E. *The Tariffing Process Facilitates Tacit Collusion*

51. Since the early 1980s, the FCC has repeatedly expressed concern that its tariffing process under section 203 of the Communications Act suppresses price competition among common carriers. The reasons for this concern are straightforward. The tariff process requires that prices, terms, and conditions of common carrier service offerings be published and filed before the service is provided.[42] The carrier may not charge more or less than the tariffed price for the service.[43]

52. Competitors can be relied upon to monitor FCC tariff filings on a continuous basis, so that this process provides notice of a price cut before it takes effect. Because competitors can immediately match the price cut when it occurs, the carrier initiating the cut loses any first-mover advantage. This scenario need not be repeated before it becomes clear that it would be futile to initiate a price cut in the hope of gaining market share on a rival for any appreciable length of time.[44]

53. In order not to forestall price competition, the Commission embarked on its policy of "forbearance" or "permissive detariffing," which in 1983 it extended to other facilities-based carriers than AT&T.[45] In the interexchange market this new policy implied that the FCC would require tariff filings by AT&T, the only "dominant" carrier, but not by MCI and Sprint. The FCC believed that, for carriers lacking market power, detariffing would more likely increase

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[42] 47 U.S.C. § 203(a) ("Every common carrier . . . shall . . . file with the Commission and print and keep open for public inspection schedules showing all charges for itself . . . for interstate and foreign wire or radio communication . . . ."). The full text of tariffs is available for public inspection from 1:30 until 4:30 every weekday afternoon in the FCC's Tariff Reference Room.

[43] *Id.* § 203(c).

[44] *See* Orr & MacAvoy, *supra* note 33.

[45] Policies and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, Fourth Report and Order, 95 F.C.C.2d 554 (1983).

price competition because it would eliminate section 203's requirement for advanced notice of price changes,[46] "an excellent mechanism for inducing noncompetitive pricing."[47] The Commission found that "traditional tariff regulation of nondominant carriers is at odds with the purposes of the [Communications] Act because it inhibits price competition, service innovation, and the ability of firms to respond quickly to market trends."[48] Indeed, the FCC observed, the tariff process encouraged AT&T's competitors to follow AT&T's lead, pricing just below its rates.[49] The Department of Justice expressed a similar concern in 1990 that the tariffing process promoted tacit collusion among AT&T, MCI, and Sprint.[50]

54. Given this regulatory latitude of permissive detariffing, it could be expected that MCI and Sprint would have offered their services off-tariff and would have challenged AT&T's prices. But MCI and Sprint generally declined the opportunity to forego tariffing and instead continued to offer most of their services under tariff.[51] Furthermore, MCI actually sued to pre-

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[46] Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, Further Notice of Proposed Rulemaking, 84 F.C.C.2d 445, 478-79 (1981).

[47] *Id.* at 454.

[48] Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, Fourth Report and Order, 91 F.C.C.2d 59, 65 (1982).

[49] Fourth Report and Order, 95 F.C.C.2d at 580; Policy and Rules Concerning Rates For Competitive Common Carrier Services and Facilities Authorizations Therefor, Notice of Inquiry and Proposed Rulemaking, 77 F.C.C.2d 308, 313-14, 358-59 (1979).

[50] Reply Comments of the United States Department of Justice, CC Dkt. No. 90-132, at 41, 44-46 (filed Sept. 28, 1990).

[51] When a nondominant carrier files a tariff, it becomes effective in one day. *See* 47 C.F.R. § 61.23(c); Tariff Filing Requirements for Nondominant Common Carriers, Memorandum Opinion and Order, 8 F.C.C. Rcd. 6752 (1993).

vent the FCC from forbidding nondominant carriers to file tariffs and won the right to file tariffs that the FCC did not want.[52]

55. Originally, AT&T defended permissive detariffing,[53] but, after it had begun offering its own Tariff 12, AT&T in August 1989 filed a complaint with the FCC asserting that MCI had violated section 203 of the Communications Act by discounting under the FCC's detariffing policy. The procedural history of the Commission's action on AT&T's complaint, and the D.C. Circuit's review of the FCC's final order ruling on the complaint, are convoluted, but the result is not. The permissive detariffing policy was vacated and remanded to the FCC, where it has remained in suspension.

56. The significance of these conditions for competition is evident. MCI had begun to attract large business customers; in response, AT&T introduced Tariff 12. At that point, AT&T sought to have MCI pricing brought back under the tariffing process that would reliably transmit contemporaneous price information.

57. It is no surprise, therefore, that the California Bankers Clearing House Association, the New York Clearing House Association, the Securities Industry Association, Visa, U.S.A., Inc., and other large business users of telecommunications services filed an amicus brief in the Supreme Court in January 1994 supporting permissive detariffing, stating: "The Commission has adopted such a policy on the grounds that it would, among other things, 'de-facilitate' price collusion among the major carriers in the highly concentrated market for inter-exchange telecommunications services."[54] The position of these consumers anticipates the

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[52] MCI Telecommunications Corp. v. FCC, 765 F.2d 1186 (D.C. Cir. 1985).

[53] *See* Brief for Petitioner at 9, MCI Telecommunications Corp. v. American Tel. & Tel. Corp., (U.S. Jan. 13, 1994) (No. 93-356); Policies and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor, Sixth Report and Order, 99 F.C.C.2d 1020, 1027 (1985).

[54] Brief Amicus Curiae of the California Bankers Clearing House Association et al., at 2, MCI Telecommunications Corp. v. American Tel. & Tel. Corp. (U.S. Jan. 13, 1994) (No. 93-356).

propensity for tacit collusion and the role of the tariffing process in "facilitating" that propensity. By late 1993, in its attempt to re-establish detariffing after remand from D.C. Circuit, the FCC repeated its warning, but with a distinct variation in wording: "traditional tariff regulation of nondominant carriers . . . is *actually counterproductive* since it can inhibit price competition, service innovation, entry into the market, and the ability of carriers to respond quickly to market trends."[55]

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[55] Tariff Filing Requirements for Nondominant Carriers, Memorandum Opinion and Order, 8 F.C.C. Rcd. at 6572 (emphasis added).

IV. PRICE-COST MARGINS FOR LONG-DISTANCE SERVICES HAVE RISEN SINCE 1990, AS MARKET CONCENTRATION HAS STABILIZED

A. *Estimation of Long-Distance Prices and Marginal Costs*

58. Price-cost margins are estimated in order to compare market behavior with the predictions from the Cournot, Bertrand, and tacit collusion theories. Prices for the following services offered by AT&T, MCI, and Sprint are reported in Appendix Table Two: Message Toll Services (MTS); outbound WATS with switched access, with dedicated access, and with 36-month dedicated access; inbound WATS with switched and dedicated access; and Virtual Network Services.[56] The brand names of the specific services and the assumptions regarding customer calling patterns are shown in Appendix Table One. As indicated above, regulated carriers may not charge more or less than the tariffed price, so these tariff prices are transaction prices rather than only list or quoted prices.[57]

59. Marginal costs are estimated as the change in total costs as a result of total output changes. For long-distance services, such marginal costs equal the sum of access charges and incremental operating expenses incurred for calls. Access charges for the period 1985-92 are from the FCC's *Statistics of Communications Common Carriers*,[58] and for 1993 these charges are from WEFA's *Economic Impact of Eliminating the Line-of-Business Restrictions on the Bell Companies*.[59]

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[56] The rate data are obtained from HTL Telemanagement, Ltd. HTL collected tariffs for the services shown in Table One and calculated rates based on the assumed customer calling pattern shown in Table Two.

[57] A complication arises with respect to constructing price indexes for these service offerings that have embedded in them quantity discounts. To control for these discounts, I hold constant usage levels in calculating price-cost margins.

[58] 1992-93 COMMON CARRIER STATISTICS, *supra* note 11, tbls. 6.2, 8.9.

[59] WEFA, ECONOMIC IMPACT OF ELIMINATING THE LINE-OF-BUSINESS RESTRICTIONS ON THE BELL COMPANIES 16-17 (July 1993) (citing Bellcore data). Access charge estimates obtained from the FCC and Bellcore are essentially the same.

60. Incremental expenses are those associated with small changes in total service levels. The current AT&T, MCI, and Sprint systems have sufficiently large capacities that marginal changes in total output do not necessitate expansions of fiber capacity, so that these expenses are limited to direct and variable outlays only.[60] WEFA estimates that average incremental costs of long-distance service equal $0.01 per minute, whereas Bellcore estimates that these costs are approximately $0.005 per minute, according to its Network Cost Analysis Tool.[61] Neither WEFA nor Bellcore distinguishes its cost estimates among interexchange carriers. Choosing the more conservative estimate, from WEFA, the resulting marginal costs of long distance service are shown below.

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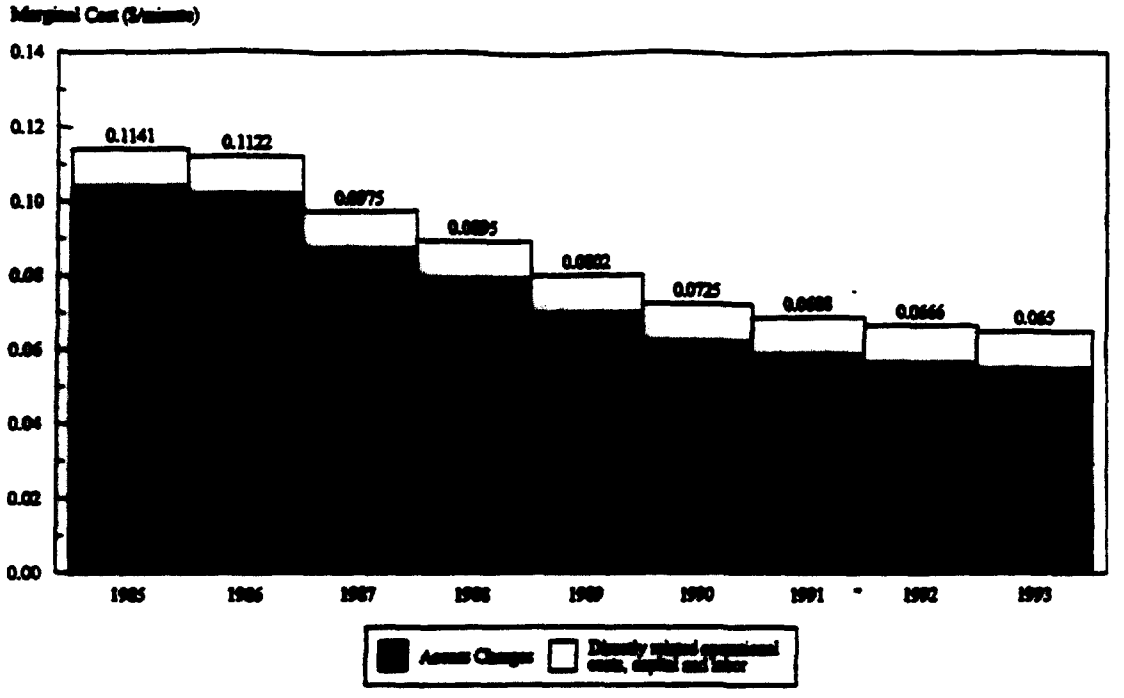
[60] Evidence supporting this finding is contained in the FCC's report, Competition in the Interstate Interexchange Marketplace, 6 F.C.C. Rcd. at 5880. In its report, the Commission agrees with a study prepared by AT&T Bell Laboratories that concludes that MCI and Sprint could immediately absorb as much as 15 percent of AT&T's business day traffic without any expansion of their existing capacity. This means that marginal changes in output do not require expenditures for incremental capacity expansion. Furthermore, according to the Bell Labs study, full provisioning of Sprint's network would enable it to serve from 257 to 513 billion minutes of traffic. *Id.* at 5888. By comparison, AT&T's total interstate switched access minutes in 1992 equal 212 billion minutes. 1992-93 COMMON CARRIER STATISTICS, *supra* note 11, at tbl. 8.10. The FCC also agrees with the finding of the Bell Labs study that within five months, MCI and Sprint together could add approximately 25 billion minutes of capacity for a combined cost of approximately $600 million. 6 F.C.C. Rcd. at 5888. On the basis of these findings, the FCC concludes that "AT&T's competitors have substantial excess capacity available immediately and in the relative short-term." *Id.* at 5889. Finally, a 1989 research paper by two members of the FCC's Office of Plans and Policies concludes that, if one assumes that AT&T can serve the entire market, then the available capacity of MCI, Sprint, and other carriers equals 146 percent of total market demand. JOHN R. HARING & KATHLEEN B. LEVITZ, WHAT MAKES THE DOMINANT FIRM DOMINANT? (FCC, OPP Working Paper No. 25, 1989).

[61] WEFA, *supra* note 55, at 20-21.

ESTIMATED MARGINAL COST OF INTERSTATE SWITCHED ACCESS



Sources for Operational Costs: WEFA, "Economic Impact of Eliminating The Line-of-Business Restrictions on the Bell Companies," July 1993, pp. 20-21.
Sources for Access Charges 1985-1992: FCC, Statistics of Communications Common Carriers, 1992-1993 Edition, Tables 6.2 and 8.9.
Sources for Access Charges 1993: Bellcore as cited in WEFA, "Economic Impact of Eliminating The Line-of-Business Restrictions on the Bell Companies," July 1993, pp. 16-17.

61. The resulting set of estimates is used to develop estimates of price-cost margins for seven different types of long-distance services during the period 1987-93. These price-cost margins and the HHI series for the four major categories of service discussed in Section II (MTS, inbound WATS, outbound WATS, and Virtual Network Services) are used to examine the relationship between concentration and market behavior in the last decade.

B. *The R: .tion Between Price-Cost Margins and Concentration Over Time*

62. .ne relationship between price-cost margins and concentration by major service category are shown below.[62] In MTS, price-cost margins rise slightly but consistently from 1988 to 1993. The margins of the three firms are essentially identical over most of the period, reflecting the underlying similarity of their prices (the three firms by assumption have the same marginal costs). During this period, market concentration, as measured by the HHI, falls from a level of 0.76 in 1985 to 0.54 in 1993. After 1987 there is an inverse relation between profit margins and the HHI -- as concentration declines, the three leading firms' price-cost margins increase.

63. Price-cost margins for inbound WATS (using switched access) show differences among the three firms in 1989, after which that difference gradually disappears. Margin levels are stable to 1989, after which they rise steadily. In particular, AT&T's price-cost margin remains consistently higher than those of MCI and Sprint. The margin levels for all three firms show steady increases over the period 1989-93. The HHI series for inbound WATS begins at 1.0, reflecting AT&T's monopoly position to 1986 and then falls rapidly to 1990, after which it stabilizes at 0.53.

64. The price-cost margins for outbound WATS (using switched access) by AT&T, MCI, and Sprint show a steady rise over the period 1988-93. After 1989, the margins of the three suppliers are quite similar, again following from the underlying uniformity of their prices. The HHI series for outbound WATS shows a rapid decline in the period 1985-88 from a level of 0.75 to 0.42, after which it stabilizes.

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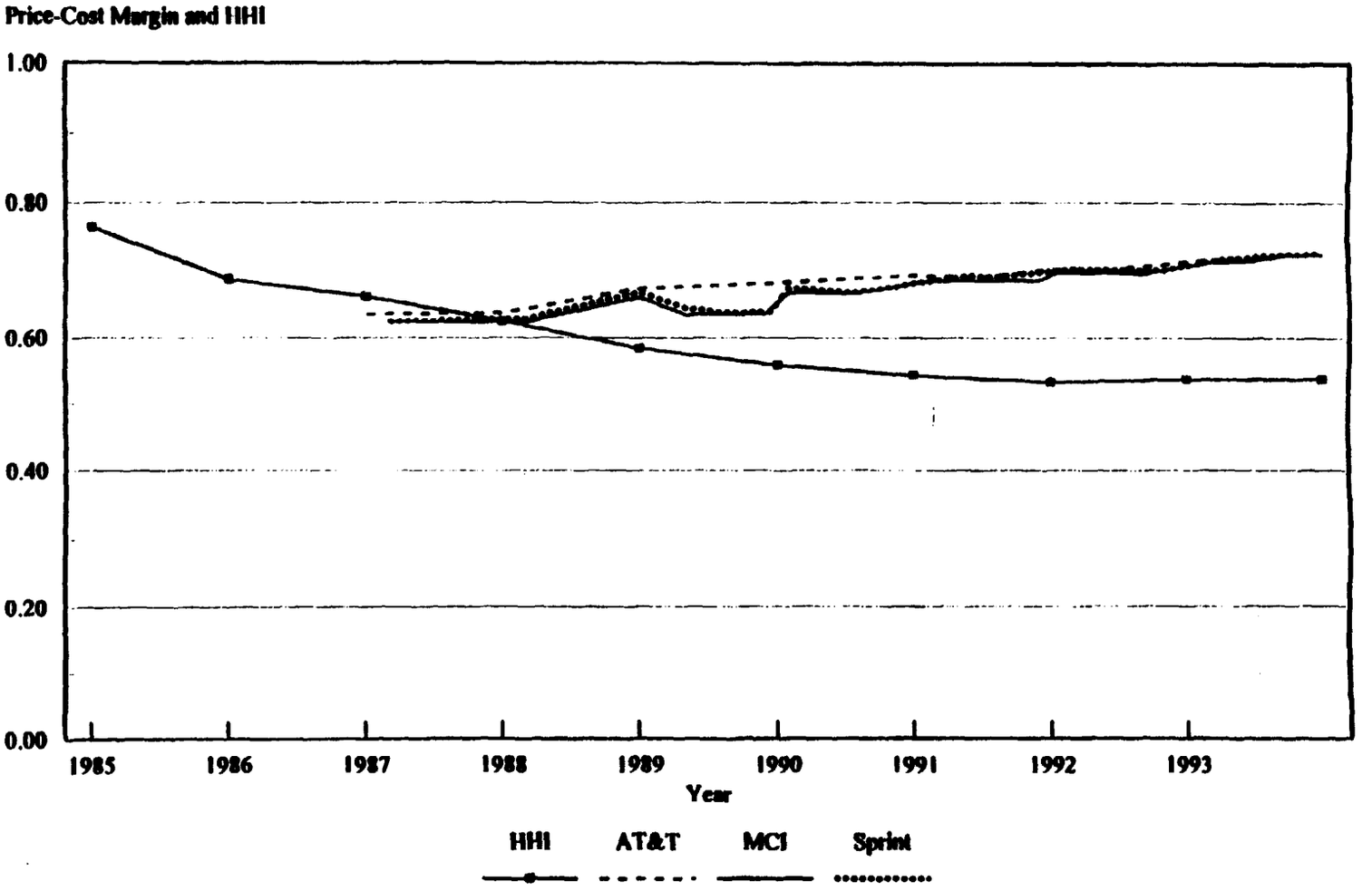
[62] The price-cost margins and HHI series reported in this section include one inbound WATS service (switched access) and one outbound WATS service (switched access). Additional information on inbound WATS using dedicated access and outbound WATS using dedicated access (both under month-to-month and 36-month contracts) is contained in figures accompanying this affidavit.

65. Finally, the price-cost margins for Virtual Network Services exhibit a relatively high degree of variation among the three firms in 1989 and 1990. After 1990, however, the margins for AT&T, MCI, and Sprint are quite close, with MCI remaining at a lower level. But the HHI series shows a slight increase from 1985 to 1986 to a level of 0.65, after which it falls to a level of 0.50 by 1989, and stabilizes at 0.47 by 1992.

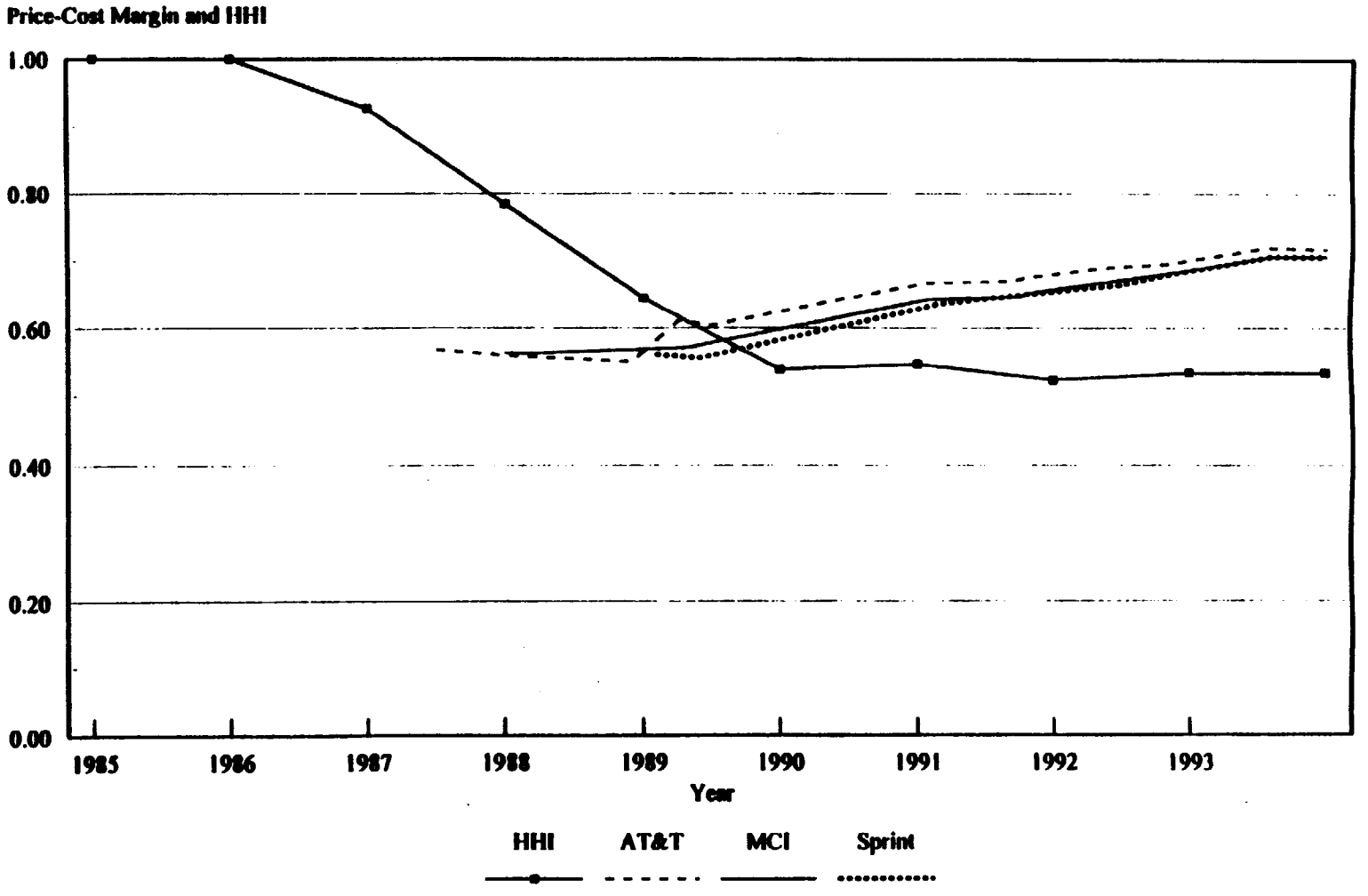
66. These finding are not sensitive to the estimates of marginal cost employed in this analysis. In order for the trend in price-cost margins to be reversed, marginal costs would need to be increased by more than 57 percent in 1990 and by more than 75 percent in 1993, relative to marginal costs in 1985. Recall that marginal costs include access charges and operating costs. Since there is little disparity in the access charges reported by the FCC and WEFA, for the trend in price-cost margins to be reversed, marginal operating costs would need to be increased by a factor of four in 1990 and a factor of five in 1993, relative to 1985, to change the direction of the relationship between concentration and price-cost margins.

PRICE-COST MARGINS AND MARKET CONCENTRATION
MTS



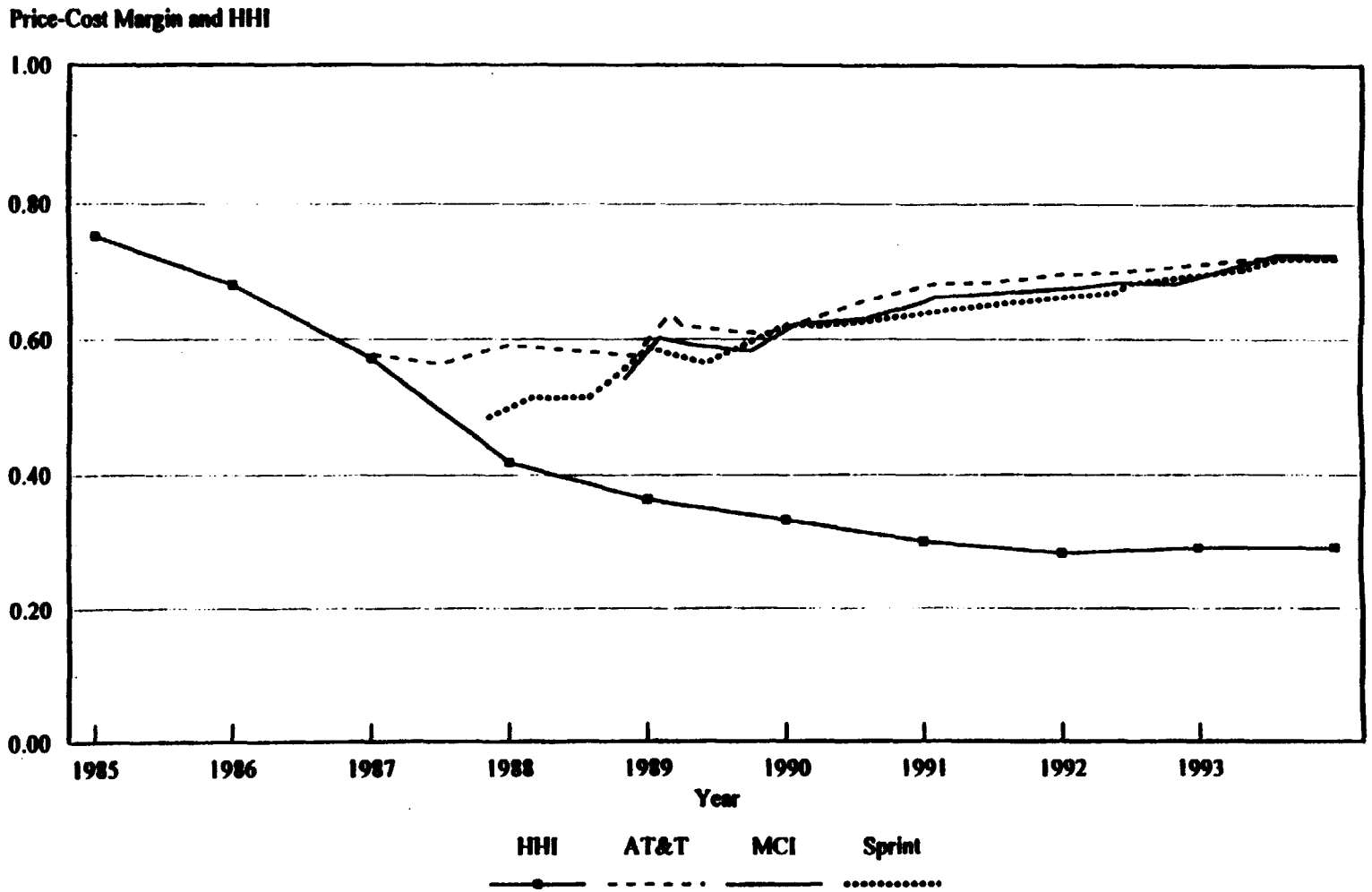
Sources: Marginal Costs from FCC and WEFA; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services, Inc.

PRICE-COST MARGINS AND MARKET CONCENTRATION
WATS SWITCHED INBOUND (200 HOURS PER MONTH)



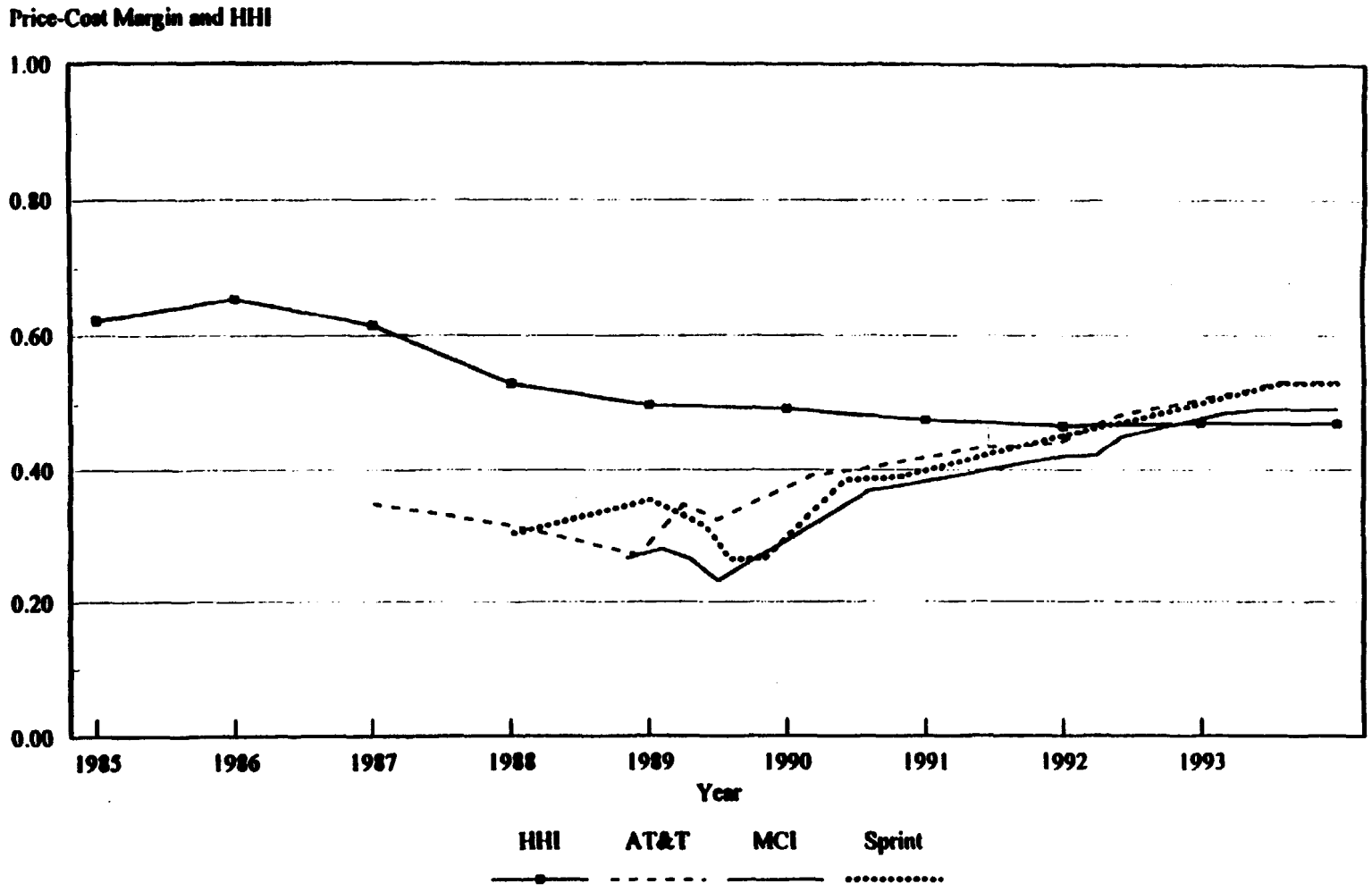
Sources: Marginal Costs from FCC and WEFA; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services, Inc.

PRICE-COST MARGINS AND MARKET CONCENTRATION
WATS SWITCHED OUTBOUND (200 HOURS PER MONTH)



Sources: Marginal Costs from FCC and WEFA; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services, Inc.

PRICE-COST MARGINS AND MARKET CONCENTRATION
VIRTUAL NETWORK (10,000 HOURS PER MONTH)



Sources: Marginal Costs from FCC and WEFA; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services, Inc.

67. The price-cost margins shown here are not only rising in the presence of falling market concentration, they are also high in absolute levels. High price-cost margins encourage entry by firms attempting to earn profits above the competitive level. Such entry has the effect of causing margins to decline as price competition intensifies until the point at which firms in the industry earn the competitive rate of return. However, the evidence on price-cost margins for AT&T, MCI, and Sprint show no decline in margins of the type that would be anticipated if the markets for these long-distance services were competitive. Thus the trends in price-cost margins rebut the case for Bertrand behavior, because that would result in declining margins over time.

68. Furthermore, the margins are high in absolute value relative to those in other industries. For example, in a sample of 284 industries, Domowitz, Hubbard, and Petersen report that the average price-cost margin in 1981 equals approximately 0.275.[63] Thus the average price-cost margin for these 284 industries equals slightly more than one-third the 1993 price-cost margins for MTS, inbound WATS, and outbound WATS, and approximately 52 percent of the margin for Virtual Network Services. Domowitz, Hubbard, and Petersen also split out the most concentrated industries in their sample for which the top four firms account for at least 81 percent of sales. The average price cost margin in 1981 for these industries equals approximately 0.330, which is less one-half the 1993 margin for MTS, inbound WATS, outbound WATS, and slightly less than two-thirds the margin for Virtual Network Services. In sum, by reference to nearly 300 other industries, the profit margins earned by AT&T, MCI, and Sprint for long-distance services are large in absolute value, indicating the presence of non-competitive performance in these markets.

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[63] Ian Domowitz, R. Glenn Hubbard & Bruce Petersen, *Business Cycles and the Relationship Between Concentration and Price-Cost Margins*, 17 RAND J. ECON. 1 (1986). They define the price-cost margin as [Value of Sales + Change in Inventories - Payroll -Cost of Materials] divided by [Value of Sales + Change in Inventories]. The 284 industries are four-digit Standard Industrial Code industries as defined by the U.S. Bureau of the Census.

69. The relationship between price-cost margins and market concentration can also be evaluated with a statistical regression that allows other important factors to be held constant.[64] Thus, a regression equation is specified in which price-cost margins are determined by HHI and variables indicating service type.

70. Because of differences in the behavior of price-cost margins over the period 1987-89 versus the period 1990-93, two different regressions are estimated corresponding to two periods. The price-cost margins for each service are weighted-average profit margins, where the weights are the firms' market shares. The results of the two regressions are reported in Table One.[65] Both regressions explain over 85 percent of the variance in margins, and both exhibit patterns of estimated coefficients allowing the testing of hypotheses on market competitiveness.

71. According to the Bertrand formulation of interfirm behavior, if at least two firms have the capacity to provide all the supply in the market, then price-cost margins should decline to competitive (zero) levels. In contrast, the Cournot construct leads to predictions that price-cost margins will converge to the HHI divided by the (absolute) value of the elasticity of demand.[66] Thus, declines in the HHI should result in declines in profit margins (as in the illus-

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[64] A regression uses one or more explanatory variables to account for variation in a dependent variable. For example, changes in income may be used to explain or predict changes in consumer spending. In the current context, changes in the level of market concentration are used to predict changes in price-cost margins.

[65] In the regression, the market shares used in calculating the weighted average price-cost margin are taken from Multinational Business Services, Inc. for the period 1985-90. For the period 1991-93, the market shares are predicted on the basis of a regression of each service type on total toll revenues. Total toll revenues for 1991 and 1992 are obtained from the FCC. 1992-93 COMMON CARRIER STATISTICS, *supra* note 11, at tbl. 1.4. Total toll revenues for 1993 are obtained from the FCC. LONG DISTANCE MARKET SHARES, *supra* note 21, at tbl. 6.

[66] JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 223 (MIT Press 1988). In the regressions shown in Table Three, it is assumed that the (absolute) value of the elasticity of demand for each of the services equals 0.70. This equals current estimates of the elasticity of demand for total intraLATA toll service. *See* LESTER D. TAYLOR, TELECOMMUNICATIONS DEMAND IN THEORY AND PRACTICE (Kluwer Academic Publishers 1994).

trative table on page 24). Only the tacit collusion theory is consistent with falling HHI and rising price-cost margins because the extent of tacit collusion depends on increasing equality of market shares (falling HHI). As shares become more equal (and HHI declines), and as shares become more stable (once HHI is constant), price-cost margins should increase if tacit collusion dominates the price-setting process across three firms.

72. The first regression covering the period 1987-89 shows that decreases in the HHI are associated with increases in pricing margins, and this estimate is significant at the five percent confidence level. That is, on the basis of this regression, one can reject the claim that no relationship between the HHI and the price-cost margins exists. However, the second regression for 1990-93 shows an inverse relationship between market concentration and profit margins that is stronger and much more statistically significant than the relationship for the period 1987-89. One cannot reject the hypothesis that, as the HHI continues to decline, price-cost margins increase significantly.

73. These results reject both the Bertrand and Cournot theories as to a range of *competitive* behavior. The observed relationship between the price-cost margins and HHIs establishes that decreases in market concentration for long-distance services are associated with increases in price-cost margins. This relationship can only be explained by firm interaction based on tacit collusion: the three large sources of interLATA interexchange services after 1990 acted *as if* setting prices to maintain their market shares would result in operating income margins significantly in excess of competitive levels.

C. *The Relation Between Price-Cost Margins for Different Services*

74. It is also possible to evaluate the relationship of price-cost margins and market concentration by examining how margins and concentration vary across the different service categories. The two regressions include variables for the different services, with the category of MTS as the "base case" service against which others are adjusted (because MTS is the only service in the study purchased primarily by residential or non-business customers). Coefficients

for the service variables can be interpreted as indicating the impact on margins of each service, holding the HHI fixed, relative to the margin for MTS. For example, in the first regression, the estimated coefficients for the three outbound WATS services (switched, dedicated, and dedicated with 36-month contracts) indicate that the carriers earn lower price-cost margins for these services than for MTS, holding market concentration constant. Moreover, this effect is more pronounced in the second regression (1990-93), as evidenced by larger (absolute value) coefficients. Both regressions show that there are no statistically significant differences in margins across the three outbound WATS services.

75. The lower margins for outbound WATS relative to MTS can be explained by characteristics of demand on the part of large business users. Unlike residential and small business customers, large businesses can (at some suppliers' prices) economically build their own private networks. This ability to self-provide selected long-distance services has the effect of increasing the elasticity of demand for those services. Furthermore, as a result of their larger expenditures on phone service, businesses have an incentive to monitor rates more closely, and thus are less likely than residential customers to stay with a particular carrier if its rates become relatively high. Noncompetitive prices are inversely related to the elasticity of demand so that it follows that these prices for services purchased by customers with relatively elastic demands would have relatively low price-cost margins. Such prices would be the most important result from firms taking recourse in the tacit collusion process -- the ability of carriers to charge outbound WATS customers lower prices while keeping WATS inbound and MTS prices high in margin terms adds critically to the profitability of all suppliers.

76. With respect to switched and dedicated inbound WATS services, the first regression shows that during the 1987-89 period, price-cost margins on these services were similar to those for MTS. The second regression shows that margins on inbound WATS were lower than those earned on MTS in the 1990-93 period, by a statistically significant amount, but in absolute terms by the smallest amount of any class of service. The margins earned on the

switched and dedicated inbound WATS services are not significantly different from each other in either period.[67]

77. The fact that margins on inbound WATS relative to MTS were lower in the latter period may be due to the lack of 800 number portability that existed during part of the earlier period. The inability of customers to take their 800 numbers with them when changing carriers made it less likely that other carriers in the early period would use price discounts to increase market shares relative to AT&T. As 800 number portability became possible during the latter period, the second and third carriers could increase their share-gaining activities which would have the effect of lowering profit margins that carriers set in the late 1980s and 1990s. Even so, margins increased over the latter period as shares of these three firms became more equal.

78. Finally, margins earned on the provision of Virtual Network Services were lower than MTS margins in both periods. This too is consistent with large business customers being more able to substitute away from Virtual Network Services in response to relative price increases. The evidence also suggests that carriers' ability to discriminate against customers demanding Virtual Network Services increases in the latter period (the estimated coefficient for Virtual Network Services falls substantially in the second relative to the first regression), as shares of the three carriers stabilize and prices become identical.

[67] In addition to the regression reported in Table One, an alternative regression was estimated in which each of the seven service variables were multiplied by the HHI for that service. This specification allows the HHI to have different effects on price-cost margins for different services, as opposed to the regression in Table One which constrains the HHI to have the same effect on each of the services. The results of the alternative regression show the same ordering of price-cost margins among services. Dedicated and switched outbound have the largest price-cost margins, followed by virtual network, dedicated and switched inbound, and MTS.

V. Tacit Collusion Explains Market Performance While Other More Competitive Theories Do Not

A. *Findings*

79. The evidence shows that price-cost margins in the period 1987-90 were generally stable for the several long-distance services, but then begin increasing in the face of falling or stable market concentration in the period 1990-93. This "turn around" cannot be explained by the Bertrand theory, which predicts that price should converge to marginal cost whenever there are two or more firms. Neither can it be explained by the Cournot theory, which predicts that decreases in market concentration should be associated with declining price-cost margins. Only the tacit collusion framework for pricing can explain the rise in margins as concentration declines.

80. Further, certain changes in market conditions would account for initially falling profit margins followed by rising profit margins. Regulatory conditions in the earlier period made tacit collusion more difficult and therefore collusive rates lower. Price-cost margins in the earlier period can be associated with AT&T's response to the other long distance carriers allowed to pay lower access charges for less-than-equal access connections by the LECs. This differential, if it exceeded the amount necessary to compensate final users for unequal access, gave MCI and Sprint a cost advantage, which when passed on to consumers, became a rate advantage that AT&T could not make up in order to hold market share without reducing its price-cost margin. For AT&T not to reduce but to hold to its margins at pre-divestiture levels would only have increased MCI's and Sprint's market shares more as they took advantage of their lower access costs. The access charge differential offered by the FCC thus had the effect of reducing the overall rate level, as AT&T sought to limit MCI's and Sprint's expansion of market shares.

81. But there is a more basic reason why ability and incentive to establish stable tacit collusion was limited before 1990. At the time of divestiture, AT&T's share of total toll

revenues was 91 percent, while MCI and Sprint held 4.6 and 2.7 percent, respectively.[68] Tacit collusion would have been inherently difficult at that time because AT&T's market share was too large. It would have been unprofitable for MCI and Sprint because their futures depended on taking market share rapidly. Their gains from building customer volume outweighed current profits or high margins with small customer volume.

82. Thus, market structure conditions during the period 1984-89 operated to reduce incentives to tacitly collude in a credible manner. By 1990, several important changes had occurred that changed the incentives of the three firms to do so.

83. Equal access had been achieved, so the Commission's built-in discount on access costs for the other carriers was gone, thereby eliminating the smaller carriers' cost advantage for achieving gain in market shares.[69] AT&T's decline in market share gave it renewed incentive to threaten MCI and Sprint with credible price reductions -- the relative importance of profiting from existing customers fell, while the importance of profiting from future customers rose. At the same time, MCI's and Sprint's larger market shares gave them more incentive not to discount AT&T's prices -- the importance of profiting from existing customers rose, while profiting from additional customers did not. Stable shares provided the mutually most acceptable framework for the three large interexchange carriers to each set roughly similar and increased price-cost margins.

84. Margins across service categories in the 1990s established a pattern that confirms the presence of tacit collusion. In particular, margins inversely related to demand elasticities imply tacit collusion and the highest margins in fact were set on those services posited to have the least elastic demands. Services with demands from least to most elastic would be MTS,

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[68] 1992-93 COMMON CARRIER STATISTICS, *supra* note 11, at tbl. 1.4.

[69] Equal access was established on an end-office by end-office or tandem by tandem basis and so was achieved gradually over time. By 1987, equal access had been achieved in approximately 70 percent of end-offices, and by 1990 it had been achieved in essentially all end-offices.

inbound WATS, and outbound WATS, in that order, because opportunities for self-provision by large buyers are greatest in the WATS categories and greater for outbound than inbound WATS customers. Also, WATS customers, because of their relatively larger purchases, have an incentive to monitor rates more closely than MTS customers. As shown in Table One, the levels of price-cost margins from 1991 to 1993 were lowest for outbound WATS services, followed by Virtual Network Services, inbound WATS, and then MTS. The fact that margins earned on MTS exceed those on business services, holding constant the effect of HHI, establishes that carriers have discriminated against specific classes of customers in a noncompetitive pattern.

85. In summary, market conditions changed after 1990 in ways that: (1) enhanced the ability and incentive of the three major carriers to set noncompetitive prices in a credible manner; (2) made competition on the part of MCI and Sprint for AT&T's share less likely to benefit them; and (3) thus made tacit cooperation feasible. Therefore, the price level that could be supported by tacit collusion increased over time and, after 1990, higher price-cost margins were not competitive on any dimension over time or across services.

B. *Conclusion*

86. The market for interLATA services is not competitive. AT&T, MCI, and Sprint price their long-distance services as if tacitly colluding. Such a result is inconsistent with the stated goals of the AT&T divestiture judgment, and with the public-interest standard of the Communications Act.

87. The irony of the divestiture is that this segment of the telecommunications industry, which the policy makers so hopefully believed could be competitive after 1984, is ten years later mired in oligopolistic interdependence. This condition is compounded by the interLATA service prohibition against entry of local exchange carriers that has sheltered AT&T, MCI, and Sprint from significant competitive entry that would have made tacit collusion impossible.

88. Thus competitive gains from RBOC entry into interstate interLATA service would be substantial today because the markets now depart from the competitive behavior pattern envisioned by the framers of the MFJ. The entry of the RBOCs into the interexchange markets could make these markets at least much more competitive than they are currently. For this reason, I urge the Court to vacate the MFJ and remove the interLATA restriction on interstate service by the Bell operating companies.

* * *

I hereby swear, under penalty of perjury, that the foregoing is true and correct, to the best of my knowledge and belief.

Paul W. MacAvoy

Subscribed and sworn to before me this 22nd day of June, 1994.

Notary Public

My commission expires: November 30, 1998.

TABLE ONE
MARKET PERFORMANCE REGRESSION
DEPENDENT VARIABLE IS WEIGHTED AVERAGE PRICE-COST MARGIN

1987-1990

Explanatory Variables	Parameter Estimate	Standard Error	T for Null Hypothesis: Parameter = 0	Significance Level
Intercept	0.81	0.089	9.2	0.0001
HHI/Elasticity of Demand	-0.20	0.093	-2.2	0.0500
Switched Outbound	-0.15	0.049	-3.2	0.0077
Dedicated Outbound	-0.25	0.049	-5.1	0.0002
Dedicated Outbound, 36 months	-0.30	0.049	-6.0	0.0001
Switched Inbound	-0.03	0.049	-0.6	0.5670
Dedicated Inbound	-0.09	0.049	-1.8	0.0995
Virtual Network	-0.43	0.045	-9.7	0.0001

$R^2 = 0.9025$
Number of Observations = 21
Elasticity of Demand = 0.70

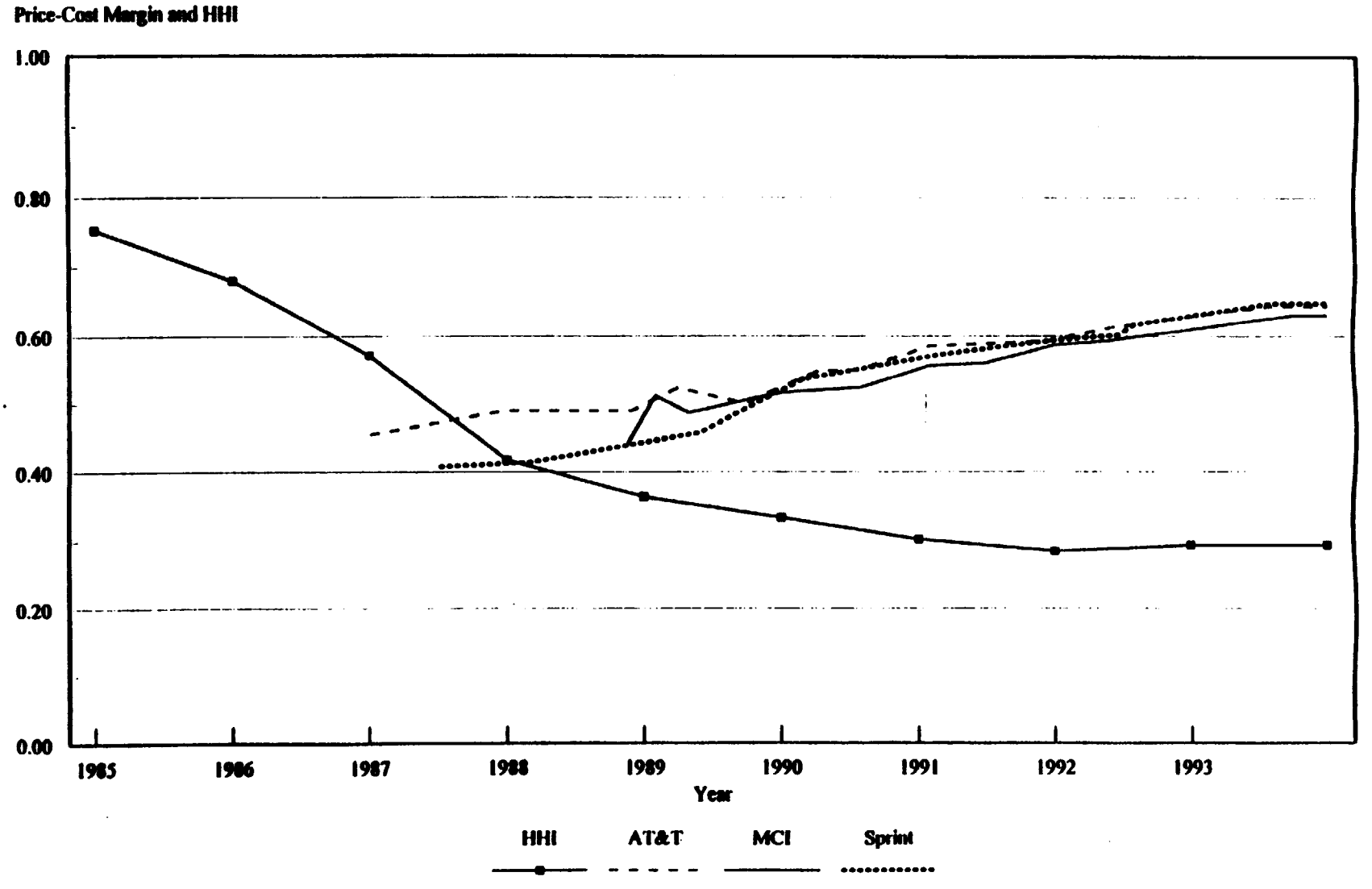
1991-1993

Explanatory Variables	Parameter Estimate	Standard Error	T for Null Hypothesis: Parameter = 0	Significance Level
Intercept	2.26	0.289	7.8	0.0001
HHI/Elasticity of Demand	-2.03	0.372	-5.4	0.0001
Switched Outbound	-0.68	0.130	-5.2	0.0001
Dedicated Outbound	-0.77	0.130	-5.9	0.0001
Dedicated Outbound, 36 months	-0.92	0.130	-7.1	0.0001
Switched Inbound	-0.06	0.029	-2.2	0.0400
Dedicated Inbound	-0.14	0.029	-4.9	0.0001
Virtual Network	-0.45	0.045	-10.1	0.0001

$R^2 = 0.9117$
Number of Observations = 28
Elasticity of Demand = 0.70

FIGURE ONE

PRICE-COST MARGINS AND MARKET CONCENTRATION
WATS DEDICATED OUTBOUND (1,000 HOURS PER MONTH)



Sources: Marginal Costs from FCC and WEFA; Rates from HTL Telemanagement, Ltd.; and Market Concentration from Multinational Business Services, Inc.