the future than its historical embedded cost and that the LECs will be able to use such plant to deliver new services. But from that premise it does not follow that copper plant would be replaced. When an incumbent LEC eventually needed to replace such plant, the relevant economic question that the LEC would face would be whether copper wire was the cheapest means of supplying the necessary distribution services. If wireless loops were cheaper than copper loops at that point, the incumbent LEC would replace copper with wireless. Therefore, the relevant measure of replacement cost to use today to value an incumbent LEC's copper cable is the stand-alone cost of the most efficient substitute technology for performing the desired service. It may indeed be true that the cost today to reproduce a daisy-wheel printer placed in service in 1980 would be higher than its historical embedded cost; but no one would ever value a daisy-wheel printer above the stand-alone cost of a laser printer available today that was capable of delivering service of equal or superior quality.

133. The fallacy in this reasoning by AT&T reveals a larger logical inconsistency, which is another example of the Janus Artifice described earlier. AT&T endorses the notion that an incumbent LEC should be required to price UNEs and interstate access on a forward-looking basis that assumes a hypothetical level of efficient network architecture that does not correspond to the manner in which the LEC's network actually evolved over time to serve customer demand. Yet, when it comes to establishing the replacement value of the existing assets that AT&T believes are so inefficiently deployed by the incumbent LEC in its current network architecture, AT&T maintains that new demand will "increase the likely value of the existing copper cable."[124] Thus, whether the incumbent LECs have suffered stranded costs depends on AT&T's purpose at the moment. If AT&T is calculating forward-looking costs for purposes of pricing UNEs and interstate access, then large portions of an incumbent LEC's base of undepreciated assets should be ignored as not being sufficiently representative of the ideal network architecture of the future. But when asking whether the shareholders of the same incumbent LEC may

124. *Id.* at 33.

have been deprived a return of their invested capital because of the interaction between regulatory policies concerning depreciation and those concerning entry into formerly protected markets, AT&T presents a rosy scenario of the escalating value of embedded copper plant. Why, one might ask, if AT&T believes that copper plant is so attractive, did the company pay $11.5 billion in stock to acquire McCaw, the largest provider of wireless telephony services, instead of spending even a fraction of that amount purchasing the wireline assets of non-RBOC local exchange carriers?[125]

5. The Red Herring of Imprudence and Inefficiency

134. Finally, AT&T implies that an incumbent LEC cannot recover its existing embedded costs because they "reflect an accounting measure of actually incurred costs, but the prudence and efficiency of those expenditures have never been demonstrated."[126] One can turn the proposition around: Has any party proven that those expenditures were imprudent when made or are now inefficient? It is hardly appropriate to adopt AT&T's view that all incumbent LEC investment should be presumed to be imprudent until proven otherwise. The fact that in many cases price caps for interstate access have not been binding is powerful prima facie evidence that incumbent LECs have delivered the productive and dynamic efficiency that incentive regulation was designed to elicit.

135. If AT&T believes that it has paid prices for interstate access that reflect imprudent and inefficient investments made by incumbent LECs, what actions has it taken before now to have costs disallowed? It is late in the game, when addressing the taking of private property belonging to the shareholders of the incumbent LECs, for AT&T to imply that such property is a heap of wasteful investment. Moreover, AT&T is logically inconsistent. On the very same page of comments, AT&T simultaneously argues (1) that "there is obviously little risk of underrecovery" because the incumbent LEC presciently invested in sufficient copper cable capacity to meet growing demand for new narrowband

125. Section I(D) of the Modification of Final Judgment forbade AT&T from "acquir[ing] the stock of assets of any BOC," but it did not forbid AT&T from acquiring other LECs.

126. Comments of AT&T Corp. at 33.

and broadband services, but that (2) recovery of the incumbent LEC's costs should be impeded (in ways that AT&T does not make clear) because "the prudence and efficiency of those expenditures have never been demonstrated."[127]

B. The Opposing Commenters Confuse Which Revenues Are Relevant to Determining Whether a LEC Can Recover the Cost of Providing Regulated Services, Including Interstate Access

136. AT&T argues that "ILECs now have ample opportunities to recover embedded costs through the provision not only of regulated local exchange services, but also of other services such as yellow pages, customer calling services, enhanced services, and Block B cellular franchises."[128] Moreover, AT&T asserts that "[t]he Commission may consider intrastate revenues so long, as here, they are not used to justify a rate that would otherwise be confiscatory."[129] Elsewhere in its discussion of cost recovery, AT&T asserts that incumbent LECs currently earn "monopoly rents."[130] This entire discussion confuses the analysis of whether the regulated operations of the incumbent LEC can remain financially viable under the pricing rules that AT&T advocates.

137. The Telecommunications Act of 1996 added section 252(d)(1) to the Communications Act, which states that the price of interconnection or an unbundled network element "(A) shall be (i) based on the cost (determined without reference to a rate-based proceeding) of providing the interconnection or network element (whichever is applicable), and (ii) nondiscriminatory, and (B) may include a reasonable profit."[131] In its *First Report and Order* the FCC related section 252(d)(1) to the agency's notion of TELRIC and reasoned "that, under a TELRIC methodology, incumbent LECs' prices for interconnection and unbundled network elements shall recover the forward-looking costs directly attributable to the specified element, as well as a reasonable allocation of forward-looking common costs."[132] The *First Report and Order* also refers to "profit."[133]

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127. *Id.*
128. *Id.* at 37.
129. *Id.* at 37 n.63.
130. *Id.* at 35.
131. 47 U.S.C. § 252(d)(1).
132. *First Report and Order* ¶ 682.

138. The meaning of "profit" in section 252(d)(1) and the *First Report and Order* is relevant to the pricing of interstate access in three respects. First, the manner in which profit is defined for purposes of unbundling and local interconnection will influence the extent to which the intrastate-regulated activities of the LEC's operations are making a positive or negative contribution to revenue adequacy. Second, the availability of the market-based option that the Commission proposes for the pricing of interstate access is expressly conditioned on, among other things, the incumbent LEC having reached agreements with CLECs for the provision of resale and UNEs that conform to the Commission's TELRIC-based pricing recommendations, which include its statutory interpretation of "profit." Third, the extent to which one can say that the margins earned by incumbent LECs on their provision of interstate access contain "excess profit" is intertwined with the pricing of UNEs and resale and the sufficiency or inadequacy of charges on end users or interexchange carriers.

139. A firm earns a "reasonable profit" when its *economic profits* equal zero. Economic profits are zero when total revenues equal total costs, inclusive of a competitive return on capital. The incumbent LEC's return on capital equals the sum of the return on capital for its incremental, joint, and common costs. The allowance in section 252(d)(1) for a "reasonable profit" is accomplished when the incumbent LEC's prices for its regulated services are established so that, on average, the LEC earns zero economic profits on the entire array of regulated services that it supplies. That is, the firm's rates should be established so that, on average, it earns zero economic profits on its regulated services as a whole. Of course, random market factors may cause the LEC's profits to exceed or fall below that value in any particular period.

140. Four points bear emphasis because they have generated controversy in arbitration proceedings to establish prices for UNEs. First, *firms* earn profits; individual products or services produced by firms do not. It is therefore an incorrect reading of section 252(d)(1) to say that no

133. 47 U.S.C. § 252(d)(1); *First Report and Order* ¶ 699.

individual UNE may earn more than a "reasonable profit." Such a reading of that statute would make economic sense only if each network element were supplied by a firm producing only that element as its output and nothing else. It is equally specious for the opposing commenters to accuse the incumbent LECs of earning excessive or "monopoly" profits on interstate access.

141. The entire exercise of unbundling addressed in sections 251 and 252 presupposes, to the contrary, that the incumbent LEC is a multiproduct firm. Furthermore, the continuation of regulatory policies that impose public service obligation on the incumbent LEC, and the continuation of any subsidies in the retail rate structure, imply that the incumbent LEC will earn a *negative* contribution to its overall profitability from some services (such as basic local service and service to high-cost customers for whom the incumbent LEC is obliged to serve as the carrier of last resort). Given that regulators continue to embed subsidies into the rate structure, it will necessarily be the case that the incumbent LEC will have to earn returns to certain other services that, if viewed in isolation, would appear to yield positive economic profit. For that reason, the proper reading of section 252(d)(1) corresponds to the economic reality of the situation: Regulators must allow the incumbent LEC the opportunity to earn a "reasonable profit"—which is to say, a zero economic profit—across the full aggregation of regulated services that the LEC is required to offer, including interstate access.

142. Second, the only profit that is relevant for purpose of section 252(d)(1) is the profit on the incumbent LEC's *regulated* services. Typically an incumbent LEC is owned by a holding company that has unregulated activities, such as investments in overseas telecommunications ventures or investments in domestic activities that are not regulated. The profit that the incumbent LEC's parent earns from those unregulated activities are not relevant to the definition of "reasonable profit" under section 252(d)(1) because they do not flow from investments made under the regulatory contract in a particular state to discharge the LEC's assumption of public service obligations there. By analogy, the Supreme Court long ago announced as a matter of takings jurisprudence in *Brooks-Scanlon Co.* v. *Railroad*

Commissioner that it is impermissible to judge whether rate regulation is confiscatory by including the returns to unregulated operations of the company in question.[134]

143. Third, whether the incumbent LEC earns a profit must be determined with respect to its regulated services *in the particular jurisdiction under consideration.* A state PUC cannot average profit figures across multiple states to determine whether the prices that it sets for UNEs in its own state allow the incumbent LEC there the opportunity to earn a reasonable profit. The California Public Utilities Commission, for example, cannot deny an incumbent LEC in California the opportunity to earn a reasonable profit when it sell UNEs to entrants in California on the rationale that the Public Utilities Commission of Ohio has allowed the LEC's sister company in Ohio to earn a return there that the California regulators deem to include economic profit. If regulators could do so, they would be tempted to engage in a form of opportunistic behavior: They could "export" to other states the burden of ensuring that the parent company of the various sister LECs achieved revenue adequacy for its local exchange operations as a whole. But, of course, once one state acted in that opportunistic manner, others would follow and it would be impossible for remaining states to cover the parent company's resulting deficit from its local exchange operations. That form of opportunism can occur between the federal government and the states because of the jurisdictional separation of the LEC's common costs.

144. A fourth and related point concerns the argument advanced by entrants into local telephony that uncompensatory prices for UNEs (and for resale, for that matter) are legally permissible because the Telecommunications Act of 1996 liberated incumbent LECs to enter other markets—particularly the interLATA long-distance market—as a quid pro quo. That argument is not plausible if one assumes, as the interexchange carriers maintain, that the in-region interLATA market is competitive. (That proposition, however, is the subject of bitter controversy as a result of the empirical

134. 251 U.S. 396, 399 (1920) ("The plaintiff may be making money from its sawmill and lumber business but it no more can be compelled to spend that than it can be compelled to spend any other money to maintain a railroad for the benefit of others who do not care to pay for it.").

research by Professor Paul MacAvoy suggesting that long-distance markets exhibit tacit collusion among the three major carriers.[135]) If interLATA markets *are* competitive, then simple arithmetic disposes of the quid pro quo argument. By definition an incumbent LEC that is forced to accept losses in local exchange services because of unbundling at uncompensatory prices will earn a return that is below the competitive return on capital. The only way for the incumbent LEC to earn a competitive return overall once it may provide in-region interLATA services is for the LEC to earn supracompetitive returns from those new long-distance services. But if those services are by hypothesis currently earning only a competitive return for the firms providing them, then the incumbent LEC would be averaging a competitive return on capital in the interLATA market with a less-than-competitive return on capital in the local exchange market. The result of that averaging is necessarily an overall return to the LEC that is below the competitive return on capital. In short, the quid pro quo argument is plausible only if those advancing it make what is essentially an admission against interest—namely, that interexchange carriers currently are able to earn supracompetitive returns.[136]

C. Market Share, Market Power, and the Counterfactual Rhetoric of an Unregulated Incumbent LEC Monopoly Free of Mandated Cross-Subsidies

145. The opposing commenters repeatedly claim that the current regime of access prices preserves monopoly rent.[137] But that criticism is based on a distorted view of the real world. To assume that a regulated monopolist is routinely and consistently earning monopoly rents is counterfactual: The *raison d'etre* of public utility regulation is to prevent a firm thought to be a natural monopoly from setting the profit-maximizing price of an unconstrained monopolist. Contrary to the opposing commenters' implicit assumption, regulation of interstate access charges in place before the enactment of the 1996

135. PAUL W. MACAVOY, THE FAILURE OF ANTITRUST AND REGULATION TO ESTABLISH COMPETITION IN MARKETS FOR LONG-DISTANCE TELEPHONE SERVICES (MIT Press & AEI Press 1996).

136. Alternatively, one could argue that the incumbent LEC could earn supracompetitive returns because it would have substantially lower costs of marketing long-distance services to customers than the interexchange carriers have. That assumption is not plausible given that the incumbent LECs would be novices at marketing interLATA services and would face three or more established competitors.

137. *E.g.*, Comments of AT&T Corp. at 35.

federal legislation should be presumed to have limited rather than facilitated the extraction of monopoly rents. Nonetheless, expert witnesses testifying on behalf of entrants in state arbitration proceedings following the *First Report and Order* asserted, without empirical support, that the incumbent LEC "has substantial market power in many areas."[138] Similarly, in this proceeding Professors Baumol, Ordover, and Willig assert, though without empirical substantiation, that the "bottleneck in local telephony confers substantial market power on the ILECs and, *in the absence of regulatory restraints*, would allow the ILECs to price . . . network components significantly above their true costs."[139] Incumbent LECs, of course, are *not* permitted to price "in the absence of regulatory constraints." If state regulation has failed to prevent incumbent LECs from earning monopoly rents, then state regulators should now correct their past failures directly. Indeed the Telecommunications Act of 1996 commands them to do so if they have not done so already.[140]

146. Moreover, if monopoly rents do persist in the pricing of some final product sold by the regulated incumbent LEC, it is more likely than not that regulators have authorized or mandated the extraction of those rents as part of an overall rate structure that is rife with cross subsidies from one customer group to another. It is certainly possible, in other words, that the prices for specific services sold by the regulated incumbent LEC contain rents that the firm is obliged to extract from one set of customers and then dissipate in the course of subsidizing other services that the regulator orders the LEC to sell below cost. In that case, the recovery of the contributions to margin on the services supposedly generating the monopoly rents represents nothing more than a preservation of state-mandated cross subsidies; those positive contributions to margin should not be interpreted by the FCC in isolation as a preservation of monopoly rents that, on balance, flow from the combined classes of all customers to the

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138. Rebuttal Testimony of Frederick R. Warren-Boulton at 7, In the Matter of AT&T Communications of the Southwest, Inc.'s Petition for Arbitration Pursuant to Section 252(b) of the Telecommunications Act of 1996 to Establish an Interconnection Agreement with GTE Midwest Inc., Case No. TO-97-63 (Mo. Pub. Serv. Comm'n, filed Oct. 21, 1996) (prepared for AT&T Communications of the Southwest, Inc.) [hereinafter *Warren-Boulton Rebuttal Testimony*]; *see also* KASERMAN REPORT, *supra* note 75, at 6 (describing incumbent LEC services "that remain subject to supply under conditions of significant monopoly power").

139. Baumol-Ordover-Willig Affidavit at 4 ¶ 7 (emphasis added).

140. 47 U.S.C. § 253(a) (abolishing state and local legal barriers to entry).

incumbent LEC's shareholders. In any event, it is surely preferable for the regulator to eliminate the system of cross subsidies altogether by rebalancing the rate structure, rather than to reject the M-ECPR and instead price network access selectively on the basis of incremental cost while continuing to require the incumbent LEC to price various other services below cost. Such a selective approach would violate sound economic analysis and deny the incumbent LEC the opportunity to recover its costs, which eventually would destroy the LEC's financial solvency and induce disinvestment in the network.

147. The unsubstantiated assertion that the incumbent LEC enjoys unconstrained market power flies in the face of established thinking in antitrust law. Legal and economic scholars have long recognized that naïve reliance on market shares in antitrust cases can produce diagnoses of monopoly power where none exists. Market power refers to the ability of a firm to raise price above the competitive level without losing so many sales as to make the price increase unprofitable. In terms of maximizing consumer welfare, public policy should ask whether a market produces the textbook result of perfect competition in the sense that price (in an industry without economies of scale or scope) is driven down to marginal cost. Market shares are merely an indirect indicator of whether price is likely to exceed marginal cost. In the stylized, perfectly competitive market, where price equals marginal cost, there are so many firms that no one firm has more than a small share of total sales made in the market.

148. The danger with market-share analysis, however, is that courts, regulators, and legislators will continue to rely upon it when it produces misleading inferences of market power or when more direct evidence of the margin between price and cost is readily available. The misdiagnosis of market power is especially troublesome in regulated industries like local telephony, which are subject to universal service obligations.

149. Economists have traditionally measured the market power of some firm i through the Lerner index L_i, named for economist Abba Lerner.[141] The Lerner index is an estimate of the

141. Abba Lerner, *The Concept of Monopoly and the Measurement of Monopoly Power*, 1 REV. ECON. STUD. 157 (1934).

proportion by which firm i's price P_i deviates from its marginal cost C_i' at the firm's profit-maximizing output:

$$L_i = (P_i - C_i')/P_i.$$

In a seminal article published in 1981, Professor William Landes and Judge Richard Posner derived an equivalent form of the Lerner index that is highly useful in antitrust analysis.[142] It enables one to infer the market power of any firm i by simultaneously considering the entire market's price elasticity of demand ϵ^d_m, firm i's market share S_i, and the price elasticity of supply of the j other firms on the competitive fringe of the market ϵ^s_j:

$$L_i = S_i/(\epsilon^d_m + \epsilon^s_j(1 - S_i)).$$

Through this restatement of the Lerner index, Landes and Posner provided a valuable insight. As long as a court considers all three variables—ϵ^d_m, S_i, and ϵ^s_j—it will arrive at the same estimate of a firm's market power regardless of how it defines the relevant market.[143] If one variable (often S_i, the share of the supposedly "relevant" market) is overstated or understated, then the other two variables will assume larger or smaller values that precisely offset the distorted estimate of the first.

150. Landes and Posner noted that high market shares in a price-regulated industry are either meaningless from a competitive perspective or indicative of prices that are set at or below marginal cost—that is, at or below the price that would obtain in a competitive equilibrium:

> To the extent that regulation is effective, its effect is to sever market power from market share and thus render our analysis inapplicable. This is obviously so when the effect of regulation is to limit a monopolist's price to the competitive price level. A subtler effect should also be noted, however. Regulation may increase a firm's market share in circumstances where only the appearance and not the reality of monopoly power is created thereby. For example, in many regulated industries firms are compelled to charge uniform prices in different product or geographical markets despite the different costs of serving the markets. As a result, price may be above marginal cost in some markets and below marginal cost in others. In the latter group of markets, the regulated firm is apt to have a 100% market share. The reason is not that it has market power but that the market is so unattractive to sellers that the only firm that will serve it is one that is

142. William E. Landes & Richard A. Posner, *Market Power in Antitrust Cases*, 94 HARV. L. REV. 937, 944–45 (1981).
143. The price elasticity of demand, though a negative number, is often expressed as its absolute value, as it is here.

> induced to remain in it by the opportunity to recoup its losses in its other markets, where the policy of uniform pricing yields revenues in excess of costs. In these circumstances, a 100% market share is a symptom of a lack, rather than the possession, of market power.[144]

That assessment is directly relevant to the unsubstantiated assertion by numerous economists that the incumbent LEC possesses market power. If an incumbent LEC has a marginal cost of $20 for its provision of basic residential service but is ordered by regulators to charge only $15, then the LEC's Lerner index for that service is –.33. The incumbent LEC has *negative* market power but virtually 100 percent of the market. Landes and Posner note that in such a case "the causality between market share and price is reversed. Instead of a large market share leading to a high price, a low price leads to a large market share; and it would be improper to infer market power simply from observing the large market share."[145] The Ninth Circuit comprehended that relationship in *Metro Mobile CTS, Inc.* v. *NewVector Communications* when it said: "Reliance on statistical market share in cases involving regulated industries is at best a tricky enterprise and is downright folly where . . . the predominant market share is the result of regulation. In such cases, the court should focus directly on the regulated firm's ability to control prices or exclude competition."[146]

D. Full Recovery of Forward-looking Costs Is Not Tantamount to "Indemnification"

151. AT&T pejoratively recasts cost recovery as "'make-whole' payments" by which "consumers [would] be forced to subsidize ILECs."[147] Similarly, some economists testifying on behalf of AT&T, such as Dr. Frederick R. Warren-Boulton, argue that "[t]he FCC's TELRIC-based pricing proposal would permit the ILEC to recover all of its forward-looking, efficient costs, including any joint and common costs, and it would be poor economic policy to indemnify any competitor against losses

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144. Landes & Posner, *supra* note 142, at 975–76.

145. *Id.* at 976.

146. 892 F.2d 62, 63 (9th Cir. 1989); *see also* Consolidated Gas Co. of Fla. *v.* City Gas Co., 880 F.2d 297, 300 (11th Cir.), *vacated and reh'g granted*, 889 F.2d 264 (11th Cir. 1989), *on reh'g*, 912 F.2d 1262 (11th Cir. 1990), *rev'd per curiam on other grounds*, 499 U.S. 915 (1991).

147. Comments of AT&T Corp. at 29.

associated with competition."[148] Dr. Warren-Boulton bases his argument against full cost recovery for the incumbent LEC on its supposed inefficiency: "To the extent [the incumbent LEC] is currently inefficient or its costs reflect investments in facilities which are not required to service telephone demand, these costs should not be recovered via the prices for . . . unbundled network elements."[149] Professors David Kaserman, John Mayo, and other expert witnesses for AT&T make the same argument when urging that the wholesale discount for resale of LEC services be increased by netting out monopoly rents and inefficiencies.[150]

152. That argument invites four responses. First, to date, the economists who allege this incumbent LEC inefficiency have not provided factual, let alone empirical, support for their allegation.

153. Second, it is easy to assert that a regulated firm like a local exchange carrier *must* be inherently inefficient, since regulation is inferior to competition and cannot replicate its disciplines; nonetheless, it bears emphasis that the investments of the incumbent LEC that the M-ECPR's detractors would characterize as inefficient (and thus costs that would become stranded in the face of competition) are investments that regulators approved beforehand as prudent. The argument is thus one of massive, persistent regulatory failure—for which opponents of the M-ECPR implicitly argue that the incumbent LEC should be held financially responsible.[151]

154. Third, how are inefficiencies in TELRICS to be determined? The incumbent LECs can present studies of the costs that they incur to provide service. There are considerable difficulties in devising an efficiency benchmark and then determining whether the costs incurred by LECs satisfy that efficiency standard. State regulators have traditionally not interfered with company management decisions.

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148. *Warren-Boulton Rebuttal Testimony, supra* note 138, at 4. "Offering a guarantee to *any* firm that it will be able to recover 'all its costs,'" Dr. Warren-Boulton continues, "is incompatible with competition and market discipline." *Id.* at 5 (emphasis in original).

149. *Warren-Boulton Testimony, supra* note 138, at 5–6.

150. KASERMAN REPORT, *supra* note 75, at 17–19.

151. As we have previously noted, that argument distills to the assertion that the democratic institutions that produced public utility regulation and that have been politically responsible for overseeing the performance of regulators have failed miserably. J. Gregory Sidak & Daniel F. Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. REV. 851, 991–93 (1996).

Incentive regulations, such as price caps, were introduced to provide market incentives for productive efficiency. Unsupported allegations of cost inefficiency made by a competitive entrant are subject to question. So also are arbitrary engineering cost studies that are offered as efficiency benchmarks. Furthermore, application of any such benchmark by a regulatory authority is fraught with potential problems that compound those associated with price regulation. Artificially constructed engineering studies or guesses at access costs by administrative agencies do not substantiate charges of cost inefficiency.

155. Fourth, the "indemnification" argument fails to recognize that permitting the incumbent LEC to receive the expected value of its future net revenue stream is not the same as the guaranteed receipt of the highest net revenue stream that the regulatory arrangement would have allowed. It is true that the reasonable opportunity to recover costs is not a guaranty that such cost recovery *will* occur. Rather, the opportunity is an expected value. Simply monetizing the expected flow of net revenues into a stock is not the same as a guaranteed payment of the full amount of costs incurred. Rather, it is merely the payment of the *certainty equivalent*[152] of a uncertain future stream of net revenue payments, just as a share of stock or an insurance contract has a value determined by the certainty equivalent of the various contingent outcomes envisioned by that financial instrument.

IV. The Opposing Commenters Ignore the Applicable Takings Jurisprudence or Apply It Superficially to TELRIC-Based Pricing of LEC Provision of Interstate Access

156. The opposing commenters present a superficial and incomplete discussion of the takings questions posed by this proceeding. We address here four errors contained in that discussion. First, the opposing commenters ignore the entire body of takings law concerning physical invasion of private property. Second, they incorrectly apply takings case law concerning rate-regulated utilities. Third, they

152. *See, e.g.*, RICHARD A. BREALEY & STEWART C. MYERS, PRINCIPLES OF CORPORATE FINANCE 202–04 (McGraw-Hill, Inc. 4th ed. 1991).

fail to recognize that the unbundling of the local network mandated by the Telecommunications Act of 1996 redefined the public purpose to which shareholders of the incumbent LECs had dedicated their private property, and that such a redefinition does not insulate state and federal governments from the Takings Clause for the amount to which their actions diminish the value of that private property. Fourth, the opposing parties incorrectly argue that a waiver process before the Commission will suffice to protect the rights to private property that shareholders of incumbent LECs receive from the U.S. Constitution.

A. The Opposing Commenters Choose to Ignore the Clear Relevance of *Loretto* to Cost Recovery by an Incumbent LEC That Is Required to Provide Unbundled Network Access

157. At pages 82 to 90 of our initial affidavit, we explained at length the relevance to this proceeding of the Supreme Court's leading decision on takings arising from physical invasion of property, *Loretto* v. *Teleprompter Manhattan CATV Corp.*[153] The increased pressure on the incumbent LEC to recover its full economic costs of providing interstate access services arises in substantial part from the requirements that the LEC sell UNEs, interconnection, and wholesale services at prices that will preclude the LEC from fully recovering even the *forward-looking* component of its *intrastate* costs of providing regulated service; it therefore follows *a fortiori* that the intrastate side of the LEC's business will not be able to make a positive contribution to the recovery of common network costs that have been jurisdictionally assigned to interstate access. To the contrary, the pricing of UNEs and interconnection will make it possible for arbitrage to take place in the supply of interstate access. In short, the physical occupation of the incumbent LEC's network directly affects the magnitude of common costs that the LEC will be able to recover through its sale of interstate access. Thus *Loretto* applies to the underrecovery of costs due to the pricing of interstate access, just as the decision provided the basis for a unanimous decision of the Oregon Supreme Court in 1995 that colocation constituted a physical invasion that violated the Takings Clause.[154]

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153. 458 U.S. 419 (1982).

154. GTE Northwest, Inc. v. Public Util. Comm'n of Ore., 321 Ore. 458, 468–77, 900 P.2d 495, 501–06 (1995), *cert. denied*, 116 S. Ct. 1541 (1996).

B. The Opposing Commenters Fail to Comprehend the Implications of TELRIC Pricing for the Takings Analysis under *Hope* and *Duquesne*

158. AT&T attempts to defend the constitutionality of "reinitializing" price caps to TELRIC levels by arguing that the Takings Clause "requires only that a regulated entity have a fair *opportunity* to secure a reasonable return on its *overall* investment."[155] That sentence alone demands three responses. First, TELRIC pricing provides *no* opportunity for the incumbent LEC to earn a reasonable return on its investment because such pricing necessarily forces the LEC to receive total revenues that are less than total costs. Second, as explained earlier, the investment upon which the Takings Clause requires that the regulated firm receive the opportunity to earn a reasonable return is the firm's investment to provide the regulated service, *not* the firm's "overall" investment. Third, the issue presented here is one of a massive shortfall in the recovery of costs. In other words, the proposals to price interstate access at TELRIC create a virtual certainty that the incumbent LEC will be denied the opportunity not only to earn a return *on* its investment in regulated assets, but also to secure the return *of* those regulated assets by the end of their useful lives. As we explained in our initial affidavit, the severity of the problem facing the incumbent LEC is far graver than the problems facing the regulated firms in *Federal Power Commission* v. *Hope Natural Gas Co.*[156] and *Duquesne Light Co.* v. *Barasch.*[157]

159. In the next sentence, AT&T quotes the familiar language from *Hope* that a regulatory agency is "not bound to the use of any single formula" when setting rates.[158] Whatever this passage from *Hope* stands for, it surely does not mean that a regulator is free under the Takings Clause to set rates such that the total revenues from a firm's regulated activities will consistently fall below the firm's

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155. Comments of AT&T Corp. at 39 (emphasis in original). MCI and WorldCom make similar arguments but discuss the relevant takings cases even more superficially than does AT&T. Comments of MCI Communications Corp. at 28–32; Comments of WorldCom, Inc. at 62–62 & n.72.

156. 320 U.S. 591 (1944).

157. 488 U.S. 299 (1989).

158. Comments of AT&T Corp. at 39 (quoting *Hope*, 320 U.S. at 602).

total costs from those activities. The standard interpretation given the quoted passage from *Hope* is that the net effect of the rate order, not its details, is what matters for constitutional purposes. "The Constitution protects the utility from the net effect of the rate order on its property. Inconsistencies in one aspect of the methodology have no constitutional effect on the utility's property if they are compensated by countervailing factors in some other aspect."[159] The requirement that a firm's total regulated revenues be allowed to cover its total regulated costs is not a particular "methodology" or "formula" of rate regulation. It is a fundamental principle of economics that reflects common sense. In more technical terms, the requirement that a firm's total regulated revenues cover its total costs is the *constraint* on the regulatory pricing problem: The regulator sets prices to maximize some measure of social welfare, subject to the constraint that the firm earns a competitive return. Correctly viewed in these terms, the break-even constraint is in no way at odds with AT&T's observation that "the Supreme Court has twice directly held that regulators are free to adopt new ratemaking principles that preclude recovery of embedded-type book costs."[160] To repeat, whether or not regulators give a regulated firm a reasonable opportunity to break even on its regulated activities is *not* a minor detail of rate setting that the Takings Clause will not disturb. Rather, it defines what must be the "net effect" of the rate regulation, which is all that *Hope* and *Duquesne* are concerned with.

160. Next, AT&T argues that "even" the incumbent LECs "do not remotely suggest that any of them would face [the] prospect" of being subjected to a rate order for interstate access with "overall rates so low as to 'jeopardize the financial integrity of the [regulated] companies, either by leaving them insufficient operating capital or by impeding their ability to raise future capital.'"[161] AT&T's sole support for that proposition consists of two quotes, one from an undated Bell Atlantic document and the

159. *Hope*, 320 U.S. at 314.
160. Comments of AT&T Corp. at 39.
161. *Id.* at 39–40 (quoting *Duquesne*, 488 U.S. at 312). MCI cites this same passage. Comments of MCI Communications Corp. at 29–30.

other from a story about Pacific Bell in the trade press.[162] Yet both quotes emphasize the RBOC's potential revenues *outside* the market for regulated local telephony services, such as in-region interLATA, wireless, Internet access, and 800 services.[163] In the following paragraph, AT&T makes the shift in its argument complete by explicitly asserting that the relevant takings question is whether a "limitation on access recovery is so onerous that it will deprive ILECs of the opportunity *as firms* to earn a fair return on their *total* investment."[164] That reasoning is false. As we discussed earlier, it is no answer to the takings question to say that unregulated services may yield revenues to offset the losses which, because of a change in regulatory policy, the regulated firm will be highly likely to incur in its provision of regulated services. As we noted earlier, the Supreme Court rejected such reasoning in 1920 in *Brooks-Scanlon*.[165]

161. Finally, AT&T misstates the contractual issue at hand when it says that there "is . . . no merit to the ILECs' oft-repeated argument that changes *in ratemaking methodology* violate some legally protected 'regulatory compact.'"[166] As we explained in our initial affidavit, if it is mutually agreeable to the regulated firm and the regulator, a change in ratemaking methodology (such as a shift from rate-of-return regulation to price caps) is by itself a bilateral modification of the regulatory contract rather than a unilateral abrogation of the contract. The relevant question is therefore whether or not the change in the ratemaking methodology is voluntarily accepted by the incumbent LEC and, if it is not, whether its net effect is to deny the incumbent LEC its expectation under the regulatory contract—namely, a reasonable opportunity to recover its full economic costs of providing the regulated service.

162. AT&T further argues: "Nothing in the FCC's current access pricing rules establishes any 'vested right' or other ILEC entitlement . . . ."[167] AT&T misses the point. The question is not whether

162. Comments of AT&T Corp. at 40 n.66.
163. *Id.* Ad Hoc makes the same incorrect argument. Comments of Ad Hoc Telecommunications Users Committee at 56-60.
164. Comments of AT&T Corp. at 40 (emphasis added).
165. 251 U.S. at 399.
166. Comments of AT&T Corp. at 41 (emphasis added).
167. *Id.*

rules of the FCC's own making impose an obligation on it *vis-a-vis* the incumbent LECs. The question is whether the FCC will answer to the common law of contracts and to the Takings Clause of the U.S. Constitution. As we explained in our initial affidavit, by virtue of the agreement among the FCC and the states to allocate common costs arbitrarily across jurisdictional lines (and indeed disproportionately to the interstate account), the FCC became a party to the regulatory contract that each state had already entered into with a given incumbent LEC. The incumbent LEC's ability to recover its common costs depends upon the regulatory actions of both the FCC and the state PUCs. The Commission's decisions on the pricing of interstate access are as capable of breaching the regulatory contract as are a state PUC's decision on the pricing of UNEs and resale.

163. Citing *Duquesne* and *Market Street Railway*, AT&T then asserts that "courts have *directly* held [that] an alleged 'compact' claim adds nothing to allegations that a regulatory change effects a taking."[168] AT&T's reading of the two cases is, to put matters politely, a stretch. Nothing contained on page 303 or 313 of volume 488 of the *U.S. Reports* supports AT&T's argument. Nothing contained on page 555 or 567 of volume 324 of the *U.S. Reports* supports AT&T's argument. Neither *Duquesne* nor *Market Street Railway* can be read to repudiate the notion of the regulatory contract or to establish that a claim for breach of the regulatory contract is coextensive with, or superfluous to, a claim based on takings jurisprudence. If the Supreme Court had made such a significant pronouncement, one would expect to find the word "compact" or "contract" somewhere in *Duquesne* and *Market Street Railway*. Neither word can be found in the two decisions.

164. Even if one sets aside AT&T's curious citations, its legal argument still does not withstand scrutiny. A claim for breach of contract under the common law is a separate cause of action from a claim for just compensation under the Takings Clause of the U.S. Constitution. It may be the case, as we discussed in our initial affidavit, that the Commission could invoke a defense that would shift

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168. *Id.* (emphasis added) (citing *Duquesne*, 488 U.S. at 303, 313, Market St. Ry. v. Railroad Comm'n of Ca., 324 U.S. 548, 555, 567 (1945)).

onto the states all liability for its breach of the regulatory contract. But that is a separate matter from whether an incumbent LEC could plead a contract claim against the Commission for its adoption of a pricing policy for interstate access that had the net effect of precluding the LEC from having any reasonable opportunity to recover the common costs of the regulated services that it agreed to provide to the public.

C. The FCC Cannot Redefine the Intended Use of Private Property That an Incumbent LEC Has Dedicated to a Public Purpose Unless the Commission Simultaneously Preserves the LEC's Reasonable Opportunity to Recover Its Full Economic Costs

165. As the Commission and various commenters have noted, network unbundling under sections 251 and 252 of the Communications Act presents interexchange carriers with the opportunity to arbitrage their way around interstate access charges. What makes such arbitrage possible is that Congress has effectively redefined the public purpose to which the private property of an incumbent LEC had been dedicated. If that newly dedicated public purpose diminishes the LEC's opportunity to recover its full economic costs of providing service, a taking will have occurred.

166. The Supreme Court's 1915 decision in *Northern Pacific Railway Co.* v. *North Dakota* has great relevance to the mandatory unbundling of network access in local telephony, for the decision emphasizes that private property that a regulated utility has dedicated to a public purpose cannot be appropriated by the government for a different purpose.[169] The case involved a challenge by two railroad companies to a North Dakota statute setting maximum rates on the intrastate carriage of coal. The railroads claimed that the rates forced them to carry coal at a loss or at an uncompensatory rate (taking into account a competitive return to capital) and therefore constituted a taking of private property. Although the North Dakota Supreme Court agreed that the rates forced the companies to carry coal at a uncompensatory rate, it nonetheless deemed those rates not to be confiscatory because the companies overall continued to earn a reasonable return on their intrastate business.

169. 236 U.S. 585 (1915).

167. The Supreme Court reversed. It held that the statute was an attempt to take a carrier's property without due process of law in violation of the Fourteenth Amendment. Although the state enjoys broad power to regulate private property devoted to a public use, Justice Hughes, writing for the eight-member majority, stressed that, "the State does not enjoy the freedom of an owner."[170] That the state may reasonably regulate to ensure that a carrier fairly discharges the obligations of its charter does not mean that state may redefine the public use to which the carrier's property is dedicated, even if the carrier's total business continues to earn a sufficient return:

> The fact that the property is devoted to a public use on certain terms does not justify the requirement that it shall be devoted to other public purposes, or to the same use on other terms, or the imposition of restrictions that are not reasonably concerned with the proper conduct of the business according to the undertaking which the carrier has expressly or impliedly assumed . . . . The public interest cannot be invoked as a justification for demands which pass the limits of reasonable protection and seek to impose upon the carrier and its property burdens that are not incident to its engagement. In such a case, it would be no answer to say that the carrier obtains from its entire intrastate business a return as to the sufficiency of which in the aggregate it is not entitled to complain.[171]

As an example, Justice Hughes stated that if the firm "has held itself out as a carrier of passengers only, it cannot be compelled to carry freight."[172] This simple example from 1915 has a contemporary counterpart in the debates over mandatory unbundling of access to local telephony networks: If the regulated firm has held itself out as an integrated network providing service directly to customers, can it be compelled to rededicate that network to providing service to other (unregulated) firms that compete with the regulated firm for sales to retail customers? *Northern Pacific Railway* says no.

168. Professors Baumol and Willig have recently made the same argument with respect to railroads. Regulation of the railroads began in 1887 with the Interstate Commerce Act that established the Interstate Commerce Commission (ICC). The Railroad Revitalization and Regulatory Reform Act of 1976[173] was an initial attempt at railroad deregulation that left many regulatory controls in place.

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170. *Id.* at 595. The lone dissenter, Justice Pitney, wrote no opinion.
171. *Id.* at 595-96.
172. *Id.*
173. Pub. L. No. 94-210, 90 Stat. 31 (codified at 49 U.S.C. § 10701).

Congress substantially deregulated railroads with the Staggers Rail Act of 1980[174] and, with the ICC Termination Act of 1995,[175] replaced the ICC with the Surface Transportation Board within the Transportation Department, which continues oversight of railway rates.

169. Rail deregulation, however, did not require a railroad to provide shippers access to unbundled bottleneck elements of its rail network. Professors Baumol and Willig have reasoned that unbundled access to bottleneck routes at (lower) local tariffed rates would violate the railroad's regulatory contract with the regulator to provide end-to-end services rather than network elements:

> Investment has long been attracted to the railroads under the consistent understanding that only rates for end-to-end movements, and not rates for segments, would be regulated. (We are advised that the Supreme Court so stated in 1925 in *Louisville & Nashville R.R. v. Sloss-Sheffield Steel & Iron Co.*, 269 U.S. 217, 231–34 (1925), and that the ICC repeatedly reaffirmed this point—for example, in a number of merger cases in the past decade.) On that understanding, investors have committed vast sums to provide efficient *networks*, and not merely segments. That is no less a regulatory compact than those described by Dr. [Alfred E.] Kahn for the electricity and telephone industries. That compact was, of course, reinforced still further by the Staggers Rail Act of 1980, which directed the ICC to provide railroads the opportunity to attain revenue adequacy; and it was not changed by the ICC Termination Act of 1995.[176]

Professors Baumol and Willig are thus concerned, consistent with the logic of *Northern Pacific Railway*, that a railroad would suffer stranded costs if forced to unbundle its network and to price its unbundled bottleneck routes at levels that would prevent it from recovering all of its economic costs.

170. *Northern Pacific Railway* also established that the proposed redefinition is not made any more constitutionally permissible by the fact that the state intends the redefinition to serve an important public policy goal that materially benefits the state's residents. The Court considered it beside the point that North Dakota believed that the rates would "aid in the development of a local industry," an industry whose "infancy" and potential "to confer a benefit upon the people of the State" were matters of sincere

174. Pub. L. No. 96-448, 94 Stat. 1895 (codified in scattered sections of 49 U.S.C.).

175. Pub. L. No. 104-88, 109 Stat. 803 (codified at 49 U.S.C. § 201).

176. Response of William J. Baumol and Robert D. Willig to the Verified Statement of Alfred E. Kahn 8 (Dec. 13, 1996), Central Power & Light Co. *v.* Southern Pac. Trans. Co., Nos. 41242, 41295, 41626, 1996 STB LEXIS 358 (Surface Trans. Bd. Dec. 27, 1996) (emphasis in original) (discussing Verified Statement of Alfred E. Kahn (Nov. 27, 1996)).

concern to the state.[177] North Dakota's goal of "making the community less dependent upon fuel supplies imported into the State"[178] could not justify its resorting to an appropriation of private property as the means to achieve that objective:

> [W]hile local interests serve as a motive for enforcing reasonable rates, it would be a very different matter to say that the State may compel the carrier to maintain a rate upon a particular commodity that is less than reasonable, or—as might equally well be asserted—to carry gratuitously, in order to build up a local enterprise. That would be to go outside the carrier's undertaking, and outside the field of reasonable supervision of the conduct of its business, *and would be equivalent to an appropriation of the property to public uses upon terms to which the carrier had in no way agreed.*[179]

This passage illuminates the contemporary debate over the regulatory contract because its logic rests on the consensual nature of regulation: The firm dedicates its private property to a public purpose only as the result of voluntary exchange. Justice Hughes emphasized throughout the opinion that, although the legislature's discretion to set both general and particular rates is extremely wide and such rates enjoy a presumption of reasonableness, it is another matter entirely when the state acts to alter fundamentally the obligations imposed on the carrier by its acceptance of the original regulatory contract: "The constitutional guaranty protects the carrier from arbitrary action and from the appropriation of its property to public purposes outside the undertaking assumed . . . ."[180]

171. The Court's emphasis on the original understanding of the intended use of regulated property in *Northern Pacific Railway* sheds light on why, and the degree to which, the regulated firm would have willingly opted for asset specificity rather than asset generality in making its investments. If the regulated firm had expected that it could be required to use its dedicated property for a purpose other than that for which such property was originally dedicated, then the firm would have borne the risk that, in the newly designated purpose, the property might fail to earn a sufficient return originally understood by the utility and the municipality to be necessary to allow the firm to recover that capital and a com-

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177. 236 U.S. at 598.
178. *Id.*
179. *Id.* (emphasis added).
180. *Id.* at 604.

petitive return on such capital over its useful life. Faced with such risk, the firm presumably would have opted instead for a different kind of capital having a lesser degree of asset specificity or a shorter useful life, or both. While investment in that alternative kind of capital would have reduced the risk to the regulated firm of having its regulated property redirected to an originally unintended use, that investment might not have been the most efficient capital in terms of minimizing the cost to society of producing the service in question. If so, then the regulator's rededication of the use of the dedicated property would impose a social cost.

172. There is an additional implication, relating to entry regulation, of the requirement that the regulator not rededicate the use to which regulated property is to be put. Some states have long forbidden municipalities to grant exclusive franchises for the provision of services such as local telephony.[181] Given that the absence of franchise exclusivity raised the risk that a utility would not receive a reasonable opportunity to recover its irreversible and nonsalvageable investment in network infrastructure, and given that the utility's rates were regulated not to exceed just and reasonable levels, why would the utility's investors nonetheless have been willing to risk their capital in this manner? Perhaps such investors received a risk premium relative to the return on capital for utilities in jurisdictions that did not forbid franchise exclusivity. But it seems at least as likely that such a premium was unnecessary because the risk was not appreciable. In other words, investors even in jurisdictions that forbade franchise exclusivity may have taken sufficient comfort in knowing that their transaction-specific investments were dedicated to a *specific purpose*—namely, the provision of retail services *directly to customers* in the municipality that granted the franchise. Since the Supreme Court's decision in the *Express Package Cases* in 1885 it had been clear under the common law of common carriage that a public utility could not be required to sell interconnection to another carrier.[182] And early cases such as *Pacific*

181. E.g., TEX. CONST. art. I, § 26.

182. 117 U.S. 1 (1885); *see* MICHAEL K. KELLOGG, JOHN THORNE & PETER W. HUBER, FEDERAL TELECOMMUNICATIONS LAW 13–14 (Little, Brown & Co. 1992).

Telephone & Telegraph Co. v. *Eshleman*, decided by the California Supreme Court in 1913, emphasized that a regulator could not mandate unbundled network access to accommodate a competitor, and that a state legislature could do so *only if* it paid just compensation to the incumbent utility.[183] Thus, when investors built the first local telephone networks under nonexclusive franchises, it would not have occurred to them, or to the municipality franchising them, that the municipality (or its successor, the state public utility commission) might subsequently rededicate such regulated property to the purpose of providing a rival firm the infrastructure with which to lure away the incumbent utility's retail customers. Indeed, the early years of local telephony witnessed a race among competing facilities-based LECs with overlapping networks to maximize subscribership in a service area.[184]

173. The one form of potential competition that the utility and the municipality did originally envision was of a completely different sort. If competition were to occur, it would take the form of another utility receiving another nonexclusive franchise to build its own transaction-specific infrastructure. Yet, such facilities-based entry was not expected to occur because local exchange carriers were thought to be natural monopolies; indeed, such entry was considered futile and wasteful. That is why entry regulation, taking the form of the prior grant of certificates of necessity and convenience, placed so much emphasis on avoidance of duplicative facilities. In other words, neither the municipality nor the original franchised utility ever expected that competitive entry would take the form of mandated access to the incumbent's network.

174. Furthermore, if the incumbent's network was to be occupied—in any degree—by some party other than the utility that owned it, that party was understood to be the municipality itself. Some franchise agreements gave the municipality the option to buy out the utility's network at the end of the franchise term for a price voluntarily negotiated by the parties or, in the case of deadlock, for a price set

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183. 166 Cal. 640, 664-65, 137 P. 1119, 1127-28 (1913).

184. *See* MILTON L. MUELLER, JR., UNIVERSAL SERVICE: COMPETITION, INTERCONNECTION, AND MONOPOLY IN THE MAKING OF THE AMERICAN TELEPHONE SYSTEM (MIT Press & AEI Press 1996).

by arbitration. Of course, at any time during the franchise term the municipality independently had the option simply to exercise eminent domain over the utility's network, which would trigger an analogous valuation process for determining just compensation for the forced buyout.

175. *Northern Pacific Railway* has relevance to current policies on network unbundling such as the FCC's *First Report and Order*. To price mandatory access to the incumbent LEC's network elements, the FCC introduced the concept of total *element* long run incremental cost (TELRIC), which is to be distinguished from total *service* long run incremental cost (TSLRIC). TELRIC embodies more than a new kind of costing exercise. It reflects a fundamental redefinition of the output of the regulated local exchange carrier. In the past, the output of a LEC consisted of services. After the FCC's 1996 interconnection order, the incumbent LEC's output has been redefined to consist of elements. The difference is significant in at least two respects.

176. First, the incumbent LEC built its network in the manner that it did so that it could discharge an obligation to serve—that is, to provide services to consumers. The incumbent LEC, however, now faces both an ongoing obligation to provide services to consumers and a new obligation to supply elements to competitors. The latter was never contemplated when the incumbent LEC dedicated the private property of its investors to a public purpose.

177. Second, there will likely be significant transactions costs of using the incumbent LEC's network to provide elements rather than services as its intended output. Those new costs are a cost of achieving the benefits that Congress and the FCC envisioned from the mandatory unbundling of local telephony. But it is neither efficient nor constitutional to make the shareholders of incumbent LECs absorb those costs. Rather, such costs must be fully recovered in the rates that an incumbent LEC may charge for unbundled elements. If demand conditions preclude setting prices for UNEs at a sufficiently high level to recover those costs, then an end-user charge must be employed to recover the residual amount of cost beyond what can be recouped through the market-allowed price.