*, 37 J. ECON. & BUS. 343 (1985) ("market share *per se* is a source of high profits, regardless of the level of concentration and after controlling for firm size"); Roger L. Beck & Sheila Mozejko, *Concentration and Price/Cost Margins Across Time in Canada*, 9 CAN. J. ADMIN. SCI. 40 (1992) ("when a shift occurs from a single-point-in-time to a sequential-points-in-time approach, there is no longer a consistent relationship between changes in concentration and changes in profit margins").

74. Gyoichi Iwata, *Measurement of Conjectural Variations in Oligopoly*, 42 ECONOMETRICA 947, 947-66 (1974); James A. Brander & Anming Zhang, *Market Conduct in the Airline Industry: An Empirical Investigation*, 21 RAND J. ECON. 567, 567-83 (1990); James A. Brander & Anming Zhang, *Dynamic Oligopoly Behavior in the Airline Industry*, 11 INT'L J. INDUS. ORG. 407, 407-35 (1993).

75. Jonathan Haskel & Chistopher Martin, *Capacity and Competition: Empirical Evidence on UK Panel Data*, 42 J. INDUS. ECON. 23, 23-44 (1994).

76. Sigbjorn Berg & Moshe Kim, *Oligopolistic Interdependence and the Structure of Production in Banking: An Empirical Evaluation*, 26 J. MONEY, CREDIT & BANKING 309, 309-22 (1994); George S. Ford, *Flow-Through and Competition in the International Message Telephone Service Market*, PHOENIX CENTER POLY PAPER NO. 7 (2000), available at <http://www.phoenix-center.org/pcpp/PCPP7Final.pdf>.

(1989) show that the oligopolistic rice market is closer to the competitive than the collusive outcome.⁷⁷

Experimental research is particularly interesting on this point. Fouraker and Siegal (1963) evaluated the competitive behavior of 16 pairs of “student duopolists.”⁷⁸ In seven of 16 games, about half of the total, the Cournot equilibrium was observed. Other outcomes included five Bertrand (perfect competition) outcomes, three collusive outcomes, and one outcome between collusion and Cournot.⁷⁹ In all, 76% of the outcomes were Cournot competition or better. The average outcome was Cournot, but there were significant departures from Cournot behavior. These experiments illustrate the variety of outcomes possible with small number competition. Interestingly, *when the experiment was extended to three players, the Bertrand outcome was the most common.* Holt (1985) and Plott (1982) also find support for the Cournot outcome in experiments.⁸⁰

A particularly relevant experimental study for high capacity services is found in Plott, Sugiyama, and Elbaz (1994).⁸¹ In this article, the experiment involves price setting in the context of declining average costs (i.e., natural monopoly). While multiple firm outcomes were feasible (the number of competitors was endogenous), it rarely occurred in the experimental setting; the presence of scale economies typically rendered a single seller in equilibrium. However, the single emerging seller did not offer its product at the monopoly price. Rather, the price of the seller was just high enough so that the seller did not make a loss (the second-best efficient prices). Consumers, then, made purchases at approximately the lowest possible price absent subsidies to the seller. The result was consistent with the predictions of contestability theory, which holds that a monopolist facing relatively easy entry will charge a price lower than the monopoly level. If entry is very easy, the monopolist’s

77. Larry S. Karp & Jeffrey M. Perloff, *Dynamic Oligopoly in the Rice Export Market*, 71 REV. ECON. & STAT. 462 (1989).

78. S. Siegel & D. L. Harnett, *Bargaining Behavior: A Comparison Between Mature Industrial Personnel and College Students*, 12 OPERATIONS RESEARCH 334 (1964).

79. In Bertrand competition in prices, firms choose price and sell whatever quantities consumers demand at that price. The equilibriums are very different between the (simple) Cournot and Bertrand models. Unlike the Cournot model, with Bertrand competition the perfectly competitive outcome is obtained with only two firms. In this sense, Bertrand is often viewed as “more competitive” than Cournot. An interesting and important point is that in a Bertrand setting, the HHI is a meaningless indicator of market power, since after the second entrant, the number of firms has no impact on price. MARTIN, *supra* note 46 at 35-43; CARLTON & PERLOFF, *supra* note 47, at 157-187.

80. Charles A. Holt, Jr., *An Experimental Test of the Consistent-Conjectures Hypothesis*, 75 AM. ECON. REV. 314, 314-25 (1985); Charles R. Plott, *Industrial Organization Theory and Experimental Economics*, 20 J. ECON. LITERATURE 1485 (1982).

81. Plott, et al., *supra* note 80, at 261-87.

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price is equal to the welfare maximizing price (subject to the constraint of zero profits for the firm).

Without question, the empirical economics literature discussed above supports neither a simple nor consistent relationship between industry concentration and prices or profits. Competition among small numbers of firms can produce a variety of outcomes and assuming blindly, high concentration leads to high prices or is bad for consumers is inappropriate. The NRRI Study's leap from high HHIs (even if well measured) to market power is inconsistent with economic theory and evidence. No simple linkage is permitted, and this fact is widely recognized among economists and the theoretical foundation for caution is very well developed.

B. WHY ARMIS RATES OF RETURN ARE POOR INDICATORS OF MARKET POWER

As noted above, the NRRI Study observes, "market concentration does not, by itself, prove that a seller has excessive market power."⁸² The bulk of both the GAO and NRRI studies, however, focused exclusively on market concentration data. Perhaps recognizing the limitations of this data, an attempt is made to provide other evidence supporting the market power hypothesis. For the NRRI Study, this additional evidence includes an analysis of rate-of-return statistics for the incumbent LECs.⁸³

There are (at least) two central and significant shortcomings of the ARMIS rate of return analysis. First, the ARMIS data has a number of serious defects. It is a regulatory database, and the revenues and costs are allocated across different services, different regulatory regimes, and different regulatory geographies. The prospect that these allocations can render economically meaningful data is slim. Additionally, the ARMIS data does not measure economic costs, but regulatory accounting costs. While allocating costs based on rules of thumb is bad enough, the regulatory depreciation rules render the rate-of-return calculations meaningless from an economic standpoint. Market power is an economic phenomenon, not an accounting or regulatory one.⁸⁴

82. NRRI STUDY, *supra* note 29, at 44.

83. As with prices, it is possible to link concentration to rates of return via theory. As mentioned earlier, however, this linkage is possible only under particular assumptions, including primarily the assumption of Cournot competition. *See, e.g.,* MARTIN, *supra* note 46, at 499-507.

84. The FCC has recognized that ARMIS is accounting, not economic, data, as acknowledged in the NRRI Study. NRRI STUDY, *supra* note 29, at 8 n.17. *See also* 2005 Special Access NPRM, *supra* note 20, at ¶ 35 ("ARMIS . . . data show . . . accounting rates of return"). The academic debate over using accounting data is an old one. *See, e.g.,* MARTIN,

The ARMIS data is typically viewed with great skepticism by analysts familiar with the database. Yet, the data has been used in many analyses calling for the tighter regulation of special access services.⁸⁵ In the NRRI Study, however, the authors agree that the “ARMIS figures are virtually meaningless [and] . . . unreliable”⁸⁶ — a serious indictment by a group calling for increased regulation in the sector. Furthermore, the FCC has rejected the ARMIS data as probative in this very context, noting that “high or increasing rates of return calculated using regulatory cost assignments for special access services do not in themselves indicate the exercise of monopoly power.”⁸⁷ In some instances, the exceedingly high rates-of-return computed by some parties fail even the proverbial “red face test.”⁸⁸

A serious and recognized problem with the use of the ARMIS data is that the FCC “froze” separations categories for large carriers in 2001, thereby locking in such allocations at year 2000 levels. In an effort to salvage the ARMIS data from this particular defect (but not the others), the authors of the NRRI Study made some adjustments to the data hoping to counter the impacts of the separations freeze. They admit, however, that “no adjustment technique is available to us that could match the accuracy of direct assignment studies.”⁸⁹ Nevertheless, calculations are made of returns using the adjusted ARMIS data. No effort is made to demonstrate that the adjustments are plausibly accurate, and no effort is made to adjust for the differences in regulatory and economic depreciations. Other criticisms of the adjustments made in the NRRI Study have been made.⁹⁰

supra note 46, at 517-22; Ira Horowitz, *The Misuses of Accounting Rates of Return: Comment*, 74 AM. ECON. REV. 494, 494-500 (1984).

85. NRRI STUDY, *supra* note 29, at 69-71; N. Uri & P. Zimmerman, *Market Power and the Deregulation of Special Access Service by the Federal Communications Commission*, 13 INFO. & TELECOMM. TECH. L. 129, 173 (2004).

86. NRRI STUDY, *supra* note 29, at 70.

87. 2005 Special Access NPRM, *supra* note 20.

88. See, e.g., Written Testimony of Paul Schieber, V.P. Access & Roaming, Sprint Nextel Corp. on *An Examination of Competition in the Wireless Industry*, Before the House Subcommittee on Communications, Technology & the Internet 11 (May 7, 2009) available at http://democrats.energycommerce.house.gov/Press_111/20090507/testimony_schieber.pdf (claiming a 138% rate-of-return at the firm level).

89. NRRI STUDY, *supra* note 29, at 71.

90. Harold Ware, et al., *Is More Special Access Regulation Needed? Reactions to the NRRI Study on Special Access Competition*, NERA ECON. CONSULTING (2009), available at http://www.nera.com/extImage/PUB_Special_Access_Regulation_03.2009_final.pdf.

Table 1. NRRI Study - Measures of Concentration and Returns

Carrier	HHI DS-1 Transport	HHI DS-3 Transport	HHI DS-1 Chan. Term	HHI DS-3 Chan. Term	HHI Simple Average	NRRI Rate of Return
Verizon	8,932	7,309	8,958	8,598	8,449	15%
at&t	7,566	6,045	7,930	7,735	7,319	30%
Qwest	7,056	5,446	8,238	7,714	7,114	38%

Despite the acknowledged limitations of their proposed adjustments, the authors of the NRRI Study seem reasonably confident in their findings. They conclude the relatively high rates of return imply the incumbent LECs “continue to have market power.”⁹¹ In light of their underlying theory, we find this conclusion puzzling. Indeed, the rates of return computed from ARMIS data directly contradict the NRRI authors’ assertion that incumbents hold market power in less regulated markets. Table 1 summarizes the average national concentration levels from the NRRI Study along with the calculated rates of return. Based on the theory undergirding the entire report, higher concentration *implies* market power. Yet, their own calculations reveal the opposite. Across all product categories defined in the NRRI Study, higher concentration leads lower returns in direct conflict with the assumption underlying their own analysis.

NRRI bases this analysis on ARMIS rates of return, a perplexing approach once one calculates ARMIS rates of return from the period in which all special access services were price regulated. In 1999, for example, the average rate of return for special access computed using ARMIS data was 32% for Qwest, 37% for AT&T, and only 4.5% for Verizon.⁹² For Qwest and AT&T, the returns under complete price regulation are not much different than the “adjusted” returns computed in the NRRI Study. The conclusion, then, is the pricing flexibility has had no effect. For Verizon, its rate of return prior to the *Pricing Flexibility Order* was substantially lower than the other Bell companies and even below any reasonable estimate of the firm’s cost of capital. One interpretation, then, is that a more deregulatory approach has provided for more reasonable returns on investment for the firm.

Based on this evidence, the probative value of ARMIS calculations of returns seems low. At a minimum, changes to the separations process require significant adjustments to the data. But when those adjust-

91. NRRI STUDY, *supra* note 29, at 71.

92. Author calculations (matching ARMIS calculations) from ARMIS Form 43-01 (available at: <http://www.fcc.gov/wcb/armis>).

ments are made, the only conclusion that can be drawn (based on the NRRI Study) is that *higher* concentration leads to *lower* market power. This “inverse” relationship is consistent with the analysis in POLICY PAPER NO. 21, which shows that concentrated markets in an industry with large fixed and sunk costs may be a sign of *intense* price competition.⁹³ Nevertheless, we believe the proper interpretation of the analysis is that the ARMIS data should not be relied upon, adjusted or otherwise, and nor should the NRRI Study’s estimates of the HHI.

C. WHY SIMPLE COMPARISONS OF REGULATED AND DEREGULATED PRICES ARE POOR INDICATORS OF MARKET POWER

Both the GAO and NRRI studies compare prices—either list or average—for special access services across markets with varying degrees of pricing flexibility.⁹⁴ Neither study, however, proposes that market power can be measured by comparing less regulated to more regulated prices. Market power is assessed by comparing market prices to the prices that would prevail in a competitive setting. Absent the specification of a relationship between competitive and regulated prices, and the formation of expectations of how prices may adjust under differing degrees of flexibility, there is nothing about market power to be learned from the price comparisons contained in both reports.

1. *The Reality of Regulating Prices*

The fatal flaw in any study that compares “more regulated” to “less regulated” special access prices is the assumption that FCC price regulation in fact achieves perfect results—prices that perfectly (or even crudely) coincide with the price in a competitive market. The fact is, however, that process of setting prices is complex and even the most capable efforts fail to find a satisfactory outcome. In fact, the FCC specifically recognized that prices may rise as a result of less regulation, noting that its special access pricing rules “may have required incumbent LECs to price access services below cost.”⁹⁵ Once one recognizes that more heavily regulated rates may be flawed in some way (and in fact may be either too high or too low), then comparing less regulated rates to more heavily regulated rates carries very little probative value.⁹⁶

93. Ford et al., *supra* note 24.

94. GAO REPORT, *supra* note 1; NRRI STUDY, *supra* note 29.

95. Pricing Flexibility Order, *supra* note 11, at ¶ 155

96. As both the courts and the Federal Communications Commission have consistently recognized, ratemaking is “far from an exact science”. See, e.g., Fed. Power Comm’n. v. Conway Corp., 426 U.S. 271, 278 (1976); WorldCom, Inc., 238 F.3d at 457; Sw. Bell Telephone Co. v. FCC, 168 F.3d 1344, 1352 (D.C. Cir. 1999); Time Warner Entm’t Co. v. FCC, 56 F.3d 151, 163 (D.C. Cir. 1995); United States v. FCC, 707 F.2d 610, 618 (D.C. Cir. 1983);

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The problems with setting regulated prices are well known and frequently studied. Regulators typically operate with only crude measures of cost and demand, often target “theoretical” standards for prices inconsistent with either efficiency or competition, and consider factors outside the scope of efficient pricing.⁹⁷ The argument that regulators strive to set “cost-based prices” provides no help. First, it is very difficult to measure costs even when you know what the cost standard is, yet regulatory agencies have a diverse set of cost standards, including historical costs, embedded costs, forward-looking costs, current costs, marginal costs, variable costs, incremental costs, and so forth. The notions of “cost” are numerous, and there are likewise various pricing approaches that convert costs to prices, including Ramsey pricing, cost-plus pricing, rate of return pricing, Efficient Component Pricing, TELRIC-plus pricing, and so forth. Second, even if the cost standard is known, the implementation algorithms and assumptions are often hotly contested. Correctly specifying the cost of capital, for instance, is arguably a complex problem in the presence of significant sunk costs.⁹⁸ In the current economic environment it is unclear whether the standard textbook methodologies for determining the cost of capital are even legitimate tools of analysis, given that financial markets are not clearing.⁹⁹ Third, with scale economies, most measures of “costs” will depend on the level of demand, which is likewise subject to error in measurement. Fourth, “cost based pricing methods do not directly consider consumer welfare [and] can fail to be efficient.”¹⁰⁰ So, even if the cost standard is known and implemented perfectly, there is no guarantee that the cost based price is efficient or equivalent to the competitive price.¹⁰¹ Indeed, in markets with sunk

see also Pricing Flexibility Order, *supra* note 11, at ¶¶ 96, 144 (justifying its triggers by noting that “regulation is not an exact science”).

97. See, e.g., DANIEL F. SPULBER, REGULATION AND MARKETS Ch. 3 and 10 (1989); Yoram C. Peles & Jerome L. Stein, *The Effect of Rate of Return Regulation is Highly Sensitive to the Nature of Uncertainty*, 66 AM. ECON. REV. 278, 278-279 (1976); Satya P. Das, *On the Effect of Rate of Return Regulation under Uncertainty*, 70 AM. ECON. REV. 456, 456 (1980); Nicholas Rau, *On Regulation and Uncertainty: Comment*, 69 AM. ECON. REV. 190, 190 (1979); Kuo-Ping Chang, *A Note on the Effect of Rate-of-Return Regulation Under Uncertainty*, 3 J. REG. ECON. 349, 349 (1991); Frank A. Wolak, *An Econometric Analysis of the Asymmetric Information Regulator-Utility Interaction*, 34 ANNALS D'ECONOMIE ET DE STATISTIQUE 12, 14 (1994).

98. David M. Mandy, *TELRIC Pricing with Vintage Capital*, 22 J. REG. ECON. 215, 218 (2002); James Alleman & Paul Rappaport, *Optimal Pricing with Sunk Costs and Uncertainty*, in THE ECONOMICS OF ONLINE MARKETS AND ICT NETWORKS, 143, . 1431-1933, (Russel Cooper et al., eds., 2006).

99. See Section V, *infra*.

100. SPULBER, *supra* note 97.

101. Lewis T. Evans & Graeme Guthrie, *Incentive Regulation of Prices When Costs are Sunk I-2* (Jan. 9, 2005) (unpublished working paper), available at <http://srn.com/abstract=467660> or doi:10.2139/ssrn.467660.

costs, differentiated goods, demand and/or cost relationships among goods, or other complexities, cost-based prices may bear no relationship to what would be considered competitive prices.¹⁰²

Indeed, the looseness of the regulatory process had led the Supreme Court to adopt a “zone of reasonableness” standard for reviewing regulated rates.¹⁰³ The zone of reasonableness is such that “the order may reasonably be expected to maintain financial integrity, attract necessary capital, and fairly compensate investors for the risks they have assumed, and yet provide appropriate protection to the relevant public interest, both existing and foreseeable.”¹⁰⁴ Even if an outcome satisfied such conditions, there is nothing that can be said about whether the final price is above or below the “competitive” level as determined by the rivalry among sellers—the standards across the two settings are not identical. As a consequence, any judgment about market power or competition by relying on a simplistic comparison of regulated and deregulated prices is likely to be nonsense.

Regulators infrequently follow textbook principles when regulating prices.¹⁰⁵ Some recent economic research has shed significant theoretical

102. See STEPHEN J. BROWN & DAVID SUMMER SIBLEY, *THE THEORY OF PUBLIC UTILITY PRICING* Ch. 3 (1986); George S. Ford et al., *Consumers and Wireless Carterfone: An Economic Perspective*, PHOENIX CENTER POL'Y BULL. NO. 21 (2008), available at <http://www.phoenix-center.org/PolicyBulletin/PCPB21Final.pdf> (for examples where below cost pricing is observed in a competitive setting); see also T. Randolph Beard & Michael L. Stern, *Continuous Cross Subsidies and Quantity Restrictions*, 56 J. INDUS. ECON. 840, 840-861 (2008).

103. *In re Permian Basin Area Rate Cases*, 290 U.S. 747 (1968). The concept was used at the FCC in the 271 Proceedings. See Application by Bell Atlantic New York for Authorization Under Section 271 of the Communications Act To Provide In-Region, InterLATA Service in the State of New York, CC Docket No. 99-295, Memorandum Opinion and Order, 15 FCC Rcd 3953, 4084, ¶ 244 (2000) available at <http://digitallibrary.unt.edu/ark:/67531/metadc29899/m1/582/?q=15FCCRcd3953>; Joint Application by SBC Communications Inc., Southwestern Bell Telephone Co., and Southwestern Bell Communications Services, Inc., d/b/a Southwestern Bell Long Distance for Provision of In-Region, InterLATA Services in Kansas and Oklahoma, CC Docket No. 00-217, Memorandum Opinion and Order, 16 FCC Rcd 6237, ¶¶ 47-48 (2001); Application of Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions) And Verizon Global Networks Inc., For Authorization to Provide In-Region, InterLATA Services in Massachusetts, CC Docket No. 01-9, Memorandum Opinion and Order, 16 FCC Rcd 8988, ¶ 20 (2001) available at <http://digital.library.unt.edu/ark:/67531/metadc3770/m1/624/?q=16FCCRcd>; Application of Verizon Pennsylvania Inc., Verizon Long Distance, Verizon Enterprise Solutions, Verizon Global Networks Inc., and Verizon Select Services Inc. for Authorization to Provide In-region, InterLATA Services in Pennsylvania, CC Docket No. 01-138, Memorandum Opinion and Order, FCC 01-259, ¶¶ 53-75 (2001) available at http://transition.fcc.gov/Bureaus/Common_Carrier/Order/2001/fcc01269.pdf.

104. *In re Permian Basin Area Rate Cases*, 390 U.S. 747, 792 (1978).

105. Marilyn O'Leary and David Smith O'Leary, M. and Smith, D. B. (1989). *The Contribution of Economic Theory to the Regulatory Process: Strengths, Weaknesses, and Future Directions*. In K. Nowotny, D. Smith, and H. M. Trebing (Eds.) *Public Utility*

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and empirical light on the regulatory price setting process. Beard and Thompson (2002) conclude that regulators who respond to the democratic process cannot be expected to implement prices that are efficient in the economic sense.¹⁰⁶ The authors consider a simple voting model in which the regulator is elected within a democratic process. Thus, candidates for the regulatory office vie with each other by offering constituents “price platforms” which, in the specific analysis considered by the authors, take the form of two-part tariffs. It is demonstrated that heterogeneity among voters leads to a “regulatory bias” to which costs are recovered through fixed versus usage-sensitive fees. In other words, *economic efficiency is inconsistent with regulation that responds to the democratic process*. In a similar approach to the problem, Faulhaber (1997) presents results suggesting that voter-determined prices can lead to lower welfare than even unregulated monopoly.¹⁰⁷ Without question, both theoretical and empirical analyses support the general conclusion that the regulatory process is not a “textbook” process that renders efficient, competitive prices.

The importance of these ideas is not simply theoretical. It is a well-known fact that telecommunications pricing contains a number of explicit and implicit subsidy schemes, most of which are not supportable in a competitive marketplace. Pricing below costs to favor particular customer types (or constituents) is not uncommon, and there is a multi-billion dollar subsidy program in the United States to support such choices.¹⁰⁸ In fact, many would argue that regulation is often used to ensure that prices are inconsistent with competitive outcomes, since competitive outcomes do not always render politically-desirable

Regulation 223-238. Boston: Kluwer Academic Publishers. at 223 (“[i]t is difficult for economists to understand regulatory decision making because they usually do not understand how regulators see their role . . . Regulators understand their duty to balance the interests of rate-payers and shareholders when making a decision. They understand they have an economic function to set price, but they act in an environment of inputs, constraints, and concerns that are not economic in nature. [The objective of fairness] may not make it possible for the economic criterion of efficiency to be achieved.”); Brown, S. and Sibley, D. (1986), *The Theory of Public Utility Pricing*. Cambridge: Cambridge University Press, at 4 (“Recent work on the positive theory of regulation paints a complex picture of economic regulation. Regulators are assumed to be interested in maximizing political support for their incumbency and do so through their regulatory decisions.”)

106. T. Randolph Beard & Henry Thompson, *Efficient versus “Popular” Tariffs for Regulated Monopolies*, 59 J. BUS. 75-87 (1996).

107. Gerald R. Faulhaber, *Voting on Prices: The Political Economy of Regulation*, in INTERCONNECTION AND THE INTERNET: SELECTED PAPERS FROM THE 1996 TELECOMMUNICATIONS POLICY RESEARCH CONFERENCE, (Gregory L. Rosston and David Waterman eds., 1997).

108. FCC, Universal Service, http://www.fcc.gov/wcb/tapd/universal_service (last visited Aug. 12, 2011).

outcomes.¹⁰⁹

2. *Whose Price?*

Another problem with price comparisons across regulatory structures is that the prices evaluated in both the GAO study and the NRRI Study are from a single industry segment—the incumbent LECs. Yet, competition does not imply that the prices of all firms decline, or that the prices of all firms are identical. In a homogeneous goods setting, higher prices will at some point impact profits, but such is the price of a bad decision, and firms are allowed to make bad decisions. Furthermore, few goods are truly homogeneous. Thus, price differences may reflect quality differences, or even differences in the markets served by one firm or another.

Special access services, for example, are often purchased across broad geographic areas, so as to connect multiple locations across diverse geography (e.g., connect multiple plants spread across the country).¹¹⁰ In other cases, the service may be purchased for a single location by a firm serving a single geographic market.¹¹¹ If firms specialize in the provision of one type of service or the other, then prices will naturally differ. Consequently, any analysis of prices must consider not only the incumbent LEC's prices, but the prices of its rivals. Further, adjustments for quality and service characteristics must be attempted, if deemed relevant.

3. *Pricing Trends*

Another misplaced focus of the GAO and NRRI studies is the evaluation of pricing trends. The NRRI Study, for example, claims “[p]rice trends can provide evidence of market power, or its absence. A market can be considered noncompetitive if, once having been competitive, and without costs rising, a dominant participant imposes substantial and sustained price increases.”¹¹² The NRRI Study then claims to show that special access prices have risen (in some cases) over time, and then draws market power conclusions based on this trend.¹¹³ However,

109. Joseph Farrell, *Prospects for Deregulation in Telecommunications*, FCC SPEECHES (May 30, 1997), available at <http://www.fcc.gov/Bureaus/OPP/Speeches/jf050997.html> (Quoting Economist Lawrence White who stated “cross-subsidies are the enemy of competition, because competition is the enemy of cross-subsidies”), See, e.g. Jerry Ellig, *Costs and Consequences of Federal Telecommunications Regulations*, 58 FED. COMM. L.J. 37 (2006).

110. NRRI STUDY, *supra* note 29, at 6.

111. T. Randolph Beard et al., *Market Definition and the Economic Effects of Special Access Regulation*, PHOENIX CENTER POL'Y PAPER NO. 37, 9-11 (2009), available at <http://www.phoenix-center.org/pcpp/PCPP37Final.pdf>.

112. NRRI STUDY, *supra* note 29, at 57

113. *Id.* at 60.

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NRRI, like the GAO, also observed declines in the prices of special access services.¹¹⁴

There are some important flaws in NRRI's pricing analysis. First, the authors fail to adjust for inflation when comparing prices over time.¹¹⁵ Inflation is largely a consequence of government monetary policy, not incumbent LEC behavior.¹¹⁶ From the first of 2001 until the end of 2007, the period covered by the NRRI Study, the Consumer Price Index rose 20% and Producer Price Index rose 27%.¹¹⁷ To ignore inflation for such price comparisons is a significant error from an economic standpoint. In the social welfare function, only relative prices matter. So, the price of special access services relative to other goods is the relevant issue, not the absolute price level. Nevertheless, even focusing on nominal prices, NRRI observed price declines for ILEC special access services between 2006 and 2007.¹¹⁸ Notably, the GAO study correctly employed real prices, and found that prices are falling.¹¹⁹

As important as the use of real, not nominal, prices in this analysis is the fact that simple price trends are generally not useful at all (adjusted for inflation or not), and for many reasons include changes in costs and quality over time. In an effort to qualify (or defend) the trend analysis, the authors of the NRRI Study include the caveat "without costs rising."¹²⁰ Of course, the incumbent LECs are not exempt from inflation, so without further analysis we must assume their costs rise with the general level of prices. The NRRI, however, does not adjust for inflation, so they have assumed costs are constant over time in the presence of compelling evidence they are not.

Additionally, costs are not the only things that change over time. Telephone companies do not sell single products, and these products systematically have demand or cost interdependencies. In such an environment, there may be demand or cost changes in one market that affect the prices in another. For example, say the incumbent LECs sell two services—local phone and special access services. The prices of the incumbent LEC are regulated by the government to maximize consumer

114. *Id.*; GAO REPORT, *supra* note 1.

115. GAO REPORT, *supra* note 1, at 60.

116. Milton Friedman, *The Role of Monetary Policy*, 58 AM. ECON. REV. 1-17 (1968), available at <http://www.nvcc.edu/home/jmin/ReadingStuff/The%20Role%20of%20Monetary%20Policy%20by%20Friedman.pdf>.

117. Economic Research: Federal Reserve Bank of St. Louis, *Prices*, <http://research.stlouisfed.org/fred2/categories/32455> (last visited Nov. 2, 2011).

118. NRRI STUDY, *supra* note 29, at 60.

119. *Id.* (In a particularly odd statement about the inflation adjustment, the NRRI Study states, "[w]hile we do not dispute Verizon's claim, when Verizon's inflation adjuster is removed, we reach a quite different conclusion." Of course, if one ignores the underlying factual setting, different conclusions are likely.)

120. NRRI STUDY, *supra* note 29, at 57.

welfare under a zero profit constraint, just to avoid any debate about the motivations of the firm. In this setting, the government employs Ramsey prices for local and special access services, which we say are p_L^* and p_A^* for local and special access service. Now, assume that the demand for local service declines, as we have observed recently as consumers switch to alternative providers of communications services like mobile phones, VoIP, and cable systems. With linear demand, as the demand declines, the price of special access must rise to satisfy the zero profit constraint.¹²¹ Thus, in a (second best) welfare-maximizing setting, the recovery of fixed costs shifts away from local to special access, even if costs are unchanged. Here, demand is the driver of price changes, not cost changes.

In all, using the trend in prices to infer market power requires complex statistical analysis. Simple trending is meaningless from an economic perspective, implying it is meaningless from a market power perspective. Whether it is probative in a political setting, which often is unconstrained by economic logic, is beyond the scope of this analysis.

4. *Welfare Effects of Price Changes*

Finally, even if it is the case that prices for special access services are higher in less regulated markets compared to more regulated markets there remains the question as to whether this result adversely affects economic welfare. While it is commonly believed that higher prices are welfare reducing, this need not be true in regulated markets, as has been recognized for decades. As observed by Baumol and Willig with regard to price cap regulation,

[w]here the value of the cap is set too high, and if competition is not an effective constraint upon price, consumers are likely to be harmed by prices that are higher than the competitive levels. Where the figure chosen for a price cap is excessively low, it will be the regulated firm that will suffer initially; but as always, in the long run, the consumer will bear the cost. In this case, the cost will result from inadequate investment, foregone innovation opportunities, and perhaps a reduction in the vitality of competition, all of these adding up to poorer service and higher prices than those that otherwise would have prevailed.¹²²

As made clear here, since regulated prices may be above or below the efficient level, no meaningful welfare determination may be made simply by observing price changes.

121. The elasticity is $dQ/dP \cdot P/Q$. A falling demand reduces Q , ceteris paribus, so the elasticity is rising (in absolute value).

122. William J. Baumol & Robert Willig, *Price Caps: A Rational Means to Protect Telecommunications Consumers and Competition*, 10 REV. BUS. 3, 4 (1989); see also, Joseph Farrell & Michael L. Katz, *Public Policy and Private Investment in Advanced Telecommunications Infrastructure*, 36 COMM. MAG., IEEE 87 (1998).

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The point is echoed by Katz and Farrell, two former chief economists of the FCC:

If firms anticipate that successful new services will be subject to retail rate regulation, especially (but not only) if the regulation may not fully account for the riskiness of those investments, their investment incentives will be blunted. [A]ccounting for the risk in sunk investments is far from easy. Moreover, once the investments have been made, the ex post inefficiency of maintaining high prices to recover these sunk costs (as well as the popularity of low prices among voters) may tempt regulators to reset prices at lower levels than would be optimal ex ante.

Clearly, there is a broad concern that regulated prices in telecommunications markets may be set below any reasonable estimate of an efficient or competitive market price, probably because it has happened so often. The FCC and state regulatory commissions have consistently, over many decades, engaged in substantial explicit and implicit cross subsidization of telecommunications services, pursuing goals outside the realm of economic efficiency. Since markets respond to economic rather than political forces, differences in market prices and regulated prices are to be expected.

5. *Welfare and Quantity Changes*

By observing only price differences it is impossible to say whether the regulated price is below or above competitive levels, and whether a price increase is welfare reducing or enhancing. How does one tell the difference between a welfare improving and welfare reducing price increase? The difference is consistently indicated by the change in quantity. If quantity rises when price rises, then welfare rises. If quantity falls when price increases, then welfare declines. Importantly then, without observing quantity changes, it is impossible to make a welfare claim about the price differentials observed in markets for high capacity services (or in any other markets where regulated and unregulated prices are compared). An analysis of quantity is required to make welfare claims, and welfare effects should be what motivate policy makers. Further, it is essential to measure the changes in quantities for all participants in the market, not just one or a few firms. Market quantity is a tool for welfare analysis, not the quantities of individual sellers.

The use of quantity as an essential ingredient in market power analysis has been incorporated into the analysis of electricity deregulation and competition for a number of years. Brennan (2007) argues that price-cost margins are often inaccurate proxies from market power in electric markets and encourage quantity-based analysis.¹²³ Brennan

123. Timothy J. Brennan, *Preventing Monopoly or Discouraging Competition? The Perils of Price-Cost Tests for Market Power in Electricity*, in *ELECTRIC CHOICES: DEREGULATION AND THE FUTURE OF ELECTRIC POWER* (Andrew N. Kleit ed., 2007).

concludes “[t]he focus of assessments of market power in electricity should be not on price but on output.”¹²⁴ Joskow and Kahn (2001) do the same, pointing to output measures as an essential ingredient in market power assessment.¹²⁵ This output or capacity approach to assessing market power also has been adopted by the Federal Trade Commission in its analysis of market power in gasoline markets, where the analysis focused on changes in prices and refining capacity.¹²⁶

To date, only Wallsten (2007) considers the quantity effect of special access deregulation.¹²⁷ However, the data used in this study is far from ideal to study the welfare effects of special access deregulation for a number of reasons. First, the data is defined in terms of voice-grade equivalent circuits, which is influenced by the mix of circuits purchased. Second, only the data for the incumbent LEC are observed, and not the overall market quantities. Third, the data is state level, whereas deregulation occurs at the MSA level.¹²⁸ Certainly, these are serious shortcomings, and all are explicitly recognized by Wallsten. But, for now it is the only analysis on quantity available, and the econometric results indicate that quantities of special access services have risen in response to deregulation, at least for the incumbent LECs, suggesting welfare improvements. While more and better evidence would be helpful, experience indicates the required data is exceedingly difficult to come by. Whether one chooses to put much credence in Wallsten’s results or not, it is clear that some measure of quantity change is desirable if we wish to make a welfare claim with respect to special access deregulation. Quantity changes must be measured at the market level, not just for one or a few firms in the relevant market.

V. POLICY RECOMMENDATIONS

Our deconstruction of the most common arguments in support of changes to the rate regulation regime for special access services is meant to be informative and to contribute positively to the discussion. The debate over the proper regulatory framework for these important and crucial services has raged for over a decade, and a review of the literature

124. Brennan, *supra* note 123, at 172.

125. Paul L. Joskow and Edward Kahn, *A Quantitative Analysis of Pricing Behavior in California’s Wholesale Electricity Market During Summer 2000*, 23 ENERGY J. 1 (2002), available at <http://econ-www.mit.edu/files/1138>.

126. FTC, INVESTIGATION OF GASOLINE PRICE MANIPULATION AND POST-KATRINA GASOLINE PRICE INCREASES (2006), available at <http://www.ftc.gov/reports/060518PublicGasolinePricesInvestigationReportFinal.pdf>.

127. Scott Wallsten, *Has Deregulation Affected Investment in Special Access?* 14.16 PROGRESS ON POINT 1 (2007), available at <http://www.pff.org/issues-pubs/pops/pop14.16specialaccessempiricalanalysis.pdf>.

128. Wallsten, *supra* note 127, at 10-11.

and economics of these services demonstrates that these are complicated problems that warrant careful, data-intensive scrutiny. Given the important and crucial role of special access connections in modern telecommunications and broadband networks, it is important that policymakers approach this question in a comprehensive, accurate, sophisticated, and tailored manner. If the above discussion serves any purpose, then we hope that it will counsel against both knee-jerk reactions and acceptance of simplistic arguments raised by parties on both sides of the debate.

In this Section, we attempt to cut through the thicket and identify three areas upon which policymakers should focus. First, we provide some recommendations as to how data collection on special access should be improved and utilized. Second, we outline the components of the cost/benefit analysis that we believe ought to be applied to this and indeed any other proposed change in regulation. Regulation is not perfect, so it is important for policymakers to recognize and compensate for that fact. Third, we provide a number of observations on the important question of geographic market definition. Gallons of ink have been employed by advocates on both sides of this issue with regard to geographic market definition, and we believe that much of this tidal wave is the result of a lack of recognition of the difference between administrative and economic markets. Stated simply, the “administrative geographic market” for a regulatory framework need not meet the formal definition of an “economic geographic market” if the regulator judges that the benefits from utilizing the strict economic definition are outweighed by administrative costs.

A. DATA COLLECTION ON SPECIAL ACCESS SERVICES MUST BE IMPROVED

At the end of the day, the crux of the problem is that there simply is not sufficient data to make an informed decision about the state of competition in the markets for high capacity services and, by extension, whether additional regulation is warranted. Indeed, the quest and call for more facts has been a persistent outcome of any serious attempt at competitive analysis of the markets for high capacity services—including our own research—over the last decade. The only fact we know today is that despite a decade-long search for market power, there simply is no credible evidence that supports any radical change in the current regulatory approach. As such, before any new price regulation on special access service is imposed, policymakers need to receive data from *all* participants, not just a few types of providers. Specifically, the FCC should obtain data that would shed more light on competition such as the location of competitive facilities, and the scope of retail and wholesale service offerings.

Even incumbent LECs—the target of proposals to impose price regulation—have begun to advocate for more comprehensive collection of information by the FCC. On April 27, 2009, USTelecom proposed that the FCC “initiate a broad fact-finding effort to evaluate the competitiveness of the special access market.”¹²⁹ In particular, USTelecom proposed that the FCC collect from all competitive providers in the market information that includes: metropolitan transmission facility locations at a DS1 level and above, list and locations of buildings served, and “wireless carrier locations” (e.g., towers or cell sites) and the method used to connect those locations.¹³⁰

That said, while this proposal would provide policymakers with more data by which to conduct a more comprehensive market analysis, in the end, policy choices will turn on whether that data is utilized properly in a comprehensive cost-benefit analysis.

B. ANY REVISION TO THE SPECIAL ACCESS PRICE REGULATION
PARADIGM MUST BE SUBJECT TO A STRINGENT
COST/BENEFIT TEST

As noted above, it is well-established by both the FCC and the courts that price regulation is far from an “exact science.”¹³¹ Indeed, not only is the rate-setting process itself complicated,¹³² but the regulators’ deliberation is complicated by interested parties who inevitably seek to use the regulatory process to effectuate a transfer of wealth from one industry segment to another.¹³³ Regulation, then, is imperfect, just as markets

129. Letter from Glenn Reynolds, Vice President-Policy, USTelecom, to Marlene Dortch, Secretary, Federal Communications Commission, WC Docket No. 05-25 (Apr. 27, 2009) at 4, available at www.ustelecom.org/uploadedFiles/Issues/Filings/20090427_Ex.Parte.Special.Access.05.25.pdf.

130. *Id.*

131. As both the courts and the Federal Communications Commission have consistently recognized, ratemaking is “far from an exact science”. *See, e.g.*, *Conway Corp.*, 426 U.S. at 278; *WorldCom, Inc.*, 238 F.3d at 457; *Sw. Bell Telephone Co.*, 168 F.3d at 1352; *Time Warner Entm’t Co.*, 56 F.3d at 163; *United States v. FCC*, 707 F.2d at 618; *see Pricing Flexibility Order*, *supra* note 11, at 196 (justifying its triggers by noting that “regulation is not an exact science”).

132. *See, e.g.*, ICT Regulatory Toolkit, 5.1 Why Regulate Prices? <http://www.ictregulationtoolkit.org/en/Section.2150.html> (last visited Aug. 12, 2011), where the ITU observed that that regulation has “potentially high costs”:

Among other things, it substitutes the regulator’s judgment for market interactions. No matter how capable and well intentioned regulators are, they will never be able to produce outcomes as efficient as a well-functioning market. Regulators should therefore forebear from interfering in pricing decisions unless regulation is justified. That is, *unless the expected benefits from regulating prices outweigh the expected costs from doing so.* (Emphasis supplied.)

133. *See* CASS R. SUNSTEIN, *THE COST-BENEFIT STATE: THE FUTURE OF REGULATORY PROTECTION* 9 (2002) (“the strongest argument for cost-benefit balancing are based not only

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are sometimes imperfect. The question is, which will maximize social welfare – unregulated or regulated markets. For this reason, before any regulation is imposed – price or otherwise – policymakers must always engage in a careful cost-benefit analysis.¹³⁴

With regard to special access services, the FCC in 1999 did claim to engage in such an approach. The FCC did not simply step back and say that regulation was unneeded, but instead specifically noted that in situations where the potential for alternative sources of supply of special access circuits was present, the costs of continuing rate regulation would exceed the benefits of price regulation in those markets. In the *Pricing Flexibility Order*, the FCC concluded that

regulation imposes costs on carriers and the public, and the cost of delaying regulatory relief outweighs any costs associated with granting that relief before competitive alternatives have developed to the point that the incumbent lacks market power.¹³⁵

Executing this balancing test—balancing the potential benefits of regulation against its costs—requires a detailed, fact-based and nuanced approach. It is not amenable to a simplistic, naïve, paint-by-numbers competitive analysis. Unfortunately, while the industry has spent nearly a decade re-debating the balance that the FCC struck in 1999, no one has yet to present a credible analysis that shows that the benefits of imposing more stringent rate regulation in MSAs affected by the FCC’s 1999 decision would outweigh the costs of that regulation.¹³⁶

In the current financial and economic crisis, these costs and risks of regulation are even more pronounced, particularly with regard to rate regulation. At the most basic level, one cost of rate regulation is the risk that regulators will establish an incorrect rate. If regulators set a rate too high, then they might redirect investment inefficiently and also whittle away any prospective welfare gains by that intervention. If regulators set a rate too low, then investment will be squelched and entry will be deterred. It is important to note that not only would investment by incumbents be squelched and deterred, but that investment by entrants might be similarly affected. With fixed and sunk costs, regulatory-mandated reductions in prices or profits may very well dissuade new entrants from offering service.

on neoclassical economics, but also on an understanding of human cognition, on democratic considerations, and on an assessment of the real-world record of such balancing,” noting that cost-benefit analysis “can protect democratic processes” from interest groups that are “pressing for regulation when the argument on its behalf is fragile.”).

134. SUNSTEIN, *supra* note 133.

135. Pricing Flexibility Order, *supra* note 11, at 14271 ¶ 90.

136. *Id.* (That said, in the *Pricing Flexibility Order*, the FCC offered no evidence to support its conclusion that regulation was too costly. But the expert agency gets deference—parties to the proceeding do not).

The risk of a regulator setting a rate incorrectly is particularly acute in the current environment, because any form of rate regulation requires the regulator to examine and establish a cost of capital. In a normal rate case, a regulator can obtain reasonably valid estimates of the cost of capital by observing borrowing and equity costs for other firms exhibiting “comparable” risk characteristics.

But today, the Federal Reserve Board of Governors and the Department of the Treasury have concluded that the financial markets are currently so dysfunctional that the public authorities must step in and recapitalize banks, large insurers, and so on.¹³⁷ Future taxpayers are being used as a source of capital-of-last-resort for many of these institutions, a process that is necessarily distorting the standard methods in which a regulator may establish a cost-of-capital for the industry. Stated simply, if it is true that even economically worthwhile projects are now unable to obtain funding under any conditions, what is the true cost of capital? Once credit is being rationed, the risks of establishing an incorrect rate for a service are very high, and policymakers ought to take this into account when reviewing proposals for immediate regulation of special access rates, at least until the financial markets return to normalcy.¹³⁸

C. DISTINGUISH BETWEEN ADMINISTRATIVE AND ECONOMIC GEOGRAPHIC MARKETS

Once more complete and accurate information is gathered, there remains the question as to what should be done with it and how it should be used to formulate policy. As discussed above, policy decisions as to the type of regulation that might need to apply and in what geographic areas or subdivisions should pass through a cost/benefit analysis of the effectiveness of regulation.¹³⁹ Doing so means, however, that certain policy “cuts” should be made based upon an estimation of administrative efficiency, and not simply upon rigid economic principles.

137. Fed. Reserve Bank of St. Louis, *The Financial Crisis: A Timeline of Events and Policy Actions*, <http://timeline.stlouisfed.org> (last visited Aug. 12, 2011).

138. Moreover, any such mistake likely would outlive the current climate. Suppose that one could, in some manner, calculate or otherwise obtain a “proper” capital cost for a regulated rate in today’s climate. Once the current global financial crisis abates, it would be necessary for the regulators to revisit these rates immediately and recalculate them with new, “more-normal” capital costs. Failure to do so would cause the price caps to be so high that they would be incapable of putting any brakes on the (alleged) market power of sellers. Thus, any set of prices established in a realistic manner under conditions of financial emergency would be (one hopes) a very short-lived achievement, and a follow-up proceeding would be soon required. The clear need for follow-up proceedings at a future date should be part of the regulator’s decision as to whether to proceed immediately.

139. SUNSTEIN, *supra* note 133.

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In the special access debate, much ink has been spilled on the proper economic definition of geographic market for these services. While market definition is important for competitive analysis, one must recognize that a cost/benefit analysis of regulation might point the policymaker to use a different geographical area (such as an MSA) for administrative purposes. If a policymaker chooses to utilize an area such as an MSA to apply its rule for regulatory efficiency and administrative decisions, then it is somewhat of a non sequitur to criticize that decision as not encapsulating the true “economic” definition of a market.

Perhaps because advocates simultaneous use (and confuse) these two different uses of the phrase “geographic market,” economic studies frequently avoid questions of market definition in this context. The GAO in particular avoids the term “market” altogether, using “area” in its place.¹⁴⁰ The NRRI utterly fails to define the relevant economic geographic market, and this shortcoming is a key determinant in the report’s willy-nilly analysis of concentration. At first, the NRRI Study claims to “estimate HHI for each MSA.”¹⁴¹ However, two pages later, the authors calculate an HHI for the nation and then “by city.”¹⁴² The authors also observe that “there is considerable geographic variation from city to city” and that the “level of competition varies by location.”¹⁴³ Finally, the authors recommend that the FCC “adopt a finer (more granular) [geographic] scale in making decisions about the competitiveness of special access markets.”¹⁴⁴ In so doing, the authors recommend that regulators consider the possibility that markets for high capacity services may be a “building” or “city block[,]” or perhaps requiring GIS software to measure.¹⁴⁵ All of these options cannot simultaneously be legitimate definitions of the “geographic market,” and without such a defined market, there can be no meaningful calculation of market concentration.

The central problem of market definition derives from the confusion between the *geographic market* for purposes of economic analysis (e.g., HHI calculations) and the *administrative market* for purposes of regulat-

140. GAO REPORT, *supra* note 1.

141. NRRI STUDY, *supra* note 29, at 40.

142. *Id.* at 41.

143. *Id.* at 42, 79.

144. *Id.* at 91.

145. *Id.* at 88, 93-94 (While most of the calculations of the HHI in the NRRI Study are at high level of aggregation (city, MSA, or nation), the authors suggest throughout the Report that Special Access markets are in fact very small. These geographic differences are stressed further, with the authors stating, “[g]eographic differences in concentration can identify particular areas where existing policies are succeeding or failing, and that in turn can suggest policy refinements,” or “[g]eographic price differences can identify areas where competition is sharpest.” *Id.* at 86. And, they argue that “finer” market definitions “could more accurately identify the boundaries of special access competition.”) *Id.* at 91.

ing or deregulating prices. For clarity in analysis, the concept of an *economic market* and an *administrative market* should be kept distinct, as the FCC has done in other contexts.¹⁴⁶ In its *Pricing Flexibility Order*, the FCC acknowledged that markets are likely smaller than the MSA, but choose the MSA as the geographic area for regulatory decisions based on administrative concerns.¹⁴⁷ The D.C. Circuit upheld this choice.¹⁴⁸ In fact, the agency never defined the economic market to be the MSA and recognized that the MSA consists of many economic markets.

In a setting where a consistent theme is “collect more data,” it is vital that the dimensions of the data set be determined. Parties should commit to market definitions of both the economic and administrative sort, or the FCC should clearly specify its own market delineations. And most importantly, all—advocates and policymakers alike—would be well-served if they consciously, continuously and openly acknowledged the difference between a strict economic definition of a geographic market and an administrative definition, as the FCC did in 1999. Criticizing an agency’s selection of an administrative geographic market definition should be levied not on the basis that the administrative market selected does not “fit” the economic definition of a market. Instead, criticism, if any, should be levied as to whether the costs and benefits of a different administrative geographic market would be superior to the agency’s current definition.

VI. CONCLUSION

Businesses, wireless, and broadband firms spend tens of billions of dollars each year on special access and other high-capacity services,

146. Verizon and MCI Applications, *supra* note 22 at ¶28. *See also* In The Applications of NYNEX Corporation, Transferor, and Bell Atlantic Corporation, Transferee, For Consent to Transfer Control of NYNEX Corporation and Its Subsidiaries, File No. NSD-L-96-10, Memorandum Opinion and Order, 12 FCC Rcd. 19985 ¶¶55-57 (1997), *available at* <http://digital.library.unt.edu/ark:/67531/metadc2308/m1/583/?q=12> FCC Rcd 19985 (where the FCC used LATA 132 as an administrative market for purposes of evaluating the competitive effects of a regional merger).

147. Pricing Flexibility Order, *supra* note 11 (“the geographic area that it should use for purposes of reviewing requests for pricing flexibility . . . narrowly enough so that the competitive conditions within each area are reasonably similar, yet broadly enough to be administratively workable.”).

148. WorldCom, Inc., 238 F.3d at 461 (“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. [citation omitted] 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.”).

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which are often crucial, high capacity broadband connections for wireless antennae and corporate networks. As a result, the framework in which the FCC regulates how incumbent LECs sell these services has been the subject of intense scrutiny and debate for well over a decade. Most recently, purchasers of these services have called for additional rate regulation, including the re-imposition of price caps.

Given the importance of these services to the “Information Economy,” this attention to regulation is not a surprise. But what is surprising is how much the debate—from both sides of the issue—centers around points that, in our view, are misdirected and even may be misleading. Indeed, a perusal of the pleadings and rhetoric on this issue indicates that the vast bulk of advocacy in favor of rate regulation centers around three points:

- (1) The market for high capacity special access services is unduly concentrated;
- (2) The rates of return on special access services, computed using FCC ARMIS data, are very high; and
- (3) Prices for special access services are lower in regulated areas than in areas with Phase II pricing flexibility.

Two studies—one by the GAO and another by the NRRI—generally echo these same themes.

In this article, we have shown that these arguments simply do not, standing alone, support further governmental intervention into this market. First, as our prior research has shown, market concentration is, to a certain extent, to be expected in this industry given the high fixed and sunk cost nature of the investments needed to provide special access services. But that does *not* mean that such a market cannot have acceptable economic performance; in fact, in such a market, economic research shows that market concentration may very well be the *result* of intense price (sometimes called Bertrand) competition.

Second, we have shown that using rates of return from FCC’s ARMIS data as a means of attributing or imputing high profits to Bell Operating Companies for special access services is a misleading, excessively blunt, and even arbitrary tool. In fact, the results of the NRRI Study demonstrate the shallowness of using ARMIS data in this way, because the NRRI Study concludes that the Bell Company with the *highest* ARMIS rate of return sold services in the least-concentrated markets for high capacity services. ARMIS is accounting, not economic data, and even regulatory proponents like the NRRI acknowledge the data is “meaningless” and “unreliable.” Quite simply, ARMIS returns are not useful for identifying market power.

Finally, we have shown that simple comparisons of regulated and deregulated prices have little meaning as to whether market power is being exercised, whether over time or at some particular moment. In

fact, observing that regulated prices are different from market prices can, frankly, be an indictment of the rate regulation just as easily as it can be a criticism of deregulation.

Therefore, despite a decade of nearly constant regulatory scrutiny, the case for altering the current regulatory regime for special access services is surprisingly weak and incomplete. Time and again, those that study this issue—including us—have called for the collection of more relevant data, and we restate that view. But better data is not enough. A better framework for analyzing competition and regulation in this market must accompany a call for increased regulation of this sector. Most importantly, a realistic expectation of market structure must also be tempered with a realistic expectation of the effectiveness of regulation.” We have provided some suggestions to this data collection and analysis, with specific attention to geographic market definition. It is our hope that the new FCC Administration will treat the regulation of these services with the seriousness and rigorous attention that it warrants.