

Who's Taking Whom: Some Comments and Evidence on the Constitutionality of TELRIC

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I. INTRODUCTION

Valuing the rate base has always been a contentious part of utility regulation. Over the last one hundred years, the Supreme Court has endorsed both original cost and fair-market valuation. At other times, the Court has chosen not to review the valuation method as long as the resulting overall financial performance of the company was reasonable.

The latest valuation controversy stems from the introduction of competition into the telecommunications arena via the Telecommunications Act of 1996 (1996 Act).¹ Competition has required the unbundling and wholesale pricing of network elements. Wholesale pricing, in turn, requires valuing network elements. Determining this value has created significant controversy. On the one hand, incumbent local exchange carriers (ILECs)² argue that in order to provide adequate return on invested capital, elements should be valued at original cost. The Federal Communications Commission (FCC), however, in an effort to promote competition, urges valuing network elements based on forward-looking costs.³ No doubt the Supreme Court will provide considerable guidance toward the eventual outcome of this issue.

This Article discusses rate-base valuation, total element long run incremental cost (TELRIC) pricing, and the Court's opinion generally on the issue of takings. Part II begins by examining the pricing rules devised by the FCC under the 1996 Act to promote competition and the ILECs' objections to those rules. The FCC argues that forward-looking TELRIC

1. Pub. L. No. 104-104, 110 Stat. 56 (1996) (codified at scattered sections of 47 U.S.C.).

2. See Implementation of the Local Competition Provisions in the Telecomms. Act of 1996, *First Report and Order*, 11 F.C.C.R. 15,499, 4 Comm. Reg. (P & F) 1 (1996) [hereinafter *Implementation of Local Competition*]. An "Incumbent Local Exchange Carrier" is defined as:

With respect to an area, the local exchange carrier that: (1) on February 8, 1996, provided telephone exchange service in such area; and (2)(i) on February 8, 1996, was deemed to be a member of the exchange carrier association pursuant to [section] 69.601(b) of this chapter; or (ii) is a person or entity that, on or after February 8, 1996, became a successor or assign of a member described in clause (i) of this paragraph.

Id. at 16,199.

3. See *id.* at para. 679.

prices are economically efficient and promote competition.⁴ The ILECs contend that if prices are set at a level equal to TELRIC plus a reasonable share of joint and common costs, these prices will:

[D]eny them recoupment through unbundled network revenues of all historic and/or embedded costs and profit, contrary to the reasonable investment expectations of their investors. To ensure that a taking does not occur, the ILECs argue that the pricing methodology must guarantee the recovery of all prudently incurred costs of investing in local network.⁵

To help resolve these conflicting viewpoints, this Article then turns to the Supreme Court's response to the takings question posed earlier in the twentieth century. Part III of this Article discusses the development of the "Fair Value" doctrine and its eventual abandonment in *Federal Power Commission v. Hope Natural Gas Co.*⁶ In *Hope*, the Court made it clear that it was not willing to review the rate-base valuation process as long as the end result—the financial viability of the company—was adequate.⁷ Following similar reasoning, adoption of TELRIC-based pricing may be acceptable as long as companies maintain their financial integrity. The issue of TELRIC and financial viability is examined more deeply in the rest of this Article.

Part IV looks more carefully at TELRIC pricing and some of the concerns the Supreme Court has already expressed about its adoption. Part IV argues that TELRIC may be no more hypothetical than other pricing standards and that the Regional Bell Operating Companies (RBOCs) and large ILECs have been advocating TELRIC-like pricing for some time. Part IV also makes the point that TELRIC may be no more subjective than other pricing standards such as Ramsey pricing or efficient compound pricing rule (ECPR). Furthermore, both methods require a regulatory commission to estimate the forward looking economic cost of production.

Part V focuses on whether TERLIC pricing does indeed lead to a taking according to the standard espoused by the *Hope* Court. While there has been a lot of discussion of this issue in law journals,⁸ the question of

4. *See id.*

5. E. Sanderson Hoe & Stephen Ruscus, *Taking Aim at the Takings Argument: Using Forward-looking Pricing Methodologies to Price Unbundled Network Elements*, 5 *COMMLAW CONCEPTUS* 231, 239 (1997) (footnotes omitted); *see also* Reply Testimony of Irene G. Chavira at 22, *Interconnection Contract Negotiations Between AT&T Comm. of the Mountain States, Inc. and U S WEST Comm., Inc.* Pursuant to 47 U.S.C. § 252, (N.M. State Corp. Comm'n Mar. 27, 1997) (No. 96-411-TC).

6. 320 U.S. 591 (1944).

7. *See id.* at 603.

8. *See, e.g.*, William J. Baumol & Thomas W. Merrill, *Does the Constitution Require that We Kill the Competitive Goose? Pricing Local Phone Services to Rivals*, 73 *N.Y.U. L.*

whether or not a taking has occurred is largely an empirical issue. This Article presents data on the rate of return on the regulated earnings of selected local exchange companies since the passage of the 1996 Act. The companies selected are arguably firms that ought to have experienced the greatest harm from TELRIC-based prices for unbundled network elements. They deaverage costs by density zone yet engage in value of service pricing. The data indicate that the majority of these companies are experiencing more than adequate rates-of-return on regulated capital, a condition that contradicts the ILECs' argument that TELRIC-based prices are confiscatory. Furthermore, recent evidence on the sale of exchanges indicate that the market price for ILEC exchanges is greater than their book value, a clear sign that investors are being adequately compensated for their initial investment.

II. THE TELECOMMUNICATIONS ACT OF 1996

On February 8, 1996, the 1996 Act was signed into law. The 1996 Act is a comprehensive overhaul of the Communications Act of 1934, making significant changes in the law affecting the regulation of broadcasting, cable, and telephony with less extensive changes in satellite and spectrum regulation and in the FCC's own internal processes.⁹

Broadly speaking, the intent and purpose of the 1996 Act was "to provide for a procompetitive, deregulatory national policy framework designed to rapidly accelerate private sector deployment of advanced telecommunications and information technologies and services to all Americans by opening all telecommunications markets to competition"¹⁰ thereby securing "lower prices and higher quality services for American

REV. 1122 (1998); William J. Baumol & Thomas W. Merrill, *Deregulatory Takings, Breach of the Regulatory Contract, and the Telecommunications Act of 1996*, 72 N.Y.U. L. REV. 1037 (1997); Jim Chen, *The Second Coming of Smyth v. Ames*, 77 TEX. L. REV., 1535 (1999); Hoe & Ruscus, *supra* note 5; J. Gregory Sidak & Daniel F. Spulber, *Deregulation and Managed Competition in Network Industries*, 15 YALE J. ON REG. 117 (1998); J. Gregory Sidak & Daniel F. Spulber, *Givings, Takings, and the Fallacy of Forward-looking Costs*, 72 N.Y.U. L. REV. 1068 (1997); J. Gregory Sidak & Daniel F. Spulber, *The Tragedy of the Telecommons: Government Pricing of Unbundled Network Elements Under the Telecommunications Act of 1996*, 97 COLUM. L. REV. 1081 (1997); J. Gregory Sidak & Daniel F. Spulber, *Deregulatory Takings and Breach of the Regulatory Contract*, 71 N.Y.U. L. REV. 851 (1996); Stephen F. Williams, *Responses Deregulatory Takings and Breach of the Regulatory Contract: A Comment*, 71 N.Y.U. L. REV. 1000 (1996); Oliver E. Williamson, *Deregulatory Takings and Breach of the Regulatory Contract: Some Precautions*, 71 N.Y.U. L. REV. 1007 (1996); Jim Rossi, *The Irony of Deregulatory Takings*, 77 TEX. L. REV. 297 (1998) (book review).

9. See Thomas G. Krattenmaker, *The Telecommunications Act of 1996*, 49 FED. COMM. L.J. 1 (1996).

10. 142 CONG. REC. H1154 (daily ed. Feb. 1, 1996) (statement of Rep. Bliley).

telecommunications consumers. . . .”¹¹

One of the principle goals of the 1996 Act regarding the provision of telephone service was to open the local exchange and exchange access markets to competitive entry.¹² In advancing this goal the interconnection section of the 1996 Act, section 251 imposes several obligations on the ILECs. Three important obligations include the following: First, ILECs have a duty to enable competitors to interconnect with the ILECs network, for the transmission and routing of exchange service and exchange access, at any technically feasible point within the network.¹³ These services must be offered at rates, terms, and conditions that are just, reasonable, and nondiscriminatory.¹⁴ Second, ILECs must provide unbundled network elements (UNEs) to competitors at any technically feasible point within the network. UNEs must be provided in a manner enabling them to be combined to provide telecommunications service and at rates, terms, and conditions that are just, reasonable, and nondiscriminatory.¹⁵ Finally, ILECs must offer all their retail services for resale by competitors at wholesale rates.¹⁶

The FCC has devised pricing rules to implement the provisions of the Act. These rules are among the more contentious issues surrounding the FCC's rulemaking procedures for the full implementation of the Act. In particular, as noted in the introduction, it is the FCC's adoption of the TELRIC Plus methodology for the pricing of unbundled elements and interconnection that has given rise to multiple constitutional challenges by the ILECs and their supporters.

According to the FCC, its TELRIC Plus methodology is a forward-looking pricing methodology that replicates how competitive markets actually operate and best approximates what it would actually cost an efficient, competitive firm to produce UNEs.¹⁷ The TELRIC Plus pricing of UNEs, as set forth by the FCC, will, according to the FCC and its supporters, adequately compensate the ILECs for all forward-looking costs of providing UNEs, including the costs of capital and provides for a reasonable allocation of joint and common costs.¹⁸ Proponents of TELRIC

11. 47 U.S.C. § 251 (Supp. II 1996).

12. *See Implementation of Local Competition*, 11 F.C.C.R. 15,499, para. 3, 4 Comm. Reg. (P & F) I (1996).

13. *See* 47 U.S.C. § 251(c)(2) (Supp. II 1996).

14. *See id.* § 251(c)(2)(D).

15. *See id.* § 251(c)(3).

16. *See id.* § 251(c)(4).

17. *See Implementation of Local Competition*, 11 F.C.C.R. 15,499, para. 679, 4 Comm. Reg. (P & F) I.

18. *See id.* at paras. 679-98, 700.

aver that, because prices are driven to forward-looking costs in competitive markets, “the TELRIC Plus methodology is intended and expected to provide ILECs with a constitutionally sufficient approximation of the fair market value of their property in a competitive market.”¹⁹

One of the principle ILEC objections to the TELRIC method is that, because it is a forward-looking costing methodology, it fails to permit the recovery of “historical” and “embedded” costs, or, in the language of the regulatory battles of an earlier era, fails to permit the recovery of an ILEC’s “prudent investment” in its physical plant and infrastructure and so constitutes a taking of ILEC property.²⁰

The “fair value”²¹ methodology and the “prudent investment”²² methodology (the latter sometimes referred to as “historical” or “embedded”²³ cost methodology) have been variously praised and damned by ratemakers, ratepayers, and the regulated industries over the years.²⁴

19. Hoe & Ruscus, *supra* note 5, at 236 (footnote omitted).

20. See, e.g., *Implementation of Local Competition*, 11 F.C.C.R. 15,499, para. 670, 4 Comm. Reg. (P & F) 1; Joint Motion of GTE Corp. and the Southern New England Tel. Co. for Stay Pending Judicial Review at 12-13, *Implementation of the Local Competition Provisions in the Telcomms. Act of 1996, Order*, 11 F.C.C.R. 11,754, 4 Comm. Reg. (P & F) 980 (1996) (No. 96-98); Hoe & Ruscus, *supra* note 5, at 239.

21. In the public utility context, “fair value” is generally understood to refer to the present value of property—tangible and intangible—that is used and useful in providing a public service. Although no clear definition for fair value exists, it is interpreted as “a figure somewhere between original cost and reproduction cost, arrived at by the exercise of ‘enlightened judgement.’” CHARLES F. PHILLIPS, JR., *THE REGULATION OF PUBLIC UTILITIES* 319 (1993). The courts generally lean toward the use of reproduction costs as the standard for fair value. See *id.*

22. One definition of prudent investment is “capital reasonably expended to meet the utility’s legal obligation to assure adequate service.” *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 317 (1989). Some consider prudent investment synonymous with historical cost as evidenced by Justice Brandeis’s statement: “Historical cost, i.e., the proper cost of the existing plant and business, estimated on the basis of the price levels existing at the respective dates when the plant and the additions were constructed. This is often called prudent investment.” *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Serv. Comm’n of Mo.*, 262 U.S. 276, 295 n.6 (1923) (Brandeis, J., dissenting).

23. “Embedded or accounting costs are costs that firms incurred in the past for providing a good or service and are recorded as past operating expenses and depreciation.” *Implementation of Local Competition*, 11 F.C.C.R. 15,499, para. 675, 4 Comm. Reg. (P & F) 1.

24. Broadly speaking, supporters of the “prudent investment” rule believe that the Constitution ensures public utilities and their investors a fair return on the capital prudently invested in providing services to the public. Specifically, the Constitution “guarantees an opportunity to earn [compensation equal to] the reasonable cost of conducting the business.” *Southwestern Bell Tel. Co.*, 262 U.S. at 291. Supporters of the fair value rule, on the other hand, believe that it is the utility property—tangible and intangible—currently in use and useful for the purpose of providing the public service that is protected by the Constitution. In sum, the Constitution protects the present value of the property used and useful in providing the public service, which is also known as the fair value.

These groups, wavering in their preferences as political and economic expediency dictated, have from time to time shifted in their support for any particular methodology.²⁵

The Supreme Court, in trying to make sense of these shifts, and the resultant slings and arrows of constitutional takings challenges and counterchallenges hurled during the various ratemaking conflicts of the twentieth century, has observed that “neither law nor economics has yet devised generally accepted standards for the evaluation of ratemaking orders”²⁶ and has, in recent years, sensibly refused to elevate any particular methodology to the level of constitutional mandate, choosing instead to focus its efforts on the overall effects of regulation.

The U.S. Supreme Court, however, has been drawn into the TELRIC controversy. On January 25, 1999, the Court issued its decision in *AT&T Corp. v. Iowa Utilities Board*.²⁷ The Supreme Court held that the FCC had jurisdiction to establish pricing methodologies for state commissions to apply in arbitrations under sections 251 and 252 of the 1996 Act. Due to the jurisdictional nature of the appeal, however, the Court did not address the merits of the FCC’s TELRIC methodology for pricing UNEs or its avoided cost methodology for services subject to resale.²⁸

Challenges to the merits of the FCC pricing rules are currently pending before the Eighth Circuit. “Meanwhile, at least thirty-five states have independently approved a TELRIC unbundled elements pricing methodology. Of these states, at least fifteen are being sued for approving forward-looking cost incremental pricing for unbundled network elements.”²⁹

25. In his dissenting opinion in *Southwestern Bell Tel. Co.*, Justice Brandeis made explicit reference to the self-serving nature of rate-making advocacy by noting that “[t]he rule by which the utilities are seeking to measure the return is, in essence, reproduction cost of the utility or prudent investment, *whichever is the higher*.” 262 U.S. at 311 (emphasis added). For more on the political nature of the judiciary’s choice between prudent investment and reproduction cost theories, see Stephen A. Siegal, *Understanding the Lochner Era: Lessons from the Controversy over Railroad and Utility Rate Regulation*, 70 VA. L. REV. 187, 219-23 (1984).

26. *Permian Basin Area Rate Cases*, 390 U.S. 747, 790 (1968).

27. 119 S. Ct. 721 (1999) (affirming in part and reversing in part the decision of the U.S. Court of Appeals for the Eighth Circuit in *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997)).

28. See *AT&T Corp.*, 119 S. Ct. at 728 n.3.

29. Paul W. Garnett, *Forward-looking Costing Methodologies and the Supreme Court’s Takings Clause Jurisprudence*, 7 COMMLAW CONSPECTUS 119, 132 (1999) (footnotes omitted).

III. A SHORT HISTORY OF CRITERIA RELIED UPON BY THE SUPREME COURT IN DECIDING WHETHER OR NOT A TAKING HAS OCCURRED

The Supreme Court will unavoidably be drawn into the valuation question as the advocacy for TELRIC pricing spreads. Hence, it is useful to examine how the Court responded to changes in valuation paradigms in the past.

A. *Fair Value Ratemaking*

The fair value doctrine saw its inception in 1897 with the Supreme Court's opinion regarding a Nebraska freight-hauling rate case, *Smyth v. Ames*.³⁰ Justice Harlan wrote:

The corporation may not be required to use its property for the benefit of the public without receiving just compensation for the services rendered by it What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience.³¹

Justice Harlan did not clearly define how "the fair value of the property being used"³² was to be determined. He did suggest, however, that in ascertaining

[T]hat value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.³³

Despite the fact that *Smyth* suggested that all factors bearing upon value and cost should be considered by ratemaking bodies in making a fair value determination of a utility's property, focus quickly narrowed to two factors: the original and reproduction cost of useful property. Fair value came to be interpreted as an uncertain combination of these two costs, albeit with the courts leaning toward an emphasis on reproduction costs as

30. 169 U.S. 466 (1898). The 1893 panic that brought prices to nearly the lowest level reached in the nineteenth century prompted the courts to adopt present value (fair value). Insistence upon reproduction cost was the shippers' protest against burdens believed to have resulted from watered stocks, reckless financing, and unconscionable construction contracts. See *Southwestern Bell Tel. Co.*, 262 U.S. at 298.

31. *Smyth*, 169 U.S. at 546-47.

32. *Id.* at 546.

33. *Id.* at 547.

the standard of fair value.³⁴

While reproduction costs might have been considered a theoretically sound method for valuing the rate base, it suffered from practical problems and was not operable at the state regulatory level. Engineering estimates required to estimate the cost of reproduction were inexact by definition and often contradictory.³⁵ Furthermore, when presented with a company's present valuation study of its physical plant, many state commissions were financially incapable of undertaking an independent appraisal to verify the study as such appraisals were extremely expensive and time consuming. For example, in a telephone rate case, the Minnesota Commission undertook an exhaustive physical valuation of the telephone plant in question that required three years and almost one million dollars in expenditures by the state and company to complete.³⁶

34. See EMERY TROXEL, *ECONOMICS OF PUBLIC UTILITIES* 794 (1947); see also C. WOODY THOMPSON & WENDELL R. SMITH, *PUBLIC UTILITY ECONOMICS* 209, 362-63 (1941). At times, the utilities shared the court's ambiguity when presenting their petitions for rate relief: "The telephone company does not distinctly say what it considers a correct earnings basis." *Michigan State Telephone Company*, Pub. Util. Rep. (PUR), 1923A, at 70 (Mich. Pub. Utils. Comm'n July 13, 1922). Frequently, the telephone company offered a valuation estimate based on both procedures. They leaned toward the use of reproduction cost, which is the cost of reproducing the presently used and useful property at current costs. Typically, one or more engineers conduct an appraisal of the physical property to determine this cost, adding land valuations, amount of working capital, certain intangible values, and an allowance for going value.

Neoclassical economists justify applying reproduction cost because it most accurately represents the workings of a competitive economy. In the long run, a competitive economy will provide a service at the cost of providing the service. If the price of the service is above cost, entry will continue until the price is driven down to the cost of a new entrant providing a perfectly substitutable service. Conversely, firms will leave the market if the price is below the cost of providing service. Economists further argue that basing the cost of service on the reproductive cost provides greater rate flexibility than use of historical costs. Historical costs tend to keep prices low during periods of inflation, encouraging overuse of the utility service. Conversely, during deflationary periods, rates based on historical cost will be greater than those justified by use of reproductive cost, leading to unnecessarily low use of the phone system.

35. See, e.g., *Southwestern Bell Tel. Co.*, 262 U.S. at 299-302. Justice Brandeis noted: In *Marin Municipal Water District*, the several valuations of five experts were: \$670,163; \$723,001.85; \$763,028; \$919,204; \$1,031,436. In *Springfield v. Springfield Gas & Electric Co.*, the several valuations of five experts were[:] \$547,488; \$588,262; \$806,404; \$898,785; \$940,988. In *Duluth Street [Railway] Co. v. Railroad [Commission]*, the valuations of two experts, both employed by the [s]tate were \$600,000 and \$1,100,000.

Id. at 299 n.11 (Brandeis, J., dissenting) (citations omitted).

36. See *Northwestern Bell Tel. Comm'n*, Pub. Util. Rep. (PUR) 1923B, 117-20 (Neb. State Ry. Comm'n Nov. 4, 1922); see also *Wisconsin Tel. Co.*, Pub. Util. Rep. (PUR) 1927A, 581, 584-85 (Wis. R.R. Comm'n Nov. 23, 1926); *Georgia Ry. & Power Co. v. Railroad Comm'n of Ga.*, Pub. Util. Rep. (PUR) 1925A, 546, 584-5 (D.N.D. Ga. Sept. 25, 1924); *Bell Water Co.*, Pub. Util. Rep. (PUR) 1925D, 1, 6 (Cal. R.R. Comm'n Jan. 17,

B. *The Evolution to Historical Cost Ratemaking*

The *Smyth* rule held sway from 1898 to 1942. In the early years of this period, the Court adhered to an interpretation of the fair value doctrine which allowed state commissions to use a combination of reproduction cost and original cost in determining the fair value of the rate base. However, by the early decades of the 1900s, fair value had come to be consistently tied to some estimate of reproduction cost.³⁷

In one gas case, for example, the Court wrote “[i]f the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase.”³⁸ The Court further illuminated its acceptance of reproduction cost in another gas case. The majority argued that the utility uses the property to produce output. Therefore, it is the property itself that provides value and the property that requires valuation. If property value can be reduced judicially due to reckless or imprudent investment, then

[T]he making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law.³⁹

In a West Virginia water case, the Court again defended fair value measured as the current value of property. The Court wrote:

Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to render the service are unjust, unreasonable and confiscatory This is so well settled by numerous decisions of this Court that citation of the cases is scarcely necessary.⁴⁰

What is noteworthy about the Court’s behavior during this period are the two philosophical tenets maintained by the Court in its explorations concerning the determination of fair value. The first was a refusal to adopt reproduction cost as the controlling measure of fair value. The second was

1925).

In current dollars, this is equivalent to approximately nine million dollars. Due to the advent of computerized database systems and the availability of highly developed computer modeling techniques, performing a similar study today would be far less expensive.

37. See, e.g., *Southwestern Bell Tel. Co.*, 262 U.S. 276; *Clark’s Ferry Bridge Co. v. Public Serv. Comm’n of Pa.*, 291 U.S. 227 (1934); *McCardle v. Indianapolis Water Co.*, 272 U.S. 400 (1926).

38. *Willcox v. Consolidated Gas Co.*, 212 U.S. 19, 52 (1909).

39. *Minnesota Rate Cases*, 230 U.S. 352, 454 (1913).

40. *Bluefield Water Works & Improvement Co. v. Public Serv. Comm’n of W. Va.*, 262 U.S. 679, 690 (1923).

a refusal to adopt a precise formula for calculating fair value.⁴¹

Starting around 1923, a minority on the Supreme Court began advocating for an alternative to the fair value rule of *Smyth*.⁴² Their preference was for a rate base calculated using original cost. In recommending this valuation method, Justice Brandeis, writing in a telephone case, argued for the use of prudent investment which he measured as original cost minus any fraudulent, unwise, or extravagant expenditure. He apparently had two motives for wanting to value the rate base in this fashion. The first was his belief that it is the capital invested, not the property itself, on which investors should earn a return: "The thing devoted by the investor to the public use is not specific property, tangible or intangible, but capital embarked in the enterprise. Upon the capital so invested the [F]ederal Constitution guarantees to the utility the opportunity to earn a fair return."⁴³

Brandeis's second motive for questioning the majority's fair value doctrine was his concern about the inherent instability and speculation associated with a valuation method that tried to value at current prices, a plan that was put into place years before the rate-hearing. As he noted in his dissent in *Southwestern Bell*:

The experience of the twenty-five years since [*Smyth v. Ames*] has demonstrated that the rule there enunciated is delusive. In the attempt to apply it, insuperable obstacles have been encountered. It has failed to afford adequate protection either to capital or to the public. . . . [I]t is essential that the rate base be definite, stable, and readily ascertainable.⁴⁴

Brandeis argued that using a prescribed, tractable rate valuation method, such as prudent investment, would bring less ambiguity and arbitrariness to the process: "The doubts and uncertainties incident to the [determination of the rate base and rate of return] can be eliminated, or lessened, only by redefining the rate base, called value, and the measure of fairness of return, now applied under the rule of *Smyth v. Ames*."⁴⁵

41. In *Minnesota Rate Cases*, for example, in valuing the rate base the Court concluded: "The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgement having its basis in a proper consideration of all relevant facts." 230 U.S. at 434.

42. It is suggestive that the beginning of this advocacy period coincided with the inflationary period attending World War I. A time during which "state utility commissions, while admitting the evidence in obedience to *Smyth v. Ames*, failed, in ever-increasing numbers, to pay heed to it in fixing the rate base." *Southwestern Bell Tel. Co.*, 262 U.S. at 301.

43. *Id.* at 290.

44. *Id.* at 292.

45. *Id.* In *Bluefield Water Works Improvement Co. v. Public Service Commission of West Virginia*, Justice Brandeis concurs in the judgment of reversal for the same reasons

Justice Stone's dissent in another case (joined by Brandeis and Cardozo) is reflective of the minority's lack of faith in accurately estimating reproduction cost. Justice Stone wrote:

In assuming the task of determining judicially the present fair replacement value of the vast properties of public utilities, courts have been projected into the most speculative undertaking imposed upon them in the entire history of English jurisprudence When we arrive at a theoretical value based upon some uncertain and figurative data we gain at best only an illusory certainty. No court can evolve from its inner consciousness the answer to the question whether the illusion of certainty will invariably be better supported by a study of the actual cost of the property adjusted to price trends, or by a study of the estimates of engineers based upon data which never have existed and never will.⁴⁶

Stone and Brandeis also dissented in a rate case involving a water utility in Indiana.⁴⁷ The tone of their dissenting opinion was again that estimates of reproduction cost are speculative. In another water case, Justice Black wrote:

Wherever the question of utility valuation arises today, it is exceedingly difficult to discern the truth through the maze of formulas and the jungle of metaphysical concepts sometimes conceived, and often fostered, by the ingenuity of those who seek inflated valuations to support excessive rates. Even the testimony of engineers, with wide experience in developing this theory and expounding it to courts, is not in agreement as to the meaning of the vague and uncertain terms created to add invisible and intangible values to actual physical property. Completely lost in the confusion of language—too frequently invented for the purpose of confusing—commissions and courts passing upon rates for public utilities are driven to listen to conjectures, speculations, estimates[,] and guesses, all under the name of “reproduction costs.”⁴⁸

By the late 1930s, power in the Court was shifting toward Brandeis's view of rate-base valuation. Justices Cardozo and Brandeis left in 1938 and 1939, respectively. Justice Butler, a leading advocate of reproduction cost valuation, left the Court in 1939, as well. The three replacements—Felix Frankfurter, William O. Douglas, and Frank Murphy—all eventually supported the prudent investment method of valuation. The combination of these three additional justices with Justices Stone and Black, who had consistently joined in dissents extolling prudent investment as a means of rate-base valuation, swung the majority of the Court in support of the

stated in his dissenting opinion in the *Southwestern Bell* case. See *Bluefield Water Works Improvement Co.*, 262 U.S. at 695.

46. *West v. Chesapeake & Potomac Tel. Co.*, 295 U.S. 662, 689-90 (1935).

47. See *McCardle v. Indianapolis Water Co.*, 272 U.S. 400 (1926).

48. *McCart v. Indianapolis Water Co.*, 302 U.S. 419, 428-29 (1937).

prudent investment method.

There were two landmark cases that firmly established the Court's recognition of prudent investment as a constitutionally valid means of valuation. The first involved a natural gas company that extracted gas from Texas and transported it to Illinois where it was sold at wholesale to utility companies.⁴⁹ The Court's opinion, written by Chief Justice Stone established two important points. One is that the Court would not set aside Federal Power Commission (FPC) established rates the Court deemed "reasonable." Justice Stone wrote:

[T]he [FCC] is also free under [section] 5(a) [of the Natural Gas Act] to decrease any rate which is not the "lowest reasonable rate." It follows that the [c]ongressional standard prescribed by this statute coincides with that of the Constitution, and that the courts are without authority under the statute to set aside as too low any "reasonable rate" adopted by the [FCC] which is consistent with constitutional requirements.⁵⁰

The second point is that if the Court found that rates were "just and reasonable" then it would not proceed with further inquiry into the method of valuing the rate base that produced those rates. Again, from the Court's opinion, Stone wrote "[i]f the [FCC]'s order, as applied to the facts before it and viewed in its entirety, produces no arbitrary result, our inquiry is at an end."⁵¹ The general interpretation of this opinion was that prudent investment could be used as long as it generated rates that were just and reasonable.

The second case, and the one that firmly established the validity of prudent investment, was also a gas case.⁵² Hope Natural Gas, a company wholly owned by Standard Oil, distributed natural gas in Ohio and Pennsylvania. Officials in those states asked the FPC to use its authority to review rates charged by Hope. The FPC considered the matter and eventually ruled that Hope should lower its rates, as they were not the lowest reasonable rates. This ruling was based, in part, on valuing the rate base at its "actual legitimate cost" (prudent investment). The court of appeals set aside the ruling, arguing that the rate base should reflect present fair value. The appellate court went on to assert that the FPC should have considered reproduction cost and trended original cost in its valuation and that prudent investment was not the proper measure of fair value.⁵³

The Supreme Court, in an opinion written by Justice Douglas,

49. *See* Federal Power Comm'n v. Natural Gas Pipeline Co., 315 U.S. 575 (1942).

50. *Id.* at 586.

51. *Id.*

52. *See* Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591 (1944).

53. *See id.* at 599-601.

disagreed with the appellate court's decision. Mirroring the *Natural Gas Pipeline* opinion, Douglas wrote:

Under the statutory standard of "just and reasonable" it is the result reached not the method employed which is controlling It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end.⁵⁴

Douglas's disdain for the fair value rate base is evidenced further in the opinion. After reviewing financial performance statistics for the company, he wrote:

In view of these various considerations we cannot say that an annual return [supported by the [FPC]'s original cost rate ruling] is not "just and reasonable" within the meaning of the Act. Rates which enable the company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so-called "fair value" rate base.⁵⁵

With the *Hope* decision, the Court was accepting the constitutional validity of the use of prudent investment valuation as long as it maintained the financial viability of the utilities. More significantly, however, the *Hope* decision made it plain that the Court was eschewing the elevation of any particular ratemaking methodology to the level of constitutional status.

Hope marked a shift in the Court's analytical emphasis. Henceforth, the Court would no longer narrowly focus on the particular regulatory method employed in rate-making. The object of analysis was now to be on the overall effects of regulation.⁵⁶ Of course, one result of this decision, and one which is important for the discussion in Part V, is that "the embedded or prudent investment costing methodology upheld in *Hope Natural Gas* is no more susceptible to a Takings Clause challenge than the forward-looking or 'fair value' costing methodology upheld in *Smyth v. Ames*, which 'mimics the operation of the competitive market.'"⁵⁷

The findings of the *Hope* Court were strongly reaffirmed by the Court in *Duquesne Light Co. v. Barasch*.⁵⁸ In his majority opinion Chief Justice Rehnquist wrote:

Forty-five years ago in the landmark case of *FPC v. Hope Natural Gas Co.*, this Court . . . held that the "fair value" rule is not the only constitutionally acceptable method of fixing utility rates. . . . Today we

54. *Id.* at 602 (citations omitted).

55. *Id.* at 605.

56. *See id.* at 602.

57. Garnett, *supra* note 29, at 129 (footnote omitted).

58. 488 U.S. 299, 310 (1989).

reaffirm these teachings of *Hope Natural Gas*: “[I]t is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unreasonable, judicial inquiry . . . is at an end. The fact that the method employed to reach that result may contain infirmities is not then important.”⁵⁹

The Court went on to buttress the *Hope* Court’s decision to refrain from elevating any one ratemaking methodology to the level of a constitutional standard. In a strongly worded statement the majority of the Court refused the Pennsylvania Electric Association’s suggestion that the prudent investment rule be adopted as the constitutional standard:

The adoption of a single theory of valuation as a constitutional requirement would be inconsistent with the view of the Constitution this Court has taken since *Hope Natural Gas* (citation omitted) As demonstrated in *Wisconsin v. FPC*, circumstances may favor the use of one ratemaking procedure over another. The designation of a single theory of ratemaking as a constitutional requirement would unnecessarily foreclose alternatives which could benefit both consumers and investors.⁶⁰

The judicial theory of valuation espoused in *Hope* may be extended to TELRIC pricing. In essence, TELRIC is just another valuation method. The court has consistently avoided selecting one valuation method over another. The lesson of *Hope* is that the court will refrain from reviewing the valuation method as long as the end result is just and reasonable. Hence, the reasonable conclusion is that TELRIC should not be objectionable if the end result it produces is just and reasonable. Part V examines the result of recent TELRIC valuations. But first, this Article addresses some of the other concerns raised by the court with respect to TELRIC pricing.

IV. IMPACT OF THE 1996 ACT

Significantly, the majority noted that a rigid insistence on the prudent investment rule “would also foreclose a return to some form of the fair value rule just as its practical problems may be diminishing.”⁶¹ It is to a discussion of the diminishment of these problems to which this Article now turns.

59. *Id.* at 310 (1989) (quoting *Hope*, 320 U.S. at 602) (citations omitted).

60. *Id.* at 316. In a recent ruling, the Fifth Circuit Court of Appeals observed that “Duquesne stands for the proposition that ‘no single ratemaking methodology is mandated by the Constitution, which looks to the consequences a governmental authority produces rather than the techniques it employs.’” *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 437 (5th Cir. 1999). In regards to the deregulatory takings issue, the court concluded that “Duquesne does not require courts to engage in a takings analysis whenever an agency opens a previously regulated market to competition.” *Id.*

61. *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 316 n.10 (1989).

A. *TELRIC, Fair Value, and the Problems of Estimating Forward-looking Costs*

If the aim were to ascertain the value (in its ordinary sense) of the utility property, the enquiry would be, not what it would cost to reproduce the identical property, but what it would cost to establish a plant which could render the service, or in other words, at what cost could an equally efficient substitute be then produced.⁶²

In his criticism of the FCC's TELRIC pricing system in the Supreme Court's recent *AT&T Corp.* decision Justice Breyer noted that:

Justice Brandeis, joined by Justice Holmes, pointed out the drawback of using a forward-looking, rather than an actual historic, cost system many years ago. They wrote that whatever the theoretical economic merits of a "reproduction cost" system (a system bearing an uncanny resemblance to the FCC's choice), the hypothetical nature of the regulatory judgments it required made such a system administratively unworkable.⁶³

As regards the so-called "hypothetical nature of the regulatory judgements" required for the implementation of the TELRIC methodology, it is uncertain as to whether the factual inquiry required for the conduct of a proper TELRIC study is any more hypothetical in nature than the judgments called for in determining whether or not capital costs, some of which were incurred decades ago, were "prudently" made or are "used and useful." Both the prudent and used and useful standards require an agency or a court to ascertain the prospective demand for the products that will use the utility's facilities, the cost of alternative technologies, and the life-cycle costs of the facilities. All of these factors require considerable speculation and by definition are hypothetical in nature.⁶⁴

62. *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Serv. Comm'n*, 262 U.S. 276, 312 (1923) (Brandeis, J., dissenting).

63. *AT&T Corp. v. Iowa Utils. Bd.*, 119 S. Ct. 721, 752 (1999) (Breyer, J., concurring in part and dissenting in part) (citation omitted).

64. If either the used and useful or prudent test is used to determine the reasonableness of the embedded investment, a commission or an agency should account for the anticipated demand for the facilities. Only if the anticipated revenue from the facilities exceed its cost, can the facilities be deemed to be prudently invested or used and useful. *See Duquesne Light Co. v. Barasch*, 488 U.S. 299, 309 (1989).

In the rapidly changing telecommunications industry, forecasting demand is no easy task. There is a consensus in the telecommunications industry that little is known about the demand for new telephone services. During a proceeding before the FCC, this view was expressed by the local exchange carriers. The FCC proposed that telephone company usage forecasts be used to allocate the cost of new investments between regulated and nonregulated services, basing the allocation of common equipment on relative use during the period when the nonregulated use reaches its highest occupancy rate during the equipment's lifecycle. After public notice, the FCC instead chose to base cost allocations on only three-year demand forecasts—a period significantly less than the economic life of most outside plant and central office facilities. The suppliers of the new services informed the

Second, Justice Brandeis *never* stated, nor can it be construed that he implied, that estimating reproduction cost was a wholly valueless and inappropriate enterprise. In fact, he noted that estimating reproduction cost was useful and appropriate “as a means, either of supplying lacks in the proof of actual cost and investment, or of testing the credibility of evidence adduced, or of showing that the cost of installation had been wasteful,”⁶⁵ and instances such as “when book values, or property accounts, furnish[] no trustworthy evidence either of cost or of real value.”⁶⁶

Such a situation pertains today in regards to the pricing of UNEs and interconnection. The ILECs and their allies, as has been noted in the previous discussion, have advocated for the use of some form of the prudent investment system in setting prices for UNEs and interconnection. The problem with this methodology is that the accounting systems currently used by the ILECs do not contain the data that is required for making pricing decisions regarding the provision of UNEs and the pricing of interconnection. These accounting systems were largely designed to track the financial standing of the corporation.⁶⁷ Accounting data is typically not maintained at a level of granularity that is sufficient for determining the cost of individual components of the network or tariff elements. This lack of detailed accounting data has long been recognized by the telecommunications industry. For example, in 1980, AT&T and its operating companies explained to the U.S. District Court why the Bell System could not use accounting data to identify the cost of network facilities or services:

With the advent of competition in the terminal equipment area, the Bell System began efforts to determine the specific costs of the individual components of basic exchange service, including the access line, station, inside wire and usage. These costs were not contained in the Uniform System of Accounts required for the telephone companies

FCC “that they cannot [reliably] forecast relative nonregulated and regulated usage over the lengthy depreciation lives of most network plant.” Separation of Costs of Regulated Telephone Service from Costs of Nonregulated Activities Amendment of Part 31, the Uniform System of Accounts for Class A and Class B Tel. Cos. to Provide for Nonregulated Activities and to Provide for Transactions Between Telephone Cos. and Their Affiliates, *Order on Reconsideration*, 2 F.C.C.R. 6283, para. 19, 64 Rad. Reg.2d (P & F) 47 (1987). The FCC accepted the local exchange companies’ position and remarked that long-term forecasts are closer in method to “fortune-telling . . . [than] reasoned analyses.” *Id.* at para. 41.

65. *Southwestern Bell Tel. Co.*, 262 U.S. at 298-99.

66. *Id.* at 298.

67. “[T]he Uniform System of Accounts focuses on company-wide financial and operating data, rather than on individual service categories.” Defendants’ Third Statement of Contentions and Proof at 825, *United States v. AT&T*, 498 F. Supp. 353 (D.D.C. 1980) (No. 74-1698).

by the FCC and state regulatory commissions.⁶⁸

While it is possible to allocate embedded costs to different services, these costs are not appropriate for making pricing decisions since the historic costs analyzed may likely be different than the costs incurred as a result of the pricing decision. Efficient allocation of resources requires that the measured costs be prospective.⁶⁹ Furthermore, while it is possible to more fully allocate embedded costs to different services, the exercise involves considerable speculation due to the fact that the accounting data lacks the level of detail required for making such a determination in the first place.

In lieu of reforming their accounting procedures to more fully account for service-related costs, the Bell System advocated basing pricing decisions on forward-looking cost studies. In numerous proceedings, "Bell presented evidence that long-run incremental costs were the only economically and valid standard for ratemaking purposes. . . ."⁷⁰ Ironically, given their pejorative characterization of TELRIC and their contention that a forward-looking costing methodology fails to accurately measure their costs,⁷¹ the RBOCs, other large ILECs, and their respective economic consultants, have also been long time advocates for the use of forward-looking cost estimates for ratemaking purposes.⁷²

Citations from a symposium sponsored by the National Regulatory Research Institute in 1990 support this Article's contention that economic costs regularly have been used for pricing decisions. George W. Costello, Bell Atlantic's Executive Director of Service Costs wrote that "forward-looking incremental costs [are] the appropriate pricing floor on which to base pricing decisions."⁷³ Costello asserted that embedded costs should not

68. *Id.* at 1384.

69. See SANFORD V. BERG & JOHN TSCHIRHART, NATURAL MONOPOLY REGULATION: PRINCIPLES AND PRACTICE 91-100 (1988).

70. Defendants' Third Statement of Contentions and Proof at 384, *AT&T* (No. 74-1698). As far back as 1975, some telephone companies advocated for the use of current cost in ratemaking. See, e.g., *New York Tel. Co.*, 12 P.U.R.4th 1, 29 (October 22, 1975) (noting that New York Telephone Company endorses the principle of current cost pricing for what it calls vertical services).

71. See Brief for Petitioners' Regional Bell Cos. and GTE, *Iowa Utils. Bd. v. FCC* (8th Cir. July 16, 1999) (No. 96-3321).

72. In a 1997 Connecticut proceeding on unbundling issues, Southern New England Telephone (SNET) went so far as to opine that the total service long run incremental cost (TSLRIC) methodology remains "the most appropriate [methodology] for encouraging an effective competitive environment." DPUC Investigation into the Southern New England Tel. Unbundled Loops, Ports and Associated Interconnection Arrangements and Universal Serv. Fund in Light of the Telecomms. Act of 1996, No. 96-09-22, at 12 (Conn. Dep't Pub. Util. Control April 23, 1997).

73. George W. Costello, *Determining the Economic Cost of Actions Requiring*

be used for pricing decisions because it would result in “non-economic [sic] and inefficient pricing policies.”⁷⁴ Costello expressed concern that the misuse of embedded data for pricing decisions could “irreparably handicap” local exchange companies.⁷⁵

At the symposium, BellSouth explained how it estimated the long-run incremental cost of the loop. The cost estimates were produced “to support state-wide pricing of various services utilizing loop facilities.”⁷⁶ BellSouth explained how it used capacity costing concepts, a method not unlike the TELRIC methodology adopted by the FCC in 1996: “The cost of each item of equipment, whether it be cable, multiplexers or fiber optics, is developed by dividing the full investment by the expected utilized capacity.”⁷⁷ The type of equipment used in BellSouth’s cost study was determined by the company’s planned, not historical, network: “It is assumed that the network engineer will build outside plant facilities in the most economical manner for the company’s array of services by selecting the most economically efficient technology.”⁷⁸ This effectively meant that the company would assume service over a type of facility that may have rarely been in use at the time the cost study was conducted. For example, the study assumed that customers located more than twelve thousand feet away would be served by digital line carrier,⁷⁹ even though the vast majority of these customers were served by copper cable.

As a final example, consider the writing of Richard Emmerson, an economic consultant that has worked for a number of local exchange companies. At the symposium, Emerson stated that questions regarding such issues as “What [c]osts will be caused by proposed changes in tariffs?”, or “What costs will be imposed on the LEC by more intensive use of a network component?. . . can only be determined using incremental costing methods.”⁸⁰ In the concluding section of his paper, Emerson stated that “[i]t is unambiguous in economics and the history of regulation that incremental costs be employed to govern telephone company behavior

Regulatory Review, in MARGINAL COST TECHNIQUES FOR TELEPHONE SERVICES: SYMPOSIUM PROCEEDINGS 666 (William Pollard ed. 1991).

74. *Id.* at 676.

75. *Id.* at 679.

76. James L. Johnson & Peter F. Martin, *A Practical Model for Estimating the Incremental Cost of Local Exchange Loops*, in MARGINAL COST TECHNIQUES FOR TELEPHONE SERVICES: SYMPOSIUM PROCEEDINGS 50 (William Pollard ed., 1991).

77. *Id.* at 56.

78. *Id.* at 59 (footnote omitted).

79. *See id.* at 78.

80. Richard D. Emmerson, *Theoretical Foundation of Network Costs*, in NATIONAL REGULATORY RESEARCH INSTITUTE, MARGINAL COST TECHNIQUES FOR TELEPHONE SERVICES: SYMPOSIUM PROCEEDINGS 147 (William Pollard ed. 1991).

(whether self governed or regulated).”⁸¹

Courts have also accepted the use of incremental cost pricing. In *MCI v. AT&T*,⁸² the Seventh Circuit Court of Appeals found that AT&T did not practice predatory pricing because its prices exceeded the long-run incremental cost of production. The court defined long-run incremental costing as “the average cost of adding an entire new service or product rather than merely the last unit of production.”⁸³ Thus, the court found rates to be compensatory since they covered the economic cost of production.

Given the history supporting the use of incremental costs for judging the reasonableness of rates, it is extraordinarily paradoxical that the RBOCs and the large independent phone companies are now arguing that “[u]sing a reproduction-cost methodology like TELRIC is strangely anachronistic.”⁸⁴ It seems that it is the RBOCs sudden conversion to the use of historical-cost methodologies that is “strangely anachronistic” and inconsistent in light of the evidence of their long advocacy for the use of incremental costs in making rate determinations.

Furthermore, the ILECs’ suggestion that the reasonableness of rates can only be judged with reference to embedded costs, and that the FCC’s advocacy of TELRIC over historic costs is inconsistent with past FCC practices, is contrary to the position taken by the ILECs in price-cap proceedings during the late 1980s and early 1990s. In the course of those proceedings, the telephone companies contended that there was no need for regulatory commissions to rely on rate-base, rate-of-return proceedings to judge the reasonableness of their rates. Indeed, in state proceedings the ILECs pointed out that in 1988 the FCC found that there was *no* need to base rates on the embedded cost of service. For example, New Jersey Bell, in its request to the state commission for replacing rate-base regulation with price caps, cited the following passage from the FCC’s Price Cap decision:

The Communications Act mandates that rates for interstate telecommunications common carrier services be just, reasonable, and non-discriminatory [sic]. However, while the statute requires that “we execute and enforce [its] provisions,” and provides us with an array of regulatory powers, both specific and broad, it does not compel [the FCC] to utilize a rate-of-return methodology or any other particular regulatory model in fulfilling our statutory obligations. Rather, courts have consistently found in the Act a congressional intent to grant [the FCC] broad discretion in selecting regulatory tools. Our “broad discretion” specifically includes “selecting methods . . . to make and

81. *Id.* at 189.

82. 708 F.2d 1081, 1115 (7th Cir. 1983), *cert. denied*, 464 U.S. 811 (1983).

83. *Id.*

84. Brief for Petitioners’ Regional Bell Cos. and GTE at 23, *Iowa Utils. Bd. v. FCC* (8th Cir. July 16, 1999) (No. 96-3321).

oversee rates. . . ." In doing so, we may make any "reasonable selection from the available alternatives."⁸⁵

B. Concerning the Proposition that Other Methods—Embedded Costs, Ramsey Pricing, or ECPR—Be Used in Place of TELRIC

Justice Breyer noted that the FCC had not adequately explained why the use of Ramsey Pricing or the efficient component pricing rule would be arbitrary or unreasonable.⁸⁶ This Part briefly addresses some of the limitations associated with these two pricing schemes.

As explained by Justice Breyer, "Ramsey pricing is a classical regulatory pricing system that assigns fixed costs in a way that helps maintain services for customers who cannot (or will not) pay higher prices."⁸⁷ More specifically, Ramsey pricing uses price demand elasticity estimates to determine the relative mark-up above marginal cost for different services.⁸⁸ First, it is paradoxical that Justice Breyer would suggest this may be a superior method relative to TELRIC for pricing services. For, as with TELRIC, Ramsey pricing uses estimates of forward-looking, not embedded costs, as a basis for setting prices. There is no substantial difference in the methodology used to estimate marginal and TELRIC costs other than the quantity demanded. Both type of cost studies require an analyst to make certain assumptions about the cost of current and future technologies, as well as the level of demand.

The crucial distinction between Ramsey and TELRIC pricing is the former's use of elasticity of demand estimates to determine the amount of common costs which should be recovered from different products. This added information requirement has made Ramsey pricing of little practical use in any regulated industry. In a review of the record, Huettner stated that Ramsey "principles are yet unused by virtually every regulatory agency in the [United States]."⁸⁹

In a more recent survey of the contributions made by economists to private industry and government agencies, Gerald R. Faulhaber and William J. Baumol pointed out that until recently, Ramsey pricing was

85. New Jersey Bell Telephone Company, New Jersey Board of Regulatory Commissioners, 143 Pub. Util. Rep. (PUR) 4th 297, 313 (N.J. Bd. Reg. Com. May 6, 1993) (citations and footnotes omitted).

86. See *AT&T v. Iowa Util. Bd.*, 119 S. Ct. 721, 752, (1999) (Breyer, J., concurring in part and dissenting in part).

87. *Id.* at 752.

88. See BERG & TSCHIRHART, *supra* note 69, at 55.

89. David A. Huettner, *Optimal Second Best Pricing of CATV Pole Attachments*, 48 S. ECON. J. 996-97 (1982).

given little attention by regulators.⁹⁰ They were pleased to report that in a “landmark decision” of the Interstate Commerce Commission (ICC), the agency considered adopting Ramsey pricing. The ICC rejected the pricing rule after noting that “Ramsey pricing . . . requires both the marginal cost and the elasticity of demand to be quantified for every movement in the carrier’s system.”⁹¹ The information requirements of such an undertaking “seemed overwhelming,” and therefore it was “too difficult and burdensome for universal application.”⁹²

Justice Breyer also stated that the FCC has failed to support its claim that the use of the efficient component pricing rule would be unreasonable.⁹³ The theoretical shortcomings of the efficient component pricing rule are well known,⁹⁴ and, like Ramsey pricing and TELRIC, requires an estimate of the forward-looking economic cost of service.⁹⁵ This Article, however, merely identifies one practical problem with using it for pricing unbundled network elements.

With the adoption of price caps, some regulatory commissions have explicitly or implicitly set retail rates for incumbent local exchange carriers that were intended to encourage ILEC infrastructure investment. State regulatory commissions decided to improve the cash-flow of some incumbent local exchange carriers in order that they would have funds available for building a modern, broadband network. If not for the decision by the state commission and legislatures to promote infrastructure investment by the incumbent local exchange carrier, the retail prices would have been lower.⁹⁶

90. See Gerald R. Faulhaber & William J. Baumol, *Economists as Innovators: Practical Products of Theoretical Research*, 49 J. ECON. LIT. 577, 594-95 (1988).

91. *Id.* at 595 (citation omitted).

92. *Id.* (citation omitted).

93. See *AT&T v. Iowa Util. Bd.*, 119 S. Ct. 721, 751 (1999) (Breyer, J., concurring in part and dissenting in part).

94. See, e.g., Nicholas Economides & Lawrence J. White, *Access and Interconnection Pricing: How Efficient Is the “Efficient Component Pricing Rule”?*, 40 ANTITRUST BULL. 557, 557 n.1, 558-70.

Economides and White provide the following definition of the ECPR:

The ECPR states that the appropriate access charge by the bottleneck monopolist to the providers (actual or potential) of a complementary component or service, which the monopolist also produces (and thus the other providers are rivals to the monopolist), is a fee equal to monopolist’s opportunity costs of providing the access, *including* any foregone revenues from a concomitant reduction in the monopolist’s sales of the complementary component.

Id. at 559.

95. Under ECPR, the price for an unbundled network element is equal to the incremental cost of providing the element plus the foregone net revenue that the monopolist loses when the rival obtains the network element. See *id.* at 562.

96. See, e.g., *Clouser v. Bell Atlantic-Penn., Inc.*, No. P-00930715, 82 Pa. P.U.C. 194

The ECPR uses as a starting point the retail prices of the incumbent. If ECPR is used to set the price of unbundled network elements, the entrants that order unbundled network elements will be required to fund the roll-out of the incumbents more modern network. This subsidy is not competitively neutral and therefore violates the 1996 Act's objective of promoting competition.

V. PRESENTATION OF THE ARMIS DATA: AN EMPIRICAL EXAMINATION OF TAKINGS IN TWENTY-ONE JURISDICTIONS

The findings of *Hope*, reaffirmed by the Court in *Dusquene*, arguably define an equity owner's interest as an interest in return on investment that is "sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital."⁹⁷ This Part analyzes that return on investment.

The literature concerning the 1996 Act and the issue of deregulatory takings, as well as the ILEC petitions to the court concerning the FCC's rulemaking procedures implementing the Act, are strikingly devoid of any data that supports the view that TELRIC prices are confiscatory.

The large telephone companies, citing *Electricity Consumers Research Council v. FERC*,⁹⁸ have argued that the reasonableness of a methodology can not be judged solely on the underlying theory. Rather the justness of a rate should be tested by the presentation of substantial evidence.⁹⁹ The large telephone companies have also claimed that the justness of the rates should be based on an evaluation of the regulated earnings of local exchange carriers. They claim that the FCC's adoption of TELRIC rates leave incumbent LECs no leeway to recover even their actual operating costs, never mind the constitutionally required fair return on investment.¹⁰⁰

A. *Company Returns*

This Article presents data on the profitability of selected incumbent LECs subsequent to the passage of the 1996 Act. The companies included in this sample are those companies that are, arguably, the firms that may experience the greatest harm from TELRIC-based prices for unbundled

(Pa. Pub. Util. Comm'n June 28, 1994).

97. *Federal Power Comm'n v. Hope Natural Gas Co.*, 320 U.S. 591, 603 (1944).

98. 747 F.2d 1511, 1517 (D.C. Cir. 1984).

99. *See* Brief for Petitioners' Regional Bell Cos. and GTE at 58-59, *Iowa Utils. Bd. v. FCC* (8th Cir. July 16, 1999) (No. 96-3321).

100. *See id.*

network elements. These companies have been required to provide local loops on a deaveraged cost basis.

The local loop is the most difficult facility for any potential competitive local exchange carrier to replicate.¹⁰¹ The construction of a wire-line network requires a large amount of irreversible capital, and therefore entry is risky.¹⁰² Furthermore, there are economies of scale in the provision of the loop because of the fixed costs of digging trenches and installing conduit.¹⁰³ Consequently, unless an entrant can obtain a sizeable share of the market, it may incur higher unit costs.

Incumbent IECs opposed deaveraging because they believed that unless retail rates were deaveraged simultaneously, it “would wreak havoc on the rate structure, allowing massive arbitrage.”¹⁰⁴ One witness for an ILEC provided the following example of how arbitrage would occur:

Assume that the monthly price of a deaveraged loop in a high density urban area is \$10 per loop, and that the monthly price of a deaveraged loop in a low density rural setting is \$40 per loop. Also assume that the average retail rate for business basic exchange service (1FB) is \$32 per month. Given this scenario, in high density urban areas, a CLEC such as AT&T will purchase \$10 unbundled loops in combination with other elements to make a finished service, which would cost less than paying the 1FB resale rate (\$32 less the avoided costs). However, in rural areas, a CLEC will not purchase unbundled loops at the high price of \$40; instead, the CLEC will purchase average-rated 1FB

101. See Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination and Resale, *Eighth Supplemental Order; Interim Order Establishing Costs for Determining Prices in Phase II; and Notice of Prehearing Conference*, No. UT-960369, para. 13 (Wash. Util. & Transp. Comm'n 1998).

102. Sunk or irreversible costs deter entry because they increase the risk associated with entry. Incumbent firms have a strategic advantage if the entrant must incur costs that are not part of the forward-looking opportunity costs of the incumbent. These additional costs create a barrier to entry because the incumbent firm's opportunity costs are lower than the entrants and, therefore, he will be able to underprice his potential rival. See WILLIAM J. BAUMOL ET AL., *CONTESTABLE MARKETS AND THE THEORY OF INDUSTRY STRUCTURE* 282 (1982).

“Most loop installations involve the use of technology for which the recoverable value of the facilities is quite low. Much of the cost of installation is associated with the actual labor effort and the machinery that is used to install the copper or fiber cable. For example, Pacific Telephone estimates that 59% of the loop costs are sunk.” Rulemaking on the Commission's Own Motion to Govern open Access to Bottleneck Services and Establish a Framework for Network Architecture Development of Dominant Carrier Networks, *Interim Decision Setting Final Prices for Network Element Offered by Pacific Bell*, Rulemaking 93-04-003, at 22 n.20 (Ca. Pub. Util. Comm'n Apr. 7, 1993).

103. See *Implementation of Local Competition*, 11 F.C.C.R. 15, 499, paras. 11, 169, 232, 316, 340, 679, 4 Comm. Reg. (P & F) 1 (1996).

104. Reply Testimony of Irene G. Chavira at 27, Interconnection Contract Negotiations Between AT&T Comm. of the Mountain States, Inc. and U S WEST Comm., Inc. Pursuant to 47 U.S.C. § 252, (N.M. State Corp. Comm'n Mar. 27, 1997) (No. 96-411-TC).

service on a resale basis, since it can be purchased at a lower rate (\$32 less the avoided costs).

The net result of this would be the loss of support from low-cost geographic areas to high cost geographic areas—with no way to make it up. This situation, where unbundled rates are deaveraged and retail rates are averaged, simply allows the contribution which now flows from urban customers to rural customers to flow into the pockets of AT&T and other CLECs.¹⁰⁵

The New Mexico State Corporation Commission rejected this witness's argument and instead found in this and other proceedings that the wholesale rates for unbundled loops should be deaveraged: "It is the intent of the [1996] Act that the price of unbundled network elements be based on the economic cost of service. Therefore, U S WEST should deaverage its rates into three density groups."¹⁰⁶

Table 1 in the Appendix provides data on the deaveraged rates for loop as a UNE, established in New Mexico and twenty other states. It only shows data for states that have deaveraged their rates because these are the states, according to the incumbent local exchange carriers, that are most likely to be harmed by setting the price of loops based on the economic cost of service.¹⁰⁷

In Table 1, the columns indicated as (1) through (4) show deaveraged forward-looking costs by population density zone. Column (5) shows the average UNE loop price. Column (6) shows the 1997 embedded cost of loop. Columns (7) through (9) show returns on regulated net investment for the years 1996 through 1998.

The data shows that the New Mexico Commission, as well as other state commissions, have established deaveraged unbundled loop prices that can be less than the average embedded cost of service. The embedded cost may be higher than the forward-looking cost because technological change is lowering the cost of providing the loop, or because of differences in the

105. *Id.* at 46.

106. Interconnection Contract Between AT&T Comm. of the Mountain States, Inc. and U S WEST Comm., Inc. Pursuant to 47 U.S.C. § 252, *Findings of Fact, Conclusions of Law and Order*, No. 96-411-TC, at para. 135 (N.M. State Corp. Comm'n Mar. 20, 1997); see Petition by Brooks Fiber Comm. of New Mexico, Inc. for Arbitration of the Rates, Terms and Conditions of Interconnection with U S WEST Comm., Inc., Pursuant to Section 252(b) of the Telecomms. Act of 1996, *Order on Motion for Rehearing*, No. 96-337-TC, at para. 9 (N.M. Corp. Comm'n Feb. 1997); Petition by American Comm. Servs., Inc., and Its Local Exchange Operating Subsidiary for Arbitration with U S West Comm., Inc., Pursuant to the Telecomms. Act of 1996, No. 96-307-TC, at para. 72 (N.M. State Corp. Comm'n Dec. 1996).

107. AT&T submitted the rate data to the FCC in an *ex parte* filing made in CC Docket No. 96-98. See Letter from AT&T to Magalie R. Salas, Secretary, FCC, attachment (Mar. 2, 1999) (on file with the *Federal Communications Law Journal*).

methods used to calculate the embedded and forward-looking cost estimates. For example, the embedded cost of service is based on a composite rate of return of 11.25%,¹⁰⁸ an amount that exceeds the rate used by state commissions in most arbitration proceedings by approximately one hundred basis points.¹⁰⁹ Furthermore, the embedded cost of the loop includes the cost of connecting and disconnecting customers from the network. In the arbitration proceedings, separate nonrecurring charges are established to recover these costs. Consequently, the unbundled loop price is not designed to recover certain loop costs that are included in the embedded cost of service.¹¹⁰

As can be seen from Table 1 in the Appendix, the majority of companies are earning returns on regulated investments that are above the FCC 11.25% composite rate-of-return. Furthermore, if the set of the 150 largest telephone companies are considered, Table 1 shows that these firms are also earning returns which are greater than the FCC's authorized rate of return, 11.25%. If the FCC's composite rate of return ensures the maintenance of financial integrity, returns in the range indicated in Table 1 are more than adequate to ensure that the investment-backed expectations of public utility investors are being met.

This position is further bolstered by noting that the return reported in the last column is a composite return that has a debt and equity component. Assuming a rate of 7.58% for long term debt,¹¹¹ and an equity/debt mix of 75/25 to 60/40,¹¹² the equity return of a firm, such as Ameritech, Illinois, on

108. See NECA, *Universal Service Fund Loop Cost and Expense Adjustment Algorithms*, Oct. 1, 1998, at line 23 (on file with the *Federal Communications Law Journal*).

109. The New Mexico State Corporation Commission has used a rate-of-return of 10.72 in its arbitration proceedings. See *Interconnection Contract Between AT&T Comm. of the Mountain States, Inc. and GTE Southwest, Inc.* Pursuant to 47 U.S.C. § 252, No. 97-35-RC, at para. 90 (N.M. State Pub. Serv. Comm'n 1997).

110. The recurring rate of the unbundled loop is designed to recover the recurring cost of the loop. It is economically efficient to recover the nonrecurring expenses from the carrier that requests that a loop be connected or disconnected, rather than bundling this cost into the recurring price of the loop. By establishing separate charges, the cost of connection and disconnection is recovered from the party that causes society to incur the cost. The reporting of both recurring and non-recurring expenses in the embedded number highlights again how embedded cost data was not designed for the setting of rates. While the underlying of data exists which permits a cost analyst to segregate recurring and nonrecurring expenses, as with a forward-looking cost study, a special study must be undertaken in order to obtain this information.

111. See *Telephone Company Bond Rates*, N.Y. TIMES, May 8, 1999, at B3 (New England ed.) (listing long-term debt rates).

112. Telephone companies contend the range is appropriate. State regulatory commissions, however, have generally opted for a higher debt mix. See *Petitions for Approval of Agreements and Arbitration of Unresolved Issues Arising Under § 252 of the Telecomms. Act of 1996*, No. 8731, at 23, 29 (Md. Pub. Serv. Comm'n Sept. 22, 1997);

its embedded investment was somewhere in the range of 35% to 42% in 1998.

Given the rates of return on regulated investment, and the rates of return on embedded investment, it seems clear that the majority of telephone companies in the survey are earning returns that are more than sufficient to assure confidence in the financial integrity of their enterprises, maintain their credit worthiness and to enable them to attract additional capital.¹¹³ Based on this data it would seem that the ILECs and their supporters' contention, that use of the TELRIC methodology, on its face, results in a taking, is not grounded in the reality depicted by their earnings reports. The Fifth Circuit Court recognized this in a recent decision:

GTE claims that implementing the forward-looking cost methodology will force ILEC's to operate at a loss, and this constitutes an unconstitutional taking under *Brooks-Scanlon*. GTE's claim has no merit; it has not shown that a taking has occurred or that any taking will be permanent or would be so serious as to be considered "confiscatory."¹¹⁴

B. *The Stranded Cost Issue*

The ILECs have argued that implementation of the FCC's pricing rules will "strand" their historical costs. One of the arguments they have used to support this position is that state regulatory commissions, trying to keep local rates low, have traditionally dictated artificially lengthy depreciation schedules that do not accurately reflect loss of value due to obsolescence. For that reason, ILECs' books often reflect "'reserve deficiencies:' they carry existing equipment on their accounting books at a higher value than what it would cost to buy new equipment today."¹¹⁵ This

Implementation of the New Rules Related to the Rural Telecommunications High Cost and Low Income Components of the New Mexico Universal Service Fund, *Findings of Fact, Conclusions of Law and Order*, No. 96-310, at paras. 219-242 (N.M. State Corp. Comm'n July 15, 1998).

113. In their Brief, the ILECs argue that losses on UNEs may not be subsidized by profits from other competitive services. This argument is spurious because the companies have made no showing that the TELRIC prices are below cost. *See* Brief for Petitioners' Regional Bell Cos. and GTE at 60, *Iowa Utils. Bd. v. FCC* (8th Cir. July 16, 1999) (No. 96-3321).

114. *Texas Office of Pub. Util. Counsel v. FCC*, 183 F.3d 393, 413 n.14 (5th Cir. 1999) (citing *Dusquesne Light Co. v. Barasch*, 488 U.S. 299, 314 (1989)).

115. Brief for Petitioners' Regional Bell Cos. and GTE at 12, *Iowa Utils. Bd. v. FCC* (8th Cir. July 16, 1999) (No. 96-3321). The Michigan Public Service Commission has defined the "depreciation reserve deficiency" as "the difference between that depreciation reserve maintained on the company's books and that which would have been accrued had the actual service lives and salvage values been known at the time the asset was placed into service." *Michigan Bell Tel. Co.*, 77 P.U.R.4th 535, 537 (1986). In competitive markets, when the book value of a firm's assets exceeds its market value, the excess capitalization is

is a spurious argument. The limited available market data clearly shows that the book value of the ILECs assets is significantly less than the market value of the assets.¹¹⁶

Recent market sales information indicates that exchanges are being sold for more than book value. For example, GTE sold its 213,651 domestic access lines in Arkansas to CenturyTel, Inc., for \$843.3 million, or approximately \$3,947 per line.¹¹⁷ GTE's total 1998 Net Plant in Service Investment, or booked investment net of depreciation, was \$327.5 million.¹¹⁸ This works out to, approximately, \$1,533 per line. So, GTE's Arkansas exchanges sold for about 2.6 times their 1998 book value, hardly an indication of a stranded cost problem.¹¹⁹ In 1998, GTE sold 58,723 lines in Nebraska for \$204 million or approximately \$3,470 per line. The booked investment on those lines was \$55.2 million.¹²⁰ Hence, in this situation, GTE's lines sold at approximately 3.7 times their book value.

As another example, an analysis performed on the effect of the recent merger between Southern New England Telephone (SNET) and SBC indicated that "[t]he implied market value of SNET's intrastate assets of \$3.305-billion [sic] is approximately 1.8 times the \$1.477-billion [sic] book value of SNET's intrastate assets."¹²¹

The fact that the ILEC exchange assets are commanding prices on the open market which are of a magnitude greater than their book value vitiates the ILECs' contention that implementation of TELRIC will result in

normally written off as a stockholder loss.

116. There is limited data available on the market value of the assets. In most jurisdictions the market price of the sold exchanges is not disclosed.

117. See *Telephony*, COMM. DAILY, June 30, 1999, at 7.

118. See Joint Application at ex. 1, Joint Application of GTE Southwest Inc., GTE Arkansas Inc., and GTE Midwest Inc. for Authority to Sell and for CenturyTel of Northwest Arkansas, LLC, and CenturyTel of Central Arkansas, LLC to Acquire Certain Assets and for Relinquishment of Certain Rights Under Certificates of Pub. Convenience and Necessity, No. 99-220-U (Ark. Pub. Serv. Comm'n, 1999).

119. Other data, while less comprehensive, indicate that LECs are selling their assets for a multiple of the book value. For example, on August 19, 1999, GTE Corp. announced the sale of 126,410 access lines to Telephone USA of Wisconsin LLC and CenturyTel, Inc., for \$365 million. See *Telephony*, COMM. DAILY, Aug. 20, 1999, at 7. This is equivalent to \$2,887 per access line. In 1998, GTE average net book investment per line was \$1,135 for its 478,106 lines. GTE is only selling a portion of its 478,106 lines. Nevertheless, the limited publicly available data indicates that the sale price is considerably higher than its book investment. This provides further support for our contention of a lack of a taking.

120. See Telephone Interview with John Burvanis, Accountant, Nebraska Public Service Commission (Sept. 15, 1999).

121. Direct Testimony and Exhibit of Lee L. Selwyn and Susan M. Balwin *ex rel.* State of Connecticut Office of Consumer Counsel at 93, Joint App'n of SBC Comm., Inc., and Southern New England Telecomms. Corp. for Approval of a Change of Control, No. 98-02-20, (Conn. Dep't Pub. Util. Control May 7, 1998).

stranded costs.

VI. CONCLUSION

The 1996 Act championed the creation of competitive telecommunications markets. In reaching that goal, the FCC developed several rules including the unbundling of elements and element prices based on TELRIC forward-looking costs. This forward-looking approach is in stark contrast to typical embedded cost-pricing approaches. Not surprisingly, the ILECs have argued that such a switch would lead to an unlawful taking on the part of regulators.

This Article makes several points related to this issue. First, over the last one hundred years there have been other switches in rate base valuation methodologies. In the most recent switch, the Supreme Court was asked in *Hope* to determine whether converting from fair value-based pricing to prudent investment based pricing constituted a taking. The Court's opinion was clear. It would not review the valuation method as long as "the total effect of the rate order cannot be said to be unjust and unreasonable."¹²² Applying the Court's logic to the current controversy, it seems that TELRIC should not be unacceptable as long as the effects of TELRIC-based prices are not unjust and unreasonable.

This Article's second point takes that unjust and unreasonable approach one step further. The focus is on a sample of twenty-one jurisdictions where UNE prices are TELRIC-based and deaveraged across density zones. In each jurisdiction, retail prices reflect value of service pricing to varying degrees, so there is ample room for cream skimming by competitors. Looking at the return on regulated net investment for the ILEC in each jurisdiction, the results indicate that in two-thirds of the jurisdictions, the return was above the FCC's composite rate of return. Hence, under the Court's standard as enunciated in *Hope*, TELRIC-based prices are not unreasonable. However, as competition evolves, these returns may change. Nothing prevents review at a later time under new situations and a reexamination of TELRIC pricing.

This Article's final point relates to the implementation of TELRIC versus other pricing standards for UNEs. This Article discussed three alternative methods of pricing network elements. The most familiar method relying on embedded costs, is not practical because the accounting financial system was not designed to provide the type of information needed for pricing decisions. The other two options, ECPR and Ramsey pricing, have much greater information requirements than TELRIC. Like TELRIC, at the

122. Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591, 602 (1944).

outset the analyst must estimate the forward-looking cost of production. But, in addition, with Ramsey pricing the analyst must have available demand elasticity data. This information does not generally exist and regulatory commissions have not implemented Ramsey pricing in part due to the absence of such data. ECPR also requires a significant amount of additional data. The analyst must be able to quantify the forgone revenue—a difficult task because such a calculation requires an estimation of the cross-elasticity of demands between unbundled network elements, access charges, and retail prices. Again, this information is not available. Another advantage of TELRIC pricing is that it encourages efficient use of resources. TELRIC pricing allows efficient entry because competitors can obtain access to the network at a price that reflects the cost to society of making the resources available. Arguably, it was this view of competition that Congress envisioned when it passed the 1996 Act.

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