confers an advantage on one competitor.[48] Any difference in the price elasticity of the interLATA and intraLATA markets is obviously an artificial one. Including AT&T's intrastate discounts in its interstate APIs merely shifts revenue recovery to the less competitive jurisdiction.

AT&T should immediately be directed to recalculate its APIs and SBIs without reflecting intrastate discounts, and to support them with the volume and rate data required by the rules. Because AT&T files only conclusory cost support, it is impossible to tell how much of AT&T's current headroom results from this practice. However, AT&T's statements lead us to believe it may be substantial: at least $227M.[49] This amount -- and any competitive distortion or harm to consumers -- can only increase as AT&T competes for the intraLATA market. IntraLATA competition began in California on January 1, 1995. The effect on universal service of this dubious subsidy flow has not been examined.

The Commission also tentatively concludes that it should adopt the same treatment for exogenous costs for AT&T as it adopted for the LECs. (FNPRM, para. 70.) We support symmetrical treatment of exogenous costs for AT&T and the LECs. If adopted, this would result in the removal from AT&T's PCIs of ongoing SFAS 106 (OPEB) costs.[50] We believe these exogenous costs to be over $100M for Basket 1.[51] It could also result in the

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[48] See *FCC v. RCA Communications, Inc.*, 346 U.S. 86, 94-5 (1953); *Hawaiian Tel. Co. v. FCC*, 498 F.2d 771, 776 (D.C. Cir. 1974).

[49] See letter from R. Gerard Salemme, Vice President - Government Affairs, AT&T, to Kathleen Wallman, Chief, Common Carrier Bureau, FCC, May 11, 1995.

[50] *LEC Price Cap Review Order*, para. 307.

[51] See letter dated June 30, 1993 from Michael F. DelCasino, Administrator-Rates and Tariffs, AT&T, to Secretary, FCC and letter dated May 17, 1994 from Michael F. DelCasino, Administrator Rates and Tariffs, AT&T, to Secretary, FCC.

removal of other accounting costs, such as for SFAS 112, of which AT&T has allocated about $200M to Basket 1.[52]

## V. Conclusion

For the foregoing reasons, the Commission's proposal to include promotions and optional calling plans in price caps should not be adopted. If they are included in price caps, separate service categories should be maintained for standard MTS services and APPs. In that case the "residential index" should be replaced with the proposed Basic Rate Index. But there

[52] See *AT&T Communications, F.C.C. Tariff No. 1, Transmittal No. 7322,* 9 FCC Rcd 7228, para. 7 (1994).

should be no upward pricing flexibility in the Basic Rate Index, and it should be imposed only after AT&T's PCIs are reduced, and its APIs are increased, as explained above.

Respectfully submitted,

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Exhibit A

# AN ANALYSIS OF THE STATE OF COMPETITION IN LONG-DISTANCE TELEPHONE MARKETS

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# AN ANALYSIS OF THE STATE OF COMPETITION IN LONG-DISTANCE TELEPHONE MARKETS

## NERA Summary of Findings

## Introduction

As Congress concludes the debate on telecommunications reform, consumer interests are at stake. Pending legislation will directly affect the availability and costs of new services and technology. Any attempt to overhaul America's telecommunications regulations must take the consumer viewpoint into consideration. Specifically, if consumers are to be properly served, telecommunications markets must be open to competition. If they are not, consumers will continue to pay too much money for the services they use.

A National Economic Research Associates (NERA) study examines the extent of competition in the long-distance market and the effect of the state of competition on consumers. Of particular concern is the long-distance companies' failure to pass on reductions in access charges to consumers. Local phone companies charge long-distance carriers to use the local network. In the last decade, the local phone companies have cut those access charges with the expectation that those reductions would be passed on to consumers. The long-distance carriers, however, have kept billions of dollars of those reductions. The NERA study links this development to the state of competition in the long-distance market.

NERA looked at seven indicators (focusing on AT&T) to determine how prevalent competitive forces are in the long-distance market:

- Relative Price Performance
- Pricing Behavior
- Productivity
- Quality
- Advertising
- Competitor Entry
- Financial Performance

The long-distance market's performance was measured against established standards of competition. Conclusions about the extent of competition and its effect on the marketplace and consumers were drawn from comparisons of actual market outcomes and behavior to the competitive predictions.

# Findings

**Each of the seven indicia of competition fail to provide unequivocal evidence of effective competition in interstate long-distance market.** The evidence points to a non-competitive market with AT&T enjoying substantial market power. Consumers are hurt by this arrangement, and the burdens appear to be carried disproportionately by low-volume residential and small business consumers. The long-distance market's standing in the seven categories is discussed below:

## *I. Companies Pocket Potential Consumer Savings*

If the interstate long-distance market were truly competitive, long-distance companies would pass on all reductions in costs such as access charges to lower long-distance rates. In fact, the study found:

- Reductions in long-distance prices have come as a result of regulatory requirements, not competition.

- Lack of competitive pressures still allows AT&T to pocket savings from reduced access charges meant for consumers. In 1994, AT&T failed to pass $1.778 billion dollars on to consumers from cuts in access charges that were reduced from their 1984 levels. **Annually, that means nearly two billion dollars in local phone company price reductions were kept by AT&T and not passed on to consumers.**

- Though AT&T's reported average revenue per minute has declined, competition has not brought benefits of lower prices to low-volume users. Moreover, low-volume users appear to be the vast majority of residential customers. According to a random sample of 9000 households' telephone bills taken in mid 1994, **less than one-third of U.S. households use long-distance discount calling plans and less than one-third of residential calls are billed at discounted rates.** (PNR and Associates, Bill Harvesting Study, 1995)

## *II. Long-Distance Prices Stay Artificially High*

If the interstate long-distance market were truly competitive, one company would not be able to raise prices above competitive benchmarks. In fact, the study found that:

- **With a consistent 60 percent market share, AT&T continues to pocket some of the decreases in access fees charged by the local phone**

companies. Despite these anti-consumer actions, AT&T has little reduction in its customer base. Rather, AT&T's pricing behavior allows MCI and Sprint to follow suit, and charge inflated rates as well.

## *III. Overall Productivity Remains Stagnant*

If the interstate long-distance market were truly competitive, industry-wide and/or firm-specific productivity gains would have increased in the post-divestiture period. In fact, the study found that:

- Technological advancements and increased demand have not translated into overall increases in productivity. The industry is not being pressed by post-divestiture competition to use available technology more efficiently.

## *IV. Competition Has Not Led to Improvements in Quality*

If the interstate long-distance market were truly competitive, market segments with more than one vendor may show the effects of competition in quality, whereas segments with only one vendor would not. In fact, the study found that:

- There is no real difference between quality improvement in multiple-vendor segments and single-vendor segments, indicating that competition has not spurred on quality improvements.

## *V. Advertising Practices Hurt Consumers*

If the interstate long-distance market were truly competitive, advertising would be used to bolster market share and would not be a drain on efficiency and a barrier to entry. In fact, the study found that:

- The long-distance companies finance massive advertising campaigns that result in no major shifts in market share. In a competitive market, the money spent on these superfluous ads would go toward price reductions instead.

- Instead of offering consumers true choices, long-distance ads are only differentiating brands and are not informing consumers.

- The cost of so much national advertising serves as a barrier to entry for competitors, further enforcing the oligopolistic, anti-consumer make-up of the market.

### *VI. High Barriers to Entry Prevent True Competition*

If the interstate long-distance market were truly competitive, capable prospective carriers would be able to enter the market and prosper or fail based on their relative market efficiencies. In fact, the study found that:

- High barriers to entry (e.g. high start-up costs, massive advertising campaigns) prevent resellers from challenging AT&T, MCI and Sprint.

### *VII. Gap Between Cost and Price Continues to Widen*

If the interstate long-distance market were truly competitive, long-run economic profits would move toward zero. In fact, the study found that:

- There is no evidence of pressure to move price toward cost. AT&T's gross profit margin has, in fact, increased since divestiture, from 31.4 percent in the third quarter of 1984 to 41.6% in the third quarter of 1994.

## Conclusion

The study shows that the interstate long-distance market is not effectively competitive. Additional evidence – e.g., pricing at the cap and market shares settling near sixty percent – suggest that regulation and the threat of antitrust intervention is the constraining force in the market. The consumer welfare gains in the long-distance market to date are due more to FCC requirements than true competition.

An influx of effective competition in the long-distance market could produce massive consumer benefits in terms of rates, quality and services. Instead, during this time of weak competition, reduced fees have been pocketed by the long-distance companies, causing consumer prices to remain artificially high. Residential customers are hardest hit by this inequity. If consumers are to benefit from advances in telecommunications, more competition is needed in the long-distance market.

# The Long-Distance Market: Consumers Pay for Lack of Competition

The National Economic Research Associates recently released a study, *An Analysis of the State of Competition in Long-Distance Telephone Markets*, which concludes that there is no evidence that the long-distance market is competitive. In fact, the study finds that consumers have not received the benefits that efficient competition promises.

## Lack of Competition in the Long-Distance Market Means:

- ***Companies Pocket Potential Consumer Savings***

  Since 1984, AT&T has pocketed $1.778 billion dollars in reduced access charges that, in a competitive environment, would have been passed on to consumers.

- ***Long-Distance Prices Stay Artificially High***

  AT&T's prices are constrained by regulation and the threat of antitrust intervention, not by competition from MCI, Sprint and resellers.

- ***Productivity Remains Stagnant***

  Because the industry is not being pressed to operate more efficiently, technological advances and increases in demand have not translated into overall increases in productivity.

- ***Competition Has Not Led to Improvements in Quality***

  Competitive environments are marked by improvements in quality. However, long-distance market segments with multiple vendors show no more quality improvements than those in monopolistic segments.

- ***Advertising Practices Hurt Consumers***

  Advertising campaigns in the long-distance market only differentiate products, they do not benefit consumers. In addition, these massive expenditures serve as a barrier to entry to smaller competitors.

- ***Gap Between Cost and Price Continues to Widen***

  As AT&T's prices continue to increase, there is no pressure on the market to move price toward costs. AT&T's gross profit margin has increased from 31.4 percent in the third quarter of 1984 to 41.6 percent in the third quarter of 1994.

## Open Up Long-Distance to True Competition. Consumers Can't Afford to Wait.

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# AN ANALYSIS OF THE STATE OF COMPETITION IN LONG-DISTANCE TELEPHONE MARKETS

BY

WILLIAM E. TAYLOR
J. DOUGLAS ZONA[1]

## I. INTRODUCTION

This study updates and re-examines the relationship between the prices AT&T and other interexchange carriers (IXCs) pay to local telephone companies for interstate carrier access service and the prices they charge their customers for interstate long-distance service.[2] The issue arises because carrier access prices and interstate long-distance prices have generally fallen in the post-divestiture period until 1991, after which access charges continued to fall but interstate long-distance prices began to increase.[3] Both these facts and their interpretation are subjects of controversy. Different measures of access and toll price changes lead to different conclusions regarding their relative magnitude, and the link between changes in access charges and changes in toll prices is not a clear measure of the degree of competition in the toll markets because other factors (such as cost changes) can also lead to price changes in competitive

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1 Senior Vice President and Senior Consultant, National Economic Research Associates, Inc. (NERA), respectively.

2 W.E. Taylor, "Effects of Competitive Entry in the U.S. Interstate Toll Markets," filed in CC Docket No. 91-141 (August 1991), "Effects of Competitive Entry in the U.S. Interstate Toll Markets: An Update," filed in CC Docket No. 91-141 (July 1992), and W.E. Taylor and L.D. Taylor, "Postdivestiture Long-Distance Competition in the United States," *American Economic Review*, Vol. 83, No. 2, (May 1993), pp. 185-190.

3 The annual change in the Bureau of Labor Statistics (BLS) Consumer Price Index for interstate toll service (CPI-Interstate) has been positive since 1991.

markets. In this study, we address both questions: to assess the degree of competition in the interstate toll market and to determine the extent to which reductions in carrier access charges lead to lower interstate toll prices (i) what indices of IXC toll prices and local exchange carrier (LEC) access prices are useful, and (ii) what evidence is provided by other indicia of competitiveness?

Our study begins in 1984 with the divestiture of AT&T's operating telephone companies which split the communications industry vertically and provided an immediate impetus to competition in the interstate portion of the long-distance market. Regulators actively encouraged entry and competition in the interstate long-distance market by requiring that equal interconnections with the local network be provided to all long-distance competitors. Enforcement agencies, meanwhile, implemented new methods of regulating AT&T and the local telephone companies, including deregulation in some jurisdictions and price-cap regulation for interstate long-distance and carrier access services.

Since 1984, there have also been revolutionary changes in the statistical profile of the interstate long-distance market. The rapid development and expansion of fiber optic technology has (1) radically altered the cost structures in the market, much like advances in microwave technology did about a decade earlier; and (2) contributed to fast growth in total network capacity, which has roughly tripled in just 11 years. Whereas previously, there was only the one nationwide long-distance network, there are now nearly four backbone long-distance networks. AT&T's share of total switched interstate access minutes has now stabilized at around 60 percent. Partly in response to the emergence of regional and niche IXCs which continue to expand the services they offer and the territories in which they compete, the major

IXCs have introduced a variety of new pricing plans. The growth in promotional activities on this and other fronts has substantially increased advertising costs (as a fraction of sales revenues) across the industry.

Although the changes in the industry since 1984 have been dramatic, has competition (or regulated competition) delivered to consumers all of the promised benefits? This paper addresses that question in a systematic fashion by evaluating the empirical evidence concerning AT&T and the interstate long-distance industry as a whole with regards to seven primary indica of competition:

1. Relative price performance: If the interstate long-distance markets were truly competitive, changes in carrier access charges and other changes in industry costs would be passed through to customers as changes in long-distance prices.[4]

2. Pricing behavior: In competitive markets, firms are price-takers. Do we observe price-taking behavior in the long-distance market? Competitive markets are characterized by the absence of market power (i.e., the ability to raise price profitably or to alter terms of trade from competitive levels). Do we observe evidence of market power?

3. Productivity: Competition and incentive regulation brings powerful forces to bear on innovation and productivity. Has competition (or regulated competition) produced industry-wide and/or firm-specific productivity gains? How do the rates of productivity growth in an era of regulated competition compare to the historical rates of growth in productivity?

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[4] A reduction in carrier access prices lowers the marginal cost of providing interstate services for every long-distance company. Under general conditions in a competitive market, such changes in costs would be ultimately passed through in their entirety to customers in the form of lower prices.

4. Quality: Quality is one of the dimensions on which competitive firms compete with one another. Increases in quality may reflect progress made by competition or regulated competition. However, improvements in quality do not necessarily imply significant improvements in the competitive process.

5. Advertising: Advertising may help communicate complicated pricing plans and the existence of various alternatives for prospective consumers. On the other hand, excessive advertising may translate into efficiency losses.

6. Entry: The conditions of entry in part determine the level of price in an industry. When barriers to entry—whether financial, technological or legal—exist, incumbent firms will find it profitable to raise their prices above the level at which they would price if entry were unincumbered. Evidence of entry (net of exits) demonstrates that individual entrepreneurs believe opportunities for profit exist.

7. Financial performance: In a competitive market, long-run economic profits tend towards zero. Do we observe this tendency?

Based upon our investigation, we do not find evidence of effective competition in the interstate long-distance market; rather, we find evidence more consistent with noncompetitive behavior. On an aggregate basis, AT&T's price reductions have failed to match reductions in access charges. In fact, AT&T's pricing relative to costs suggests that the company may continue to enjoy significant market power. The adverse effects appear to have been experienced disproportionately by low-volume residential and small business customers, for whom prices rarely deviated from the maximum levels allowed under price-cap regulation. Overall service quality has improved to a degree since AT&T has been under price cap regulation; however,

the gains have been nearly equivalent in areas with and without facilities-based competition, suggesting that effective competition is not the driving force behind quality changes. Meanwhile, the substantial increases in advertising expenditures are consistent with increased barriers to entry, low levels of price competition, and high operating margins. The patterns of entry by resellers effectively confirm the suggestion of significant opportunities for profit in retail long-distance service. Similarly, AT&T's reported financial results effectively confirm the presence of high operating margins. Consequently, we conclude that regulated competition in the interstate toll market, *per se*, has not yet produced the promised substantial consumer benefits.

The remainder of the paper offers theoretical and empirical support for these assessments. Part II reviews the theory of regulated competition. Part III examines the empirical evidence regarding the impact of regulated competition in the interstate long-distance telephone market, with particular emphasis on the performance and behavior of AT&T. Part IV outlines our conclusions based upon the analysis in Part III.

## II. THEORY

As indicated above, our objective is to determine whether consumers have received the benefits that would occur in an environment of increased competition. To initiate the theoretical component of this analysis, we first describe differences between competitive outcomes and noncompetitive outcomes (Section A). We then develop a framework for evaluating the empirical evidence that is based upon the implications of whether the behavior

of IXCs is constrained by: (1) competitive forces within the industry; (2) antitrust laws and enforcement agencies (Section B); or (3) telecommunications regulation and regulatory agencies.

## A. Competitive vs. Non-Competitive Markets

In competitive markets, more efficient firms (i.e., those with below-average forward-looking incremental costs) will prosper and less efficient firms (i.e., those consistently with above-average incremental costs) will exit the market. Therefore, competition ensures that the products or services in a particular market are provided with maximum efficiency—that is, with the minimum expenditure of society's scarce resources—by distributing the supply function among rival suppliers to minimize total social costs. The ability of any firm to achieve a share of the supply function that exceeds the level expected under competitive conditions is limited by the threat of competitive entry. When entry is unimpeded, meaning that investment can flow efficiently in search of "above-normal" returns, firms will be unable to maintain prices in excess of the incremental cost-based competitive level. In such circumstances, each firm must take the market price as given and will remain in the market only if that price allows the firm to recover (1) its forward-looking incremental costs; plus (2) an acceptable return on its investment, the level of which is largely dictated by the returns available if the firm opted to deploy that investment elsewhere.[5]

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[5] The exception to this rule is the initial prices of new services. Prices exceed incremental cost to maximize the (profit) objectives of the firm. Once a successful new product begins to attract alternative suppliers, the price will fall toward incremental cost. In the interim, the innovating firm earns "above-normal" profits. In fact, the prospect of such profits creates the incentive for firms to incur the heavy up-front costs of research and development (R&D). The patent system makes an effort to balance the risks and rewards of R&D activity by granting a 17-year monopoly to the innovator. During this period without direct competition, the innovator can price above incremental cost and thereby realize a reasonable return on the original investment.

Facing the imperfect competition that characterizes the real world, individual firms have some ability to influence the price charged in certain niches of the markets they serve. The price that maximizes profit in these imperfectly competitive markets depends on both individual firms' costs and demand. In general, a multiproduct firm will maximize its profit by setting its prices above incremental cost for each product, with the amount of markup above incremental cost determined by the corresponding demand conditions facing the firm. If the demand for a specific product is more sensitive to price, the most profitable price will be closer to the firm's incremental cost.[6]

In certain markets, an incumbent firm may not face substantial competition from existing firms and/or may not face the threat of competitive entry. Such dominant incumbent firms are considered to possess market power in those markets. As a basic matter, market power signifies an ability to affect the terms of trade in the market. More importantly, however, for the economist's case regarding the damage to society caused by the absence of competition, market power translates into an ability to earn supracompetitive returns, to maintain excess productive capacity, to invest in superfluous advertising and/or to engage in other forms of waste.[7] Each of these outcomes are concomitant with reductions in market efficiency and consumer welfare. In other words, a supplier of a particular good that exercises market power

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[6] In the limiting case of perfect competition, an individual firm's demand curve is so sensitive to price that if the firm tries to charge a price above the market price, it will be unable to sell any output. As a result, the profit-maximizing price for the firm will equal its incremental cost. At the other extreme, a monopolist will price so that the increase in revenue from selling an additional unit will just cover the increase in cost. If the firm's demand curve is downward-sloping, this profit-maximizing price will be higher than incremental cost.

[7] See, e.g. F.M. Scherer, Industrial Market Structure and Economic Performance (Boston: Houghton Mifflin, 1980), p. 20.

receives a disproportionate share—at the expense of consumers—of the economic benefits associated with the sale of that good.

## B. Economic Forces in the Interexchange Market

In the case of the IXCs, pricing and other economic behavior is constrained in part by the unique characteristics of the market context in which these companies operate. The unique characteristics include:

- High proportions of embedded technology and sunk costs;
- Significant customer inertia;
- Rapidly changing technology;
- The globalization of business operations;
- The threat of possible antitrust action by the Department of Justice (DOJ);
- The Modification of Final Judgment (MFJ);
- The regulation of dominant carriers by the Federal Communications Commission (FCC); and
- The deployment of equal access capability.

These different characteristics represent forces which, to varying degrees, help determine which IXCs will be winners and which will be losers and how economic benefits will ultimately be

distributed between consumers and producers.[8] In other words, these parameters are important constraints on IXCs' strategic decision-making.

The critical insight for our purposes is that the different types of market constraints have different observable implications for individual firm behavior and market performance. Therefore, we can determine to what extent each constraint is binding in practical terms by first cataloging the implications of each constraint in terms of behavior and performance, and then comparing these implied responses to actual market circumstances. Because our investigation focuses on the extent to which consumers have enjoyed the benefit of competition,[9] we have opted to divide the constraints into three distinct categories: (1) competition from other IXCs; (2) the prospect of further antitrust action by the DOJ; and (3) the regulation of the "dominant carriers" by the FCC. If we found that the IXCs' behavior has been constrained primarily by the latter two "external" forces, then removing binding regulatory or legal constraints would act to the detriment of consumers since at least one of the IXCs could be presumed to possess market power and would therefore be inclined to adjust its prices and output towards noncompetitive levels. Prior to investigating that issue, the three sub-sections which follow briefly outline the implied responses to each set of constraints.

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[8] More specifically, these forces constrain AT&T's and the other IXCs' ability to raise price above or limit quality below the competitive level. We recognize and will turn to other attributes of competitive market outcomes, like diversity of products, technical innovations and others. Our discussion of "price and quality" is a shorthand for the attributes of competitive market outcomes.

[9] The groupings were also chosen based upon similarities in behavioral implications.

## 1. Market Competition

The first category consists of competition from other IXCs, which may limit each particular IXC's behavior in the market. We may observe the following indications that behavior is constrained by competition from IXCs:

- In a competitive market, long run economic profits tend toward zero. We should expect to see decreases in margins toward the competitive level and reductions in earnings per share as competition develops and equal access is implemented.

- Entrepreneurs respond to opportunities for profit so in a competitive market we should see little net entry, that is, the number of firms that exit (or the capacity of firms that exit) should be replaced by an equivalent number of firms or capacity in the long run.

- We would expect costs to be driven downward since, in order for a firm to survive in the competitive market it must be at least as efficient as its competitors. In addition, the return that is earned on assets deployed in a competitive market must be at least as great (and no greater) as the return that could be obtained elsewhere.

- Under general circumstances, we would expect industry-wide reductions in marginal costs (stemming from input price reductions or other cost changes that affect all firms) to be fully reflected in output prices. If an input represents 40 percent of the total cost of supplying a unit of a good and its price goes down by 10 percent in a competitive market, under general circumstances the output price should go down by 4 percent because price must track costs.

## 2. The Threat of Antitrust Intervention

The threat of antitrust intervention could motivate firms to avoid any obvious indications of possessing market power. For example, by maintaining its market share below a particular level—or, as is most relevant in the case of interstate long-distance service, by reducing its market share by a sufficient amount—a firm may effectively enter an antitrust "safe

haven." Thus, the behavior of AT&T may be constrained to produce market share outcomes in a safe haven.

A series of past court decisions supply information on the likely position of the market share "fence." For example, in *United States v. Aluminum Co. Of America*,[10] the Second Circuit Court indicated that a 90 percent market share "is enough to constitute a monopoly; it is doubtful whether sixty or sixty-four percent would be enough; and certainly thirty-three percent is not." The other cases which have tested the middle ground between the extremes cited in *Alcoa* have generally established a threshold of approximately 60 percent. For example, 50 percent was considered below the threshold in *American Telephone & Telegraph Co. v. Delta Communications Corp.*,[11] while 71 percent was considered above the threshold in *Heattransfer Corp. v. Volkswagenwerk, A.G.*[12] An observed reduction of market share down to and stabilization at the 60 percent threshold would be consistent with a strategy of seeking to avoid antitrust action.

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[10] 148 F.2d 416, 424 (2d Cir. 1945).

[11] 590 F. 2d 100 (5th Cir. 1979).

[12] 434 U.S. 1087 (1978).

### 3. The Effects of Regulatory Oversight

Currently, the regulation of the dominant IXCs[13] is governed by the price cap scheme[14] introduced by the FCC in 1989. We may observe the following indications that IXC behavior is constrained by price cap regulation:

- If competition alone is not sufficient to cause price and quality to be at competitive levels—in other words, if price cap regulation constrains behavior—we would expect to see the regulated firm price at the cap (or a larger fraction of days in a year with prices at the cap). The converse may also be true: pricing at the cap may indicate that a profit opportunity exists.[15] Similarly, the presence of (positive) net entry indicates that prices are above the competitive level, all else being equal. Since firms can earn supracompetitive returns at supracompetitive prices, we would expect to observe net entry as long as barriers to entry are not sufficiently high.

- Since the competitive price <u>could</u> coincidentally be at the level of the cap at a particular point in time, we will need to look for indications that prices were repeatedly adjusted downward for some customers and/or products—presumably in response to <u>some</u> competitive pressure—while prices for other products were increased to take advantage of the price cap formula. Such repeated adjustments over time, resulting in aggregate prices at the cap, would suggest that the circumstance of prices at the cap is not a coincidence.

- Since the aggregate price cannot be increased above the price cap index, additional profits could be obtained by decreasing service quality and/or by reducing costs. We may also observe patterns in the changes in quality over

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[13] In terms of the definition of dominant firms—another factor in the type of regulatory oversight that IXCs receive—some economists have suggested that 60 percent market share is again the appropriate threshold, particularly in industries with high entry barriers. See, for example, O.E. Williamson, <u>Markets and Hierarchies: Analysis and Antitrust Implications</u>, (New York: Free Press, 1975), p. 209, ff. 1. Of course, dominance and the ability to raise price above the competitive level are intimately related. An observed reduction of market share down to these levels and stabilization at these levels is consistent with a strategy of regulatory evasion.

[14] The price cap formulae require that the revenue share-weighted average of prices remain below a specified level; the level itself varies over time.

[15] Logically, the level of the price cap could be below the competitive level. Pricing at the cap <u>and</u> entry indicates that the competitive level is below the level of the cap.

time that are different during the price cap period as compared with the prior historical period.

- To the extent that IXCs' costs decrease more quickly than the aggregate price allowed under the cap, margins should increase over time. Increasing margins provide increased incentive to advertise since winning a customer is more valuable when the customer represents a high margin instead of a normal competitive margin.

## III. EMPIRICAL OBSERVATIONS

The seven sections that follow examine firm behavior and market performance with respect to each of the seven indica of competition listed above. Each section contains a brief description of theory and objectives, followed by an analysis of the relevant data.

### A. Relative Price Patterns

As indicated previously, if the interstate long-distance markets were reasonably competitive, changes in carrier access charges would be passed through to customers as changes in long-distance prices.[16] Such changes have, in fact, been observed over the past 11 years: as measured by average tariffed access prices, carrier access charges have fallen steadily since

[16] Almost half of the costs that AT&T and other long-distance carriers incur to provide interstate long-distance service are charges paid to local telephone companies to originate and terminate interstate traffic on their networks. These carrier access charges are assessed on each minute of switched access service and on each private line circuit that the long-distance carriers purchase from the local companies. Per minute and per circuit carrier access prices have fallen dramatically since divestiture in 1984, and the FCC has required that AT&T pass through these access charge reductions to its long-distance customers in the form of lower long-distance prices or reductions in the price cap index.

divestiture.[17] The extent to which these reductions have been passed through to long-distance customers in the form of lower prices provides a measure of the degree of price competition in the interstate long-distance markets.[18]

Simply comparing the change in long-distance price per minute with the change in access charges per minute, however, does not answer the question satisfactorily. If access charges were reduced by a penny per minute but labor costs rose by a penny per minute, we would not expect competitive IXCs to reduce per-minute prices by a penny. Similarly, if access charges fell a penny per minute while capital costs fell by another penny per minute, a one-cent reduction in price would not fully flow through carrier access reductions to consumers. Therefore, to determine the likely effect on price—all else remaining equal—of a reduction in access charges, we need to know how, or in what sense, the IXCs have been compelled by competitive forces to flow changes in marginal costs through to customers in the form of price changes. In other words, we must compare historical price changes to all cost changes or compare current price changes to past price changes.

## 1. Changes in Net Interstate Long-Distance Prices

Our previous studies examined AT&T tariff filings since 1984, aggregating the revenue effects of interstate long-distance price changes and access price changes. We showed

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[17] As calculated by the FCC, tariffed switched carrier access charges have fallen from an average of about $0.173 per conversation minute in 1984 to about $0.067 in 1993. See Staff of the Federal-State Joint Board, Monitoring Report, CC Docket No. 87-339, May 1994, Table 5.11.

[18] The relationship between the prices AT&T pays to local telephone companies for interstate carrier access service and the prices it charges its customers for interstate long-distance service has been examined on several previous occasions. See, for example, Taylor, op. cit., (August 1991); Taylor, op. cit., (July 1992); and Taylor and Taylor, op. cit.

that from divestiture in 1984 through July 1992, AT&T reported cumulative annual access charge reductions of $10.131 billion and reductions in other annual costs beyond its control of $0.733 billion, for a total annual reduction in costs of $10.864 billion.[19] Over the same period, AT&T prices to its customers fell by $8.223 billion per year. Thus, competitive pressures in the interstate long-distance markets were insufficient and permitted AT&T to raise its prices by $2.641 billion per year, net of access charges.

To judge the degree of competition implied by these price changes, we need to know either (1) what happened to industry costs other than access charges; (2) or what the historical rates of change of long-distance prices have been, against which we could compare current rates of change. In our previous studies, we showed that AT&T's interstate long-distance prices (net of inflation and separations changes) fell much less rapidly during the 1984-1992 period as compared with the 1972-1983 period—the decade before divestiture and equal access competition. From this result, we concluded that interstate toll competition since 1984 "has not led to lower prices in the aggregate market or to lower prices for residential and small business customers."[20] The current study, the results of which are described in the sub-sections that follow, updates our previous results[21] and finds a similar pattern during recent time periods.

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[19] Access charges and exogenous costs are only part of AT&T's total costs. To the extent that AT&T was stimulated by competitive forces to reduce network costs by adopting new technology and to reduce labor costs by reducing personnel, its incremental costs fell by more than $10.9 billion per year. If realized, these additional cost reductions would appear as an increase in AT&T's margins for long-distance services.

[20] Taylor and Taylor, op. cit., p. 189.

[21] Our analysis includes AT&T price cap filings through Transmittal No. 8174, filed on February 16, 1995, to be effective on April 2, 1995.