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Why regulated firms should be kept out of unregulated markets: understanding the divestiture in *United States v. AT&T*

BY TIMOTHY J. BRENNAN[1]

The purpose of this article is to provide the economic theory behind the divestiture of the local telephone operating companies achieved in the settlement of *United States v. AT&T*,[2] and the subsequent restrictions of local telephone companies' entry into other markets. The article begins by setting out the restrictions in some detail, observing that by limiting local telephone participation in other markets they are counterproductive at first glance. They can be understood, however, by looking at the predictable consequences from entry by regulated monopolists into unregu-

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2 *See* United States v. American Telephone & Telegraph Co., 552 F. Supp. 131 (1962) [hereinafter cited as Divestiture Decision].

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lated or less regulated "related" markets. The theory explaining these consequences is set out in detail. Both AT&T's pre-divestiture conduct and the post-divestiture legal treatment of the local companies are evaluated to see if they are consistent with the theory. The article concludes with an assessment of whether the restrictions should be continued, and some brief thoughts on lessons the divestiture process may have to teach regarding the application of economics in public policy.

I. The restrictions

The restrictions are set out in the Modification of Final Judgment (MFJ), actually a settlement to end the litigation of the antitrust case brought by the United States against AT&T in 1974 but, technically, a replacement of the 1956 consent decree that settled another antitrust case filed by the Justice Department against AT&T in 1949.[3] The MFJ was designed originally to accomplish four main objectives:

1. AT&T's divesting its wholly owned local telephone companies, the Bell Operating Companies (BOCs).[4]

2. Removing provisions in the 1956 decree that restricted AT&T to common carrier communications.[5]

3. Preventing the BOCs from discriminating between AT&T and other firms regarding procurement of equipment and interconnection of facilities,[6] with specific detailed requirements to ensure "equal access" of all interexchange companies to BOC local exchange facilities.[7]

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3 *Id.* at 226.

4 *Id.* at 226-27 (MFJ section I).

5 *Id.* at 138, 226.

6 *Id.* at 227.

7 *Id.* at 232-34 (MFJ appendix B).

4. Restricting the BOCs to "exchange telecommunications," "exchange access services," and "natural monopoly services actually regulated by tariff,"[8] specifically prohibiting the provision of "interexchange services,"[9] "information services,"[10] and the manufacture or provision of "telecommunications products or customer premises equipment."[11]

The MFJ was amended by the Court before its approval. These amendments permitted the BOCs to sell but not manufacture customer premises equipment[12] and Yellow Pages advertising directories.[13] They also prohibited AT&T from providing "electronic publishing" for seven years.[14] Most importantly for purposes of this report, the Court's modifications included a provision that "The restrictions imposed upon the separated BOCs by virtue of section II(D) shall be removed upon a showing of the petitioning BOC that there is no substantial possibility that it could use its monopoly power to impede competition in the market it seeks to enter."[15]

The limitations on the BOCs' activities in other lines of business were further specified in succeeding court decisions. The demarcation between exchange and interexchange telecommunications services was specified with the definition and specification of "Local Access and Transport Areas" (LATAs).[16] IntraLATA

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8 *Id.* at 228 (MFJ section II(D)(3)).

9 *Id.* (MFJ section II(D)(1)).

10 *Id.*

11 *Id.* (MFJ section II(D)(2)).

12 *Id.* at 231 (MFJ section VIII(A)).

13 *Id.* (MFJ section VIII(B)).

14 *Id.* (MFJ section VIII(D)).

15 *Id.* (MFJ section VIII(C)).

16 *See* AT&T, PLAN OF REORGANIZATION 10-12 nn.9 & 11 (1982); United States v. Western Electric Co., 569 F. Supp. 990 (1983) [hereinafter cited as LATA Decision].

services were permitted "exchange telecommunications services"; interLATA services were prohibited interexchange services.[17] The areas served by the BOCs were partitioned into 161 LATAs, in a manner consistent with the MFJ's goal of keeping local exchange companies out of interexchange service, although the Court recognized a need to "preserve the effectiveness and viability" of the BOCs.[18]

The MFJ was further clarified in a decision on the standard under which "line-of-business waivers" would be granted under section VIII(C).[19] The Court rejected the view that VIII(C) evidenced a predisposition toward diversification by the BOCs[20] and that diversification would reduce the BOCs' costs of providing local telephone service.[21] Besides restating the restriction against reentry into interexchange service, the Court required that any lines of business permitted under VIII(C) must be provided through separate subsidiaries supporting their own debt and limited to a total of "ten percent of a Regional Holding Company's (RHC's) total estimated net revenues."[22] Recently, the Court

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17 LATA Decision, *supra* note 16, at 994.

18 *Id.* at 997. LATAs are generally extended metropolitan areas, but cover areas as large as states where the population is relatively sparse. The distinction between interLATA and intraLATA is not the same as between toll and local calling. The LATAs are sufficiently large that a considerable dollar amount of limited long-distance toll traffic is supplied by the BOCs.

19 United States v. Western Electric Co., 592 F. Supp. 846 (1984) [hereinafter cited as LOB Decision].

20 *Id.* at 858.

21 *Id.* at 864-66.

22 *Id.* at 870-72. This is not an inconsiderable sum. Aggregate revenues of the seven BOC Regional Holding Companies from telephone operations in 1984 were $57.71 billion. MOODY'S PUBLIC UTILITY MANUAL (1985). Regional Holding Companies (RHCs) are the parent companies of the BOCs created by the divestiture. The 22 divested BOCs are divided among 7 RHCs.

restated its concern that "the participation of the [RHCs] in the markets they wish to enter would not be likely to promote genuine, fair competition. . . . [footnote omitted]."[23] The BOCs were further prohibited from providing exchange telecommunications outside their service areas without a waiver.

To summarize the structural consequences of the divestiture, AT&T retained its interexchange, equipment manufacturing, and research divisions, and divested its local operating companies. Following the divestiture, essentially no further restrictions remained on AT&T's operations except for a prohibition on "electronic publishing"—the dissemination of information over telephone networks.[24] On the other hand, the BOCs require court approval for everything except exchange telecommunications within their service areas. Interexchange and information services and manufacturing of equipment are strictly prohibited, and their provision of other services requires court approval and must meet a number of structural and financial safeguards, in addition to passing a test regarding the expected effect of competition in those markets.

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23 United States v. AT&T, Civil Action No. 82-0192, slip op. at 14 (Jan. 13, 1986) [hereinafter cited as Clarification Decision].

24 The Federal Communications Commission (FCC) continues to regulate AT&T's interexchange rates, although it has a pending proceeding to consider how such regulation should be amended or removed. *See* FCC Notice of Inquiry, *In re* Long Run Regulation of AT&T's Basic Domestic Interstate Service, CC Docket No. 83-1147, 48 Fed. Reg. 51,340 (1983). The FCC also had retained its own structural requirements on AT&T held over from before divestiture. These restrictions, mainly involving mandatory separate subsidiary provisions, have been lifted with respect to the sales of telecommunications equipment, and are under evaluation with respect to "enhanced" (essentially, information) services. Similar FCC restrictions on the BOCs are also being reevaluated. *See* FCC Notice of Proposed Rulemaking, *In re* Amendment of Section 64.702 of the Commission's Rules and Regulations, CC Docket No. 85-229, 50 Fed. Reg. 33,581 (1985) [hereinafter cited as Third Computer Inquiry Notice].

II. The theory

On the surface, these restrictions appear to be counterproductive. Economic efficiency is normally best served by letting firms diversify to whatever degree seems necessary to rationalize production and minimize costs.[25] If, for example, an automobile company elected to produce its own engines rather than buy them from outside companies, the presumption is that internalizing production reduces the cost of obtaining the type of engines best suited for its cars. Similarly, the exclusion of BOCs from assorted telecommunications markets runs counter to the general proposition that entry and increased numbers of competitors ought to be promoted. The more players in a market, the more likely it will be that competition among the firms will prevent any one seller or group of sellers from profiting by raising price. The apparent conflict between the restrictions on BOC activities and economic intuitions, along with the need to evaluate whether the restrictions should be continued or modified, requires an understanding of the relevant economics.

A. Competition, monopoly, and regulation

In a competitive market, as we just noted, the interaction among firms is assumed to preclude any one firm or group of firms from profiting by raising price above competitive levels. Any reduction in output necessary to raise price would be matched by an increase in supply from competitors in response to the higher price. Specifically, the sellers would be willing to offer product up to the point where the return from a sale, *i.e.*, the price, just equals the cost of producing the last unit sold.

Similarly, consumers are willing to purchase a good or service as long as the perceived benefits outweigh the expense of the purchase. When the price reaches the point where the supply

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25 *See* R. Bork, The Antitrust Paradox 226-27 (1978).

from the sellers just equals the desired level of purchases from consumers, the perceived benefits from the last unit purchased will just equal the cost of producing that last unit. Since economic welfare and efficiency are at a maximum when goods are made available up to the point where the consumer benefits just equal the marginal cost of production, we conclude that competitive markets perform optimally from an economic perspective.

In markets without competition, in contrast, the firms are not forced by competition to "take prices as given." In particular, if one firm raises the price of a good over the cost of production, competitors will not increase output nor will entrants begin producing in response. In the extreme case, where there is just one active seller and no potential competition from outside sellers, the firm will have discretion over price constrained only by what its customers will bear. Since such a firm is the sole seller in its market, it will recognize that any decision to sell more output will typically depress price, reducing the revenue received from sales of its current output. In contrast, a competitive firm taking market price as given would not expect its output decisions to affect market price. For this reason, this reduced revenue effect will lead a monopolist to supply a lesser amount of output than would be supplied if the industry were competitive.[26] It is for this reason that monopoly is generally thought to lead to inefficient undersupply of goods.[27]

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26 Increasing output need not mean that the monopolist has to lower price on current sales in order to sell the increased output, if it can sell its output at different prices. This is called price discrimination. If a monopolist can charge for each unit of output the value consumers attach to the provision of that unit, it need not reduce output at all. In that case, the level of output will be the competitive level. There will not be output inefficiency, although the monopolist may reap large profits from the ability to charge in such a manner. *See* F. M. SCHERER, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE 315-17 (1980).

27 For a brief but fuller analysis of the relationship between competitive and monopoly market performance, see R. POSNER, ANTITRUST LAW: AN ECONOMIC PERSPECTIVE 237-42 (1976).

For monopolistic pricing to exist and remain stable, it has to be free from actual and potential competition. This generally requires a perception on the part of entrants that entry into the industry will be unprofitable. A special case in which that perception may hold is where the industry is a "natural monopoly." This means that one firm can supply the level of output at which the market clears at lower cost than could two or more separate sellers.[28] Another situation where monopoly pricing can persist is where the government, rather than inherent industry cost characteristics, limits entry.[29]

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28 *See* W. SHARKEY, THE THEORY OF NATURAL MONOPOLY 54-58 (1982). Even in a natural-monopoly situation, however, a monopolist may not be able to raise price to generate supracompetitive returns, because an entrant in theory could come in and capture the market. *See* Baumol, *Contestable Markets: An Uprising in the Theory of Industry Structure*, 72 AM. ECON. REV. 1 (1982). For contestability theory to apply, however, the entrant must be able to enter and exit the industry at little cost. The entrant must be able to resell the facilities used to provide the service at a price close to what it paid when it entered. If this does not hold, the entrant will have to expect that it can recover its lost investment by capturing the market from the monopolist before it can react to the entry by reducing its own price. The conditions under which such a scenario is sufficiently plausible to eliminate the potential for monopoly pricing are limited. *See* Schwartz, *The Nature and Scope of Contestability Theory*, 38 OXFORD ECON. PAPERS 75-93 (Supp. Nov. 1986).

It should also be noted that an industry where natural monopoly cost conditions hold may nonetheless be served by more than one firm, if price competition that would otherwise drive out all but one firm is attenuated. Such a result is plausible in oligopoly situations where each firm in the market sets output realizing both its effect on overall market price and taking the *outputs* of the other firms as given. An example may be found in M. INTRILLIGATOR, MATHEMATICAL OPTIMIZATION AND ECONOMIC THEORY 207 (1971).

29 One theory of government regulation is that it is instituted in response to the request for firms in an industry to protect themselves from competition by barring entry. *See* G. J. STIGLER, *The Theory of Economic Regulation*, in THE CITIZEN AND THE STATE 114, 118 (1975).

In either event, a frequent and expected public response to sustained and significant monopoly pricing is price regulation.[30] To the degree the goal of the regulator of the monopoly is improved economic performance, it will attempt to force the regulated firm to supply its output at a price below the monopoly level. Because of the regulation, there generally is no market "test" to see what the price should be. Instead, the regulator typically employs "cost of service" regulation,[31] setting price so that the revenues obtained by the monopolist cover the costs of providing the regulated product, including a "just and reasonable" rate of return to cover the cost of investment.[32]

B. Evading regulatory controls

For the remaining discussion, we assume a firm with a monopoly in a relevant market. Its power over price is assumed not to be constrained by actual or potential competition, either because it is a natural monopoly with inherent cost advantages or because entry is proscribed by government action. We do assume, however, that the firm is subject to cost-of-service regulation. The regulation is assumed to be effective in two senses. First, we assume that price is based upon the cost to the firm of providing the service, at least insofar as the regulator can deter-

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30 *See* F. M. SCHERER, *supra* note 26, at 482; S. BREYER, REGULATION AND ITS REFORM 15-17 (1982); A. KAHN, THE ECONOMICS OF REGULATION 11-12 (1970). For arguments as to why this economic rationale for regulation may not be the empirical reason we have regulation, see G. J. STIGLER, *supra* note 29, at 115; Peltzman, *Toward a More General Theory of Regulation*, 19 J.L. & ECON. 211 (1976); F. M. SCHERER, *supra* note 26.

31 *See* S. BREYER, *supra* note 30, at 36-37.

32 *See* Federal Power Commission v. Hope Natural Gas, 320 U.S. 591, 602-03 (1944). The difficulties in ensuring efficient performance under cost-of-service regulation have been widely researched. *See* S. BREYER, *supra* note 30, at 37-59; Posner, *Natural Monopoly and Its Regulation*, 21 STAN. L. REV. 548, 593-606 (1969).

mine that cost.[33] Second, we assume that if the costs are reported accurately, the price will be below the monopoly price. In other words, regulation limits the exercise of market power by the monopolist.

In such a model, the firm by definition would profit if it could break the link between price and cost that constrains monopoly power under regulation. Under the effective cost-of-service regulation hypothesized, two important evasive strategies can be identified. The first is to use that monopoly power to increase the profits from the sales of unregulated products. A second is to increase the costs allocated to the regulated service to increase the price the regulator will permit to be charged. The first strategy may be called tying or discrimination; the second may be called cost misallocation or cross-subsidization.

1. TYING/DISCRIMINATION The regulated firm may be able to make purchase of the regulated good contingent on the purchase of an unregulated good. Such a practice is known in antitrust parlance as tying.[34] Tying is a widely recognized way of evading price controls generally.[35] A numerical example illus-

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33 There is a considerable literature regarding the effects on the behavior of regulated firms if the regulator misjudges the cost of capital. *See* Averch & Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962); Baumol & Klevorick, *Input Choices and Rate-of-Return Regulation: An Overview of the Discussion*, 1 BELL J. ECON. 162 (1970). Oversimplifying somewhat, the theory predicts that granting a rate of return in excess of the cost of capital provides an incentive to substitute capital for other inputs and induces inefficient production techniques. The empirical relevance of this theory to the practices of regulated firms is disputed. *See* Joskow & Noll, *Regulation in Theory and Practice: An Overview*, in STUDIES IN PUBLIC REGULATION 10-14 (G. Fromm ed. 1981). The analysis of structural tactics of regulatory evasion discussed here, however, does not rely upon the "A-J" effect.

34 *See* R. POSNER, *supra* note 27, at 171.

35 *See* F. R. WARREN-BOULTON, VERTICAL CONTROL OF MARKETS: BUSINESS AND LABOR PRACTICES 38-40 (1978); R. BORK, *supra* note 25, at 376;

trates this. Consider a hot dog monopolist, whose profit-maximizing price would be $1, but due to regulation it can charge only 75¢. It would be worthwhile to this monopolist to find some way to reap an extra quarter for each hot dog sold. One way to do this might be for the monopolist to sell mustard along with the hot dogs at a quarter per serving over cost, and require that anyone who buys a hot dog has to buy its mustard as well. In that way, the effective price of a hot dog, at least with mustard, becomes $1. The quarter per hot dog profit previously precluded by regulation is reaped through the tied sales of mustard.

This simple model illustrates four important features of the tying strategy. First, the monopolist, regulated in one market (hot dogs), enters another (mustard). Second, the price charged for mustard is unregulated. Third, the tactic will be more effective the more mustard and hot dogs are generally purchased together in a fixed ratio. Consumers who do not want mustard with every hot dog either may not pay the extra quarter (if purchasing mustard is optional) or may not buy the hot dog (if purchasing mustard is mandatory). Fourth, and most importantly, for the tactic to succeed the hot dog monopolist has to discourage or prevent hot dog buyers from purchasing mustard elsewhere at competitive prices, or substituting other products (*e.g.*, relish).

More generally, the regulated monopolist must deter or limit entry by purchasers of the regulated product into the unregulated market in which the monopolist is reaping the profits otherwise prevented by the regulation. To meet this goal, the regulated firm might exercise a three-step strategy:

F. M. SCHERER, *supra* note 26, at 583; M. Schwartz & D. Eisenstadt, Vertical Restraints 85 (Dept. Justice EPO Discussion Paper No. 82-8, 1983). These papers generally view tying favorably in this regard, as a method of evading a government price control instituted to hold price below the efficient, competitive level. This normative inference will not apply when the price control is intended to hold price below the monopoly level.

1. Enter an unregulated market to provide a product (U) for which the regulated product (R) is needed as a complement or input. By this, we mean that any producer or consumer of *U* needs to be able to obtain *R*.[36] Its cost of providing *U* is related to its ability to procure *R* and the price it has to pay for *R*.

2. *R* would be made available to competitors at a higher cost or lower quality. In other words, the supplier of *R* discriminates against its *U* competitors in the provision of *R*. If this is not feasible, in the extreme it could refuse to make *R* available to competing producers of *U*.

3. Charge a price above the competitive level for *U*. This can be done because the regulated firm effectively controls entry into the market for *U* through its control of *R*.

In this way, the regulated firm effectively ties purchases of *U*, the unregulated product, to purchases of *R*, the regulated product. The tie is enforced by denying *R* to others who might be able to enter otherwise. For example, suppose the regulated price of *R* is $1 per unit, and that to provide *U* one must obtain one unit of *R* and spend 50¢. If a firm can obtain *R* at the regulated $1 price, it can provide *U* for $1.50. If not, however, because the *R* mo-

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36 Throughout this discussion, the analysis of incentives to discriminate and the competitive harm that follows will apply equally to vertically related markets, in which the regulated product is used as an input in the production of an unregulated product, and to complementary markets, where the consumers of the unregulated good need the regulated good to make the unregulated good useful. In the hot dog example, a case of vertical integration would be where the hot dog monopolist could discriminate against street vendors who serve hot dogs with mustard. Discrimination involving complementary markets would be where the monopolist refuses to sell hot dogs to consumers who buy their mustard elsewhere. As this example illustrates, the complementary market situation could be viewed as a variant on the vertical case, where it is the consumer who does the integrating.

It should be noted that in theory *R* need not be a complement or input to the production of *U*. The hot dog monopolist could require that anyone purchasing a hot dog for 75¢ would have to purchase a valueless piece of scrap paper for 25¢, raising the effective price of a hot dog to $1. I assume that a blatantly evasive tie of this sort is not feasible. The relation between *R* and *U* discussed in the text enables the *R* monopolist to effect a more subtle tie through control of entry into the *U* market.

nopolist can deny access, nothing would stop it from charging in excess of $1.50 for *U*. It captures part of the value of its monopoly in market *R* through charging higher prices in market *U*.

A variation on the example will make it clearer exactly how monopolizing *U* through control over access to *R* enables exploitation of the monopoly power in *R* otherwise constrained by regulation. Suppose the suppliers of *U* could enter if they purchased one unit of substitute good *S*, available for $2, instead of using one unit of *R*. Then, if the *R* monopolist's competitors are denied availability of *R*, their supply price is $2.50. Thus, the *R* monopolist can vertically integrate into the *U* market, discriminate against its unintegrated competitors by denying them *R*, and can raise price up to $2.50 without fearing entry. The extra dollar above the $1.50 competitive price, however, comes from the difference between the regulated price of *R* ($1) and the price of the substitute, *S* ($2). The $1 per unit monopoly profit shows up as profits in the unregulated market, from selling *U* at $2.50 when it only cost $1.50.

It is important to see that the regulated monopolist behaves just as if it had been able to sell its product at the higher price of the next best substitute. In our example, if regulation were not present, the monopolist would have made *R* available at $2, the competitive price of the substitute. The price of *R* would be $2.50, whether or not the *R* monopolist entered the market. It would gain no additional monopoly profit from entering the *U* market.

The example above illustrating the tying or discrimination theory of regulatory evasion relied upon an extreme characterization, where the regulated monopolist entered a complementary or vertically related market and denied all potential competitors access to its regulated product.[37] The theory applies, however, in situations less extreme. Rather than vertically integrate, for example, the regulated monopolist may be able to reap the profits

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37 *See* F. Setzer, Divestiture and the Separate Subsidiary Requirement 19 (FCC OPP Working Paper No. 11, 1984).

from this strategy by taking a payment from a downstream firm for the right to be treated favorably. Of greater significance, the firm need not discriminate in an absolute sense. If it can provide its product to others at higher rates than it charges itself, or at lower quality, then it creates a similar margin that it can exploit by raising price in the downstream market.[38] Price discrimination itself may be ruled out by rate regulation, but regulating quality may be more difficult.

Return to the preceding example. Suppose that the *R* monopolist made *R* available to its *U* competitors for the regulated price of $1, but at a lower quality level than it provides *R* to its integrated *U* affiliate. For illustrative purposes, suppose that as a result of the quality difference the *U* competitors would have to discount their service by a dollar below the price the *R* monopolist charged. The competitive price at which the *U* competitors can supply their lower-quality product remains at $1.50, but the need to discount means that the *R* monopolist can sell *U* for $2.50, reaping $1 per unit in excess profit. In practice, reducing quality is not likely to be a perfect substitute for excluding the competitors altogether. The example, though, shows that the economic risks posed from vertical integration or entry into complementary markets by a regulated monopolist do not disappear if the regulated monopolist merely makes its output "available" to its unaffiliated competitors.

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38 *See* D. Kelley, Deregulation After Divestiture: The Effect of the AT&T Settlement on Competition 34-35 (FCC OPP Working Paper No. 8, 1982). Another way to characterize the strategy is that the regulated firm is able to reap higher profits because it can raise rivals' costs. This strategy is set out in Salop & Scheffman, *Raising Rivals' Costs*, 73 AM. ECON. REV. PAPERS & PROCEEDINGS 267 (1983). In general, the strategy makes more sense when the ability of the seller of the input needed to raise rivals' costs and reduce their ability to compete cannot already capture the profits simply by exercising monopoly power in that input market. However, where the input market is constrained by regulation, vertical integration and discriminatory access to the input make sense as a tactic for capturing monopoly power otherwise constrained.

The harm to market performance following from the exercise of this strategy may go beyond merely raising the price of the provision of the unregulated product. To the degree the regulated firm is successful in excluding or limiting the participation of competitors in the unregulated market, it is possible that more efficient providers of the unregulated product will be excluded. As the interest of the regulated firm is limiting downstream competition to raise price, one would expect that it would allocate its efforts to discriminate toward those firms that pose the strongest competitive threat to its unregulated affiliate's operations. The implication is that not only will be there a loss in consumer welfare from higher prices, but the service itself may be produced inefficiently as a result.

A further harm following from this situation may be seen when we relax the implicit simplifying assumption that the downstream good is undifferentiated and constant in type and quality over time. Discrimination by the regulated firm against unaffiliated competitors may discourage the introduction of innovative services that would reduce the price the regulated firm could charge for its offerings in the unregulated market. As with its efficient competitors, the regulated firm will have the strongest incentive to discriminate against suppliers of the new services that most reduce the demand for its own service. The expected detrimental outcome is that innovation and entry by suppliers of differentiated, highly demanded competitors to current service offered by the regulated firm will be limited.

Moreover, differentiation of services itself may increase the ability of the regulated firm to discriminate against competitors. If these entrants require variations on the regulated product that are different from the type or quality provided by the regulated firm to its unregulated affiliate, it will become harder for regulators to tell whether the services are being provided in an efficient manner. The differences in the types of service will make it inappropriate to test for discrimination simply by comparing what competitors get against what the regulated firm gives itself.

Summarizing, we have seen that a regulated monopolist has an incentive to link the provision of its regulated product with the

provision of other unregulated products, to capture the returns denied it by the regulation. One possible link is between the regulated product and a good or service for which the regulated product is an input or complement. While this may not be a perfect tie in terms of exploiting market power, it has the advantage of enforceability. In the extreme, the tie can be enforced by outright denial of the regulated product to firms competing with the regulated firm in the downstream market. The conduct may also take the form of more subtle discrimination in the terms, conditions, or quality of the regulated firm's output available to its competitors.

The obvious way to prevent regulatory evasion using this tactic is to prevent the entry of the regulated firm into downstream markets or markets for complementary goods.[39] Without the vertical integration or entry, the regulated firm lacks the unregulated market in which it can charge prices and capture returns exceeding competitive levels. It therefore has no incentive to discriminate among unaffiliated providers of the related competing services.

The rationale for limiting entry into an unregulated market will be greater to the degree two conditions hold. First, the regulated firm must possess the ability to raise price above the regulated level were the regulation not in place. Specifically, there could not be close substitutes for the regulated product in the production of the unregulated product (or its substitutes).[40] If entrants or their customers can obtain a substitute for the regulated product at a comparable price, the regulated firm gains

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39 Here, vertical integration may include contractual relationships between the regulated monopolist and downstream firms that include exclusive dealing arrangements or other favorable treatments that make the arrangement tantamount to vertical integration. For a general discussion of the substitutability between vertical integration and other vertical restraints, see F. R. WARREN-BOULTON, *supra* note 35, 164.

40 The ability of the monopolist to raise price in the unregulated market will be limited if there are close substitutes that do not rely upon the ability to obtain the regulated product.

little power to raise prices in the related market through exclusion or discrimination.

Second, discrimination itself must be unpoliceable, because the regulators are unwilling or unable to control the discrimination. Where regulators are willing, the discrimination will necessarily have to be too subtle for the regulators to detect while being sufficiently consequential to affect the performance of unaffiliated competitors of the regulated firm. As noted above, the detection problem will be exacerbated to the degree downstream competitors require different variations on the product supplied by the regulated firm. It should also be noted that enforcement procedures are likely to be slow, and a potential competitor of the regulated firm may not feel the system can move sufficiently quickly to protect it against the risk of discrimination.

2. COST MISALLOCATION/CROSS-SUBSIDIZATION The discrimination theory just discussed is a strategy for evading the constraint when regulation requires that price be based upon cost. The strategy involves weakening the price–cost link by using control over the availability of the regulated product to restrict entry into vertically related unregulated markets. This permits the regulated firm to capture the monopoly profits through charging higher prices in the unregulated markets.

Another way to increase prices would be to increase the costs attributed to providing the regulated product by the regulator. If these attributed costs represent actual payments made to produce the regulated product, this strategy will not increase profits.[41] To profit by the strategy, the regulated firm needs to capture the

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41 We neglect here the possibility that the regulated firm might profit by using excessive amounts of capital relative to other inputs when the allowed rate of return exceeds the cost of capital. The theoretical potential for inefficient market performance from the expansion of regulated firms into related markets at issue in this article does not require as an assumption that the regulators are incorrectly estimating the cost of capital, *i.e.*, that the "A-J" effect applies. *See supra* note 33.

difference between the actual costs of the goods and the inflated attributed costs.

There are two well-known ways of achieving this goal. Like the discrimination theory, the first of these involves vertical integration. Rather than integrating downstream to control entry, though, this tactic involves integrating upstream. Suppose the regulated firm enters the business of providing inputs needed to produce the regulated product. It then may be able to sell to itself these inputs at a price higher than the costs of producing them. If it can do this, the price in the regulated market will increase, as a result of the increasing costs attributed to the production of the regulated product. The profits of producing the regulated product remain apparently controlled, but the profits of charging the higher price in the regulated market will be recovered as the difference between the costs of producing the inputs and the prices paid by the regulated firm to its upstream affiliate.[42]

Consider again our hot dog monopolist, whose monopoly profit-maximizing price is $1 but who is constrained by regulation to charging 75¢. Assume that the regulator bases the 75¢ rate on an estimated 50¢ per hot dog labor cost and 25¢ per hot dog cost of pork. Pork is assumed supplied by a competitive industry; it would follow that the cost of producing the pork for a hot dog is 25¢.

Suppose the hot dog manufacturer enters the pork business. It produces pork at a cost of 25¢ per hot dog, but sells it to itself at 50¢ per hot dog. The regulator sees that the per hot dog cost of pork has increased by 25¢, and permits a price increase for hot dogs from 75¢ to $1. The apparent cost of producing a hot dog has increased by a quarter. However, the hot dog monopolist's pork affiliate is getting 25¢ per hot dog profit on the pork it sells for hot dog production. The effect of the arrangement is that the price of hot dogs rises to the monopoly level, and the profits are taken by the upstream pork affiliate.

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42 *See* Posner, *supra* note 32, at 826; D. Kelley, *supra* note 38, at 34-35.

For this theory to apply, the regulated firm has to have market power and the upstream firm must not be regulated effectively. In practice, the regulator may extend regulation upstream insofar as to see that the transfer price between the upstream affiliate and the regulated firm is proper and not inflated to extract these monopoly profits.[43] Its ability to do so will depend in large measure on the homogeneity of the input and its use elsewhere. If the input is something like flour, the transfer price can be easily compared to prices paid for it by others. If the input is a specialized piece of machinery, for example, there may not be sufficiently many transactions involving sufficiently similar machinery for the regulator to judge whether the transfer price was appropriate.

The second tactic of cost transfer need not rely upon vertical integration, but still requires that the regulated firm enter other unregulated markets. Suppose that the monopolist can allocate costs of supplying other markets to its regulated business. If so, rates for the regulated product will rise under cost-of-service regulation. The prices in the other markets, however, will generally be set by competition among the other firms in those markets. If the regulated firm can allocate some of the costs of providing service in those unregulated markets to the regulated market, the profits in the unregulated markets will rise.[44] The direct effect will be that the price of the regulated product rises, with the attendant profits appearing in the operations of the regulated firm in the unregulated markets.

To see this direct effect, let us return to the hot dog monopolist. Suppose the monopolist enters the sausage business, which is assumed not regulated. The competitive price of sausages in the

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43 *See* M. FARRIS & R. SAMPSON, PUBLIC UTILITIES: REGULATION, MANAGEMENT, AND OWNERSHIP 98, 144 (1973); U.S. DEPARTMENT OF JUSTICE, COMPETITION IN THE COAL INDUSTRY 31 (1982).

44 The costs in question are specifically not joint or common costs that would be redundant if the unregulated and regulated products were provided by separate firms. *See infra* note 45.

market is 45¢. Assume that the expense for the pork used to make sausages can be assigned to the hot dog business. In other words, the hot dog regulator cannot tell whether the firm's purchase of pork went into the making of hot dogs or into the making of sausages. The hot dog manufacturer has the incentive to allocate pork used to make sausages to the hot dog side of the business, up to 25¢ per hot dog. At that point, the regulated price of hot dogs rises to $1. Profits are taken through selling sausages at 45¢, while the apparent costs are lower due to the shifting of pork costs to the production of hot dogs.

There may be indirect but equally important effects of this practice. It is likely to result in inefficient substitution of inputs whose costs can be misallocated for those inputs for which this strategy is not feasible. In addition, by writing off costs of its competitive services against the regulated sector the regulated firm faces lower costs of supplying competitive markets. This may result in an increase in its share of the competitive market over what it would have been had the costs not been misallocated. At the margin, this may result in the displacement of more efficient capacity of unaffiliated firms by less efficient capacity of the regulated firm. In the extreme, more efficient suppliers of the competitive product may be excluded altogether. This ability arises not from the regulated firm's efficiencies, but because its costs may be borne by customers of its regulated product through cost misallocation. Moreover, the regulated firm may have a particular incentive to capture an inefficiently large share of the unregulated market, if doing so would add to the pool of costs that could be misallocated to its regulated sector.

Suppose, for example, that the hot dog company only has to pay 40¢ per sausage in costs because some of the pork costs are shifted to the hot dog side of the business. These costs are recovered through hot dog price increases mandated by the apparent increased costs of supplying hot dogs. The company could profitably charge 44¢ per sausage and underprice the stand-alone sausage manufacturers. If the "real" unit cost for the hot dog manufacturer to make sausages is 48¢, with 8¢ per sausage of pork cost shifted to the hot dog sector, then it will be excluding

firms able to produce at 45¢, even though they are 3¢ per sausage more efficient. Because of the possibility that this shifting of costs from competitive to regulated businesses may result in the underpricing of efficient competitors, it could be characterized as a subsidy of competitive businesses by the monopoly profits generated in the regulated market. For this reason, this practice is commonly referred to as cross-subsidization.[45]

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[45] Johnson, *Boundaries to Monopoly and Regulation in Modern Telecommunications*, in COMMUNICATIONS FOR TOMORROW: POLICY PERSPECTIVES FOR THE 1980s 127, 136 (G. Robinson ed. 1980); D. Kelley, *supra* note 38, at 34; F. Setzer, *supra* note 37, at 21. For the technical definition of cross-subsidization, see Faulhaber, *Cross-Subsidization: Pricing in Public Enterprises*, 65 AM. ECON. REV. 966 (1975); W. SHARKEY, *supra* note 28, at 40-42.

It is important not to confuse cross-subsidization with a superficially similar concept—the allocation of joint and common costs. *See* Posner, *supra* note 32, at 826. The anticompetitive effects of cross-subsidization described in the text follow specifically from the attribution of costs incurred in producing for the competitive market. A common cost of producing two products, on the other hand, is a cost that once incurred to produce the first product need not be incurred again to produce the second. If the costs in question are truly common to both the regulated and competitive sides of the firm, then by definition they are not borne again by the regulated firm if it elects to provide the unregulated product. *See* W. SHARKEY, *supra* note 28, at 38.

The regulated firm would not necessarily be imposing an inefficiency on the competitive market by neglecting to allocate common costs to the competitive business. Such costs imply that the firm may have lower net costs of providing the competitive service because of the costs it already properly incurred to offer the regulated product. Efficiencies in the production of more than one product are called economies of scope. *See* Bailey & Friedlander, *Market Structure and Multiproduct Industries*, 20 J. ECON. LIT. 1024, 1031 (1982).

There can be an efficiency issue associated with the allocation of common costs through the prices charged for the different products offered by a firm. If a firm must raise revenue to recover common costs from the prices it charges for its various products, then the welfare-maximizing percentage divergence of price from marginal costs is inversely proportional to the elasticity of demand for the service (assuming demands for the various products are independent). These are

Such cross-subsidization need not only have adverse effects in the regulated market, but it may result in higher prices in the unregulated market where operations are subsidized, if the potential for cross-subsidy is known to potential entrants. The ability to cross-subsidize may imply that the marginal costs to the regulated firm of serving an unregulated market are lower than the costs to competitors. Because of this, a potential entrant may expect that it could not survive competition if it entered because of the relative advantage cross-subsidy gives the regulated firm. If this expectation holds, potential entrants may not actually enter, even if the regulated firm is charging a monopoly price in the unregulated market. Under this scenario, the ability to cross-subsidize can provide a credible threat that deters entry and preserves the ability of the regulated firm to charge monopoly prices in the subsidized market.[46] Therefore, cross-subsidy may not only raise price in the regulated market through misallocation of costs, but it may enable the regulated firm to charge monopoly prices in the unregulated market as well.

The potential for cross-subsidization or cost misallocation depends upon the inability of regulators to determine that costs alleged to have been incurred in the provision of the regulated product actually were incurred to provide it. The most likely

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known as Ramsey prices. *See* W. SHARKEY, *supra* note 28, at 51; Baumol & Bradford, *Optimal Departures From Marginal Cost Pricing*, 60 AM. ECON. REV. 265 (1970).

If one of the markets is competitive, however, the elasticity of demand facing the regulated firm in that market is likely to be high, because consumers can turn to other suppliers if it raises price. Therefore, it would normally be efficient for a regulated firm to have most of its truly common costs borne by the ratepayers of its monopoly services. Moreover, under fairly general but not universal conditions, Ramsey prices will guarantee that an entrant could not profitably undercut the monopolist in all its markets. *See* Baumol, Bailey & Willig, *Weak Invisible Hand Theorems on the Sustainability of Natural Monopoly*, 67 AM. ECON. REV. 350, 351 (1977).

46 For a discussion of the potential to deny entry when the incumbent firm reduces its marginal cost, but through investment rather than through cross-subsidy, see Spence, *Entry, Capacity, Investment and Oligopolistic Pricing*, 8 BELL J. ECON. 534 (1977).

candidate markets for a regulated firm to enter to generate cross-subsidies will be those where the nature of the costs are similar to those of the regulated product, specifically, where the inputs used are similar. It is unlikely that the hot dog monopolist would find it useful to enter the machine tool business, for example, since it is not likely to get the regulator to believe that steel, lathes, and drill presses are needed to make hot dogs. On the other hand, businesses that use the same types of labor and equipment will be better candidates. It will be harder for the hot dog monopolist's regulator to detect that packers, pork, and cooking equipment allegedly used to make hot dogs were actually used to make sausages.[47]

Although this suggests that entry into similar businesses poses the greatest probabilities of inefficiency, there is one type of input common to virtually all business that presents a potential cross-subsidy risk. Raising capital through borrowing may be a source of cross-subsidy. The regulator may have a difficult time distinguishing whether the borrowing done was for the regulated product or another product. The regulated firm may be able to raise funds for ventures in other markets by borrowing against the assets of the regulated business. If the risk inherent in the regulated market is lower than that in the unregulated market, as might be expected given the residual unexploited demand created by regulation holding down price, this will result in subsidized lower-cost debt for the unregulated operations. The "subsidy" will be paid by increases in risk of the capital borrowed to pay for the regulated service, because that capital now bears some of the risk of the unregulated service.

Assuming the regulated firm lacks sufficient competition in the regulated market to prevent its lifting prices through cross-subsidy, and assuming the regulator cannot effectively determine how costs are allocated, efficiency may be enhanced by taking the

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47 If the term "common costs" is taken to refer to inputs that the production of one product has that are similar in type to those used to produce another, then the colloquial association between common costs and propensity to cross-subsidize is proper. This, however, is not the technical definition of "common costs." *See supra* notes 44–45.

ability to cross-subsidize away from the regulated firm. This would be guaranteed by preventing the regulated firm from entering other businesses, particularly those in which the inputs used were similar. Because of the ubiquitousness of debt capital as an input, special controls on the use of assets employed in regulated operations as collateral on debt raised for operations in unregulated markets may be required to ensure efficient performance in the unregulated markets and effective regulation in the regulated markets.

3. CAVEATS/ECONOMIES OF SCOPE By constraining the exercise of market power, regulation creates an incentive for a firm to find ways to achieve otherwise denied profits. We have just identified two broad strategies, discrimination and cross-subsidization, in which the ability to carry out evasive and anticompetitive strategies is gained through entry by the regulated firm into unregulated markets. Where regulation cannot effectively deter discrimination or cost misallocation, the most effective and apparent remedy for the competitive problems posed is to prevent the regulated firm from entering other markets. The discrimination risk focuses attention specifically on vertically related markets or markets for complementary goods. The cross-subsidy risk focuses attention on products where the inputs used are similar to those used in producing the regulated product.

Possible properties should be recognized that may warrant exceptions to the policy of preventing entry by regulated companies into unregulated markets. The first and most important of these is the possibility of economies of scope.[48] Suppose the firm producing the regulated product can consequently produce the unregulated good at lower cost than those who would be provid-

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[48] *See supra* note 45. Economies of scope need not be limited to the relatively narrow category of technical savings in the physical production of the service. These economies can include savings in facilitating joint planning and service that might follow from interdependencies between the markets for the separate products. For example, if hot dogs with mustard occasionally made people ill, integration of hot dog sales with mustard sales might avoid disputes over whether the hot dogs or mustard manufacturer was to blame.

ing the unregulated good if that firm is not allowed to enter. If that firm is not allowed to enter, the economy as a whole sacrifices the benefits in lower production cost. Where such economies exist, however, a regulated firm may have an advantage that would make the unregulated market a natural monopoly. Other firms, by definition, would not have access to these particular economies of scope. If this is so, the optimal public policy response may be to permit the regulated firm to enter the additional market, but to extend regulation as well.[49]

If the unregulated market is itself a natural monopoly undisciplined by actual or potential competition, then entry by the regulated monopolist will probably not lead to higher prices in that unregulated market. This entry will also reduce the likelihood of harm from discrimination, since the unregulated monopolist will be able to extract most or all of the consumer surplus associated with production links between the regulated good and the unregulated product. However, the threat of discrimination may make this natural monopoly less contestable than it might otherwise be, with higher prices as a result. In addition, such entry still raises the possibility of shifting costs to the regulated sector to push up prices.

Another possible reason to permit regulated firms to enter unregulated businesses occurs when the market for the unregulated product is highly concentrated and unlikely to see much entry. In that case, permitting the regulated firm to enter may make the unregulated market less concentrated and improve its performance. This benefit may take the form of increased com-

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49 It may be argued that where the unregulated market is itself a natural monopoly, entry by the regulated firm will not make matters worse and, therefore, regulatory prohibition of its entry is unjustified. In theory this is so. However, prohibiting entry by the regulated firm has the virtue of providing a test of the extent of scale economies in the unregulated market, undistorted by the potential for entry-deterring discrimination or cross-subsidization by the regulated firm. Absent economies of scope, there will still be a social benefit in prohibiting entry by the regulated firm where there is uncertainty about the potential for competition in the unregulated market.

petion in the short run. It may also possess a longer-run nature, if the regulated firm is one of only a few companies likely to discover new products for markets as yet undeveloped. When the unregulated market might benefit from entry by the regulated firm, be it from economies of scope or scarcity of competitors, it may be difficult to determine whether those benefits outweigh the risks of increased prices in the regulated market and deterrence of marginally more efficient entrants, with potentially supracompetitive prices in the unregulated market.[50]

III. The application—the AT&T divestiture

Having set out the theory of the economic consequences of entry by regulated firms into unregulated markets, we turn to an application of that theory—the divestiture by AT&T of its local operating companies and the line-of-business restrictions on those local companies that followed.[51] It is not the purpose of this article to conclude that the telephone network before the divestiture specifically fit the requirements of the theory. In particular, there will not be any independent empirical estimation of telephone costs and demands to determine where economies of scale and natural monopoly characteristics begin and end, or whether there are any economies of scope that warrant vertical integration or multimarket participation by the companies in the telephone industry. It is worth remembering that *United States v. AT&T* was settled, not decided on the merits. While the Court was required to recognize the "public interest" in approving the divestiture, it did not and probably could not conclude that the evidence

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50 Where there are economies of scope, it will be especially difficult for regulators to determine whether costs allocated to the regulated business represent truly common costs or costs specifically incurred in providing the regulated service. As if it weren't bad enough, the detection problem is made worse by the theoretical finding that common costs should usually be recovered primarily by ratepayers in the regulated industry. *See supra* note 45.

51 *See supra* notes 2–23 and accompanying text.

presented in the case supported the government's case against AT&T or refuted AT&T's defenses.[52]

The goal here, as in the Court's decision, is more modest. It is to see if the economic theory set out above, conjoined with a reasonable, simplified characterization of the telephone network, is consistent with the government's pursuit of divestiture and the subsequent restrictions imposed upon the local operating companies. The first step is the construction of the appropriate model of the telephone network. Second will be a look at AT&T's conduct at issue in the case to see if it is consistent with the characterization of the telephone network and the incentives of firms under regulation. This is not to deny that other explanations may hold as well. Next, the divestiture and accompanying line-of-business restrictions will be evaluated to see if they conform to the theory. The analysis will be summarized by identifying the empirical assumptions crucial for concluding that the entry restrictions on the BOCs should be maintained.

A. A model of the telephone network

There are three fundamental markets that combine to provide conventional telephone service. These are pictured in the accompanying diagram of the telephone network. At the center of the network is the set of local exchange facilities. These local exchanges provide the wires (local loops) that physically connect callers to each other and, frequently through special access lines, to the carriers who provide long-distance or interexchange service. The local exchanges also provide the local switching systems that direct calls to the intended caller or long-distance company, as instructed by the caller through the number dialed. There typically will be many switches in a local exchange area, connected by interoffice trunks. Some switches will be designed to route telephone traffic among the various switches. This is known as a tandem function.

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52 Divestiture Decision, *supra* note 2, at 160-61.

Interexchange carriers connect the local exchange carriers. They transport traffic from one local exchange to another using cable, microwave, fiber optic, and satellite connections. There are switches within the interexchange networks to route calls to various destinations. Interexchange carriers are typically accessed through the dialing of the area code on top of the called party's seven-digit telephone number. Depending upon the type of connection an interexchange company has with the local exchange, however, extra digits may have to be dialed to reach the interexchange carrier's local point of connection.[53]

Closest to the consumer is terminal equipment, also known as customer premises equipment or CPE. For most users, CPE is the basic dial or push-button telephone. One may include in the CPE heading "inside wiring"—the lines within a building to which the local loops to the local exchange switching network are connected. Within recent years CPE has become more complex, however. The development of private branch exchanges, or PBXs, enables the user to have on-premises switching and call-routing capability. This both facilitates internal communications systems and enables large users to economize by having more than one telephone per local loop.

There are two other important parts of the overall telecommunications industry not pictured in the figure. At one end, feeding all these levels is the equipment supply industry. These are the firms that manufacture the telephone units, switching systems, and transmission equipment used to carry telephone communications. The markets in which these firms operate will be termed "equipment markets." At the other end, the telephone network is used to provide not only conventional real-time voice service, but a wide variety of specialized data

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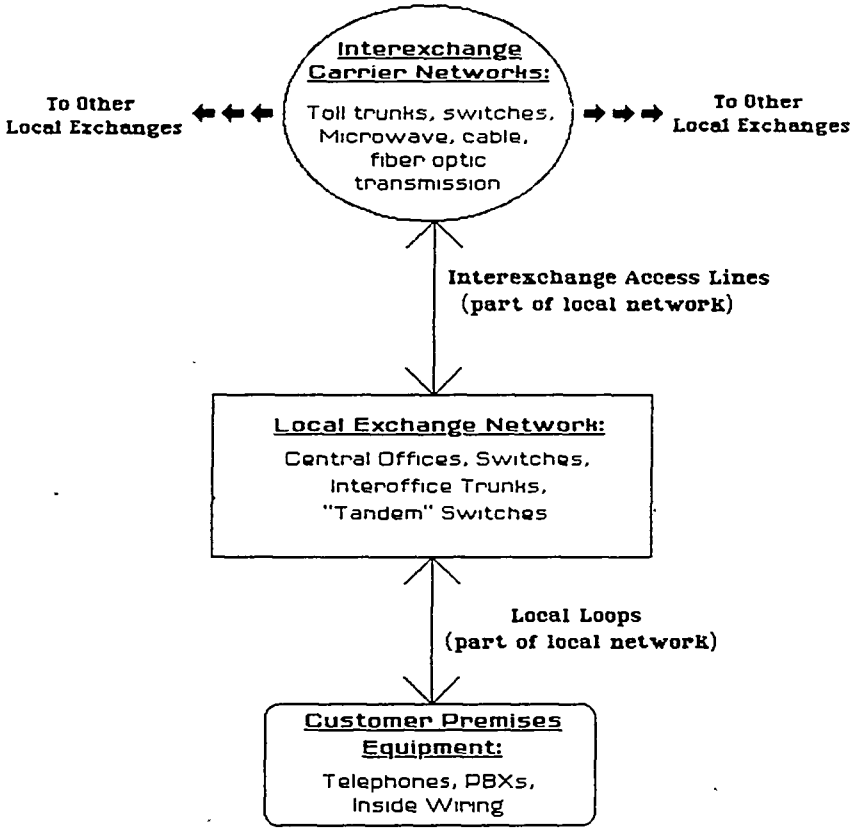
53 The term "interexchange traffic" is not synonymous with "toll traffic," which is paid for on a per-minute basis. In some areas, local traffic is paid for on a usage-sensitive basis. This is generally known as local measured service.

Markets in the Telephone Industry



transmission services and, in conjunction with computers, data-processing services. These may be subsumed under the heading "information services."[54]

We assume first that the local exchange portion of the telephone network is a regulated natural monopoly. Local telephone service has been recognized as a monopoly[55] in local switching and the connection of callers to each other[56] and to interexchange carriers.[57] As a rule, local telephone companies have exclusive franchises in their localities. Moreover, natural monopoly characteristics are strongly suggested by the apparent diseconomy in

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54 Information services are defined within the MFJ as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information which may be conveyed by communications. . . ." *See* Divestiture Decision, *supra* note 2, at 229. An exception is made in the definition to permit the BOCs to provide internal information services for management or operational purposes. The FCC defines a similar concept, enhanced services, as those that "employ computer processing applications that act on the format, content, code, protocol, or similar aspects of the subscriber's transmitted information; provide the subscriber additional, different, or restructured information; or involve subscriber interaction with stored information." 47 C.F.R. § 64.702(a).

55 *See, e.g.*, S. BREYER, *supra* note 30, at 288; G. BROCK, THE TELECOMMUNICATIONS INDUSTRY 306-07 (1981).

56 It is not necessarily the case that LATAs, the practical definition that demarcates local traffic from interexchange or interLATA traffic, is defined by the point at which the natural monopoly characteristics of telephone transmission service no longer hold. The local exchange companies provide a considerable amount of intraLATA toll service. Some of this may be potentially competitive, but at the time of the divestiture the court felt that localities might need additional revenue to support the provision of local service. *See* LATA Decision, *supra* note 16, at 997.

57 For large-volume callers, there is increasing substitution of other technologies for direct connection to local exchange carriers, bypassing the local exchange. *See* Sirbu, *Comparing Alternative Technologies for Local Access*, in TELECOMMUNICATIONS ACCESS & PUBLIC POLICY 30 (A. Baughcum & G. Faulhaber eds. 1984); G. Brock, Bypass of the Local Exchange: A Quantitative Assessment 41-45 (FCC OPP Working Paper No. 12, 1984).

stringing two telephone lines down any given street[58] and the efficiency of having all telephone users connected to the same local network.[59] These local telephone exchange monopolies are price-regulated, as a rule.

The remaining markets within the telecommunications industry will be assumed potentially (if not actually) competitive, *i.e.*, they can be (if not are) served efficiently with a number of firms simultaneously operating and competing with one another. Interexchange service and CPE have received the most attention in the literature as potentially competitive markets.[60] The term "information services" encompasses a wide range of data-processing markets, which will be assumed competitive. We also assume that the many markets for telecommunications transmission and switching equipment comprised by the category "equipment markets" are competitive.

The theory set out above describing the potential for exploitation of otherwise constrained market power through the entry of regulated firms into unregulated markets, combined with these assumptions regarding the nature and competitive status of the markets within the telecommunications industry, suggests with qualifications that regulated local exchange companies should not be permitted to enter other telecommunications markets. The potential economic harms are twofold. The first is that the local exchange companies could discriminate in access to the local exchange, to favor affiliates in interexchange service, information services, and CPE markets and exploit control over the local exchange. The second is that costs will be misallocated, by either paying too much for purchases from affiliated equipment suppli-

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58 *See* Johnson, *supra* note 45, at 128.

59 At the very least, automatic interconnection arrangements among all local exchange providers would probably be needed to ensure that any caller could reach conveniently anyone else in his community. Otherwise, one might not be able to reach subscribers to another exchange.

60 *See, e.g.*, G. Brock, *supra* note 55, at 198-253; Johnson, *supra* note 45, at 131-34.

ers, or allocating costs of providing other services, telecommunications or not, to the local exchange for payment by the ratepayers. The qualifications largely are that the regulators be unable to detect and prevent this discrimination or cost misallocation, and that there be no significant countervailing economies of scope which outweigh the problems caused by entry into these markets.

We first address the question of whether AT&T's pre-divestiture conduct (and, to some extent, the Justice Department's case against it) was consistent with the theory and these assumptions regarding telecommunications markets. Next, we will see if the divestiture as implemented is an appropriate remedy given these empirical assumptions. Finally, we will identify important potential areas for empirical research on the validity of the assumptions and their continuing relevance for structural policies such as the line-of-business restrictions.

B. Pre-divestiture AT&T

1. CONFORMITY WITH THE MODEL Before the divestiture, AT&T was the major company in virtually all telephone industry markets. Through the telephone operating companies it owned outright or controlled, AT&T supplied both local telephone service and CPE to about 83 percent of the United States.[61] AT&T, through a nominal partnership arrangement with the "independent" telephone companies, possessed a monopoly in switched long-distance service until MCI's entry was permitted by a 1977 court decision.[62] Through Western Electric,

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61 Johnson, *supra* note 45, at 128.

62 G. BROCK, *supra* note 55, at 227. AT&T's overall interexchange monopoly began to erode in 1959, when the FCC permitted the use of non-AT&T microwave facilities for unswitched private line service in its *Above 890* decision. *See* Johnson, *supra* note 45, at 131. In 1971, the FCC permitted the entry of "specialized common carriers" who would

its equipment-manufacturing arm, AT&T supplied itself with the switching, transmission, and terminal equipment it used to provide local and interexchange service and CPE. AT&T's Bell Laboratories carried out the research and development activities for the entire company. As is the case today, local telephone service was regulated. This regulation included both the monthly fee paid by telephone subscribers for service and the access charges paid by non-AT&T interexchange companies for use of the local exchange.[63]

There were, however, a number of differences between AT&T and the telephone industry model set out above. Interexchange service and terminal equipment rates were also regulated; AT&T was not intrinsically free to set price as high as it chose. The prices charged by Western Electric for equipment and the fees paid to Bell Labs for use of AT&T's patents were not directly regulated, although regulators in principle could disallow payments they regarded as excessive. In addition, AT&T did not participate in information services markets or other nontelecommunications markets. Because of the 1956 consent decree, AT&T was restricted to the provision of communications services.[64] The 1956 decree restrictions mainly limited the

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make private line facilities available to other customers. It was MCI's offering of Execunet, a switched long-distance service over its specialized private-line facilities, which led to the court decision forcing AT&T to permit MCI to interconnect with AT&T's local exchanges and eliminating AT&T's switched interexchange monopoly. *See* S. BREYER, *supra* note 30, at 309-10.

63 Access fees were set in negotiations arranged by the FCC between AT&T and the other common carriers. See G. BROCK, *supra* note 55, at 226-28 for a discussion of the process.

64 *See supra* note 4. In 1980, the FCC deregulated CPE and enhanced services markets (see 47 C.F.R. § 64.702(a)(e); F. Setzer, *supra* note 37, at 10-12), and decided that AT&T could offer these services, but through a separate subsidiary. At the time of the divestiture, AT&T contended that the 1956 decree should be interpreted to permit it to enter enhanced service markets. The government had requested an appeal of a lower court decision granting AT&T's request, but the appeal was

number of markets from which AT&T might have misallocated costs, and took away the incentive to discriminate in the provision of local exchange services to information service providers.

The effect of the regulation of interexchange and CPE provision on these predictions is more complex. As the theory stands, AT&T would have an incentive to discriminate against competitors in those markets as long as the prices charged in those markets were permitted to exceed the marginal production costs. Unless rates in those markets were equal to or lower than marginal production costs, there would be a positive marginal profit to AT&T for capturing potential customers from competitors through discrimination in connection to the local exchange. In addition, AT&T would have an incentive to misallocate costs from those markets to local exchange service if, at the margin, rates for local service were more closely tied to costs than rates for terminal equipment or long-distance services. For example, if allocating $1 from long-distance service to local exchange service would result in an increase in allowed revenues at the local level of $1 but a decrease in allowed long-distance revenue of only 75¢, AT&T would profit by 25¢ by misallocating costs.

It does appear that long-distance rates and terminal equipment rental fees were generally above costs. It is widely held that, for political reasons, long-distance fees were used to subsidize local rates.[65] If so, AT&T would have an incentive at the margin to use control over local access to prevent loss of business to competitors. The story for positive marginal profit on

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dropped in 1982 when the divestiture was announced and the 1956 decree was essentially vacated. *See* Divestiture Decision, *supra* note 2, at 138 n.17. The one apparent exception to this restriction was AT&T's participation in advertising markets, through its supply of Yellow Pages directories.

[65] *See, e.g.*, G. BROCK, *supra* note 55, at 302; Temin & Peters, *Cross-Subsidization in the Telephone Network*, 21 WILLAMETTE L. REV. 199, 212-14 (1985); Kahn, *The Road to More Intelligent Telephone Pricing*, YALE J. REG. 139, 141-42 (1983); Griffin, *The Welfare Implications of Externalities and Price Elasticities for Telecommunications Pricing*, 64 REV. ECON. STAT. 59 (1982); Johnson, *Why Local Rates Are Rising*, REGULATION, July–Aug. 1983, at 31.

terminal equipment is less clear.[66] Nevertheless, annual rental fees around $20 on ordinary telephones with retail costs in the neighborhood of $60 suggest that rates for at least basic terminal equipment may have been in excess of costs. The interesting issue with regard to the cross-subsidy issue is whether local service rates were more tightly linked to allocated costs than the regulated rates for long-distance or terminal equipment. The existence of the subsidy from long-distance to local service suggests that local service regulators would have been very strict at least in a downward direction, in that a dollar of costs saved would surely be passed on. Of course, this same strict attitude suggests scrutiny that would have made it difficult for AT&T to pass costs along to its ratepayers.

2. CHECKING THE PREDICTIONS With these caveats, AT&T generally conformed to the model of a regulated firm integrated into potentially competitive markets. Consequently, we would make the following four major predictions as to AT&T's behavior before the divestiture:

1. AT&T would discriminate against its interexchange competitors in the provision of connection with local exchanges.
2. AT&T would deny or limit connection to the local exchange to its competitors in CPE markets.
3. AT&T would favor Western Electric, its integrated equipment supplier, charging itself supracompetitive prices for telephone equipment.
4. AT&T would allocate costs to the local exchange to the degree possible.

AT&T's behavior appears to have been consistent with these predictions. To the degree regulators permitted, it attempted to deny directly and through the regulatory process, local exchange connection to its competitors in interexchange[67] and CPE mar-

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66 *See* G. BROCK, *supra* note 55, at 302.

67 *Id.* at 210-18, 224-27 & 232-33; United States v. AT&T, 524 F. Supp. 1336, 1348-52 (1981) [hereinafter cited as Opinion on AT&T's Motion to Dismiss].

kets.[68] These contentions, in the context of the theory of regulatory evasion set out above, were at the heart of the Justice Department's case.[69]

The evidence on the other two predictions is not as clear. While some research has claimed that profits were gained through payments to Western Electric of excessive prices for equipment,[70] claims of this sort were not to be found directly in the government's case against AT&T. Similarly, little evidence was introduced that AT&T cross-subsidized its efforts in its markets other than local exchange services. The absence of such evidence, however, is not surprising given the nature of the claim. If the government had been able to prove that AT&T had misallocated costs, presumably so too would the regulators. Thus, these cost misallocation theories have an intrinsic empirical and evidentiary difficulty—they may only be true in those situations where they can't be proved!

The Justice Department addressed these issues indirectly. With regard to the upstream "transfer pricing" issue, the Department presented an economist who testified that as a consequence of its incentive to shelter profits upstream from the regulators, AT&T would have the incentive to use only integrated (*i.e.*, Western

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68 Opinion on AT&T's Motion to Dismiss, *supra* note 67, at 1353-57; 2 A. KAHN, THE ECONOMICS OF REGULATION 140-45 (1971); G. BROCK, *supra* note 55, at 234-53.

69 Pretrial Brief for the United States at 49-50, United States v. AT&T, Civil Action No. 74-1698 (1980) [hereinafter cited as DOJ Pretrial Brief]. Some commentators on the Justice Department's prosecution of the case have incorrectly inferred from initial filings that the case was poorly focused and without foundation in economic theory. *See, e.g.*, MacAvoy & Robinson, *Winning by Losing: The AT&T Settlement and Its Impact of Telecommunications*, 1 YALE J. REG. 1, 14 (1983).

70 Irwin, *The Communications Industry*, in THE STRUCTURE OF AMERICAN INDUSTRY 405-06 (W. Adams ed. 1971). Irwin also claims that GTE, a smaller but similarly integrated provider of local telephone service, also profited through improper equipment-pricing purchases from its affiliate, Automatic Electric. *Id.*

Electric) equipment suppliers.[71] The Department argued AT&T did exclude non-Western Electric suppliers, and claimed this was foreclosure of a "Bell market," *i.e.*, the "market" in purchases for the Bell system.[72]

The other cross-subsidization story was handled in a rather unorthodox manner. The Department did not offer specific evidence that a price was in fact below cost, or that costs had been shifted to the local exchange rate base. As just noted, the essence of cross-subsidization theory is that it will be difficult if not impossible for an outsider to verify that it took place. Instead of effect, then, the Department turned to intent. It essentially argued that if a firm was in the position to undercut competitors by cross-subsidizing, it would let its pricing policies be determined solely by the desire to exclude competitors. A firm in this position would ignore the costs of providing the service in response to the competition, having faith that one way or another it would be able to get the regulators to let the ratepayers pick up the tab. In the phrase used during the litigation, the Department contended that AT&T "priced without regard to cost."[73]

Recognizing the natural limitations of the evidence for cost misallocation, it can be concluded that AT&T's conduct was consistent with the predictions regarding excessive transfer pricing and cost misallocation. With regard to transfer pricing, the court accepted the Justice Department's foreclosure story,[74] but properly rejected the notion of a "Bell market" as an artifice not

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71 *See* Opinion on AT&T's Motion to Dismiss, *supra* note 67, at 1373 n.57, citing testimony of F. R. Warren-Boulton.

72 DOJ Pretrial Brief, *supra* note 69, at 36-38. The theory is set out without the novel market definition at 54-60.

73 *Id.* at 60-67. There is an understandable temptation to characterize "pricing without regard to cost" as a pricing strategy per se rather than as evidence of intent. *See, e.g.*, Brock, *Pricing, Predation, and Entry Barriers*, in BREAKING UP BELL 191, 220-26 (D. Evans ed. 1983).

74 Opinion on AT&T's Motion to Dismiss, *supra* note 67, at 1371-74.

related to any bona fide economic markets.[75] Particularly in light of the way AT&T responded to nascent competition in the provision of interexchange private lines,[76] the court accepted the Department's notion of "pricing without regard to cost" as a reasonable antitrust concept.[77]

B. The post-divestiture restrictions on the BOCs

As noted above, the theory of regulatory evasion through entry into unregulated markets suggests that regulated firms be prohibited from entering unregulated markets, absent substantial economies of scope that would warrant continued participation in both kinds of markets. Assuming no economies of scope, applying this theory to AT&T would entail separation of the regulated businesses from the unregulated ones. The separated regulated businesses would be limited to their regulated markets, and the remaining unregulated businesses would be free to operate in whatever markets they chose. Of most importance would be the prohibition of local exchange company entry

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75 *Id.* at 1378-79.

76 *See* G. Brock, *supra* note 55, at 206-10, 218-24. A measure of the difficulty inherent in deciding whether prices reflect cross-subsidization is that the regulatory and courtroom proceedings regarding the legality of AT&T's bulk rate private-line Telpak tariffs went on for more than 15 years without final resolution. *Id.* at 207-10; S. Breyer, *supra* note 30, at 304.

77 Opinion on AT&T's Motion to Dismiss, *supra* note 67, at 1364-70. Considering how the court accepted virtually every claim of the Justice Department in its ruling and the overall consistency of AT&T's conduct with the regulatory evasion theory, it is difficult to understand how some commentators interpret AT&T's settling as the exploitation of a strong legal position to unload its local monopolies, rather than as avoidance of an adverse decision with the potentially very costly private treble damage antitrust suits the likely consequence. *See, e.g.*, MacAvoy & Robinson, *supra* note 69. For a further indication of the court's overall opinion of the Justice Department's case, see Divestiture Decision, *supra* note 2, at 160-63.

into the markets most susceptible to discrimination or cost misallocation—interexchange services, information services, and telecommunications equipment. These were the areas specifically quarantined from local telephone companies by the MFJ.[78]

Even before the settlement was modified by the court, however, there were apparent discrepancies between the prescriptions of the economic theory and the divestiture as proposed. Maybe the most obvious is that AT&T retained its regulated interexchange business while being freed of the 1956 decree's restrictions on participation in nontelecommunications markets. If AT&T has market power in interexchange services, the theory set out here suggests that AT&T would be tempted to discriminate against its competitors in markets that require access to its interexchange network, or allocate costs of doing business in other markets to its interexchange account for recovery from long-distance ratepayers. This discrepancy was justified with the presumption that the post-divestiture interexchange market would eventually become competitive, regardless of AT&T's then near-monopoly share of that market. AT&T would no longer have the incentive to discriminate because the victims could turn to other interexchange carriers. It would not find cross-subsidization profitable because its interexchange rates would be held down by competition.[79]

Besides the apparent discrepancy in permitting AT&T to retain a regulated business, the divestiture settlement permitted

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78 *See supra* notes 8–11 and accompanying text.

79 *See* Department of Justice Response to Public Comments on the Competitive Impact Statement in Connection With the Proposed Modification of Final Judgment, 47 Fed. Reg. 23,320, 23,349-54 (May 27, 1982). *See also* Department of Justice Competitive Impact Statement in Connection With Proposed Modification of Final Judgment, 47 Fed. Reg. 7170, 7176 (1982) [hereinafter cited as Competitive Impact Statement].

The FCC has solicited comment on the desirability, extent, and nature of continued regulation of AT&T's interexchange services post-divestiture. *See supra* note 24.

the BOCs to participate in a class of potentially competitive unregulated markets. Although the proposed MFJ included a number of strict entry prohibitions, it permitted the BOCs to provide any business that would fall under the rubric of "exchange telecommunications."[80] This term essentially includes any local telecommunications service, not limited to telephone service. This definition permits the BOCs to enter potentially competitive local communications businesses. A noteworthy example is cellular radio, a sophisticated radio telephone service that requires interconnection with the local exchange companies to connect its subscribers, usually mobile, to other local telephones. This need for connection to the local exchange invites exactly the discriminatory abuses the divestiture was intended to stop.[81]

As the divestiture evolved, it was further modified away from the strict separability concept prescribed by the economics. The court permitted the BOCs to sell, but not manufacture, CPE and to provide Yellow Pages directories.[82] Permitting sale of CPE creates the opportunity for discrimination in the provision or maintenance of exchange facilities to users of competing CPE. It also leaves open the possibility that the local companies will design their local networks with technical specifications favoring their affiliated equipment supplier. In favor of permitting BOC sale of CPE, the court argued it would contribute "vigorous competition" to AT&T's dominance in those markets.[83] The court also argued that requiring the BOCs to use an independent manufacturer would impede cross-subsidization and discrimination in the provision of network technical standards.[84] In addi-

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80 Competitive Impact Statement, *supra* note 79, at 7182.

81 Interconnection between local exchanges and cellular systems not owned by local telephone companies has been a subject of dispute before the FCC for some time. *See, e.g.*, FCC Memorandum Opinion and Order, *In re* Need to Promote Competition and Efficient Use of Spectrum for Radio Common Carrier Services (Mar. 5, 1986).

82 *See supra* note 13 and accompanying text.

83 *See* Divestiture Decision, *supra* note 2, at 192.

84 *Id.* at 191-92.

tion, the court relied upon the FCC's requirement that CPE be offered by BOCs only through a separate corporate subsidiary.[85]

Much of the problem in the court's solution of permitting BOC sale, but not manufacture, of CPE is defining manufacturing. If "manufacturing" means only fabrication, the BOCs will be able to maintain control over the design features and ensure exploitation of any advantages deriving from preferential access to technical knowledge of local networks. If, at the other extreme, "manufacturing" is defined so broadly that the BOCs are nothing more than retailers, they will be unable to bring out their own differentiated products. This would limit their competitive presence—the court's rationale for letting the BOCs sell CPE in the first place. Moreover, if the FCC's separate subsidiary rules are effective safeguards, they probably eliminate any (unidentified) economies of scope that might make the BOCs more effective competitors to AT&T than the multitude of other CPE suppliers. Finally, even if the BOCs are only selling CPE, they may still be able to discriminate against competing suppliers through the use of different maintenance procedures, *e.g.*, claiming that problems in the telephone lines are caused by competitors' CPE.[86]

Permission to offer Yellow Pages opens up the possibility that the local telephone companies would have an incentive to discriminate in making available business telephone service subscriber lists and other local exchange information valuable in soliciting advertisers and creating the listings. The court found that Yellow Pages service may well be a local natural monopoly, and regarded those monopoly revenues as a source of funds to offset local telephone rates.[87] Much to the court's later chagrin,

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85 *Id.* at 192 n.247. The FCC's separation and network information disclosure rules are set out in 47 C.F.R. § 64.702(b)-(d).

86 While such claims are unlikely to be credible with ordinary modular plug telephones, the case is more ambiguous with respect to multiple-line equipment with internal switching capability, such as PBXs. *See supra* note 53 and following text.

87 *See* Divestiture Decision, *supra* note 2, at 193-94 nn.256, 257.

the BOCs put the Yellow Pages in separate subsidiaries so the regulators would not be able to use the profits for this subsidy.[88] Moreover, as a matter of economic theory it is not at all clear that monopoly revenues from Yellow Pages should be used to subsidize local telephone service. Since demand for local telephone service is probably considerably less elastic than demand for advertising space in Yellow Pages, the theory of Ramsey pricing suggests that local telephone subscribers should bear a greater share of the burden of covering telephone exchange costs than Yellow Pages advertisers.[89] In no case would it be economically efficient to hold monthly local telephone subscription rates below the marginal cost of providing connections to the local telephone network. It appears, therefore, that letting the BOCs retain Yellow Pages service is both theoretically and empirically unsound.

The major hole in the quarantine, however, was the court's decision to waive the line-of-business restrictions on the BOCs if they can show that competition in those markets would not be harmed.[90] As of February 28, 1986, the BOCs had petitioned for 86 waivers, of which 53 had been granted.[91] Businesses covered by these waivers include exchange telecommunications outside the service areas, real estate, office equipment, lease financing, foreign business ventures, and computer and software businesses.[92]

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88 *See* LOB Decision, *supra* note 19, at 865-66.

89 For a discussion of the Ramsey pricing principle, see Baumol & Bradford, *supra* note 45. For a discussion of the inelasticity of demand for local telephone service, see Griffin, *supra* note 65.

90 *See supra* note 15 and accompanying text.

91 DEPARTMENT OF JUSTICE REPORT ON LINE OF BUSINESS WAIVER REQUESTS (Feb. 28, 1986). As of September 1987, there had been over 160 waivers granted. The few denials were because the proposed activities violated the MFJ's restrictions against manufacturing, information services, or interexchange services. *See* United States v. Western Electric Co., Inc., No. 82-0192 (D.D.C. Sept. 19, 1987), at 206.

92 IEEE COMMUNICATIONS MAG., Dec. 1985, at 27.

The businesses covered by these waivers typically do not pose a significant discrimination risk, since they do not directly connect to or require the use of the BOCs' local exchange facilities.[93] The risk posed by entry into these businesses is that their costs will be shifted to the local telephone ratepayers, with both excessive local telephone rates and inefficiency and preemption of competition in the market entered by the BOC.[94] To limit the harmful effects of cost misallocation, the court required that the waivers would be granted only where the businesses did not use local exchange assets to secure debt, and limited the total net revenue of the outside business to 10 percent of the BOC's net revenues.[95]

While these limitations are commendable limitations on the harm to ratepayers, the 10 percent limitation may enable the BOCs to wreak considerable havoc on markets that would be viewed as rather substantial on an absolute scale, and only appear small next to the massive size of local telephone company operations.[96] In addition, a not inconsiderable cost of opening up other markets to the BOCs through the waiver process has been a continuing and unforeseen need for the court and the Justice Department to regulate actively the post-divestiture business conduct of the BOCs. The clean "quarantine" of the divestiture as originally proposed would in theory have eliminated such regulation.[97] Absent economies of scope or other reasons to believe that BOC entry into these other markets would improve upon the performance of the other firms already competing in those markets, it is not clear that the remaining risks of cost misalloca-

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93 With the exception of CPE, the businesses that do pose the most significant discrimination risk are those still specifically prohibited by the MFJ—interexchange service, information services, and equipment manufacturing. The court shows no current inclination to weaken those restrictions. *See* Clarification Decision, *supra* note 23, at 7-9.

94 *See supra* notes 43–47 and accompanying text.

95 *See supra* note 22 and accompanying text.

96 *See supra* note 22.

97 *Interview with William Baxter*, IEEE COMMUNICATIONS MAG., Dec. 1985, at 26.

tion and burdens of line-of-business regulation outweigh the expected benefits of permitting BOC entry into these other markets.

In conclusion, the line-of-business restrictions placed upon the local telephone companies as part of the divestiture settlement between the Justice Department and AT&T are broadly consistent with the prescriptions following from the economic theory of the participation in unregulated markets by regulated firms. The match is not so good when one turns to the particulars. The BOCs are permitted to offer competitive local communications services, CPE, Yellow Pages advertising, and a host of other businesses not directly related to their local telephone networks. While these exceptions are generally not totally lacking for justifications, the agruments made during the divestiture proceedings have not been persuasive.[98]

IV. Qualifications and observations

A. Continuation of the restrictions

While economic theory is instructive on the dangers of permitting regulated firms to enter unregulated markets, there remains the strong intuition behind the general proposition that excluding firms from markets is both anticompetitive and inefficient. Some suggestions may be offered on the question of whether the line-of-business restrictions on the BOCs should be continued.

The primary question to ask is whether there are products that local telephone companies can inherently supply more efficiently. Closely related to this question is the problem of determining the product boundaries of the local telephone monopoly. A striking example of this problem is the service of "protocol

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98 In fairness, recent court decisions on BOC line-of-business matters have taken a much harder tone regarding BOC expansion into other industries. *See, e.g.*, Clarification Decision, *supra* note 23, at 4-15.

conversion." To oversimplify somewhat, protocol conversion is the process by which communication between different computers or data terminals is made possible by converting the data format used by one machine into that used by the other. On the one hand, protocol conversion may be viewed as a potentially competitive information service from which the BOCs may be excluded. On the other hand, protocol conversion may be viewed as part of the local exchange's responsibility to maximize the ability of its subscribers to communicate with each other.[99] The protocol conversion case illustrates the difficulty that may attend delimiting the permissible areas for BOC entry.

If one concludes that a BOC possesses economies of scope in the provision of a particular product, two possibilities follow. The first is that the economies of scope are sufficiently great and unique to telephone companies that the natural monopoly extends to the new product. If this is so, one solution is to permit the BOC to provide the product, but extend regulation to that product to deter cost misallocation.[100] Although extension of the natural monopoly is probably the outcome when there are economies of scope, it may be the case that a BOC possesses some efficiencies over other firms that do not extend to the entire range of output demanded in the market. In that case, the choice as to whether the benefits of BOC provision

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[99] For a discussion of the complexities of the issue in the context of the FCC's rules regarding BOC provision of enhanced services, see Third Computer Inquiry Notice, *supra* note 24, at 33,593-99.

[100] Presumably, discrimination will generally not be a problem where the service is a natural monopoly resulting from economies of scope with the local exchange company.

One has to be careful in extending regulation not to strip the BOCs of returns commensurate with the risk associated with developing new products. *See* Statement of Richard Schmalensee appended to AT&T's filing in response to the Third Computer Inquiry Notice, *supra* note 24. For example, if the product were patentable, a non-BOC innovator would in principle be able to capture monopoly profits over the life of the patent. On the other hand, if the ratepayers rather than the BOC were funding the research, the BOC would be bearing less of the risk and thus need not require a high rate of return as a suitable incentive to innovate.

outweigh the potential adverse consequences to both telephone ratepayers and the efficient performance of other firms in the new market is likely to be difficult.

Another primary consideration affecting continuation of the line-of-business restrictions is the likelihood that discrimination and cross-subsidization can be effectively policed by regulators. In the pre-divestiture history of AT&T, discrimination was practiced largely through open refusal to interconnect, using the regulatory process itself as both an excuse for refusal and a tactic for delay.[101] Assuming that the divestiture has made regulators unsympathetic to those tactics, a telephone company will have to use more subtle methods of discrimination. The problem with more subtle methods is that their effect has to be sufficiently observable by consumers for the telephone company to be able to profit in the marketplace. In other words, consumers have to know that the telephone company's competitors offer systematically less desirable products. At the same time, the discrimination has to be sufficiently subtle that the regulator will not be able to quickly act upon it or devise an effective penalty.[102] The types of situations where this combination of events is likely to occur may not be large.[103] With regard to cost misallocation, the regulatory question is whether new accounting techniques have been devised to permit better detection of

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101 *See supra* notes 67–68 and accompanying text.

102 *See supra* notes 39–41 and accompanying text.

103 An additional qualification is that discrimination by a local telephone company might be detectable by comparing performance of its affiliate in its service areas with the performance of that affiliate in other service areas. *See* Antitrust Division, United States v. GTE Corporation; Proposed Final Judgment and Competitive Impact Statement, 48 Fed. Reg. 22,020, 22,034 (May 16, 1983). The usefulness of this "benchmark" competition requires that the affiliate's product be offered outside the local telephone company's service area and that the regulator can control for differences in demand and costs across regions. Consideration of benchmark tests also brings up the potential empirical difficulties in attributing performance differences to local economies of scope or discriminatory activity.

cross-subsidization than apparently has been the case in the past.[104]

Finally, technological change may erode the local exchange monopoly. While this is not likely to take place for some time with respect to residential or small business users, large users may be able to use competing technologies for many of their communications needs, particularly with regard to connection to interexchange carriers.[105] The threat of local exchange companies to discriminate against unaffiliated competitors in markets for which these alternate technologies are substitutes would be weakened, because the threatened companies could turn to these competitors. As far as these markets are concerned, the local exchange companies would have little market power to exploit through discrimination. If such markets can be specified, the restrictions on the BOCs on participation in complementary markets may be worth lifting.

B. Lessons on policy making

It would be difficult to imagine a larger single instance, along virtually any dimension, of the application of microeconomic theory to public policy than the divestiture of AT&T. It would therefore be remiss to leave the subject without looking for instruction on the conduct of economic policy making.

One observation is that microeconomics is used not as a tool for empirically quantifying costs and benefits to decide what course of action should be taken. Rather, it is typically employed as a theoretical guide for finding the types of industrial

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104 *See supra* notes 47, 70, and accompanying text. *See also* Third Computer Inquiry Notice, *supra* note 24, at 33,589-93.

105 *See supra* note 57. It is important to note that such entry may be the result of inefficiently high charges paid by interexchange carriers for use of local exchange facilities. *See* Kahn, *supra* note 65, at 149. The appropriate policy test for local exchange market power would be based on its ability to undercut "bypass" competitors and still sell significantly above the marginal cost of providing access to the local exchange.

structures and policies most likely to provide maximum overall economic benefit. This is not surprising, given the persuasive power and simplicity of economic theories relative to the inherent ambiguity and complexity of empirical estimation. This is not to say that data should not or do not inform economic judgments. For example, where empirical conclusions on econmies of scope or regulatory effectiveness are available, one should take those into account in making policy. Absent strong evidence one way or the other, however, economic theory combined with often unstated beliefs and broad stylized facts will be the determinants of economic policy recommendations. Although imperfect, this may be the best we can do. Otherwise, as a practical matter the loser in almost any economic policy dispute will be the party assigned the burden of empirical proof.

The emphasis on theory and stylized facts, however, makes it all the more important that specialists in the questions at issue have a strong role in deciding policy. *United States v. AT&T* is a good example. Determining the ability and incentive to discriminate[106] or cross-subsidize,[107] and whether these pose dangers exceeding potential economies of scope,[108] requires judgments on the effects of engineering and accounting practices that nonspecialist attorneys and economists are untrained to make. The record in *AT&T* gives little reason to hope that unambiguous quantitative proofs can be provided. It may be that as war is too important to be left to the generals, telecommunications is too important to be left to the engineers and accountants. I cannot help wondering, however, whether telecommunications policy judgments would be better informed if directly relevant expertise were held by officials responsible for telecommunications regulation.

An additional policy lesson may be suggested by the widely noted aversion telephone customers allegedly have had to the prospect of having to choose their interexchange and equipment

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106 *See supra* notes 40, 101-03, and accompanying text.

107 *See supra* notes 47, 104, and accompanying text.

108 *See supra* notes 48-49, 99-100, and accompanying text.

suppliers rather than having things already handled by the telephone companies.[109] According to economics, more choice is better because consumers have a wider set of options to use to maximize their welfare. There is probably no more fundamental premise underlying normative economics. This aversion to choice seems to contradict this fundamental premise.

It may be the case that telephone service for residential consumers is essentially a good where characteristics above a particular minimal level of quality are unimportant. Thus, the only potential gain from having to choose is a lower price, with the risk that the firm one chooses might not meet the necessary quality characteristics. While much of the history of opposition to AT&T has centered on differentiated equipment or services,[110] the divestiture experience suggests that where product uniformity is strong, consumers as a whole might be better off if they let a regulator make the choice for them. The regulator could police the firm chosen to ensure acceptable quality and reasonable, if not necessarily lowest possible, prices.[111] Markets may be most valuable not as an instrument for securing the lowest price of a standardized good but for providing a spectrum of product characteristics and quality where the good can be supplied in a variety of ways. The policy implications of such a conception of the role of markets have not been worked out, but they may be quite important.

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109 *See, e.g., Telecommunications: A Special Report*, Wall St. J., Feb. 24, 1986. This aversion to choice is a complaint different from the adverse reaction to local price increases allegedly brought about by the divestiture. This increase is largely the product of accelerated depreciation of outdated equipment and the inability to sustain interexchange subsidy of local service because of the availability of bypass technologies. *See supra* note 57; Johnson, *supra* note 65. It is also a different complaint from the possibility that the separation of long distance, local service, and CPE firms could make allocation of blame for poor service and identification of maintenance responsibilities more difficult.

110 *See* 2 A. KAHN, *supra* note 68.

111 For a theory of regulation based in part on consumer preference for stability and the cost of adaptation to technological change, see B. M. OWEN & R. BRAEUTIGAM, THE REGULATION GAME 23-24 (1978).

The resistance of business users to choice is in some ways more difficult, but in some ways easier, to understand. Business users are more likely than residential users to demand specialized, technically sophisticated equipment. In a competitive market, though, the profitability of a business depends upon its ability to provide better products at lower prices than its competitors. Therefore, costs paid for inputs compared to one's competitors' payments are more important to a firm than absolute costs. Competition will force the businesses to pass lower prices for inputs to their consumers. A telecommunications monopoly provides businesses with assurance that their competitors cannot undercut them with respect to telecommunications offerings, while competition brings no benefits to them, only to their customers in the form of lower prices.

Finally, the divestiture recalls a lesson suggested by the Vietnam experience. Although there is a natural tendency on the part of policy makers to compromise and seek middle ground, there are some public policy issues for which the middle ground is the worst possible solution. A commonly held view on the Vietnam War, for example, is that we should either have fought it with full commitment or not at all, and that the compromise position led to a protracted morass. So too may it be with the divestiture. The economic theory set out above suggested a strict separation of regulated from unregulated businesses. Compromising this prescription has led to an involved, lengthy, and unanticipated process of regulating the permissibility, terms, and conditions of BOC entry into particular markets. It was just this kind of regulatory oversight, applied to AT&T as an integrated company, that the divestiture was intended to avoid. Even where discretionary "fine tuning" might be justified by the considerations discussed above, the costs, delay, and decreased predictability of public action associated with such discretion may not bring about commensurate improvements in regulatory and market performance.

The light at the end of the tunnel is quite dim. If the end result of the divestiture is the gradual readmittance of the local telephone companies into other lines of business, because hav-

ing ventured onto the "slippery slope" the "slide" could not be stopped, it will be hard to conclude that the divestiture was worth the trouble.

APPENDIX

Recent developments

The line-of-business restrictions on the local telephone companies came up for review in 1987, in accord with a triennial review process incorporated into the MFJ. The Department of Justice recommended that most of these restrictions be lifted.[1] In its view, circumstances had changed regarding the market power of the local telephone companies and the ability of regulators to police the anticompetitive conduct which had brought about the original case against AT&T.[2]

After receiving extensive written and oral argument, Judge Greene rejected the Department's proposal to lift most of the restrictions on local telephone company operations.[3] The restrictions on interexchange service and equipment manufacturing were retained. Restrictions on non-telephone-related business, for which the cross-subsidization and discrimination problems are less severe, were lifted. The BOCs were not permitted to enter information services per se, but Judge Greene invited parties to submit proposals to encourage the local telephone companies to develop means to deliver electronic message services that other firms would provide.

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1 *See* Department of Justice, Report and Recommendations of the United States Concerning the Line of Business Restrictions Imposed on the Bell Operating Companies by the Modification of Final Judgment (Feb. 2, 1987). The only restriction the Justice Department originally suggested maintaining was on a BOC providing interexchange service into, out of, or within the geographic areas it serves. In its subsequent response to comments on this report, the Department dropped this proposal as unworkable, electing to recommend retaining the interexchange service restriction.

2 The major basis for these findings was HUBER, THE GEODESIC NETWORK: 1987 REPORT ON COMPETITION IN THE TELEPHONE INDUSTRY (1987), a report commissioned by the Department.

3 United States v. Western Electric Co., Inc., No. 82-0192 (D.D.C. Sept. 19, 1987).

Judge Greene's decision was generally correct and showed great insight and courage. He found that the facts submitted by the Department, rather than its interpretation of those facts, showed that the local telephone companies retain both their potential market power and the incentive and ability to engage in anticompetitive conduct.[4] Each observer no doubt has his or her disagreements. I might have maintained a requirement that unrelated business ventures be capitalized separately to prevent indirect ratepayer subsidy of debt and equity cost. Since the BOCs already can provide consumer premises equipment, it is less than clear what added practical benefits are gained from preventing the BOCs from manufacturing that equipment.[5] His solicitation of proposals to improve information service provision is especially noteworthy, for the important line to draw is not between "exchange" and "information" service, but between "natural monopoly" and "competitive" services.

Unfortunately, since the Department's reversal it is difficult for Judge Greene to guarantee a credible enforcement commitment that these restrictions will be maintained as long as the facts warrant. Absent a credible commitment, the local telephone companies may refuse to cooperate in the development of standards or access policies to facilitate the development of information services markets, in the belief that eventually Congress will eliminate the restrictions or the court will tire of maintaining them. Since the Department had been the primary agency in the government supporting these restrictions, its reversal may have eliminated that commitment. If so, the damage of the Department's reversal may have been done, in spite of Judge Greene's decision.

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4 The lack of factual support for the Department's radical reversal a mere three years after achieving a divestiture it had been seeking in various guises since at least 1949 raises serious questions about prosecutorial policy. *See* Brennan, Content, Controversy and Control in Antitrust Enforcement (George Washington University Graduate Institute for Policy Education and Research Working Paper No. 1987-1, 1987).

5 *See* text note 86 and accompanying text. If the judge interprets "not manufacture" as "only retail," the benefits of the restriction may be clearer.