FINANCIAL MARKETS AND THE AT&T ANTITRUST SETTLEMENT

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INTRODUCTION

The 1982 Justice Department (DOJ) settlement with AT&T ended one of the major antitrust actions in U.S. history.[1] The action involved the nation's largest corporation. It encompassed services provided to practically every U.S. citizen, and marked a watershed in the history of U.S. telecommunications [Kovaleff, 1989].

The settlement spawned a family of "Little Bells," and left AT&T to provide long distance services, to operate its Bell Laboratories division, and to run its Western Electric manufacturing subsidiary. AT&T was freed to enter previously closed markets including computers and satellite operations.[2]

More to the point of this article, the settlement differed markedly from the DOJ's announcements when the investigation was first opened, which is not atypical in antitrust negotiations. At the outset, the DOJ indicated AT&T might lose Western Electric. Uncertainty also surrounded the ultimate status of Bell Labs. When the dust settled, Western Electric and Bell Labs remained with AT&T.

The difference between the DOJ announcement and the settlement raises questions about how investors may have reacted to events along the way. For example, the Western Electric and Bell Labs outcomes seem to be a victory for AT&T, as did the opportunity AT&T received to enter the satellite and computer businesses. If AT&T investors gained from these outcomes, is there evidence that shareholders in the satellite and computer businesses lost wealth?

Following the research path of others [Burns, 1977; Eckbo and Wier, 1985], this article reports the first financial markets investigation of key events in the AT&T settlement. We present evidence that investors in financial markets made estimates of marginal portfolio effects in the AT&T case, evidence which lends some support to the special interest theory.[3] In our research, we examined the movement of portfolios of stocks, AT&T and others, in association with three antitrust events: (1) the 20 November 1974, DOJ announcement that it was proceeding against AT&T; (2) the 8 January 1982 settlement decree announcement, which was mild relative to the initial charges; and (3) the 11 August 1982 settlement modification announced by Judge Harold H. Greene of the U.S. District Court (D.C.), described in detail later. The

research path we followed allowed daily portfolio movements to inform us about wealth effects associated with the three actions.

The portfolios we analyze include AT&T, other firms in long-distance communications, firms that operate in the satellite industry, and computer manufacturers. The firms we included were selected from those with the same SIC code designation found in the Center for Research in Securities Pricing tapes.[4] When identifying AT&T competitors, we selected firms we believed to be viable competitors in the long-distance telecommunications market.

At the margins of action, we find the owners of AT&T lost wealth with the DOJ announcement that it was investigating AT&T, but gained at the margin with the settlement. Looking elsewhere, we find AT&T's long-distance competitors gained wealth with the announced investigation, but lost with the settlement. The evidence of lost portfolio values for AT&T competitors is consistent with the theory that consumers gained lower priced long-distance service. Firms in the satellite industry, opened to AT&T by the settlement, lost wealth with the settlement. The satellite evidence suggests the development of a more competitive market and associated consumer gains. Computer firm shareholders were unaffected by the three events, and Judge Greene's modification had no discernible portfolio effects.

The article proceeds as follows: Part two gives a regulatory interpretation of AT&T's evolved position at the time the DOJ action was forming. Tracing the history of AT&T through the time of the settlement, the discussion develops around a special interest theme, but public interest arguments are also presented. The formal basis of the DOJ suit is described, along with the potential industry effects. An ideal settlement, from AT&T's perspective, is provided just before the testable implications of the settlement process are listed. The following section describes the statistical experiments used to isolate the financial markets effects and reports results for four portfolios of stocks. Finally, the last section reviews the findings and provides some brief final thoughts.

AT&T'S CHANGING REGULATORY ENVIRONMENT

From Emerging Competition to Regulated Markets

For many years, we believe, AT&T and its ancestor firms benefitted from regulation.[5] Instead of being a straitjacket that constrained profitable movement, regulation, when it came, was more like a comfortable tweed jacket. Initially, the firm's market position was protected by patents, which became intertwined with Western Electric's production monopoly. Then, when patents expired and competition emerged, the firm strenuously sought federal regulation by promoting the notion of natural monopolies and rate of return regulation [Olasky, 1987].

Eventually, arguments about the elimination of wasteful competition, interconnected single networks, declining average costs, and universal service won popular support. In 1910, Congress gave the Interstate Commerce Commission regulatory powers over interstate telephone companies (AT&T); in 1921, telephone and telegraph mergers were immunized from antitrust scrutiny; and in 1934, Congress created the Federal Communications Commission (FCC) to regulate interstate telephone service.[6] Monopoly in long-distance service, virtual monopoly in local service, and monopoly in related research and manufacturing resulted. At the same time, AT&T was denied the right to enter certain businesses, like telegraph and satellite communications.

The Emergence of Regulatory Constraints

In time, what had become comfortable regulation gradually began to constrain AT&T's ability to compete in changing markets. Technological change made obsolete AT&T's regulatory clothing, which had allowed for profitable long-distance operations that subsidized local service and placated state regulators [Temin and Galambos, 1987]. When the regulatory dam cracked, microwave-based firms entered the profitable long distance market and sought to skim the extra profits; no competitor wanted to enter and seize AT&T's local service where rates had been subsidized by long-distance users [MacAvoy and Robinson, 1983]. "Ma Bell" faltered.[7]

Antitrust Action Begins

AT&T cut prices in the face of new competition and apparently reduced prices where new entry was expected. In the struggle to adjust to competitive entry by MCI, a microwave telecommunications firm, AT&T became the subject of a private antitrust suit.[8] MCI sued and complained to the DOJ. MCI's complaint, which alleged anticompetitive pricing and "preemptive strikes" on the part of AT&T joined those of other independent telecommunications firms.[9] MCI's suit was ultimately unsuccessful, but on 20 November 1974, the DOJ filed suit against AT&T, Western Electric, and Bell Telephone Laboratories.[10]

Brought under the Sherman Act, Section Two, the DOJ alleged AT&T had illegally manipulated its dominant position in local telephone, long-distance telephone, and telecommunications equipment markets. AT&T was also accused of refusing to provide competitors with local interconnection service and of setting entry-inhibiting prices in potentially competitive parts of its business.[11] As a remedy, the DOJ proposed divestiture of Western Electric and the local telephone providers. The matter of Bell Laboratories, which raised only mild antitrust questions regarding advantage from vertical integration, was left on the table.

The Ideal Settlement

The DOJ complaint smacks of orthodox public interest logic. Even though AT&T was regulated at every turn, the firm allegedly had abused its position.[12] High profits made in some markets, it was alleged, provided a cross subsidy for other markets, which was seen as evidence of abusive monopoly power. Entry attempts were met with below cost prices. AT&T could always appeal for and expect to get a reasonable

return on its investment; and its investment was based on past regulatory decisions that barred entry and perpetuated a particular technology, so the argument went. All along, the deadweight loss of restricted output was borne by consumers.

Following this public interest theme, the DOJ would have sought to obtain a court decision or settlement stripping AT&T of Western Electric and setting the local operating firms free to expand and compete without being hampered with equipment purchase and other AT&T mandates. We note here that the fact that AT&T's pricing had been subject to regulation raises a question about the efficiency of the FCC's regulatory procedures. Whatever AT&T had achieved was the result of FCC oversight.

With a public interest settlement, the new AT&T and other long-distance providers would be left to slug it out in the open market. What might be done with Bell Laboratories was a more complicated problem, since from the antitrust authority's position, the market for research and development was more difficult to analyze than that of telecommunications services and equipment.

A special interest interpretation of the antitrust action asks us to reconsider what had happened to AT&T. Its regulatory environment had become obsolete and new competition had entered, but the firm had no way to escape the regulator's crippling grip. Somehow, the FCC had failed to maintain the regulatory walls. AT&T's market share was falling. By law, the firm had a duty to serve consumers in all its regulated markets. Its new competitors had no such duty. AT&T's Bell Labs held basic patents that had provided the technological basis for satellite communications and computers. But the firm was barred from entering those markets.[13] Given this situation, a properly crafted antitrust settlement could be as beneficial to AT&T investors as the birth of federal regulation had been in 1910. But instead of spending resources to mount a public relations campaign as it did before, the firm had little choice but to invest in the work of lawyers who would fight the antitrust action and then help mold a new regulatory environment.

From AT&T's standpoint, the ideal settlement or decision would allow AT&T to shed its subsidized local firms, hold to its core long-distance service business, keep its machinery and research and development divisions, and be allowed to enter any related business market it might choose to enter. Consumers would gain lower priced long-distance service; AT&T would be able to draw rents from its famous Bell Labs patent machine. In other words, if the antitrust train was headed in AT&T's direction, and it was, the ideal agreement seems to correspond more to the one that emerged in the settlement, not the one included in the initial DOJ complaint.

The Actual Settlement

The results of a negotiated settlement were announced on 8 January 1982.[14] Two major bargains were struck. First, the DOJ agreed not to press for the divestiture of Western Electric and Bell Telephone Labs. AT&T agreed to divest 22 operating companies. Second, the DOJ agreed to lift its 1956 restrictions on the types of

services and markets AT&T could provide and enter. The provisions of the agreement are as follows:

1. AT&T's 22 Associated Companies, termed "Bell Operating Companies" (BOCs) were to be divested, within eighteen months after court approval, as wholly separate business entities, forever independent of AT&T, without binding license and supply contracts, and fully capable technically, financially, and otherwise, of operating alone.
2. The BOCs were to be established as purely "natural monopolies," situated between the customer premise equipment and long-distance components, serving solely as interconnectors of subscribers with each other and with interexchange carriers providing long-distance service, only within the exchange component.
3. The BOCs were to be prohibited from operating in the long-distance component, providing information services not directly related to telecommunications, manufacturing products, and selling customer premise equipment (except under emergency conditions) [Bolling, 1983, 55-56].

The negotiated settlement required approval by the federal court, and Judge Greene surprised many observers by invoking the Tunney Act, which empowers the court to serve as independent check on government antitrust actions to assure that settlement provisions are in the public interest. Judge Greene made some modifications, which affected primarily the timing of the disposal of the Baby Bells, and asserted his authority to oversee the implementation of the settlement.

How Investors at the Time Perceived the Effects

Based on this discussion, a timely examination of the movement of AT&T's stock, relative to the market, should provide the following evidence:

- Abnormal losses in wealth occur for AT&T when the DOJ announces its investigation and complaints. The DOJ proposal would strip AT&T of its losers (local Bells) and its winners (Western Electric and perhaps Bell Labs). The streamlined firm would be left to compete in a technologically fresh market.
- Abnormal gains in wealth occur when the DOJ settlement is presented. The settlement allows AT&T to keep Western Electric and Bell Labs and to rid itself of the subsidized local providers.
- Abnormal gains occur when Judge Greene asserts his authority over post-settlement activities. As a one-man FCC, he will abide predictably by the letter of the law.

Turning to the effects of the three events on a portfolio of AT&T's long-distance competitors, the story we have told predicts the following:

- Abnormal gains will accrue to competitor shareholders when DOJ announces its investigation of AT&T. The complete disruption of AT&T will shear the firm of its management team, eliminate its research and manufacturing advantage, and reduce the firm to the status of wounded competitor.
- Abnormal losses will be generated when the settlement is announced. Instead of facing a wounded competitor, the independent long distance competitors face a slimmer long-distance provider with research, manufacturing, and patents intact.
- No effects observed with Judge Greene's announcement. The settlement event was the determining factor.

For AT&T's potential competitors in the satellite and computer industries, we predict the following:

- No effects with the DOJ announced investigation. AT&T has no track record in the industries, and the antitrust investigation reveals no promise that AT&T will have any advantage in the new market. AT&T will enter without its machinery and R&D divisions.
- Negative effects with the settlement. Now, a new competitor emerges, one with brandname recognition, deep research capabilities, especially in satellite technology, and manufacturing capabilities.
- No effect from Judge Greene's announcement. The settlement effects say it all.

THE FINANCIAL MARKET EFFECTS

The Financial Markets Model

Following the lines of Schwert's [1981] analysis of regulatory actions and the related work of Burns [1977] and Eckbo and Wier [1985], we used the standard capital assets pricing model to estimate portfolio effects of the AT&T antitrust events. Our tests for abnormal returns address the predictions contained at the end of the previous section. In separate estimates, we isolated changes in systematic risk associated with each event.[15] Our basic estimating equation, which was used for four portfolios, is written:

$$R_{it} = a_{it} + B1R_{mt} + B2D1 + E_{it},$$

where R_{it} is the dividend adjusted return to the ith portfolio for time period t; the intercept, a_{it}, is the return on a riskless asset; R_{mt} is the return to the entire financial market. $D1$ is a dummy variable for the event in question, which tests for abnormal returns and is the standard technique used in event analysis. E_{it} is a normally distributed error term. We will report the details for our estimate of abnormal returns and discuss the results for systematic risk.

The Four Portfolios and Three Events

Following the general procedures used by Eckbo and Wier [1985] in their investigation of antitrust practices, which used equally weighted portolios of stocks from the same industries, we made estimates for four portfolios of NYSE and NASDAQ stocks, testing for returns relative to the overall markets in each case.[16] The first, named AT&T, contains that one stock. The second portfolio, COMPETE, contains the following equally weighted telecommunications firms that participated in the long-distance telephone business at the time of the suit: Allied Telephone Co., Central Telephone and Utilities Corp.; Century Telephone Enterprises, Inc.; General Telephone & Electronics Corp.; Microwave Communications Inc.; and United Telecommunications. Seventeen firms in the computer industry, equally weighted, filled the third portfolio, *COMPUTER*, and five equally weighted firms from the satellite industry formed the fourth portfolio *SATELLITE*.[17] All tests were run using the *COMPUSTAT* tapes for daily returns.

We estimated abnormal returns for three events, using 250 observations of data before and after each event. The first event is 21 November 1974, the day following the opening of the antitrust suit. That day is used because trading in AT&T stock was suspended on the day of the announcement. The second event is set for 11 January 1982, the Monday following the Friday, January 8, public announcement of the settlement.[18] Again, trading was suspended on the day of the announcement. 11 August 1982, the date of Judge Greene's decision, is the third event. Our estimates proved robust in spite of the fact that investors were most likely forming opinions of the outcome as the events unfolded.[19]

The results of our tests for abnormal returns are reported in Table 1. As indicated there, the AT&T portfolio experienced a 6.3 percent loss in association with the suit announcement. The coefficient is highly significant and negative. The *COMPETE* portfolio experienced a 2.9 percent gain, which is at the borderline of statistical significance. There are no significant gains or losses for the Satellite and Computer portfolios.

The announcement of the settlement is associated with a 4.0 percent gain in the AT&T portfolio, which is highly significant. Notice that the gain here is less than the loss experienced when the suit was opened. There is 5.0 percent loss experienced for the competitors' portfolio, *COMPETE*, which is also highly significant and more than twice the gain associated with the DOJ announcement of action. Apparently, investors in the stock of AT&T's competitors were discouraged by the settlement's outcome. With Bell Labs and Western Electric, AT&T would be a stronger long-distance competitor than if its research and manufacturing divisions had been sheared away.

The *COMPUTER* portfolio registers no effect with the settlement. Even though AT&T is allowed to enter the computer industry, investors assigned no value to the settlement. We infer that AT&T was not viewed as a strong potential entrant. However, the owners of AT&T's new *SATELLITE* competitors experienced a 3.30 percent loss, which is statistically significant. Unlike investors in computers, the owners of satellite stocks were discouraged by the settlement. The results suggest that AT&T would be a viable satellite production and service firm.

Judge Greene's announcement that he would administer the decision caused no stock market ripples. None of the four portfolios are affected significantly by the event. We infer here that the added effects of judicial review were seen by daily investors as a non-event.

Other Tests and Summary

As mentioned earlier, we made event estimates that controlled for changes in systematic risk. The theoretical basis for these estimates, provided by Peltzman [1976], argues that regulation protects the sheltered firm from the full force of changes in economic activity. Of course, AT&T was the regulated firm. We made estimates of abnormal returns and changes in systematic risk for the AT&T portfolio.

The results of this experiment for abnormal returns were similar to those observed in the first estimate. However, the AT&T portfolio showed reductions in systematic risk and negative abnormal returns with the announcement. There was no evidence of changes in systematic risk found in the two remaining event tests. The evidence on abnormal returns was basically unchanged. We have no theoretical basis for interpreting the results other than to rely on the buffering theory. The theory suggests that AT&T's regulatory buffer would improve, even at the cost of abnormal losses.[20]

In summary, our empirical work indicates that daily investors saw significant differences that developed in the AT&T case. The wealth of investors in AT&T was affected negatively when Western Electric and Bell Labs were potentially excluded, and then positively when the two divisions were maintained. The marginal losses were larger than the marginal gains. The wealth position of investors in AT&T's competitors is a mirror reflection of the results for AT&T's owners. They gained and then lost, with the losses exceeding the gains. Owners of firms in the computer industry apparently yawned when told that AT&T would enter their crowded industry. There is no evidence of wealth effects. But the owners of firms in the satellite industry assigned significance to the action, at least to part of it. There were significant losses in wealth when the settlement was announced. Finally, Judge Greene's announcement that he would administer the settlement may have been old news to financial markets or simply of no consequence. In any case, we find no financial market effects.

FINAL THOUGHTS

In the introduction to this article, we asked if financial market participants estimated the marginal effects of AT&T antitrust action, and raised questions about the possible effects. At that point, we summarized our findings and indicated that the results supported the notion of informed investors.

The results of our research suggest that the regulatory process may serve as a form of damage control for affected firms. AT&T investors lost and gained in the

TABLE 1
Estimation Results for Three Event Tests

EVENT		AT&T	COMPETE	COMPUTER	SATELLITE
Nov. 21, 1974	CE	-0.063	0.029	0.013	0.014
	TR	-6.815[a]	1.635[b]	1.032	0.802
	R2	0.462	0.237	0.636	0.375
Jan. 11, 1982	CE	0.040	-0.050	-0.002	-0.033
	TR	4.803[a]	-6.608[a]	-0.257	-2.879[a]
	R2	0.181	0.521	0.666	0.391
Aug. 11, 1982	CE	0.012	0.008	0.008	0.004
	TR	1.098	1.124	0.414	0.358
	R2	0.275	0.560	0.698	0.484

The table presents the results for tests for abnormal returns on the key dates discussed in the text. The abbreviations are: CE = Coefficient Estimate for Abnormal returns; TR = T ratio for the coefficient; R2 = R-squared for the equation. a: Indicates significance greater than the 5 percent level of confidence. b: Indicates significance at the 10.3 percent level. Results for the full equations are available on request.

antitrust episode, at least at the margin of daily investment activity. The gains, which came in the second stage of the episode, were smaller than the losses.

Given the limitations of our estimating procedures, we cannot determine the overall financial effects of the episode. We can claim that instead of being stripped naked and thrown to competitive wolves, which the DOJ suit suggested could happen, AT&T was given a bit of armor as it left the old regulatory regime.

Investors in AT&T's long-distance competitors appear to have recognized armor when they saw it. Where they had gained with the prospect of a stripped AT&T, they lost when the armor was restored. The owners of firms in one industry AT&T could enter experienced negative effects. Our findings confirm what common sense suggests: potential competition matters. However, just what might be potential competition is sometimes hard to recognize.

NOTES

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1. Indeed, after the settlement of the AT&T and IBM cases, which were proceeding simultaneously for a period of time, the Antitrust Division of the DOJ allowed for a reduction of 30 positions due to the closing of the cases. In March 1981, the Division had 20 attorneys assigned to the AT&T case; 13 were assigned to IBM ["What if They Had Broken Up IBM Like AT&T"? 1992].
2. In general, AT&T's restriction to common carrier communications, which arose in an earlier, 1956, antitrust consent, was lifted. However, the firm was denied entry to the electronic publishing market for five years [Henk and Strassburg, 1988]. We note that today, the market value of AT&T and newly spawned firms exceeds that of the original organization. Such a comparison was reported recently in *Fortune*. According to the report, the market value of AT&T's common stock just before settlements were announced was $47.5 billion. The article states that "[I]n late June of this year [1992], the market value of the eight successor companies together — the stripped down AT&T, plus Ameritech, Bell Atlantic, BellSouth, Nynex, Pacific Telesis, Southwestern Bell, and US West — came to no less than $180 billion. Some of the gain reflects the billions of earnings that companies have retained: The common stockholder's equity, or book value, of the seven Baby Bells plus AT&T is around $27 billion bigger than AT&T's was before the breakup. . . In 1982, AT&T sold for less than book value; today the eight as a whole command more than twice book." ["What If They Had Broken Up IBM Like AT&T"? 1992, 52]
3. We call attention to the work of Burns [1977], one of the earliest efforts to apply financial markets analysis to antitrust actions. Burns provides detailed justification of the use of financial markets testing of such actions and explains how the capital asset pricing model developed.
4. See note 17 for a complete listing of firms included in the portfolios.
5. The ancestor firms of AT&T go back to Alexander Graham Bell and the Bell Patent Association (1871), then to Bell Telephone Company (1877), the National Bell Telephone Company (1879), and American Bell Telephone and Telegraph Company (1885), which became AT&T (1899) [Stehman, 1925; Henck and Strassburg, 1988].
6. At the time single service arguments were winning—"No town would want more than one telephone company," 45 percent of all towns with phones had more than one telephone company [Lipartito, 1989].
7. There were a number of key court and FCC decisions that helped competition along. See Hush-a-Phone Corp. v. United States, 238 F. 2d 269 (D.C. Cir. 1956) and FCC *Report and Order*, FCC Docket 11866, "Allocation of Microwave Frequencies Above 890 Mc.," July 29, 1959, 27 FCC 359 at 403-13, recon. denied, 29 FCC 825, 1960. Also Carterfone Device, 13 FCC.2d 420, 14 FCC.2d 571 (1968) and MCI Telecom. Corp. v. FCC (Execunet I), 561 F.2d 365 (D.C. Cir. 1977), cert. denied, 434 U.S. 1040 (1978); MCI Telecom Corp. v. FCC (Execunet II), 580 F.2d 590 (D.C. Cir.), cert. denied, 439 U.S. 980 (1978). The authorization for private telephone systems added to AT&T's problems [Temin and Galambos, 1990].
8. *MCI Communications Corp. v. AT&T*, 369 F. Supp. 1004 (E.D. Pa. 1973), vacated and remanded, 496 F.2d 214 (3d Cir. 1974); *MCI Communications Copr. v. AT&T*, 462 F. Supp. 1072 (N.D. Ill. 1978), reversed, 708 F.2d 1081 (7th Cir. 1983) [Shughart, 1990a].
9. Discussion of AT&T's pricing behavior is found in Shughart [1990b, 467-68]. Also, see U.S. Department of Justice, Antitrust Division, Civil Investigation Demand No. 1570, November 26, 1973.
10. U.S. v. AT&T, CA No. 74-1698 (D.D.C), *Complaint*, November 20, 1974. As Brennan puts it, the 1974 action was "technically, a replacement of the 1956 consent decree that settled another antitrust case filed by the DOJ against AT&T in 1949" [1987, 742]. According to Kovaleff, the earlier suit, filed in 1949, had three objectives: "(1) the divorce of its subsidiary, Western Electric; (2) the sharing of patents held by both AT&T and Western Electric; and (3) that AT&T be compelled to purchase equipment on a competitive bid basis" [1989, 440]. Patents were freed, but the other objectives were not generally satisfied.

11. Specifically, DOJ made the following allegations in its filing: "The aforesaid combination and conspiracy to monopolize has consisted of a continuing agreement and concert of action among the defendant and the co-conspirators, the substantial terms of which have been and are: a) That AT&T shall achieve and maintain control over the operations and policies of Western Electric, Bell Laboratories and the Bell Operating Companies; b) That the defendants and co-conspirators shall attempt to prevent, restrict and eliminate competition from other telecommunications carriers; c) That the defendants and co-conspirators shall attempt to prevent, restrict, and eliminate competition from private telecommunications systems; d) That Western Electric shall supply the telecommunications equipment requirements of the Bell System; e) That defendants and co-conspirators shall attempt to prevent, restrict and eliminate competition from other manufacturers and suppliers of telecommunications equipment." AT&T was alleged to obtain a U.S. monopoly for telecommunications service, submarkets thereof, and for related equipment. Actual and potential competition had been restrained and eliminated, and consumers had been denied the benefits of free markets. [Bolling, 1983, 49-50].
12. In a purely theoretical way, since we have no way of knowing how the DOJ might do so, it is curious that DOJ did not sue the FCC for failing to serve the public interest. After all, the alleged AT&T abuses had occurred while the firm was regulated by the FCC. The antitrust action was clearly an indication of regulatory failure, if the FCC is assumed to be operating in the public interest. The logical outcome suggests that either the FCC or the DOJ was not effectively serving the public interest.
13. We note that AT&T should have been able to obtain the present value of rents generated by its patents through licensing arrangements. Theoretically, the royalties obtained would equal the additional profit the firm would make if allowed to produce the end products. Here we are assuming that AT&T's royalty arrangements were negotiated freely, without FCC interference. Brennan points out that the FCC in fact allowed market-determined royalties for Bell patents, so long as the payments were not excessive [Brennan, 1987, 773.]
14. U.S. v. AT&T, CA No. 74-1698, *Modification of Final Judgement*, January 8, 1982.
15. Peltzman [1976] argues that a firm's regulatory environment can buffer economic forces. This might affect the protected firm's beta, a measure of systematic risk. Peltzman's argument is the basis for testing for changes in beta. We added a second variable to our basic equation in testing for systematic risk effects. The second variable is formed by using an event dummy variable multiplied by Rmt, the return to the NYSE market. The dummy is set equal to zero for the event and is one otherwise. A significant change in the dummy coefficient is interpreted as a change in systematic risk. We follow Eckbo and Wier [1985] in using equally weighted portfolios in all our tests, which is the common procedures used in constructing such tests when there is no evidence that investors might use another formula for building their portfolios.
16. The firms in the computer manufacture, supply and service industry are: Applied Digital Data Systems, Inc.; Barry Wright Corp.; California Computer Products, Inc.; Control Data Corporation; Data General Corporation; Data Products Corp.; Digital Equipment Corp.; Electronic Associates, Inc.; International Business Machines; Litton Industries, Inc.; Quantel Corporation; Reliance Electric Corp.; Schiller Industries, Inc.; Sperry Corp.; Systems Engineering Labs, Inc.; and Unisys Corp. Those in satellite manufacture, supply and service industry are: Acton Corp.; Communications Satellite Corp.; Radio Corporation of America; Viacom International Corp.; and Western Union.
17. We note that the settlement between DOJ and AT&T was completed on January 6. The public announcement was delayed to allow time to inform AT&T top management and a few key government officials.
18. We also made estimates using five-day windows centered on the day of the event. In all cases but one, the results for abnormal returns were either similar or inferior. The estimate for Judge Greene's announcement was associated with positive abnormal returns for AT&T. We interpret the results to imply that Greene's decision was known in advance and that AT&T investors were encouraged by the Judge's intervention.
19. We report levels of significance in the accompanying table. Use of the Durbin-Watson statistic indicated no evidence of first-order autocorrelation.
20. A purely experimental analysis suggests that beta was just unstable at the time of the estimate, which implies that investors were uncertain about the relative risk of AT&T.

REFERENCES

Bolling, G. H. *AT&T: Aftermath of Antitrust*. Washington: Government Printing Office, 1983.

Brennan, T. J. Why Regulated Firms Should be Kept Out of Unregulated Markets: Understanding the Divestiture in *United States v. AT&T*. *The Antitrust Bulletin*, Fall 1987, 741-93.

Burns, M. The Competitive Effects of Trust Busting: A Portfolio Analysis. *Journal of Political Economy*. 1977.

Eckbo, E. B. and Wier, P. Antimerger Policy Under the Hart-Scott-Rodino Act: A Reexamination of the Market Power Hypothesis. *The Journal of Law & Economics*, April 1985, 119-49.

Henck, F. W. and Strassburg, B. *A Slippery Slope: The Long Road to the Breakup of AT&T*. New York: Greenwood Press, 1988.

Kovaleff, T. P. For Whom Did the Bell Toll? A Review of Recent Treatments of the American Telephone and Telegraph Divestiture. *The Antitrust Bulletin*, Summer 1989, 437-50.

Lipartito, K. System Building at the Margin: The Problem of Public Choice in the Telephone Industry. *The Journal of Economic History*, June 1989, 323-36.

MacAvoy, P. W. and Robinson, K. Winning by Losing: The AT&T Settlement and Its Impact on Telecommunications. *Yale Journal of Regulation*, 1983, 1-42.

Olasky, M. N. *Corporate Public Relations: A New Historical Perspective*. Hillsdale: Lawrence Erlbaum Associates, 1987.

Peltzman, S. Toward a More General Theory of Regulation. *The Journal of Law and Economics*, August 1976, 211-40.

Schwert, G. W. Using Financial Data to Measure Effects of Regulation. *Journal of Law and Economics*, 1981, 121-58.

Shughart, W. F. II. *Antitrust Policy and Interest Group Politics*. New York: Quorum Books, 1990a.

__________. *The Organization of Industry*. Homewood, IL: BPI Irwin, 1990b.

Stehman, J. W. *The Financial History of the American Telephone and Telegraph Company*. Boston: Houghton Mifflin, 1925.

Temin, P. and Galambos, L. *The Fall of the Bell System: A Study in Prices and Politics*. New York: Cambridge University Press, 1987.

U.S. General Accounting Office. *Changes in Antitrust Enforcement Policies and Activities*, GAO/GGD-91-2. Washington, D.C.: U.S. General Accounting Office, October 1990.

What If They Had Broken Up IBM Like AT&T? *Fortune*, 27 July 1992, 52.