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In the Supreme Court of the United States

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No. 34

FEDERAL POWER COMMISSION, CITY OF AKRON, AND PENNSYLVANIA PUBLIC UTILITY COMMISSION, PETITIONERS

v.

HOPE NATURAL GAS COMPANY

ON WRIT OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE FOURTH CIRCUIT

SUPPLEMENT TO BRIEF FOR PETITIONERS

EXPRESSIONS OF OPINION CONCERNING THE "FAIR VALUE" DOCTRINE OF SMYTH V. AMES AND THE RULE OF "PRUDENT INVESTMENT"

INTRODUCTION

For more than forty years extensive discussion has revolved about the proper and practicable basis for public utility rate regulation, a discussion which has not yet been definitively terminated. The crux of the problem has been the selection of the proper formula for computing the base upon which a fair annual return and an annual depreciation allowance are to be granted in the form of rates.

At the center of the controversy have been found two opposing concepts: one adopting the "present fair value" of the utility's property as the just rate base; the other, the amount "prudently invested" by the utility in its business.

This Supplement presents materials taken from the writings of legal and economic authorities, which, in our view, thoroughly discredit the "fair-value" formula, and demonstrate that (1) it is unsound and unworkable, (2) its results are unreliable, and (3) it is unduly time-consuming and costly. The "fair value" rule has been condemned by an overwhelming weight of economic opinion, legislative investigations, progressive utility commissions and persuasive judicial opinions, and it is their verdict that the rule has been a failure in practice and is virtually useless as a guide to equitable rates.

We also present materials in this Supplement which show that none of these vices inheres in the "prudent-investment" rule, and that it is on the contrary a simple, expeditious and sound method of evolving rates which are fair to the utility, to its investors and to its customers. In the belief that it will be helpful in arriving at a valid basis for rate-making, we present a résumé of significant analyses and discussions of this problem.

I. THE "FAIR VALUE" DOCTRINE

The need for reexamination of the "fair value" rule was succinctly stated by Mr. Gerard Henderson in a brilliant critique of public utility valuation:

> The relation between the public utility and the community cannot be expressed in

> terms of a simple, quantitatively ascertainable fact, for the relation involves numerous and complex factors which depend on compromise and practical adjustment rather than on deductive logic. The whole doctrine of *Smyth* v. *Ames* rests upon a gigantic illusion. The fact which for twenty years the court has been vainly trying to find does not exist. "Fair value" must be shelved among the great juristic myths of history, with the Law of Nature and the Social Contract. As a practical concept, from which practical conclusions can be drawn, it is valueless. (Henderson, *Railway Valuation and the Courts,* 33 Harv. L. Rev. 1031, 1051.)

The overwhelming weight of economic authority in the public utility field rejects the "fair value" doctrine of *Smyth* v. *Ames.* According to Bonbright, *The Valuation of Property,* Vol. II, at p. 1081:

> The sharp disagreement among American economists as to what constitutes a proper rate base makes all the more striking their apparently unanimous agreement that, whatever this base should be, the one measure which is outlawed is the very measure which the Supreme Court has held to be controlling—namely, the "value" of the properties as of the time when the rates are under consideration. This position is not confined to those writers who support the "prudent-investment" or the "original-cost" basis of regulation and whose views are therefore most obviously opposed to the accepted legal doctrine. It is accepted no less uncompromisingly by such writers as Brown (Professor Harry Gunnison Brown) and Graham (Professor Willard J. Graham), whose defense of the replacement

> cost theory will be noted below, and by the late President Hadley, who objected to any rate control which makes the fairness of the rates depend upon the adequacy of the corporate earnings. Hadley, indeed, once remarked that he could recall but one economist who agreed with the courts in accepting "value" as a measure of the rate base, and he added that this economist was dead. (Citing President A. T. Hadley's testimony before the New York State Commission on the Revision of the Public Service Commission's Laws, Hearings, p. 730 (Albany, 1930) and his address on "The Meaning of Valuation," in 19 *Am. Econ. Rev. Supp.* 173 (March 1928).)

Professor Irston Barnes of Yale University has thus summarized the "fair value" doctrine's failures and defects:

> Judged in terms of the criteria of effective regulation, the score for fair-value is not impressive. By focusing attention on the corporation, the effects of rate control on investors are ignored or relegated to a position of secondary importance. Unearned income and undeserved losses may be visited upon consumers and investors. The present-fair-value method has not been an equitable method of regulation under the circumstances that have prevailed in the past and does not promise greater fairness for the future.
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> On the theoretical level, the fair-value program of regulation encounters unanswerable objections. The legal theory is accurately characterized as vague and inconsistent. The eminent-domain fallacy is found to have infected the whole body of

> regulatory thought with respect to the fair-value standard. Finally, the nature of the inquiry and the character of the evidence presented in the search for fair value are not calculated to afford a scientific or satisfactory method of rate control. (Barnes, *The Economics of Public Utility Regulation* (1942) pp. 562–3.)

Professor Robert L. Hale, of Columbia University has observed that this concept "serves merely to divert the time, attention, and funds of regulating bodies out of the proper channels into one of the most unreal fields of speculation in which the minds of metaphysicians have disported themselves since the days of medieval schoolmen." *The "Physical Value" Fallacy in Rate Cases,* 30 Yale L. J. 710 (1921).

A. THE FICTIONAL CHARACTER OF "REPRODUCTION COST"

The most serious defect in the use of present fair value, and hence of reproduction cost, in the determination of utility rates is its utter lack of precision. The idea of reproduction cost is at first blush a simple one, and might indeed be workable in the case of a property of small size and little complexity.

> The original conception of reproduction undoubtedly grew out of simple conditions, such as would be met in estimating the cost of reproducing a building or a single structure. In this case, the difference between the original cost of the building or structure and the reproduction estimate would be due wholly to change in prices of labor and materials and the change in methods of doing work. (American Society of Civil

> Engineers, *Valuation of Public Utilities,* 81 Transactions (1917) p. 1362.)

The difficulty is that a utility comprises a vast amount of property which is both far-flung and exceedingly complex.

> This simplicity of condition does not obtain in the case of a great property, the actual construction of which has extended over many years, many of the plant units of which have been renewed or replaced by larger ones than were originally installed, which has undergone changes and alterations, and the history and records of which have not been kept fully and completely. In such a case the making of a complete estimate of the cost of replacement or reproduction is a very involved undertaking. (*Id., loc. cit.*)

As a result, the determination of reproduction cost is extremely difficult, but, what is worse, no two experts can reach an agreement upon the figure to be used.

> To this criticism of the vagueness of the court's rule as to valuation can be added another, namely, the practical difficulty of making any valuation at all. In every case examined, there has been a great conflict in evidence. Often, when two valuation experts have been employed by the same party, these experts have each made valuations that differed by a great amount. The difficulty seems to be that of making any accurate valuation of the various assets, tangible and intangible, that make up the plant of a modern public utility. (Howell, Ben R., *Recent Developments in the Application of the Rule of Smyth* v. *Ames in*

Valuation Proceedings in the Federal Courts, 3 Tex. L. Rev. 412, 432 (1924).)

This difficulty is also recognized by the Committee on Valuation of the American Society of Civil Engineers:

> The practice of those engaged in valuation work, from the beginning of such work up to the present time, has varied widely in the matter of determining the cost of reproduction. Some base such cost on existing physical conditions, others on historic conditions, and still others combine the two. Some engineers have included only those physical property units which were actually created in the construction of the property, that is, they have used historic conditions, as to items of cost, with present-day prices for labor and material. Others have used substitute units, or historic prices, or original instead of present methods of work, and still others have used original conditions, original prices, and original methods, in making an estimate of reproduction cost.
>
> This failure of engineers engaged in valuation practice to agree on a uniform conception of reproduction has cast some doubt on the real worth of Cost of Reproduction as one of the measures of value. (American Society of Civil Engineers, *Valuation of Public Utilities,* 81 Transactions (1917), p. 1359.)

The "irrationality" and "unworkability" of reproduction cost estimates have thus been described:

> For as soon as we begin to deal with reproduction cost we desert the solid ground of fact and enter the realm of guesswork and

> partisan interpretation. The determination of the cost of reproducing a given property for the purpose of fixing a rate base has come to be one of the most involved and expensive tasks in the utility business. It requires a battery of engineers and accountants working months at a time and coming to conclusions with which no other like group working independently would agree.
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> * * * * *
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> * * * if reproduction costs are to be figured on the cost of the identical plant, a plant that would not be reproduced under any modern conditions, equipped with machinery that could not be procured in any market, and for which price lists are no longer available, as has proved to be the case, we find ourselves in an unreal world, where the imagination and ingenuity of acquisitive spirits are given a free and untrammeled rein. The irrationality and the unworkability of this legal fiction of fair value, embodying the accepted theory of reproduction cost new, becomes the more apparent the more one familiarizes himself with the processes that have been devised in its name. (Mosher & Crawford, *Public Utility Regulation,* pp. 192–3, 214.)

A classical example of the wide variations in determining fair value under the reproduction cost theory is contained in the dissenting opinion of Mr. Justice Stone in *West* v. *Chesapeake & Potomac Telephone Company,* 295 U. S. 662, 691, note 7. The reference shows the following variations in results obtained by engineering appraisals of the telephone property involved in *New York Telephone Company* v. *Prendergast,* 36 F. (2d)

54—variations covering a range of almost $250,000,000:

Estimating body	Valuation	Increase over the Commission valuation
		Percent
Majority of Commission	$366, 915, 493	
Statutory Court	397, 207, 925	8. 2
Minority of Commission	405, 502, 993	10. 5
Master's report	518, 109, 584	41. 2
Company claim based on Whittemore appraisal	528, 753, 738	44. 1
Company claim based on Stone & Webster appraisal	615, 000, 000	67. 1

Another striking variation of estimates occurred in the *Indiana Telephone Case:*

> A typical instance of this difficulty is seen in the case of *Indiana Bell Telephone Co.* v. *Public Service Commission* [300 Fed. 190], in which there was a difference of $4,000,000 between the estimates of two of the commission's engineers. In this same case the difference between the highest valuation offered and the lowest was $19,000,000, or 45 percent of the highest estimate. Experts, working in good faith and including the same items of valuation, arrive at results so far apart as to prove that such proceedings are of little value in determining the true worth of the property. It can thus be seen that, although the courts are working out the elements, or items, that form a proper basis for valuation, the value to be given these items can never be determined with any degree of certainty. The best that can be said for the valuation of public utilities under the present method is that the courts have by their guesses as to the correctness of the expert's guesses, made another guess as to the probable value of the utility in question as a basis for the determination of a rate which will assure a fair return on

> the investment. (Howell, *op cit.*, p. 6, at p. 432.)

It is common knowledge that no two field parties will arrive at the same inventory of physical quantities, and it is likewise common knowledge that a recheck by one field party of the work of another always discloses discrepancies. An analysis and comparison of reproduction-cost estimates utilized in a large number of rate cases reveals a startling variation between company and commission as to the value of the same property, the latter's in some instances being little more than half of the company's (see Appendix *infra*, pp. 91–103). These discrepancies are not avoided by experts, for in attempting to determine cost of reproduction new, there are possible variations of as much as 100 percent between the estimates of engineers testifying on behalf of a utility and that of commission experts. (Richberg, *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263, 269 (1922).)

In analyzing *McCardle* v. *Indianapolis Water Co.,* 272 U. S. 400, valuation for rate-making purposes, one commentator has observed:

> In addition to the expert guessing contest involved in estimating reproduction cost, according to present or past prices, the opinion also adds an additional gambling factor in requiring "an honest and intelligent forecast as to probable price and wage levels during a reasonable period in the immediate future." For at least one hundred years (and probably for several thousand years) commerce has been offering its greatest prizes to men who could make honest and intelligent forecasts of

> future prices. Today the management of any large business would pour wealth into the lap of the inspired genius who could make such forecasts. The question is presented as to whether, when such forecasts are impossible (as they are most of the time), public utility commissions should make any effort to regulate public utility rates. Relying upon past prices alone, it would become evident in practically every case, by the time the case reached the Supreme Court, that there had not been an "honest and intelligent forecast" of future prices. The illusion * * * that a reliable forecast of future prices can be made, is on a par with the illusion which also radiates from the opinion, that there is such a thing as a "relatively permanent price level." (Richberg, *Value—By Judicial Fiat* (1927), 40 Harv. L. Rev. 567, 572.)

Speaking of reproduction-cost estimates of the Interstate Commerce Commission, Professor Sharfman has said:

> It must be evident from the foregoing analysis that it would be the simplest of tasks to point out numerous sources of possible error and miscalculations; there are scores of items concerning which equally competent judgments might produce widely divergent results. Final figures so painfully precise, and yet built upon an hypothesis so markedly unreal, are almost ludicrous in their exactness. Even with conjecture reduced to a minimum, the results are still too conjectural to be altogether acceptable as objective findings. * * * The shortcomings of the results spring from the inherent nature of the reproduction-cost

> method, rather than from any want of skill or reasonableness in its practical application. It must be borne in mind, too, that the Commission had no alternative in the matter of ascertaining and reporting reproduction costs—this task was specifically imposed upon it by the terms of the Valuation Act. (Sharfman, *The Interstate Commerce Commission,* Vol. III–A, p. 185.)

The effect of the indefiniteness of the concept of reproduction cost is that the rate basis is entirely unpredictable. The utility and the regulatory commission are, until the final decision, entirely in the dark, and so is the investor. It is for this reason, among others, that Professor Robert Hale urges the abandonment of the rule of *Smyth* v. *Ames.*

> The time now seems ripe for the Court to overrule *Smyth* v. *Ames* and to repudiate the principles that the rate-making power is subject to limitations pertinent only to the power of eminent domain, and that rates, to be valid, must yield a fair return on "value." It would seem to the present writer desirable if, in a case presenting the issue, the Court should expressly declare (what it held in effect in the *Lindheimer* case) that rates which enable the company to operate successfully and to raise the necessary money (which they do if they yield a fair return on the actual prudent cost), are valid, quite regardless of what return they yield on a "value" in the determination of which reproduction cost plays a part. This does not mean that it would be desirable for the Court to substitute for the rule in *Smyth* v. *Ames,* a requirement that rates must in all cases yield a fair return

on actual prudent cost. A state's policy which fixes rates on that basis cannot be pronounced the only one that is not "arbitrary." The line between those rate regulations that are arbitrary and those that are not, like the line between other valid and invalid exercises of the police power, can better be left to be pricked out as future occasions arise. But counsel could at least advise clients that the validity of particular rates will be determined with reference to facts pertinent to realities. As the decisions now stand, they cannot advise whether the determination will be made with reference to such facts (as in the *Lindheimer* case), or with reference to so-called values in the determination of which no prediction can be made of the weight which the Court will attach to the various elements of actual cost, replacement cost and "going value." They cannot advise whether a company's prosperous condition will be taken as evidence of the adequacy of its rates (as in the *Lindheimer* case), or as evidence of large "going value" whose existence proves the rates to be inadequate (as in the *McCardle* case); nor whether the good physical condition of the company's property will be taken to show that the annual depreciation allowance is excessive and that the rates may accordingly be reduced (as in the *Lindheimer* case), or to show that the "present value" is high and the rates accordingly "confiscatory" (as in *Board of Public Utility Commissioners* v. *New York Telephone Co.*). Certainly *all* of the conflicting decisions of yesterday cannot be the law of today. (Hale, Robert L., *Conflicting Judicial Criteria of Utility Rates—The Need for a Judicial Restatement,* 38 Columbia L. Rev. 959, 976, 977 (1938).)

The unlimited scope afforded the imagination by reproduction-cost is graphically related by Carl I. Wheat, a practitioner with broad experience:

> Indeed, when it comes to the actual process of arriving at such a figure for a public utility system, as this "reproduction cost" process has been built up in recent rate cases, those who prefer to keep their feet on sound ground must part company with the so-called "experts." In contrast to the realistic approach to the problem, we discover that under this second approach there has been erected a great structure of imaginary and imaginative potential and hypothetical "costs," totally unrelated to reality. And the argument is made that this is what the Supreme Court really meant by its use of the term "present cost." Here, indeed, we discover the *ignis fatuus* of "valuation."
>
> It is on this second premise that the "experts" assert the necessity for including the various unreal elements above mentioned, *i. e.*, the nonexistence of the existing plant, the coming to town of a promoter, his speeches to the local clubs offering to build a plant, the excitement and delight of a receptive populace, the preparation of blueprints, the obtaining of new franchises under social, legal, and political conditions not effective when the plant was originally built, the cutting and replacing of pavement not historically cut or replaced, the cost of meeting increased traffic and city growth, and a myriad of like "difficulty factors" that were not present when the plant under consideration was actually constructed, together with divers other hypothetical costs which an actual physical "reproduction" of the property might conceivably entail.

Wheat, Carl I., *The Present as Compared With the Original Cost of Construction,* 20 Pub. Util. Fort. pp. 131, 134–135 (1937).

In the article referred to above Mr. Wheat cites a striking example of the unreality of the reproduction cost approach:

> In the Los Angeles Case the book cost of the company's properties totaled $169,000,000; the cost to "reproduce" the properties at the time of the inquiry was claimed to be $182,800,000; and the claim of "fair value" after taking into consideration admitted accrued depreciation, was $175,000,000. We are here concerned solely with the basis of the company's assertion of what it would cost to "reproduce" the properties.
>
> That figure was based upon an inventory to which certain derived "unit costs" were applied. Cross-examination of the company's witnesses disclosed that this "appraisal" included $3,171,400 to represent *the cost of cutting and replacing paving over conduits in instances where no such costs were historically incurred,* though the Supreme Court had but recently declared that "the cost in imaginary conditions of cutting and restoring pavements was not an increment of value." It further appeared that the total included $1,033,000 to represent *telephone station installations and associated drop wires which had actually been abandoned at the time of the appraisal.*
>
> Moreover, it was brought out that no less than $1,623,000 was included to represent *"left-in disconnects," i. e.,* telephone disconnected but left by the company, for its own convenience, on the former subscribers' premises. (Picture the imaginary promoter rushing hither and yon over the new

> system feverishly "reproducing" this large amount of already disconnected and idle equipment!) In addition, the sum of $405,-500 was included to represent imaginary *organization and franchise costs in excess of those actually incurred in the development of the system,* an item that had recently been specifically disapproved by the Supreme Court. (*Op. cit.* at pp. 140–141.)

But the farthest flights of fancy within the realm of "reproduction-new" occurred in respect to a tax item and automobiles. The Telephone Company claimed $20,610 as hypothetical taxes during construction which might have had to be paid on hypothetical interest income during construction (*op. cit.,* pp. 140–141), and the method by which the utility sought to ascertain the reproduction value of automobiles is thus described by Mr. Wheat:

> Curiously enough, the urge for consistency in presenting "reproduction cost" estimates in the Los Angeles Case led the company's experts into a peculiar *cul-de-sac* when it came to automobiles. Notwithstanding the fact that the southern California used-automobile market is the largest in the United States, and that actual used-car prices are published, are fully standardized, and are readily ascertainable, the company's witnesses decided to "reproduce" its automobiles. To this end they went through the following highly illuminating process:
>
> "(1) They obtained from automobile piece-part catalogues the prices of some thirty separate parts (representing, said they, some 60 per cent of the total vehicle), (a) for the year each make and model of vehicle was purchased, and (b) for Decem-

> ber 31, 1934, the date as of which the 'valuation' was being made;
>
> "(2) They ascertained the ratio which the sum of these piece-part prices for the year of purchase bore to the sum for December 31, 1934;
>
> "(3) They applied this ratio to the total cost of vehicles of each particular type and age, as shown on the books, and
>
> "(4) They labeled the resulting figure 'reproduction cost new' of automobiles."
>
> In such fashion did they obtain the "cost new" of a 1929 Ford in 1934! If such a process bears any relation to "value"—under *any* definition of that term—it is difficult to perceive it. Yet this is but one example of the lengths to which many otherwise sane men have gone when attempting to build up "reproduction cost" figures in rate cases under the second theory of its nature. (*Op. cit.* at p. 142, footnote 18.)

The National Association of Railroad and Utilities Commissioners, through its Committee on Progress in Public Utility Regulation, recently had this to say with respect to the "fair value" doctrine and the delusive element of reproduction-cost:

> For more than a generation now, utility commissions have struggled with a legalistic scheme of rate regulation based upon various types of valuation procedure. As these processes have usually been applied, they have done violence to various laws of economics. Aside from the utility field, there is virtually no other segment of American business life in which the price structure is established upon the basis of certain valuation theses. Other price structures are

> competitive, but competitive criteria are lacking in the utility field. * * * The valuation procedure, especially when based on unrealistic studies of reproduction costs, fail signally to achieve this result. Because of this fact, the entire procedure has been criticized more than it has been defended. (National Association of Railroad and Utilities Commissioners, 53rd Annual Proceedings (1941) pp. 369–370.)

There is a further factor tending to make the reproduction cost entirely unlike the expense that would be incurred if the utility were actually to be reproduced. The determination of reproduction cost involves the wholly unfounded assumption that current prices can be accurately ascertained:

> * * * As prices go upward or downward, either as to labor or materials, or as the technological processes of construction or manufacture of equipment change, the amount of the reproduction cost is immediately affected. But these are all unweighted factors, which are not accurately recorded, constantly vary, and hence cannot be determined without wide differences of opinion as to their quantitative significance. Consequently, every attempt to readjust the sum is accompanied by extended litigation, cumbersome proceedings, bulky records, and tremendous expense. (Bauer, John, *Reproduction Cost and Desirable Public Utility Regulation,* 2 Journal of Land and Public Utility Economics 408, 415 (1926).)

There are indeed several ways in which the ascertainment of current prices may be entirely false. There is not only the possibility of error, which attends the determination of most economic

facts, but there is a serious danger of a fictitious price level.

> The use of "spot prices" on equipment purchased from the Western Electric Company (though the reflection of "precipitate" price changes had been frowned upon in the West Case) also enabled the utility to take advantage of a sudden recent and rather large price increase by that company, and to claim some $7,000,000 more than would have resulted from the adoption of a 5-year average pricing period (that being the "construction period" actually adopted by the company in its "reproduction cost" estimate). And this in the face of generally declining price levels in respect to almost all other commodities over that period. The fact is that such Western Electric price increases had practically no direct effect on the capital structure of the plant under consideration, since the construction program of this utility had been negligible in amount since this price increase, and in fact had been negligible in amount for some time prior thereto. Thus, by a mere scratch of the pen, the Western Electric Company (another subsidiary of the defendant utility's parent corporation) had created a basis for claims of increased "reproduction costs" totaling millions of dollars in this single case. (Wheat., *op. cit.*, p. 14, at p. 141.)

The former general counsel of the Illinois Commerce Commission likewise draws attention to the possibilities of price rigging:

> But inasmuch as the utility company is usually a prospective as well as a former customer of the manufacturer in such a

case, it is a strain on credulity to assume that the estimated price has much probative force; yet no one is in a better position to make an estimate.

The same difficulty exists, though usually in lesser degree, with quotations of prices even where the items are not obsolete, particularly where an item is a specialty of one manufacturer. An outstanding example is in the case of telephone apparatus of Bell Telephone companies. This is nearly all made by the Western Electric Company, an affiliate; and the price policy of that company has been the reverse of that necessarily followed by competitive companies. When demand falls off, as has happened during the depression, the Western Electric Company raises prices; when demand and production increase, the prices tend to fall. As a reproduction cost appraisal involves the pricing of a vastly greater amount of apparatus than is actually being produced for the Company in question, current Western Electric prices have little to do with such a situation. A somewhat similar condition seems to exist in the case of electrical apparatus made by the General Electric and other large manufacturers. Prices of much of such equipment have gone up during the depression, and the Federal Trade Commission has attacked price-fixing in some such instances. (Booth, Harry R., *Prudent Investment, Fair Value and Public Utility Regulation,* 1 National Lawyers Guild Q. 229, 240 (1938).)

In times of depression, current price data may be nebulous:

* * * The difficulty of securing adequate current price data at a time when purchases of construction materials are

> negligible or non-existent will tend to the use of older data, and thus obscure to a considerable measure the actual reduction in material costs. Reliable labor costs reflecting actual practice are difficult to obtain. (Lilienthal, David E., *Regulation of Public Utilities During the Depression,* 46 Harv. L. Rev. 745, 754 (1933).)

Shifting prices invite inflated estimates:

> The impossibility of having reproduction cost as the general basis of rate making is especially clear if we once face the fact that prices are continually shifting. * * * Among the difficulties of valuations on the reproduction cost basis, are various unjustifiable claims or applications of the theory. * * * The theory lends itself easily to various hypothetical and fanciful applications in the hands of valuation experts financially interested in forcing the results to the maximum limits. * * * [The] actual determination [of intangible construction costs] is not entirely simple, but the reproduction cost principle invites particularly the flight of fancy and their consequent inflation beyond all reason. (Bauer, *Effective Regulation of Public Utilities,* (1925) pp. 108, 131–133.)

B. THE FALLACY OF THE "COMPETITIVE PRICE THEORY"

One of the original arguments advanced in favor of the use of reproduction cost as a basis for valuation is that it tends to maintain rates such as would be charged under a system of competition. The competitive price theory has been stated by Professor Bonbright as follows:

> According to this theory, the object of public service regulation is to deprive util-

> ity companies of the power to charge a monopoly price. Rates should therefore be fixed at a level which they would probably reach if they were regulated, not by the fiat of government, but by the forces of normal competition. But under competitive conditions the prices of services and of commodities tend to equal their cost of reproduction. Therefore, under conditions of monopoly, utility prices should be made to equal the cost of reproducing the service rendered. And by cost of reproducing the service is meant the price which would just be sufficient to induce investors to put up a new plant and to give service similar to that given by the present company. (Bonbright, James C., *Depreciation and Valuation for Rate Control,* 27 Columbia L. Rev. 113, 124–125 (1927).)

From an economic standpoint there are serious flaws in the competitive price theory. It is an attempt to apply the competitive principle to a regulated monopoly by a logical *tour de force.* This is pointed out by the same authority:

> In bringing to a close this discussion of the valuation problem, the point that should be stressed above all others is the folly of attempting to regulate the prices of public monopolies so that they will conform as closely as possible to the prices that are assumed to prevail under conditions of free competition. Overlooking the fact that the proposed imitation of competition is a very poor one, overlooking the fact that a governmental control of rates designed to yield a stated return on reproduction costs is not even a good caricature of the automatic control of prices that takes place in a dynamic competitive market, we must still recognize

> that the attempt to carry over into the field of the large-scale monopoly the same price system that is assumed to prevail in the field of the small competitive enterprise, is bound to result in a serious misfit. One reason why it is a misfit is that the competitive price system disregards so ruthlessly the financial needs of the individual producer. To the low-cost producer it yields profits far beyond the current rate of interest on invested capital; to the high-cost producer it brings deficits that spell bankruptcy and ruin. As long as competition is full and free this process, harsh though it be to the unfortunate producer, may serve very well the interests of the consumer. For what matters it to him that any one producer is crippled, so long as he can turn to a more fortunate rival for his necessary services and commodities? Not so under monopoly. Not so with a railway that is alone in serving a community. Why, say the defenders of reproduction cost, should railway security holders be given any greater insurance against the fluctuations of price levels than is given to the holders of securities in an unregulated enterprise? The answer is that when the investors in small competitive enterprises fall, they may fall alone, but when the holders of railway securities fall, they force the whole community to become unwilling mourners of their downfall (Bonbright, James C., *The Economic Merits of Original Cost and Reproduction Cost,* 41 Harvard L. Rev. 593, 621–622 (1928).

A variation of the competitive price idea has been advanced in support of the theory of reproduction cost. It has been contended that the utility investor will receive the benefit of a flexible income; his return will thus be relatively constant

in terms of purchasing power. Thus, it is said, as prices rise utility values will also rise, increasing the investor's receipts and protecting him from the effects of a general rise in prices. One defect in this reasoning is pointed out in a recent treatise upon the subject of regulations of utilities:

> * * * the argument that, since reproduction costs fluctuate widely this basis of valuation is more equitable, in that the fluctuations tend to parallel the fluctuations in the general commodity price level, is partly fallacious. Reproduction costs include a large percentage of labor costs, while the percentage of labor costs in the general price level may be much less. Moreover, the general price level includes the prices of many items that are not included in reproduction estimates (Wilson, Herring & Eutsler, *Public Utility Regulation* (1938) p. 127).

The assumption that the income of utility investors will be stabilized under such a rule contains a fundamental error:

> These advocates [of the reproduction cost theory] have recently shown signs of shifting their ground while yielding to attacks upon the illogical "replacement value" theory. They have urged that the investment in the dollars of bygone years should be translated into a "present investment," that is, the amount of money having the purchasing power of the dollars of yesterday in the commodities of today. The original investment, they suggest, was of a certain purchasing power which, although stated in money at the time of investment, must be restated now in terms of equivalent purchasing power. This claim involves the

> plausible suggestion that owners of public utility securities should be assured a constant income in purchasing power rather than a constant income in dollars that have a fluctuating purchasing power.
>
> One answer to this new line of argument is that the large amount of investment in public utilities is represented in securities having a fixed return, such as bonds and preferred stock. It is hardly reasonable to ask the Government to provide a fluctuating return for these investors, which they will not be able to obtain, but which will be appropriated solely for the benefit of the common-stock holders! Another answer is that it is hardly appropriate for the Government to establish a rule which will favor one class of investors at the expense of the entire community. * * * The new claim that investors should be protected against loss from the reduced purchasing power of the dollar is utterly inconsistent with the old theory of basing rates upon the "value" of the property. (Richberg, Donald R., *The Supreme Court Discusses Value*, 37 Harvard L. Rev., 289, 297–299 (1924).)

This fallacy in the reasoning of the advocates of reproduction cost is pointed out in a report by the Federal Trade Commission to the United States Senate dealing, among other things, with valuation:

> Far transcending any other reply to this argument of the proponents of reproduction cost, however, is that it entirely overlooks the fact that public utilities are almost wholly financed through fixed income-bearing securities, that is, bonds and preferred stocks. The Federal Trade Commission's investigation of the public-utility industry covering 91 representative oper-

> ating companies engaged in the electric-light and gas business, shows that 70 percent of their capital accounts is represented by outstanding bonds and preferred stocks. What is of further significance is the Commisison's disclosure that write-ups of the capital assets of these 91 operating companies approximate 23 percent, substantially all of which was reflected in the equity stocks. In the light of these disclosures, it would be no serious exaggeration to say that the representative public utilities of the country, including railroads to a lesser extent, are more than 90 percent financed through fixed income-bearing securities.
>
> Manifestly, fluctuations in the price level do not affect the man owning a $1,000 bond on which he receives 6 percent interest, so far as his dollar investment is concerned. It is clear, then, that any speculative gain or loss, due to the price level, is reflected solely in the common stocks of utilities. Yet it has not been seriously suggested by proponents of reproduction cost that all fixed income-bearing utility securities be recalled, and common stock issued in their place (Federal Trade Commission, *Summary Report to the Senate of the United States,* January 28, 1935. Senate Doc. 92, Pt. 73A, 70th Cong., 1st Sess., p. 155).

The fact is that the use of reproduction cost tends to a result precisely opposite to that which its advocates claim for it. Rates are too high after a period of inflation and too low after a period of deflation. See Willis, Hugh Evander, *Significant Changes in Public Utility Law,* 25 Georgetown L. J. 877, 884 (1937).

C. TIME-CONSUMING AND COSTLY VALUATIONS, ATTRIBUTABLE TO THE "REPRODUCTION COST" ELEMENT, HAVE RESULTED IN THE BREAK-DOWN OF RATE REGULATION

The valuation process, requiring as it does the taking of field inventories and the pricing of the inventory items, cannot be accomplished in a short space of time. Many years are frequently required and assumption upon assumption is made before the speculative result is reached. The long time required to complete a rate case has become common knowledge. The *Ohio Bell Telephone* case, 301 U. S. 292, was in process of adjudication about fourteen years. The Missouri Public Service Commission required over 8 years to reach a determination in its proceedings against the Union Electric Light and Power Company, 17 P. U. R. (N. S.) 337; and over 7 years in its proceedings against the Ozark Utilities Company, 18 P. U. R. (N. S.) 408. The North Dakota Board of Railroad Commissioners required almost 3 years in its proceedings against the Northern States Power Company, 15 P. U. R. (N. S.) 126. The New York Public Service Commission consumed at least 5 years in determining reasonable rates for the Long Island Lighting Company, 18 P. U. R. (N. S.) 65. Twenty-seven months after the initiation of its proceedings against the Westchester Lighting Company (15 P. U. R. (N. S.) 299, 318) that Commission stated:

> To continue this proceeding to completion and to fix the permanent rates would require the receipt of additional testimony and evidence on the reproduction cost new of used and useful property—probably both by the company on its own behalf and by the Commission on behalf of the public—de-

> preciation with respect thereto, rate of return, as well as completion of the testimony on and possible additional evidence relating to the market value of land and going value. Judging from past experience, at least another two years would probably be consumed in the presentation of this necessary material, which in turn would require that the operating revenues, expenses, and any changes during this period be investigated and evidence presented thereon to bring them down to the date of the final determination.

In his dissenting opinion in the *McCart* case, *supra,* Mr. Justice Black included the following table to illustrate the delays in rate litigation (302 U. S. 435):

	Bill filed	Decided	Time
United Fuel Gas Co. *v.* Railroad Comm'n, 278 U. S. 300	Dec. 1923	Jan. 1929	5 years.
United Fuel Gas Co. *v.* Public Service Comm'n, 278 U. S. 322	April 1925	Jan. 1929	3 yrs. 8 mos.
Ottinger *v.* Brooklyn Union Gas Co., 272 U. S. 579	June 1923	Nov. 1926	3 yrs. 5 mos.
Ottinger *v.* Kings County Lighting Co., 272 U. S. 579	June 1923	Nov. 1926	3 yrs. 5 mos.
Ottinger *v.* Consolidated Gas Co., 272 U. S. 576	June 1923	Nov. 1926	3 yrs. 5 mos.
Patterson *v.* Mobile Gas Co., 271 U. S. 131	Aug. 1922	April 1926	3 yrs. 8 mos.
McCardle *v.* Indianapolis Water Co., 272 U. S. 400	Dec. 1923	Nov. 1926	2 yrs. 11 mos.
Average			3 yrs. 7 mos.

The delay involved in the determination of reproduction cost is illustrated by the history of the litigation in *Lindheimer* v. *Illinois Bell Telephone Company,* 292 U. S. 151. The proceedings before the Illinois Commerce Commission to determine rates for the Illinois Bell Telephone Company, initiated in September 1921, did not reach a final conclusion until 12½ years later, in 1934. More

than ten of these years were consumed in litigation in the federal courts subsequent to the Illinois Commission's findings in the case:

> * * * the first order of the Commission in the *Lindheimer* case was issued in 1923, and the hearings preceding that order must have occupied many months. It was not until 1933 that the bill in that case was dismissed. Such a length of time is extraordinary, but few utility valuations, including the length of the commission or court hearings, take less than two or three years. The result is that in a period of depression (even though the utility gives bond to insure refunds to rate-payers) consumers do not receive the benefit of rate reductions when they are most needed, and in a period of rising prices the utilities cannot receive the needed increase in rates when overheads and other costs are constantly increasing. (Note, *Public Utilities—Rate Base—Late Supreme Court Decisions,* 34 Mich. L. Rev. 100, 107 (1935).)

The *New York Telephone Company* case was instituted in 1920 and determined by the New York Public Service Commission in 1924, yet it was not until 1934 that the case was finally settled. See the concurring opinion of Mr. Justice Brandeis in *St. Joseph Stockyards Co.* v. *United States,* 298 U. S. 38, 90.

Of the *New York Telephone* case, which lasted more than ten years and included 37,000 pages of testimony and 3,000 exhibits, the following observation has been made:

> Herein lies the real significance of this case. While it may have lasted considerably longer than the average utility rate

> proceeding, it is nevertheless typical of the problems and difficulties involved in all rate cases. It illustrates particularly the fact that the *measure* of return to which a utility is entitled is never clear and definite under the prevailing regulatory system. The reciprocal rights of the utilities and the public remain undefined and variable even after most exhaustive investigation. The more thorough the work, the longer it lasts and therefore the more likely it becomes obsolete before final decision.
>
> This lack of definiteness as to the fundamental factors of rate control is the bane of the existing regulatory process. It is responsible for virtual breakdown of regulation. It creates and perpetuates conflict of interest. It produces trumped-up evidence, protracted hearings, futile appeals, prohibitive expense, and makes systematic regulation as a regular administrative process an impossibility. (Gold, Nathaniel, *An Example of Rate Litigation and Its Significance,* 23 National Municipal Rev. 584, 587 (1934).)

Another example of the devitalizing effect of the "fair value" rule is the *Wisconsin Telephone* case that consumed five years. The utility had about 200 men engaged in an appraisal for two years. The Commission's appraisal work occupied about 100 man-years. 117,266 working papers were the basis of the Commission's appraisal exhibits. The Commission accounting staff devoted about 25 man-years to its exhibits and accumulated 21,746 work sheets. The hearing required many weeks and resulted in a record of 12,106 pages of transcript and 413 exhibits. *Re Wisconsin Telephone Company,* 13 P. U. R. (N. S.) 224, 233 (1936.)

It is impossible to keep the regulatory process current under the prevailing rule, and unless that rule is changed the paralyzing delays in fixing proper rates which it makes inevitable will continue to cripple utility regulation. Many utilities in the United States have never had their property valued and others have had but one valuation in the comparatively long history of valuation in this country. This Court is familiar with the experience of the Interstate Commerce Commission in its efforts to arrive at the fair value of railroad properties in this country. During the period from 1913 to 1931, approximately $178,000,000 was expended by the Government and by Class I carriers in their attempt to carry out the valuation process. (Testimony of Mr. Alfred P. Thom, General Counsel of the American Railway Executives Association before the Committee on Interstate and Foreign Commerce of the House of Representatives, February 5, 1932.) It is common knowledge that the difficulty in the application of the rule of *Smyth* v. *Ames* to railroad valuation was in no small measure the direct cause of the amendment of Section 15a of the Interstate Commerce Act to eliminate the necessity of recurrent valuations. (See testimony of Commissioner Joseph B. Eastman before the Committee on Interstate and Foreign Commerce of the House of Representatives, January 19, 1932.)

There are over 200 natural gas companies under the jurisdiction of the Federal Power Commission with the reported book amount of gas plant exceeding two and one-half billion dollars. Most of the twelve and one-half billion dollars in electric

utility plant is within the Commission's province, and that includes several hundred separate companies. To apply "reproduction-cost" valuation to each utility would pose a staggering task.

The insurmountable burden of pricing utility inventories to estimate reproduction cost, or of trending cost at current prices for labor and material, is not confined to the Federal Power Commission. Other federal and state rate-making agencies have huge utility investments under their jurisdiction. For example, the book investment in railroads is more than 26½ billion dollars; in manufactured gas utilities it is about two billions; and in telephone utilities it exceeds five billion dollars.

Illustrative of the general trend of opinion on this subject is the following quotation of a leading authority in the field:

> * * * had the Court deliberately set out to defeat the whole purpose of regulation and to make public ownership inevitable, it could hardly have pursued this objective more effectively than by its rulings and dicta on valuation. Under the influence of these precedents, commission regulation has become so cumbersome and so ineffective that it may be said, with only slight exaggeration, to have broken down. Even the investor, on whose behalf the constitutional safeguards have been developed, has received no protection against the rebounds from the inflated stock-market prices that are stimulated by the "fair value" doctrine. (Bonbright, *The Valuation of Property,* Vol. II, p. 1154.)

The delay and expense involved in the determination of reproduction cost constitute a

serious practical obstacle to rate regulation. The time-consuming nature of the inquiry has been referred to by Henry C. Attwill, who for many years had been actively concerned with the practical aspects of rate regulation as chairman of the Massachusetts Department of Public Utilities. The valuation system, he writes,

> * * * slows up regulation and in a great measure makes it ineffective. In practice it takes so much time to decide the question of rates when it is dependent upon a valuation, that, at best, but few cases can be decided by a state authority in a year. Where the authority has a hundred or more companies under its supervision, as is usually the case, it is obvious that there can be but little regulation of their rates. Regulation, to be effective, should be reasonably prompt. If the company needs relief, it should receive it promptly; otherwise the relief prayed for may not suffice when granted, as during the time of protracted hearings the situation may be going from bad to worse and the loss must be compensated by additional increases in the rates. On the other hand, if the public is entitled to a reduction it should receive it promptly, as earnings, by the decisions of the courts, become the property of the corporation, and any excess in rates paid by the consumer can never be recovered by him. (Attwill, *Weaknesses of the Valuation System,* American Academy of Political and Social Sciences, Annals, Vol. 159 (1932) pp. 96, 98.)

A student of valuation cases writes:

> * * * an unreasonable length of time elapses before the courts are able to determine the validity of a prescribed rate.

> The *Pacific Gas and Electric Company* Case, reversed by the Supreme Court in 1924, and sent back for another valuation proceeding, has been in the courts since 1913. During that time the amount collected by the company above the rate prescribed by the city has been deposited in trust awaiting the outcome of the suit. In many other instances a period of from one to five years elapses after the publishing of a rate schedule before the validity of the rate is determined. Because changing conditions render the previous valuation of little help in determining the question of fair return after such a long time, it is often necessary to have a valuation *de novo,* with its additional expense and delay. (Howell, *Recent Developments in the Application of the Rule of Smyth* v. *Ames in Valuation Proceedings in the Federal Courts,* 3 Tex. L. Rev. 412, 431 (1935).)

See also Goddard, *The Evolution and Devolution of Public Utility Law,* 32 Mich L. Rev. 577 (1934); Lilienthal, *Regulation of Public Utilities During the Depression,* 46 Harvard L. Rev. 745 (1933); Beutel, *Due Process in Valuation of Local Utilities,* 13 Minn. L. Rev. 409 (1929); Federal Trade Commission, *Summary Report to the Senate of the United States,* January 28, 1935, Senate Doc. 92, Pt. 73–A, 70th Cong., 1st Sess., p. 154.

The lengthiness of valuation proceedings is accompanied by great expense to both sides. The utilities are prompted to engage high-priced legal, engineering, and accounting talent, and the commission must follow suit in self-protection. And what is worse, the utilities pass these expenses on to the rate payers. The rate payers are thus forced

to bear the heavy financial burden of litigating against their own interest.

> * * * As the cost to the utility in prosecuting or defending a rate case is allowed as an operating expense, this cost is eventually paid by the consumers. Thus, there is an incentive to the utility to protract the proceedings as long as possible; because, win or lose, the cost must be absorbed in the rates, and the effective date of any reduction in rates is usually postponed. (Atwill, Henry C., *Weaknesses of the Valuation System,* American Academy of Political and Social Sciences Annals, Vol. 159 (January 1932) p. 96, 98.)

The Federal Trade Commission has likewise called attention to the injustice of the burden placed upon the rate payers:

> Now, the significance of rate litigation, a particularly expensive type of legal procedure because of the expert engineering and accounting testimony upon which it depends, is that the cost of maintaining it in behalf of the companies constitutes an allowable expense of operation and must, therefore, be a determinant in the fixing of any rate estimated to allow a fair return to the utility. Thus, the expense is saddled on the rate-paying public. Furthermore, the cost of maintaining commissions and courts before whom rate cases are tried is a direct charge upon the State's tax resources, again a burden on the public. Likewise, special counsel, where used in behalf of the State or commission, and the fees of any independent experts they may feel called upon to employ, to say nothing of the not inconsiderable item, in protracted rate cases, of stenography, printing,

> and miscellaneous expense are all out of the public pocketbook. What the aggregate of such sums amounts to in any one year has probably never been computed; that it is enormous goes without saying. It is not unsafe to surmise, therefore, that whatever influence lawyers, engineers, and accountants with public-utility connections can bring to bear to preserve a system representing such a source of income to them, will continue to be brought. This is particularly true while, as at present, utility holding companies supply so many of such services and are dependent upon their continuance for much of the holding company's own revenue. (*Summary Report to the Senate of the United States,* January 28, 1935, *op. cit.,* p. 34, at p. 157.)

See also, Note, *Public Utilities—Rate Base—Late Supreme Court Decisions,* 34 Mich. L. Rev. 100, 107 (1935):

> * * * Professor Riggs, an engineer with wide experience in valuation cases, states,
>
> "The subject of revaluation of large properties has become a matter of grave concern to officers charged with the management of utilities. Valuation work accurately and carefully done, in sufficient detail to satisfy the requirements of attorneys conducting rate or other cases involving valuation, is costly and time-consuming. * * * To have expended from $50,000 to $500,000 for valuation of utility property within four or five years, and then to face a new valuation to meet the needs of a new case is a serious matter in the case of any company." This expense is passed on to the rate-payers in the form of an increased allowance for overheads, and an

> equal expense to the Commission is likewise passed on to the public in the form of increased appropriations for valuation work—or through the failure to hold rate hearings."

The case of *Indianapolis Water Company* v. *McCardle,* 272 U. S. 400, provides a striking illustration of the expensiveness and delay of the proceedings. The facts of the case have been summarized as follows by Beutel, *Due Process in Valuation of Local Utilities,* 13 Minn. L. Rev. 409 (1929):

> The company was comparatively small. The court, dispensing with the services of a master, heard the evidence itself. The commission, the lower court, and the majority of the Supreme Court, were agreed that the theory of reproduction was to be taken as the determining factor of value, and that 7 percent was a reasonable rate of return on the value so determined. Within seven months of the beginning of these proceedings before the commission, the company and commission, after a complete investigation by the commission's engineers, had agreed upon a valuation of the entire property involved, for bond issue purposes. This result supported in detail the valuation for rate making purposes later made by the commission and questioned in this suit. All these facts tended to simplify the case. There was no necessity of projecting return or calculating fictitious costs of production. The only point at issue was the value of the property on the reproduction theory. Thus we have here an example of a valuation case reduced to its simplest possible element, the

determination of the pure fact of value by agreed methods (pp. 424–425).

* * * * *

An examination of the record and opinions discloses that over forty different estimates of the total value of the property were offered in evidence before the commission and the courts. These estimates ranged from $8,612,399, the actual cost of the property shown by the company's books, to $25,404,026, the value claimed by Mr. Hagenah, an expert witness for the company (p. 425).

* * * * *

The proceedings in this, the simplest of cases as rate fixing cases go, started on June 8, 1923, and three years and five months later on, November 22, 1926, the Supreme Court finally reversed the commission. The investigation to compile the the evidence and the hearing of the testimony in the various tribunals consumed over a year's effort by a combined staff of experts employed by the commission and the company. The briefs and record, in greatly abbreviated form, in the Supreme Court alone had reached a total of about 700 pages which fill a bound volume approximately three inches thick, when the court, to avoid further delay, fixed the valuation (pp. 425–426).

* * * * *

Now suppose the commission on the day the Supreme Court handed down that decision had fixed rates calculated to yield 7 percent on $19,000,000, would the rate stand without a redetermination of the value of the plant? The plain answer on the theory of the case must be, *No!* The valuation is fixed as of January 1924. The rate

> necessarily must be fixed as of November 1926. The company, if it desired, could question the rates immediately, and the inquiry would have to take place in 1927 (pp. 426–427).
>
> * * * * *
>
> The only "fact" of value conclusively established is "spot" value as of 1924; but the spot has moved while the judicial process ground on. The system approved in this case demands a new determination of value, so the commission, courts, and experts must get together once more and construct a new theoretical plant on the "spot" prices of 1927. The very magnitude of the task will again cause the result to be useless. Thus, on the theory of this case, no rate can ever be set which will bind the company (p. 427). (Beutel, *Due Process in Valuation of Local Utilities,* 13 Minn. L. Rev. 409 (1929).)

Former Chairman William Prendergast of the Public Service Commission of New York has stated that the appraisal made by the New York Telephone Company cost that Company in the neighborhood of $5,000,000 (*New York Commission on Revision of Public Service Commissions Law* (1930), Vol. I, 381). It is estimated that the task of determining the fair value of all utilities subject to the jurisdiction of the Public Service Commission of New York, even with the cooperation of the utility companies and the adoption of shortcut methods, would cost about $10,000,000 and require at least three years. (Minority Report, *New York, Commission on Revision of Public Service Commissions Law* (1930), Vol. I, 394).

The expenses involved in valuation projects for rate-making purposes have been graphically de-

scribed by Harry R. Booth, former General Counsel of the Illinois Commerce Commission:

> In connection with a case recently decided by the Illinois Commerce Commission, the Illinois Bell Telephone Company stated in its annual report that it had spent $1,200,000 in preparation of a state-wide appraisal, and this was subsequent to huge expenditures in the *Chicago Telephone* case. In proceedings before the same Commission involving the Commonwealth Edison Company of Chicago, the company's expenditures totaled approximately $1,000,000, a large part of which was for appraisals; and the People's Gas Light & Coke Company, also of Chicago, spent in excess of $750,000, more than $600,000 of which was for appraisal purposes. In Missouri, two recent cases involved expenditures, mostly for appraisal purposes, of over $900,000 by the Union Electric Company and nearly $300,000 by the Laclede Gas Light Company, including the Commission's expenses in both cases. * * *
>
> By some authorities it is stated that a complete reproduction cost appraisal may be expected to cost from one-half of a percent to one percent of the reproduction cost of the property in question. Hence, for the electric, gas and telephone companies alone, which are reported in *Moody's Manual of Public Utilities* for 1937 as having a property value of over $20,000,000,000, the cost of making reproduction cost appraisals might run from $100,000,000 to $200,000,000. * * *
>
> The costs incurred by utility companies for such valuations are ordinarily charged to operating expenses, with the result that they are, in effect, paid for by the consumers.

> Costs incurred by cities and public service commissions are ordinarily paid for out of taxes, which fact, of course, exerts a distinctly discouraging influence. (Booth, *Prudent Investment, Fair Value and Public Utility Regulation,* 1 Nat. Lawyers Guild Q. 229, 235 (1938).)

The burdens of present-day rate making have been so great that commissions have frequently abandoned the attempt to secure through normal channels of regulation reductions in rates to which consumers were entitled. The New York Commission has stated:

> Consumers have appreciated that it is better to secure a reduction in rates promptly, even though it may not be as large as should be made, in their opinion, and even though it may not be as large as might be ordered by the Commission after a rate case had been conducted, extending over months and perhaps years, and possibly to be litigated in the courts. * * * It may be pointed out also that practically the Commission can cover a wider territory and deal with many more cases by negotiation than it can through formal proceedings. The latter consume far more time of the Commission and its limited staff, with the result that where negotiations with ten companies may be concluded in a few months, it would require several years to make the inventories, appraisals, accounting reports, and engineering investigations which rate cases would require. (1931 *Annual Report, New York Public Service Commission,* Vol. I, p. 8.)

The desire on the part of the commissions to achieve expeditious rate reductions benefiting the

public, coupled with the realization that the "fair value" rule equips the utilities with the means of hamstringing that objective, has led some commissions to abandon their regulatory weapons for what has been called "negotiation and wheedling." See Spurr, *Has Utility Regulation Been Reduced to Negotiation and Wheedling?* Public Utilities Fortnight, Sept. 2, 1937, p. 259.

The regulatory agencies have tried to develop short-cut methods to equitable and effective rate regulation. Some, like New York, employ the "temporary rate" procedure (*Bronx Gas and Electric Co.* v. *Maltbie,* 271 N. Y. 364, 3 N. E. (2d) 512); others have adopted the "sliding-scale" arrangement (Roberts, *How the "Sliding Scale" Reduces Rates,* Public Utilities Fortnightly, July 2, 1936, p. 2). A special committee of the National Association of Railroad and Utilities Commissioners has studied the time and expense involved in the present "fair value" process and has made recommendations for shortening rate cases and reducing the costs. (1940 and 1941 Reports on the Committee on Rates of Public Utilities, National Association of Railroad and Utilities Commissioners, 52nd Annual Proceeding, pp. 325–331, 53rd Annual Proceeding, pp. 320–323, 435–437).

Additional authorities condemning the "fair value" doctrine for rate-making purposes are: Cabot, *Public Utility Rate Regulation,* 7 Harv. Bus. Rev. 257–266 (1926); Dorety, *The Function of Reproduction Cost in Public Utility Valuation and Rate Making,* 37 Harv. L. Rev. 173 (1923); Bauer and Gold, *Public Utility Valuation* (1934).

D. "REPRODUCTION COST" IGNORES THE COST OF REPRODUCING A SERVICE

Since it is the service rendered by the utility which is the *quid pro quo* for the rates paid to it by consumers, the theory of "reproduction cost" even if otherwise admissible would logically apply to the cost of reproducing a service, not the cost of building an identical plant:

> First, the only possible argument in favor of cost of reproduction springs from the analogous use of cost of reproduction in private competitive business. * * * But the cost of reproduction so far as utilized in establishing prices in private business is not the cost of reproducing the identical property but the cost of reproducing an equally serviceable property. Or, let us say, it is the cost of reproducing the article or service, or an equally useful article or service, and never the cost of reproducing a particular plant. In truth, invention and improvement work changes in all industrial operations so rapidly that it is difficult to find any plant a few years old which would be reproduced by competent engineers in the same form today. Therefore, to utilize the idea of cost of reproduction intelligently is not to utilize the cost of reproduction of any particular property but of a service or of an equally useful service. (Richberg, Donald R., *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263, 277 (1922).)

But while an accurate application of the theory calls for ascertainment of the cost of reproducing the service, such an ascertainment is in practice impossible:

> * * * It must be apparent that such a basis for rate making would open up a new

> field for speculative estimating, to the increased profit of engineers and lawyers and to the increased confusion of the courts and commissions and would bring increasing instability to all public utility operations. (*Ibid.*)

The impossibility of applying reproduction cost as it should in theory be applied was observed by Robert H. Whitten as early as 1914:

> * * * The reproduction of the service involves not only the determination of the cost of the most efficient substitute plant, but the determination of the present cost of reproducing the business, the proper allowance under present conditions for interest and profit, and the operating costs for the substitute plant. In most cases it is exceedingly difficult and expensive to determine the design of an equally efficient substitute plant. In the case of a railroad, for example, the cost of determining a substitute location and of estimating the operating costs thereon would be so great as to render it entirely impractical as a factor in rate regulation. It would require a careful survey of various available locations, and estimates of construction and operating costs. The engineering costs of such survey and estimates would be enormous.
>
> The cost of reproduction in practice, therefore, instead of meaning the cost of a substitute plant of the most modern approved design, capable of performing the same service as the existing plant, has come to mean the cost of a substantially identical reproduction of the existing plant. This is the usual method. It involves, however, a partial abandonment of the reproduction of the service theory, and a somewhat imper-

> fect recognition of the fact that cost of production is necessarily related to the past as well as to the present and future. (Whitten, Robert H., *Fair Value For Rate Purposes,* 27 Harvard L. Rev. 419, 427 (1914).)

It goes without saying that if a plant were actually to be reproduced it would be designed in a way to take advantage of possible operating efficiencies. Thus, an entirely new plant which would produce at a capacity equivalent to that of existing facilities would normally be of a different design and higher operating efficiency. In the normal course of engineering development economies would be worked out and passed on to the consumer in the form of a reduced rate, resulting from a reduction in the valuation. The purely theoretical character of the concept of reproduction cost takes no account of these operating efficiencies:

> * * * In exchange-value economics the real value of a plant is not determined by the cost of reproducing the identical plant but by the cost of producing the commodity in a new plant having the most modern equipment required to reproduce the article. No one would be willing to invest in an obsolete plant if a new one could be built to be operated at much lower operating expenses per unit of product if such a plant could be built for the same cost as the obsolete one. It is the cost of building a modern plant of similar capacity that determines the value of a plant in an unregulated competitive industry, and not the cost of reproduction of a similar plant. Hence, reproduction cost does not cause the owners of a regulated enterprise to fare the same as the investors in unregulated competitive enterprises.

> There is, furthermore, a limitation to the concept that the cost of producing the commodity in a new plant regulates the value of an old plant, since, because of technological developments, the value of such a plant would scarcely, if ever, exceed the cost of reproduction and might be considerably less. Reproduction cost, therefore, is a measure of maximum value at best. Wilson, Herring, and Eustler, *op. cit.,* p. 24, at p. 126.

The same point is made by the minority members of the New York Commission on Revision of Public Service Commission Law, who stated:

> Even if one assumes that the *value of the property,* somehow conceived, is the proper basis of rate control, it by no means follows that cost of reproducing a substantially similar plant even roughly measures that value. This fact must be evident if we take the analogy of any unregulated business property, or of an ordinary commodity used for consumption. The value of a dwelling house, for example, is not measured by the cost of producing a replica unless it may be assumed that, were the existing house destroyed, its owner would find it expedient to build another one just like it. Even more striking is the difference between the value of the assets of a growing, progressive business enterprise and their cost of reproduction. These assets, to be sure, may still be in use, and giving what would be called good service; yet many of them are not giving as good service as could be produced by the most modern type of plant and equipment, constructed in the best possible location, and adapted to existing conditions of demand

> and of industrial technique. An intelligent appraiser, to be sure, might estimate the replacement cost of these properties as a starting point, but in that case he would write down the reproduction costs ruthlessly, perhaps to a mere fraction of the cost new, as a recognition of the fact that obsolescence, inadequacy, and physical depreciation have greatly impaired their present worth. This, at least, would be the practice of an appraiser who wishes to secure an honest valuation rather than a bloated statement for purposes of "dressing" the balance sheet. (Minority Report, *New York Commission on Revision of Public Service Commissions Law* (1930), Vol. I, p. 345.)

Similarly Attwill writes:

> When we know that values are required by courts to be placed upon the property of a corporation which no one in the world would pay to acquire, except for the monopoly the utility enjoys through special privileges obtained from the public, and values which usually exceed the total of the market value of the outstanding stock plus its liabilities, we know there is something wrong in this system of valuation. Mr. Justice Stone has aptly described it as a "synthetic" value. Synthetic products are seldom as good as the real thing. (*Op. cit. supra,* p. 33, at p. 99.)

Another factor which reproduction-new should, but fails to, take into account is the strong likelihood that the new plant construction will produce at a lower unit cost by reason of its operating efficiencies. Such a reduction in the operating cost should in logic and fairness be passed on to the con-

sumers since they are in fact paying for a new plant; yet the reproduction-new formula permits the high operating cost of the old plant to be superimposed on the high reproduction cost of the new:

> Even if a new plant of equal capacity were to cost more to construct, it might produce at unit costs so much less than the old plant that the additional cost of construction would be an excellent investment. In such a case it would be unfair to require the consumer to pay rates that would yield enough to pay the high operating expenses of the old plant and produce a return equal to that which would be a fair return upon the greater cost of an up-to-date plant. Yet the courts have held in numerous valuation cases that the plant, the cost of reproduction of which is to be estimated, is a plant identical with that in existence and have declared that the cost of reproduction of the plant must be considered in valuation for rate-making purposes. (Wilson, Herring, and Eustler, *Public Utility Regulation,* 1938, p. 126.)

Perhaps the most serious consequence of the reproduction-cost theory, from the standpoint of the public, is the fact that it discourages the introduction of improvements in the technology of the utility, since it permits obsolete and outmoded equipment to be included in the rate base at its high replacement cost. In the words of Attwill, the theory is "an incentive to inefficiency":

> The system makes no provision for depreciation by reason of inadequacy or obsolescence due to the change in the art. Under this rule, what incentive is there for the company, once it has absorbed the lighting and power business in its area, to

> install up-to-date equipment? If it can obtain as great a return on the old as it can on the new equipment, there is little incentive, so far as the profits of the business are concerned, to install the new. (*Attwill, op. cit. supra,* p. 33, at p. 99.)

As stated by Beutel:

> It [reproduction cost], encourages the companies in using antiquated machinery and obsolete equipment because of the increase of rates which will result from the practice of including such machinery in the valuation at prices many times greater than its original cost or present value as productive equipment. Thus, in a recent case an obsolete pumping plant that cost less than two hundred thousand and could have been replaced with modern machinery for less than three hundred thousand, was allowed a "reproduction" value of over one million dollars. (Beutel, *op. cit. supra,* p. 39, at p. 433.)

E. REPRODUCTION COST UNFAIRLY ASSESSES THE PUBLIC FOR AN UNEARNED APPRECIATION IN THE UTILITY'S VALUE

The advocates of reproduction-cost in rate valuations have urged that this formula enables the investor to realize an appreciation in the value of the utility, just as other investors holding property over a period of years may become the beneficiaries of an unearned increment. The claim is both specious and unjust.

1. "Costless items"

The unearned increment enjoyed by the investor in nonutility property is commonly realized by sale, but the theoretical appreciation in the utility's value is not susceptible of such pragmatic measure-

ment. Instead, it becomes an excuse for the speculative evaluation of many "costless" items:

> * * * Under the principles of valuation as hitherto established and administered by courts and commissions, "fair value" has become a means of justifying and legalizing almost every type of unearned increment, tangible and intangible, which accrues to unregulated monopoly. By the inclusion of such costless values as going value, water right values, easement values, and by the failure to make anything like complete deductions for accrued depreciation and obsolescence, companies are able to establish "values for rate-making purposes" so large that even the most prosperous and profitable enterprises make the false appearance of earning only a very limited rate of return. (Minority Report, New York Commission on Revision of Public Service Commissions Law (1930), Vol. I, p. 251).

A literal compliance with the reproduction-cost principle indeed permits the utility to reap the profits of every type of unearned increment which accrues to monopolistic or semimonopolistic enterprises. See Report of Federal Trade Commission to the Senate of the United States on Public Utility Corporations, January 28, 1935. S. Doc. 92, Part 73A, 70th Cong., 1st Sess. The huge profits—and losses—which can be spun from the shifting of general price levels, under the delusive theory of reproduction-cost, may be gathered from the absurd results produced in the *St. Louis & O'Fallon Ry.* case. In that case the Interstate Commerce Commission demonstrated that if reproduction cost estimates were applied to all railroad property to-

talling 18 billion dollars in 1919, the "value" would have jumped to over 41 billions in 1920, only a year later. The burden on the rate payers would have increased, upon that theory, by 23 billion dollars without the investment of a single dollar by the owners. *Excess Income of St. Louis & O'Fallon Ry. Co.*, 124 I. C. C. 3, 31–32; *St. Louis & O'Fallon R. Co.* v. *United States,* 279 U. S. 461, 498, Brandeis, Holmes, Stone, J. J., dissenting.

2. Unfairness to public and utilities

The possibility of such huge speculative changes under the reproduction-cost formula can be productive of great injustice both to the public and to the utility. For under this theory, there is applied to the *reproduction* value (which includes unearned appreciation) the rate of return made on *investment* in other business undertakings of corresponding risk and uncertainty. Consequently, during periods of high price levels the rates tend to be high, placing the hardship on the consumers. Conversely, when low prices prevail, a low rate would be applied, theoretically at least, to a low base, causing hardship to the companies. If this principle were strictly adhered to in depression periods, severe and, perhaps, disastrous consequences to the utilities would inevitably ensue.

3. Public pays for increased values which it alone caused.

The inclusion of reproduction-cost in a rate valuation penalizes the consumer by transferring to the utility valuation the appreciation in property and equipment which is generally attributable to the efforts of the community at large, including the consumers of the utility service.

> Since the increase in value due to unearned appreciation is a creation of the community, it is manifestly unjust to require the rate-paying public to bear an enhanced burden by reason of an increment which it has created. Richberg, *A Permanent Basis for Rate Regulations,* 31 Yale L. J. 263 (1922).

Mr. Justice Black has exposed the inequity in reproduction-cost estimates:

> It is difficult to believe that such concepts of property can establish clear proof that the Constitution of the United States has been violated. Nor do I believe that, even if the people of Indianapolis and the surrounding community have permitted the Water Company to use this stream for a public service, there has been a grant of a prescriptive property right which can be capitalized by the Company, in order to exact higher water rates from the very people who granted the privilege. (*McCart* v. *Indianapolis Water Co.,* 302 U. S. 419, 433, Black, J., dissenting.)

A similar point has thus been stated:

> The most common argument against the use of the original-cost method of valuing public utility properties, aside from the difficulties alleged to be encountered in securing records of such costs, is that appreciations in value of property (if such exist) are denied to the owners thereof. The reproductionists, however, do not point to any rule of common equity which entitles them first to earn an adequate return on their investments and then to participate in the profits which accrue to appreciation; but they rely on certain judicial passages, which in themselves are sound, although subject to linguistic abuses when applied unadvisedly to valuations that are made

> bases for rate schedules. (McCann, W. R., American Society of Civil Engineers, *op. cit.*, p. 6, at p. 1618.)

The use of a reproduction-cost basis thus enables a utility to increase the charges to the community by reason of values contributed primarily by the community. Current practice with regard to depreciation reserves provides another device for accomplishing the same result:

> * * * * It [the reproduction cost method] includes the depreciation reserve as a basis of the return, because as a practical matter it is invested in the plant. This naturally arouses hostility upon the part of the consumer. He is asked to build up an insurance fund to protect the integrity of the stockholders' investment, and then is required to pay a return upon that insurance fund in rates. This necessarily arrays the stockholders and the consumers in hostile camps, with the result that the consumer vigorously assails the provisions for depreciation. This causes vigorous assaults to be made upon the allowances for depreciation in rate controversies, with the result that public authorities are likely to allow too little for depreciation. This must be made up by larger expenditures for maintenance, or the capital of the company will eventually become impaired * * *. (Attwill, *op. cit.*, p. 33, at pp. 98–99.)

F. SOUND BUSINESS JUDGMENT FREQUENTLY DICTATES RATES WELL BELOW THE LEVEL REQUIRED BY THE "FAIR VALUE" STANDARD

The "fair value" method of rate-making has led to conclusions demonstrably unsupportable in the face of actual experience. The "fair value" of a

utility's property may be much greater than the actual cost of that property and if, under such circumstances, rates are fixed which fail to yield a "fair return" on this "fair value," those rates must be condemned as confiscatory under the doctrine of *Smyth* v. *Ames*. This would seem to be true no matter how successfully the Company may be able to operate under them, or how liberal the dividends it can pay, or how good the company's credit may be, or what return such rates may afford the Company on its investment prudently made in properties used or useful in the public service. Thus, confiscatory rates under the "fair value" test may enable a utility to operate with outstanding success because confiscation is determined by a method which has no relation to the object sought to be attained. The glaring incongruity between theoretical "fair value" and the actual facts of experience was well illustrated by *Lindheimer* v. *Illinois Bell Telephone Company,* 292 U. S. 151, in which this Court found the theory pursued irreconcilable with the actualities of operation.

No more fatal indictment can be presented against the "fair value" doctrine than that which is offered by the spectacle of successful and prosperous public utilities revealing themselves as the victims of constitutional confiscation upon the criterion of the "fair value" rule. See the dissenting opinion of Mr. Justice Black in *McCart* v. *Indianapolis Water Co.,* 302 U. S. 419, 435. When public utilities find it expedient, as they frequently do, to charge rates lower than those to which they are constitutionally entitled under the doctrine of *Smyth* v. *Ames,* they reveal the true character of the fair-value method of rate making.

Thus, it is found that utilities as a rule do not actually charge a return based upon reproduction cost:

> Chairman Cortelyou of the Consolidated Gas System, Vice President Nickerson in charge of its finances and accounts, and President Sloan of the New York Edison Company and the other electrical properties, all testified that the rates in effect were not yielding the return on the present value of the properties to which they were entitled under Federal Court decisions. In most cases they testified, the rates were not providing a fair rate of return even on actual investment. They said, however, that these rates were good business, i. e., dictated by "good business judgment," that they were in general adequate to enable the companies to obtain all the new capital required to properly service the communities, and they admitted further that the companies were able to pay good dividends on their common stock.
>
> Such testimony exposes the absurdity of the whole valuation claim which has gone so far to wreck public utility regulation. The companies are expending great sums of money and are making extreme efforts to secure rulings from the Courts to the effect that rates dictated by good business judgment and adequate to secure new capital are confiscatory under the 14th amendment to the federal constitution. Unquestionably such admissions show that the valuations of these properties could safely be reduced not only below the elaborate figures for present value built up by the engineering and accounting forces of the corporation but also below the actual investment figures on the books of the corporations. (*New York*

Commission on Revision of Public Service Commissions Law, Minority Report (1930) 271.)

G. SOUND UTILITY FINANCING DOES NOT NEED A FAIR-VALUE RATE BASE

There is a sharp conflict of opinion as to the respective effects of the rival valuation theories upon the market for utility securities. Passing, for the moment, the merits of the controversy, it is evident that the prevailing uncertainty as to the proper method of rate determination must have an adverse effect. This was pointed out by Robert H. Whitten:

> Investors in putting their money into public utility enterprises are entitled to know whether, in case the utility is appropriately located and normally successful, it will be permitted to earn a return on the actual and necessary investment, or upon the cost of reproduction, or upon the market or exchange value of the property, or upon a combination of these or other factors. Any arrangement might conceivably be fair to the company and fair to the public provided it were known in advance, so that reciprocal relations between risks involved and returns secured might be established, and proper methods of accounting for depreciation and appreciation instituted. For the future at least it is clearly essential that some one standard should be adopted as the normal and controlling standard in determining fair value. As to the past, the situation, while more complicated, still points to the desirability of definitely choosing some standard. (Whitten, Robert H., *Fair Value For Rate Purposes,* 27 Harv. L. Rev. 419, 420 (1914).)

The argument in favor of reproduction cost runs largely in terms of realization of unearned increment and stability of the investor's real income. These questions have been discussed above. For present purposes it will be sufficient to quote the following passage from the Federal Trade Commission's report:

> Nevertheless it is said that reproduction cost (which necessarily reflects price changes) is essential to attract capital in a competitive market at minimum rates of interest, since it is necessary to permit utility investors to take advantage of unearned increment in land and other values, in order to induce capital to flow into a regulated enterprise rather than into competitive industries. The argument is that as long as other fields of investment are permitted to hold out the lure of possible unearned increment, utilities must be free to hold out the same lure. Bonbright has pointed out, however, that investors overwhelmingly prefer security of income to opportunity for speculative gains coupled with risk of corresponding loss, as abundantly indicated by the preference of investors for bonds and other fixed interest-bearing securities rather than for common stocks. It is further indicated by the ability of the United States Government to market its bonds at rates considerably below the prevailing rates of interest without the inducement of any speculative gain. Federal Trade Commission, Report to the Senate of the United States, January 28, 1935, *op. cit., supra,* p. 36, at p. 155.

Similarly,

> It is a fair assumption that, in general, investors in establishing public utilities have

> looked to a fair return on their actual investment to compensate them for their outlay, and have not taken seriously into account any appreciation or depreciation in the value of land or in the price of labor and materials entering into the reproduction cost of structures and equipment. They have necessarily assumed that they would be able and would be permitted to receive for their service an amount equal to their actual cost of production, *i. e.,* operating expenses, depreciation, and interest and profits on their actual capital outlay. (Whitten, *op. cit., supra,* p. 56, at p. 425.)

To the same effect see Bonbright, James C., *Merits of Original Cost and Reproduction Cost,* 41 Harvard L. Rev. 593 (1928); Hale, *op. cit., supra,* p. 13, at p. 971.

A fluctuating rate of return may, indeed, attract a certain class of capital. But capital so attracted is of dubious usefulness. It represents speculative purchases of equities, a form of "investment" that the utilities and the public might well do without.

> The normal actual capital cost as a basis for rate determination, moreover, has a distinct advantage from the standpoint of public policy. It is desirable that rate schedules should have stability and should not fluctuate with the price of iron pipe or copper wire or with real-estate activity or reactions. A utility is not established for the purpose of speculating in copper wire or iron pipe or land. It must, however, in furnishing its service invest its money permanently in these things. The utility should not be expected to assume the risks of fluctuations in the price of the land and materials it uses (Whitten, *op. cit., supra,* p. 56, at p. 426).

Indeed, the speculative character of reproduction value rates is a source of serious dangers to the utilities themselves. Writing in 1921, a commentator called attention to the probable effects of a prolonged decline in prices:

> * * * it should be pointed out that we are at present quite obviously entering upon a period of declining prices and that in determining a rate base any use of figures representing the cost to reproduce the identical property will deprive public utilities in the near future of any return upon millions of dollars of actual investments which have been made in the last few years in properties which may be reproduced in the years soon to come for less than the amount of the investments which they represent. In such a time it will seem as unfair to the investor that his investment should be scaled down and that the return on his capital should be diminished because of declining price levels as it has seemed unfair to the consumer that the investor's capital should be inflated and his return increased because of rising price levels. (Richberg, Donald R., *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263, 278 (1921).)

Likewise, Bauer comments:

> The second general objection to reproduction cost is its failure to provide for proper standards of financial stability in the industries affected by regulation. It would promote speculation during one period and produce financial disintegration during another. It would, in turn, attract unnecessary capital and then retard the desirable flow.
>
> The fact is usually overlooked that by far the greater proportion of the actual investment in public utility properties has

> been made through bond and preferred stock. A reasonable estimate is that at least 75% of the cash capital was furnished by these securities, and only 25% or less by common stock. In many instances the proportion of common-stock investment is even less, and there are important cases where all the money put into the property is represented by limited return securities.
>
> Because of such normal financial structure, with the large percentage of fixed-return capital, any change in the return on the investment has a cumulative effect upon the common stock. (Bauer, *op. cit. supra,* p. 18, at p. 419.)

A fluctuating rate of return deprives conservative investors of stability, on the one hand; and it tends to imperil the financial soundness of the utility on the other hand. But the evil potentialities of the variable rate base are by no means exhausted. Much of the financial manipulation which discredits the management of utilities is directly traceable to the use of the reproduction cost base. "Undoubtedly, the stakes are high for those who control utilities through very narrow equities, offering great opportunity for speculative gain." Frankfurter, *The Public and Its Government* (1930), at p. 106.

> The doctrine of fanciful valuation has greatly encouraged recent tendencies in financial organization. In turn, the elaborate and mysterious refinements of intercorporate relations have powerfully sustained the efforts by which lawyers and engineers have built up schemes for inflated values. The search for fictitious value—at best a game of blindman's buff—is thus greatly complicated by the intricacies of elaborate

> corporate arrangements within utility enterprises. Not only is there the excitement of a game fascinating to technicians in law and engineering, but in applying the prevalent judicial doctrines of utility valuation by manipulating intercorporate relations, there are the cruder but more solid temptations of buttressing unreasonable rates by law and securing huge profits through speculative utility holdings. (Frankfurter, *op. cit.*, at pp. 107–108.)

H. REPRODUCTION-COST HAS BEEN CONDEMNED BY THE GREAT MAJORITY OF REGULATORY COMMISSIONS

A number of commissions have taken a very positive stand with respect to the controvery as to the merits of reproduction-cost versus prudent investment. Likewise, there are a number of judicial opinions which have pointed out the evils of the reproduction-cost system and protested against its continuation.

Perhaps the best exposition of the prevailing attitude of those who have been in direct contact with this problem is contained in the Minority Report of the Commission on Revision of Public Service Commissions Law of New York. The report states:

> In our opinion the greatest single weakness of the existing system of public utility regulation—and this applies not merely to New York State but to the country as a whole—lies in the hopeless difficulties inherent in the use of a physical valuation of property as the basis of rate control. Unless and until this fatal defect in regulating theory has been overcome, any attempt to revise the Public Service Law must fail to reach the root of the trouble. To a very

> large degree the other weaknesses which have been disclosed in the New York regulatory system, such as the understaffing of the Commission, the tendency of the Commission to become a purely judicial as distinct from a regulating body, and even the evils resulting from the unrestricted financial operations of holding companies are a repercussion from this more fundamental obstacle to effective control. We believe that we share this view with the great majority of impartial students of the problem and that the existing system would find almost no defenders were it not for the support which it derives from those utility companies which believe that its maintenance is in their pecuniary self-interest. (Commission on Revision of Public Service Commissions Law, New York, Minority Report (1930), p. 334.)

It has been the considered judgment of the great majority of the regulatory commissions that the use of reproduction cost is not a proper factor in the determination of a valuation. Indeed it is apparent that except insofar as the courts have compelled them to do otherwise, the commissions have tended to decline to apply the reproduction cost rule. In order to bring out the extent to which the commissions have adopted this position, we have conducted an extensive examination of the rulings of the commissions. Below are listed a selection of decisions in which it has been held that reproduction cost should not be a controlling factor:

> *Danbury* v. *Danbury & Bethel Gas & Electric Light Co.,* P. U. R. 1921D, 193, 206.
> *Re Potomac Edison Co.,* P. U. R. 1933B, 6.

Grafton County Electric Light & Power Co., P. U. R. 1916E, 879, 885–888.
Northampton Gas Petition, P. U. R. 1915A, 618, 626.
Bay State Rate Case, P. U. R. 1916F, 221, 223.
Middlesex & Boston Rate Case, 2nd Ann. Rep., Massachusetts, Public Service Commission, Vol. I, pp. 105–112 (1914).
Public Service Commission v. *Washington Power, Light & Water Co.,* 7 Ann. Report, Public Service Commission of Washington, 130 (1917).
Re York County Water Co., P. U. R. 1921A, 439.
Iroquois Natural Gas Co., P. U. R. 1919D, 76.
In re Tarkio Electric & Water Co., 12 Mo. P. S. C. R. 260 (1922).
Re Northern States Power Co., 15 P. U. R. (N. S.) 126.
Re Platte County Independent Telephone Co., P. U. R. 1922D, 303.
Re Roanoke Water Works Co., P. U. R. 1920C, 745.
Re Georgia R. & Power Co., P. U. R. 1921A, 165.
Re So. California Telephone Co., P. U. R. 1922C, 97.
Re Exeter Water Works, P. U. R., 1923B, 339.
Re Cole, P. U. R. 1921C, 385.
Marinette v. *City Water Co.,* 9 P. U. R. (N. S.) 308 (1934).
Milwaukee El. R. & Light Co. v. *Milwaukee,* P. U. R. 1918E, 1.
Grand Forks v. *Red River Power Co.,* 8 P. U. R. (N. S.) 225.
Pacific T. & T. Co. v. *Thomas,* 13 P. U. R. (N. S.) 337.

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Federal Commission cases:

San Pedro, Los Angeles & Salt Lake R. R. Co., 75 I. C. C. 463, 523–567 (Eastman, Commissioner, dissenting).

Excess Income of St. Louis & O'Fallon Ry. Co., 124 I. C. C. 3, 28–31, 36–37 (See also Eastman), Commissioner, concurring at pages 51–53).

Re Interstate Power Co., 32 P. U. R. (N. S.) 1.

Re Safe Harbor Water Power Corp., 34 P. U. R. (N. S.) 236.

Re Chicago District Electric Generating Corp., 39 P. U. R. (N. S.) 263.

Re Canadian River Gas Co., 43 P. U. R. (N. S.) 205.

Detroit v. *Panhandle Eastern Pipe Line Co.,* 45 P. U. R. (N. S.) 203.

Re American Airlines, Inc., Docket Nos. 334, 204, Civil Aeronautics Board (Nov. 12, 1942).

A number of regulatory commissions have gone further than to condemn the use of reproduction cost as a basis for the valuation of public utilities. They have held that the prudent investment valuation of a utility is the factor that should control in the making of the rate. It must be noted that the commissions to a large extent have been forced to adopt a different theory because of the prevailing view as to the propriety of the use of reproduction cost. It seems highly probable that if reproduction cost were not forced upon the commissions by the courts, there would be wide agreement as to the merits of the prudent investment method. The following are some of the cases in which the commissions have not only rejected reproduction

cost as the basis, but have affirmatively adopted the prudent investment theory:

Public Service Commission v. *Pacific Telephone & Telegraph Co.,* P. U. R. 1916D 947, 955.

Butler v. *Lewiston A & W Street Ry. Co.,* P. U. R. 1916D, 25.

Public Service Commission of Washington v. *Spokane Falls Gas Light Co.,* P. U. R. 1921C, 523.

Carlson v. *Jamestown Telephone Co.,* P. U. R. 1920F, 645.

Poughkeepsie & W. Falls R. Co., 1st Ann. Rep., New York Public Service Commission, Vol. I, p. 255 (1921).

Cavanaugh v. *Whitefish Municipal Water Utility,* P. U. R. 1922E, 198.

Morris v. *N. W. Bell Telephone Co.,* P. U R. 1922D, 769.

Re So. Ill. Light & Power Co., P. U. R. 1919D, 489.

Re Pacific Gas & Electric Co., 1 P. U. R. (N. S.) 1.

Re Coast Valleys G. & E. Co., P. U. R. 1924C, 40.

Re San Joaquin Light & Power Corp., P. U. R. 1922D, 595.

Re Fresno Traction Co., P. U. R. 1925C, 566.

Department of Public Service v. *Grays Harbor Railway & Light Co.,* 12 P. U. R. (N. S.) 178, 200.

Re Michigan Bell Telephone Co., 10 P. U. R. (N. S.) 149.

Re Sea Cliff & G. C. Gas Co., P. U. R. 1921A, 211.

Re Boise Artesian Water Co., 11 Ann. Rep. Idaho Public Utilities Commission 155 (1923).

Barth V. Hughes & D. Electric Co., P. U. R. 1922A, 740.
Re Midwest Power Co., P. U. R. 1922E, 22.

The general opinion of regulatory authorities who have passed upon the question of the proper valuation base is overwhelmingly in favor of the prudent investment as opposed to the reproduction cost method. Mr. Justice Brandeis in his concurrence in *Southwestern Bell Telephone Co.* v. *Public Service Commission,* 262 U. S. 276, pointed out that the Public Utility Reports for the years 1920 to 1923, inclusive, contain 363 cases passing upon the method of determining rate base. In 63 of these cases, reproduction cost was severely criticized or expressly repudiated. In 5 cases, reproduction cost was applied. In almost the entire remainder, reproduction-cost was either ignored or given only slight weight.

The objection to reproduction cost has been expressed as follows by a commission:

> This method (reproduction at prices prevailing at time of valuation) of determining value * * * is based upon prophecy instead of reality, and depends so much upon half-truths that it bears only a remote resemblance to facts, and rises at best, only to the plane of a dignified guess. *Danbury* v. *Danbury & Bethel Gas & Electric Light Co.* (Connecticut Public Utilities Commission, P. U. R. 1921D, 193, 206.)

This Court itself has found it an extremely difficult task to reconcile the reproduction cost method with the world of reality. Even as early as 1912, the Court expressed some doubt as to the exactness of this method. Speaking for the Court, Mr. Justice Holmes said, "Every figure that we

have set down with delusive exactness" is "speculative." *City of Louisville* v. *Cumberland Telephone and Telegraph Co.*, 225 U. S. 430, 432 (1911).

Concurring in the *Southwestern Telephone Company* case (262 U. S. at 290), Mr. Justice Brandeis said:

> The so-called rule of *Smyth* v. *Ames* is, in my opinion, legally and economically unsound. The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the federal Constitution guarantees to the utility the opportunity to earn a fair return. * * *

The Justice repeated this objection to *Smyth* v. *Ames* in his concurring opinion in *St. Joseph Stockyards Co.* v. *United States,* 298 U. S. 38.

II. THE RULE OF PRUDENT INVESTMENT

Prudent investment as an equitable and practicable rate base has been recommended by economists, jurists, and progressive regulatory commissions. Informed opinion overwhelmingly supports the use of the investment rate base.

A. ADVANTAGES OF A STABLE RATE BASE

Prudent investment affords a stable rate base and simplifies rate regulation with all its accompanying advantages to investors and consumers. These have been summarized in the opinion of Mr. Justice Brandeis, concurring in the *Southwestern Bell Telephone* case, 262 U. S. 276, 289, 306:

> The adoption of the amount prudently invested as the rate base and the amount of the capital charge as the measure of the rate

> of return would give definiteness to these two factors involved in rate controversies which are now shifting and treacherous, and which render the proceedings peculiarly burdensome and largely futile. Such measures offer a basis for decision which is certain and stable. The rate base would be ascertained as a fact, not determined as matter of opinion. It would not fluctuate with the market price of labor, or materials, or money. It would not change with hard times or shifting populations. It would not be distorted by the fickle and varying judgments of appraisers, commissions, or courts. It would, when once made in respect to any utility, be fixed, for all time, subject only to increases to represent additions to plant, after allowance for the depreciation included in the annual operating charges. The wild uncertainties of the present method of fixing the rate base under the so-called rule of *Smyth* v. *Ames* would be avoided; and likewise the fluctuations which introduce into the enterprise unnecessary elements of speculation, create useless expense, and impose upon the public a heavy, unnecessary burden.

The advantages of a stable rate base from the standpoint of investors in the enterprise were thus emphasized by a committee of the Investment Bankers Association:

> So nearly as possible, a stabilized basis of property valuation should be developed. This is easier said than done, but candid effort can surely remove some of the chief causes of instabilities that are dependent on variations in commodity price levels and in varying rates of depreciation and obsolescence. Present deflation of values but emphasizes the disturbing effect of too fluc-

> tuating bases of value. To arrive at what is fair will call for mutual concessions—from public regulatory bodies, of preconceived notions that often have reflected political expediency rather than economic and basic considerations; from private ownership, of other preconceived ideas of the rights of private property in a regulated business imbued with a public responsibility and trust. Preconceived notions need to be reappraised or set aside, in favor of the answer to be found only after an unbiased solution that will more nearly represent public and private rights than any yet applied. This Committee cannot but believe that a sound economic solution will sooner or later receive judicial sanction. (*Commercial and Financial Chronicle,* November 21, 1931, Vol. 133, pt. 2, p. 3389.)

Since the early obstacles to the adoption of prudent investment have in the course of time been largely removed by the development of plant cost records and uniform systems of accounts, that standard may now be adopted because it is best suited to the requirements of regulation. Accounting and security issues of utilities have been controlled for many years. Prudent investment better assures the maintenance of equitable relations between public utilities and their customers by means of greater administrative efficiency, and at the same time promotes good service and attracts required capital.

This efficiency would come about by the narrowing of the field of controvery in rate-base matters, by shortening rate case proceedings and by reducing their cost. The quickening of the process would make more frequent review of rates pos-

sible and rate control would be converted from a spasmodic undertaking into a relatively simple, continuous and effective operation. Regulatory agencies have sought relief from the frustration accompanying the "fair value" theory by such procedures as "temporary rates," and "sliding scale rates." Moreover, public utility managerial attention would be freed of the burden which prolonged rate litigation presently involves, and a reduction in the present unwarranted cost of rate litigation and regulation would benefit the consumers and taxpayers who bear all such costs.

The prudent investment method tends better to regulate return according to the needs of a public utility as measured by its contractual interest on outstanding bonds, stipulated dividends on its preferred stock, and the return on common stock required to attract capital.[4] Most utility investors expect a limited return on an unchanging base. Bauer, *Effective Regulation of Public Utilities,* 120–126. The rate base under that method would be more closely related to those outstanding securities issued for value and the method would hold radiant prospects of a relatively stable rate. The speculative features of a high rate on high values in good times, and low rates on low values in bad times would vanish.[5] In that event, money

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[4] Even if it be assumed that economic conditions should be reflected in the rates fixed, this may readily be accomplished by altering the flexible rate of return. See Whitten, *Fair Value for Rate Purposes*, 27 Harv. L. Rev. 419, 434–5; Richberg *A Permanent Basis for Rate Regulation*, 31 Yale L. J. 263, 273; *Div. of P. U.* v. *Narragansett Electric Co.*, 27 P. U. R. (N. S.) 106, 109.

[5] As we have observed above, if commissions adhered strictly to the present value theory in times of depression and

should be even easier in the regulatory field than it is now, for the investor is much more interested in a fairly certain return than he is in a return that fluctuates from year to year.

From the consumers' point of view, it may be pointed out that a reasonably stable rate base likewise has its advantages. It means reasonably stable rates which allow him to budget more accurately for future utility services with the assurance that future rates will not be radically different from present rates. Also, reasonably low rates invariably stimulate consumption of the utility service, thereby increasing revenues for the benefit of investors.

In expanding utilities, prudent investment is obviously responsive to changing construction costs. If the net investment is expanding 5% annually, and the average service life of the property is ten years, 77% of the prudent investment rate base would reflect construction costs of the five most recent years. Even in utilities where the net investment is fairly constant, due to retirement of property offsetting additions, the prudent investment basis would reflect prices of the five most recent years for 72.7% of the property. Bernstein, *Public Utility Rate Making and the Price Level* (1937) 123–124.

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low prices for material and labor, the adopted rate base might be so low that the prescribed rates would drag financial distress in their wake. The public, however, has a definite interest in preventing financial distress which will impair efficient service. Bonbright, *Merits of Original Cost and Reproduction Cost*, 41 Harv. L. Rev. 593, 621–622; see Whitten, *Fair Value for Rate Purposes*, 27 Harv. L. Rev. 419, 423–424.

When rates are fixed for public utilities, they are designed to provide the annual compensation necessary to cover all current operating expenses (including wages and depreciation), current taxes and a fair rate of return on the rate base. Under the prudent investment method, therefore, all of the factors in rate-making reflect the current requirements of the utility, except the rate base which is partially current. However, it is not unreasonable to fix rates on prudent investment because such a method assures that the utility will receive a return *on* the investment (a 6½% profit above all expenses and taxes in the instant case) and a return *of* investment (through revenues to cover annual depreciation expense for property investment consumed in rendering service). If "fair value" be the description of the rate base, then prudent investment qualifies as the fairest and truest measure of value for rate-making.

The prudent investment basis promises the achievement of a sound plan for the control of utility rates. Its merits may be summarized thus: (1) the protection of the investors' interests with the corresponding encouragement to investment; and (2) the protection of the consumers' interests with the administrative simplicity of a practicable standard and the promotion of financial soundness for the maintenance of efficient service.

The prudent investment method, with its stable foundation upon facts rather than fiction, has been supported by many persons who have devoted themselves to the study of public utility regulation. The following are typical opinions:

> Since public utilities render a service which must be supplied continuously they

should be regulated upon a theory that they are or will become going concerns. They are secured in their market position by means of governmental grants which are either expressly monopolistic or tend to become such under the pressure of uneconomic competition. They have voluntarily invested their capital upon the implied assurance that they will be permitted to earn reasonable returns. Under modern conditions of regulation the investment of capital may even be compelled by governmental authorities or it is at least invested subject to governmental authorization and approval. Under these conditions of regulated monopoly, the true economic standard for determining the rate-base is the investment standard. (Glaeser, *Outlines of Public Utility Economics* (1931), p. 505.)

Our conclusion is that original cost (unimpaired investment or prudent investment) is the most satisfactory basis of valuation. (Jones, Eliot, and Bigham, *Principles of Public Utilities* (1931), pp. 239–240.)

The most widely accepted alternative to reproduction costs new is the prudent investment method of fixing fair value. * * *

* * * A stable rate base is a condition *sine qua non* of a satisfactory scheme of regulation. Prudent investment meets this condition, as does no other rate base that has been proposed. (Mosher and Crawford, *Public Utility Regulation* (1933), pp. 214, 216.

It is to be hoped that the Supreme Court will uphold the prudent investment principle and will set aside the concept of "present value" which for nearly 40 years has done much to render rate regulation ineffective. Prudent investment is a fixed,

> nonfluctuating rate base, fair to all parties concerned. It can readily be ascertained and can be kept current merely through accounting procedure. Adjustments because of changes in price levels can be made, as they should be, in the rate of return. (Wilson, Herring and Eutsler, *Public Utility Regulation* (1938) p. 152.)

Barnes considers that prudent investment affords a practical opportunity for effective regulation:

> The early obstacles to the adoption of a cost or investment standard of rate control have now been largely removed. With the extensive development of accounting control since 1908 and the more recent enlargement of commission control over security issues, the adoption of the prudent investment program would be quite practicable; the essential data are all available. In recognition of the present practicability of the prudent-investment standard, there are many decisions of the state commissions which indicate their preference for this simpler and more direct rate-making procedure. Even in those states where the adoption of the prudent-investment method of rate control is not immediately feasible, there is every reason to believe that the adoption of this standard would lead shortly to the development of the data required to make regulation on this basis truly effective. (Barnes, *The Economics of Public Utility Regulation* (1942) p. 574.)

Professor Bernstein of the University of North Carolina, an economist, has thus supported prudent investment:

> The need to simplify rate-making procedure, particularly in the determination of

fair value, must not lead to a neglect of other equally important considerations in choosing a new method of rate making. No rate-making plan can be satisfactory in the long run unless it protects the legitimate interests of the community; the interest of the investors in utility securities and of the consumers of utility services. It is necessary, therefore, that the new rate-making plan should assure to utility companies a net income that will attract the capital required for continued expansion of the utility industries. Rate making under the new plan should also be sufficiently responsive to changing economic conditions to prevent an undesirable divergence of utility rates from the costs of producing utility services.

The prudent investment method of valuation meets these tests in every respect. It is simple and definite, so that it facilitates administrative control of utility rates; and at the same time it assures to utility companies protection of their capital investment undertaken for the public convenience at the order of the rate making authority. There can be no greater stimulus to the economical provision of adequate utility capital than the assurance of the utilities commission that the investment, if prudently made, will be protected against the hazards of fortuitous price changes. At the same time, the continued retirement, replacement, and expansion of utility equipment would give considerable weight to the prices of recent years in a prudent investment valuation. Thus, the prudent investment method of determining fair value would induce continued provision of capital for utility enterprises, while maintaining a responsiveness of utility rates to changing

costs of producing utility services. (Bernstein, *Public Utility Rate Making and the Price Level,* (1937) p. 129.)

The following analysis by Bauer and Gold, well-known authorities in this field, reaches a similar conclusion:

Standards for Proper Rate Base

We shall consider particularly how "reproduction cost" or "fair value" as against "prudent investment" or "fixed rate base" would suit the purposes of effective control. The following standards are offered for the adoption of a desirable rate base and the consequent determination of return to the utilities.

1. The rate base, with the entire method of determining the return, must be capable of systematic administration.

2. It must provide for definite protection of both investors and consumers.

3. It must maintain the financial stability of the companies to the extent possible through rate control.

4. It must make available new capital as needed for public service, but prevent dislocation or distortion of capital additions.

5. It should encourage progressive development in the industries and service to the public.

6. It should provide rate flexibility for development purposes and permit accumulation of reserves in prosperous years for stabilization of rates and return when earnings decline.

These standards of a rate base and method of determining return are obviously necessary for effective regulation. They are axiomatic and therefore need not be supported by analysis and demonstra-

tion. If utilities are to be regulated at all, the methods adopted should at least comply with these six standards. * * *

Varying Versus Fixed Rate Base

The pivot of inquiry and analysis will be throughout as to whether the traditional "fair value" or a fixed rate base, or possibly some other basis, conforms the more satisfactorily to the standards presented. The point of view will be that of desirable policy considered as progressive public interest. It will include not only consumers but also investors, and more particularly collective needs and advantages of community and state.

At the outset, we may state that reproduction cost or "fair value" fails to conform satisfactorily to the first three requirements which together are involved in comprehensive administration * * * We shall show that a fixer rate base, subject to systematic engineering and accounting control, is unquestionably essential to satisfactory control. This might be modified according to the financial structure on the basis of definite price and statistical measurements, but its origin must be actual cost as properly charged under public supervision to capital account. It must rest upon definite facts that are comprehended within the plan of administration.

As to the next two requirements, which involve basic economic forces, * * * "fair value" does not appear so glaringly unsuited to public purposes, and actual cost or fixed rate base raises at least valid questions as to its desirability. We believe, however, that overbalancing advantages are with prudent investment. If it were conclusively established that a fixed rate base

> runs counter to basic forces as claimed by certain economists, this would not count in favor of "fair value" but as proof that public regulation of private companies is a futile policy.
>
> The sixth criterion is both administrative and long-run developmental. Its application depends upon a fixed rate base or exact measurements. As to all three points * * * we expect to show that a fixed rate base is not inconsistent with progress and that it is more in harmony with basic requirements than "fair value." But if all aspects of the rate base are considered, administrative and economic, we feel certain that actual cost must be adopted with possible adjustments made on a definite basis, if regulation is to be established and continued as a reasonably satisfactory policy. (Bauer and Gold, *Public Utility Valuation* (1934), pp. 371–373.)

The following quotation is from an address upon the subject of Power Control, delivered by Franklin D. Roosevelt while he was Governor of New York.

> I seek to protect both the consumer and the investor. To that end I propose and advocate now, as I have proposed and advocated heretofore, the following remedies on the part of the government for the regulation and control of public utilities engaged in the power business and companies and corporations relating thereto: * * *
>
> 7. Abolishing by law the reproduction cost theory for rate making and establishing in place of it the actual money prudent investment principle as the basis of rate making. (Address of Franklin D. Roosevelt, Portland, Oregon, The Washington Post, September 22, 1932.)

Informed opinion in impressive strength has supported the prudent investment rule for effective rate-making: Bonbright, *Valuation of Property* (1937) Vol. II, p. 1155; Bonbright, *Railroad Valuation With Special Reference to the O'Fallon Decision,* 18 Am. Econ. Rev. Supp. 181 (March 1928); Bonbright, *The Economic Merits of Original Cost and Reproduction Cost,* 41 Har. L. Rev. 593 (1928); Goddard, *Public Utility Valuation,* 15 Mich. L. Rev. 205, 223; Booth, *Prudent Investment, Fair Value and Public Utility Regulation,* 1 Nat. Lawyers Guild Q. 229, 250 (1938); Richberg, *A Permanent Basis for Rate Regulation,* 31 Yale L. J. 263 (1922); Hale, *Conflicting Judicial Criteria of Utility Rates,* 38 Columbia L. Rev. 959 (1938); Riggs, *Depreciation of Public Utility Properties* (1922) pp. 61–62; Webber, *Principles of Public Utility Regulation* (1941) 123; Thompson, *Valuation For Rate-Making,* 1932, 8 J. Land and Pub. Util. Econ. 224 (1932). See: *New York Commission on Revision of Public Service Commissions Law,* Minority Report (1930) 378 et seq.; Clark, *Social Control of Business* (1926) 359; Goddard, *Fair Value of Public Utilities,* 22 Mich. L. Rev. 652, 677, 697; Kauper, *Wanted: A New Definition of the Rate Base,* 37 Mich. L. Rev. 1209; McDairmid, *An Institution Investor Scans the Utility Horizon,* Pub. Util. Fort. Oct. 14, 1937, p. 462.

B. EXPERIENCE SHOWS PRUDENT INVESTMENT TO BE PRACTICABLE AND EQUITABLE AS A RATE BASE

In 1923 Mr. Justice Brandeis, in the *Southwestern Bell Telephone* case, examined the "fair

value" doctrine in his concurring opinion, found that it was "legally and economically unsound," and proposed prudent investment as a constitutional, practicable and equitable basis for rate-making. He stated that "The thing devoted by the investor to the public use is not specific property tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return." *Southwestern Bell Tel. Co.* v. *Pub. Serv. Com.*, 262 U. S. 276, 289, 290.

Commissions, informed by experience, have discussed and advocated the prudent investment basis as a sound solution to the difficulties of rate-making. During the consideration by this Court of *R. R. Commission* v. *Pacific Gas & Electric Co.*, 302 U. S. 388, the Wall Street Journal on December 28, 1937, published the results of a survey of the views of the various State regulatory commissions on the question of the "fair value" theory. The Commissions which expressed their preference were two to one in favor of the prudent investment basis as the best solution to the rate-making problem. See also, Spurr, *Has Utility Regulation Been Reduced to Negotiation and Wheedling?* Public Utilities Fortnightly, Sept. 2, 1937, p. 262.

The national organization representing 46 State regulatory commissions appointed a "Committee on Progress in the Regulation of Public Utilities" which made its report in 1942 containing the following recommendations as essential to progress in regulation (National Association of Railroad and Utilities Commissioners, Proceedings of 54th Ann. Con. 1942, p. 223):

> 1. Getting all utility books set up on a rigid original cost basis, with inflationary items written off promptly;
> 2. Use of a depreciated original cost rate base in all rate proceedings;
> 3. Use of a rate base of original cost or prudent investment less the depreciation reserve requirement or book reserve, whichever is the higher; * * *

The regulatory commissions have hitherto been subjected to a judicially imposed requirement of considering reproduction cost. But a body of experience has in fact been developed in the application of valuations determined without reference to reproduction cost. The public utility commissions of Massachusetts and California have, over a period of years, made use of a valuation principle which is independent of the use of reproduction cost:

> We are indeed fortunate to have the benefit of the actual experience of at least two states with the historical cost doctrine. Both the Massachusetts and California Commissions have, notwithstanding the absence of judicial support, had the courage to follow this principle through many years of regulation. More than any other state Massachusetts has been able to avoid appeal to the courts, while the California Commission's rate decisions have been sustained with few exceptions in both the state and federal courts. (Rooks, Irvin, and Booth, Harry R., *Current Problems of Public Utility Rate Regulation,* 13 Ore. L. Rev. 122, 125 (1934).)

The California Commission has adopted the prudent investment (historical cost) basis for fix-

ing utility rates for several decades and the utilities have generally acquiesced in that method, and have prospered while rendering efficient service. (National Association of Railroad and Utilities Commissioners, Proceedings of 48th Ann. Con. 1936, p. 292). In the recent *Pacific Gas* rate case the California Commission prescribed rates upon the prudent investment basis, which were sustained by the courts (302 U. S. 388; 26 F. Supp. 507), and made this statement:

> This historical method has dominated the Commission's findings for several principal reasons. It is well grounded upon established facts, is not subject to the vagaries of pet theories, unlimited imagination, and abrupt fluctuation of current prices and passing conditions, and therefore indicates a truer measure of value upon which, through the application of rates, a return may be allowed to reimburse the owner for his enterprise and insure the integrity of his capital honestly and prudently invested. At the same time it prevents unwarranted demands upon the consumer through the projection of future rates on ephemeral values and stabilizes rates so that economic shocks from such changes are reduced to a minimum.
>
> It is an economical procedure, where the books of the companies are reasonably well kept, as obtains in practically all of the major utilities of this state, full compliance with which will prevent unwarranted expenditures of money by the Commission, the public and the company, which inures to the benefit of both the consumers and the utility. It is a more rapid procedure insuring quicker compliance with necessities as they arise. (*Re Pacific Gas & Electric Co.,* 1 P. U. R. (N. S.) 1, 11–12).

For additional prudent investment announcements by the California Commission see: *Re Pacific Gas & E. Co.,* P. U. R. 1923C, 385, 405; *Re San Joaquin Light & P. Corp.,* P. U. R. 1922D, 595, 613; *Re Coast Valleys G. & E. Co.,* P. U. R. 1924C, 40, 44; *National City* v. *Sweetwater Water Corp.,* 3 P. U. R. (N. S.) 405, 412–415.

Massachusetts has successfully employed a stable rate base resting primarily on prudent investment. The former Chairman of the Commission stated:

> Our concern in Massachusetts now is that we may be forced to abandon a system of regulation that, on the whole, has worked well for nearly half a century. Financiers and economists outside of our State have asserted, with some heat and vigor, that our system is unsound economically and cannot work successfully; that it is unjust to the corporation and its stockholders, and that as capital is timid, it will not seek investment in public utilities in Massachusetts. Representatives of some of our own electric companies have sung the same song. The answer to this is that the system has been in operation for nearly fifty years; that in all that time, resort to the Federal courts has been sought by electric companies in Massachusetts but twice, both cases being abandoned; that all of the electric companies in our State are in sound financial condition, and, so far as I am aware, none have difficulty in securing the necessary capital for their developments; and that decisions on rate questions are fairly prompt, and hearings and investigations are rarely protracted. We believe that the good faith of Massachusetts can be relied upon by those who invest their capital in public serv-

> ice enterprises, as it can be relied upon by those who lend the State their money. (Attwill, *Weaknesses of the Valuation System,* American Academy of Political and Social Sciences, Annals, Vol. 159 (Jan. 1932), p. 97.)

As early as 1914 the Massachusetts Commission declared:

> * * * capital honestly and prudently invested must, under normal conditions be taken as the controlling factor in fixing the basis for computing fair and reasonable rates * * *. (*Middlesex and Boston Rate Case,* 2 Mass. P. S. C. R. 111, 112.)

For additional cases on the Massachusetts prudent investment principle see: *Bay State Rate Case,* P. U. R. 1916F, 221, 233; *Re New England Tel. & Tel. Co.,* P. U. R. 1925E, 739, 744; *Customers* v. *Worcester Light Co.,* P. U. R. 1927C, 705, 708; *Customers* v. *Northampton Electric Lighting Co.,* 36 P. U. R. (N. S.) 353, 356; see also, Webber, *Principles of Public Utility Regulation With Special Reference To Massachusetts Practice* (1941).

California and Massachusetts have been the outstanding Commissions in the application of the prudent investment principle for many years, and their experiences have demonstrated that prudent investment is a practicable and equitable method. But many other State commissions have also supported the cost or prudent investment basis. For example:

> ARKANSAS: *Arkansas Power & Light Co.* v. *McGehee,* 42 P. U. R. (N. S.) 65, 80 (1941).
> DISTRICT OF COLUMBIA: *Re Potomac Electric Power Co.,* P. U. R. 1923D, 579, 584.

IDAHO: *Re Boise Artesian Water Co.,* 11 A. R., Idaho P. U. C. 155 (1923).
MAINE: *Butler* v. *Lewiston A. & W. St. Ry. Co.,* P. U. R. 1916D, 25, 35.
MARYLAND: *Re Potomac Edison Co.,* 1933B, 6, 19.
MICHIGAN: *Re Michigan Bell Tel. Co.,* 10 P. U. R. (N. S.) 149, 165 (1935).
MONTANA: *Cavanaugh* v. *Whitefish M. W. Utility,* P. U. R. 1922E, 198, 294.
NEW YORK: *Re Iroquois Natural Gas Co.,* P. U. R. 1919D, 76, 87–88.
Carlson v. *Jamestown Tel. Corp.,* P. U. R. 1920F, 645, 648.
Re Sea Cliff & G. C. Gas Co., P. U. R. 1921A, 211, 215.
NORTH DAKOTA: *Barth* v. *Hughes & D. Electric Co.,* P. U. R. 1922A, 740, 747.
Re Midwest Power Co., P. U. R. 1922E, 22, 36–37.
OKLAHOMA: *Re Southwestern Bell Tel. Co.,* 9 P. U. R. (N. S.) 113, 136 (1935).
PENNSYLVANIA: *P. U. C.* v. *Solar Electric Co.,* 24 P. U. R. (N. S.) 337, 360–362 (1938).
P. U. C. v. *Abington Electric Co.,* 28 P. U. R. (N. S.) 257, 260 (1939).
RHODE ISLAND: *Div. of P. U.* v. *Narragansett Electric Co.,* 27 P. U. R. (N. S.) 106, 108–109 (1939).
SOUTH DAKOTA: *Morris* v. *Northwestern Bell Tel. Co.,* P. U. R. 1922D, 769, 774.
WASHINGTON: *P. S. C.* v. *Spokane Falls Gas L. Co.,* P. U. R. 1921C, 519, 523.
Dept. P. S. v. *Grays Harbor R. & L. Co.,* 12 P. U. R. (N. S.) 178, 200 (1936).
Re Puget Sound Freight Lines, 35 P. U. R. (N. S.) 452, 455 (1940).
WISCONSIN: *Milwaukee E. R. & Light Co.* v. *Milwaukee,* P. U. R. 1918E, 1, 25–26.
Marinette v. *City Water Co.,* 9 P. U. R. (N. S.) 308, 316 (1934).

The leading Federal rate-making bodies have concurred with these commissions in the espousal of the original-cost method and the rejection of the reproduction-cost formula. Commissioner Eastman, of the *Interstate Commerce Commission,* has condemned the "judgment method of valuation" under *Smyth* v. *Ames* and has advocated prudent investment as the workable and just basis. *San Pedro, Los Angeles & Salt Lake R. R. Co.,* 75 I. C. C. 463, 550–557 (1923); *Excess Income of St. Louis & O'Fallon Ry. Co.,* 124 I. C. C. 3, 49–59.

The *Federal Communications Commission,* concerned with the regulation of telephone and telegraph rates, joined in the Government's brief, *amicus curiae,* in *Driscoll* v. *Edison Light & Power Company, No.* 509 October Term 1938 (307 U. S. 104). In that brief it was stated that the "fair value" rule has proved to be unsound and unworkable, and that the rule of prudent investment, combining as it does exactness, ease of application, and a proper principle for the determination of reasonable return, is the standard for rate-making best adapted to modern business conditions and practices in this country.

The *Civil Aeronautics Board,* having the duty of fixing rates for air transportation, has announced its intention to utilize the prudent investment method:

> The presentation, at the rehearing, of the reproduction costs of the carrier's property devoted to transportation service as of December 31, 1941, brings us to the question of the proper use, if any, to be made of such evidence. This Board in exercising its rate making functions has never and does not now measure the reasonableness

> of the rate in terms of a fair return upon the so-called "fair value" of the property used and useful in the public service. One of the primary factors, which is frequently controlling, in determining the fair value of such property is its reproduction cost less depreciation. We believe that experience has proved such method to be administratively and economically unsound; its application to public regulated enterprise during the past four decades has placed upon State and Federal regulatory agencies a burdensome, complex, expensive and futile task. Recent opinions of members of the Supreme Court of the United States add to the weight of notable dissents by members of the Court in the past in further reducing the prestige of this rate making formula. We believe that the ascertainment of the capital cost of producing the air transportation service requires that the rate of return should be predicated upon the funds which have been actually and legitimately invested in the transportation enterprise rather than upon any valuation of the carrier's property, and we shall continue to adhere to this method in the future as we have in the past. We accordingly regard reproduction cost evidence as irrelevant and immaterial to the issue of a fair and reasonable rate and evidence of this type in the future will not be admitted to the record in rate proceedings for the purpose of showing the value of the carrier's property. (*Re American Airlines, Inc.*, Dockets Nos. 334 and 204 Civil Aeronautics Board's decision of November 12, 1942, pp. 31–32.)

The *Federal Power Commission* in performing its duty to fix reasonable interstate wholesale rates

for electricity and gas has uniformly adopted the actual cost or prudent investment basis. *Re Interstate Power Co.,* 32 P. U. R. (N. S.) 1, 11 (1939); *Re Safe Harbor Water Power Corp.,* 34 P. U. R. (N. S.) 236, 247 (1940); *Re Chicago District Electric Generating Corp.,* 39 P. U. R. (N. S.) 263, 277 (1941); *Cleveland* v. *Hope Natural Gas Co.,* 44 P. U. R. (N. S.) 1, 24 (1942); *Detroit* v. *Panhandle Eastern Pipe Line Co.,* 45 P. U. R. (N. S.) 203, 214 (1942); *Re Canadian River Gas Co.,* 43 P. U. R. (N. S.) 205, 224 (1942); *Re El Paso Natural Gas Co.,* Docket Nos. G–257, G–242, October 29, 1942 Order Reducing Rates; *Illinois Commerce Commission* v. *Natural Gas Pipeline Co.,* Docket Nos. G–109, G–112, September 19, 1942, Order Accepting Reduced Rates For Filing and Terminating Proceedings; *Re Lone Star Gas Co.,* Docket Nos. G–209, G–208, May 4, 1942, Order Reducing Rates; *Re Northern Natural Gas Co.,* 47 P. U. R. (N. S.) 74, 75 (1943); *Louisiana Public Service Commission* v. *United Gas Pipe Line Co.,* 48 P. U. R. (N. S.) 91; *Re Interstate Natural Gas Co.,* 48 P. U. R. (N. S.) 267.

This imposing weight of administrative precedent, based on a wealth of practical experience and a background of technical competence, would seem sufficient to dispel any doubts as to the rate-base which should be adopted as workable and sound. It lends the support of the expert rate-maker to the pronouncement of Justices Stone and Cardozo that the rule of prudent investment, as propounded by Justice Brandeis, "states the law as it should be." See *St. Joseph Stockyards Co.* v. *United* States, 298 U. S. 38, 93.

SUPPLEMENT B

SUMMARY OF COMPARISON OF REPRODUCTION COST ESTIMATES IN RATE CASES [1]

(Detail, pages 90 to 101)

	No. of cases	Appraisal amounts			Percent excess of company appraisal
		Company	City or commission	Excess of company appraisal	
Year 1928	25	$67,495,001	$51,965,943	$15,529,058	29.88
Year 1929	32	396,382,303	267,409,792	128,972,511	48.23
Year 1930	18	185,542,529	138,940,783	46,601,746	33.54
Year 1931	18	321,257,149	210,931,858	110,325,291	52.30
Year 1932	10	152,413,117	74,320,022	78,093,095	105.08
Year 1933	20	276,949,277	180,569,492	96,379,785	53.38
Year 1934	8	69,228,539	43,595,083	25,633,456	58.80
Year 1935	9	39,088,733	29,781,774	9,306,959	32.34
Year 1936	10	205,171,349	155,231,207	49,940,142	32.17
Year 1937	5	59,982,102	46,164,509	13,817,593	29.93
Year 1938	5	171,897,333	148,129,198	23,768,135	16.05
Year 1939	2	2,147,954	1,488,952	659,002	44.26
Year 1940	4	170,055,853	126,462,956	43,592,897	34.47
Year 1941	4	11,995,845	10,646,420	1,349,425	12.67
Year 1942	2	2,133,700	1,767,178	366,522	20.74
Total		2,131,740,784	1,487,405,167	644,335,617	43.32

[1] The cases shown in this appendix are all the cases reported in Public Utility Reports for the years 1928 to 1942, inclusive, for which comparable information was given.

Reproduction cost estimates in rate cases—1928–1942

YEAR 1928

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
1. Re Home Telephone Company	Indiana P. S. C	1928 A 450	$1,187,746	$998,681	$189,065	18.93
2. Re Georgia Power Company	Georgia P. S. C	1928 A 834	23,352,860	19,614,216	3,738,644	19.06
3. Knoxville *v.* South Pittsburg Water Co	Pennsylvania P. S. C	1928 B 211	9,112,933	8,211,343	901,590	10.98
4. Re Clarksburg Light & Heat Co	West Virginia P. S. C	1928 B 296	4,482,000	2,004,143	2,477,857	123.64
5. Shamokin *v.* Roaring Creek Water Co	Pennsylvania P. S. C	1928 B 393	4,000,000	2,000,000	2,000,000	100.00
6. City of Erie et al. *v.* Mutual Telephone Company.	Pennsylvania P. S. C	1928 B 537	5,023,494	421,828	771,666	18.15
7. Clearfield *v.* Clearfield Water Company	Pennsylvania P. S. C	1928 B 633	803,379	413,344	390,035	94.36
8. Re Pomona Valley Telephone and Telegraph Union.	California R. R. Com	1928 B 707	729,231	684,350	44,881	6.56
9. Re Northwestern Indiana Telephone Co. et al	Indiana P. S. C	1928 B 729	545,672	491,179	54,493	11.09
10. Re Clinton County Telephone Co	Missouri P. S. C	1928 B 798	221,017	200,231	20,786	10.38
11. Re Pekin Water Works Co	Illinois Commerce Com	1928 C 269	639,146	541,370	97,776	18.06
12. Re Associated Telephone Co	Indiana P. S. C	1928 C 295	340,332	273,000	67,332	24.66
13. Borough of Keyport *v.* County Gas Company	New Jersey Board of Public Utility Comrs.	1928 C 327	1,749,481	1,160,444	589,037	50.76
14. Re Capital City Water Company	Missouri P. S. C	1928 C 442	880,779	677,314	203,465	30.04
15. Re Guilford Chester Water Co	Connecticut P. U. C	1928 C 549	1,548,786	1,168,801	379,985	32.51
16. Re Madison Railways Co	Wisconsin R. R. Com	1928 C 844	1,960,216	1,203,000	757,216	62.94
17. University City *v.* West St. Louis Water & Light Co.	Missouri P. S. C	1928 D 337	6,261,899	4,460,278	1,801,621	40.38
18. Re Capital City Telephone Co	Missouri P. S. C	1928 D 766	291,554	218,395	73,159	33.50
19. Dept. of Public Works *v.* Morton Electric Co	Washington Dept. Pub. Wks	1928 D 813	34,179	20,064	14,115	70.35

20. Re Decatur County Independent Telephone Co.	Indiana P. S. C	1928 E 5	360,000	325,000	35,000	10.77
21. Re Lexington Water Company	Missouri P. S. C	1928 E 329	390,117	275,216	114,901	41.75
22. Re Elwood Water Company	Indiana P. S. C	1928 E 702	650,000	329,529	320,471	97.25
23. Re Logansport Telephone Company	Indiana P. S. C	1928 E 719	932,245	640,044	292,201	45.65
24. Santa Barbara *v.* Southern Counties Gas Company.	California R. R. Com	1928 E 771	1,479,935	1,488,423	8,488	(0-57)
25. Electric Public Utility Company *v.* Public Service Commission.	Maryland Circuit Court	1928 E 856	518,000	315,750	202,250	64.05
Total for 1928			67,495,001	51,965,943	15,529,058	29.88

YEAR 1929

1. Mayor of Hyattsville *v.* Washington Suburban Gas Co.	Maryland Public Service Commission.	1929 E 4, 6	$892,984	$685,140	$207,844	30.34
2. Re Public Service Electric and Gas Co	New Jersey Board of Public Utilities Commissioners.	1929 E 17	197,673,670	114,408,002	83,265,668	72.78
3. Re Minier Mutual Telephone Company	Illinois Commerce Commission	1929 E 235	135,133	97,785	37,348	38.19
4. Public Utilities Commission *v.* Camden & Rockland Water Co.	Maine Public Utilities Commission.	1929 E 325, 330	1,311,667	1,157,924	153,743	13.28
5. Re City of Fresno	California Railroad Commission	1929 E 503, 507	3,030,754	1,662,601	1,368,153	82.29
6. Re Lincoln Telephone & Telegraph Company	Nebraska State Railway Commission.	1929 E 512	314,834	268,653	46,181	17.19
7. Re Southern California Telephone Company	California Railroad Commission	1929 E 610, 613	100,000,000	97,100,000	2,900,000	2.99
8. Re Southern Indiana Telephone Company	Indiana Public Service Commission.	1929 E 641, 645	64,029	58,573	5,456	9.31
9. R. Illinois Water Service Company	Illinois Commerce Commission	1929 E 650, 652	746,763	569,705	177,058	31.08
10. Plainfield-Union Water Co. *v.* Board of Public Util. Commissioners of N. J.	United States District Court, D. New Jersey.	1929 D 3, 13, 23	6,066,823	3,243,677	2,823,146	87.04
11. Re Oconto City Water Supply Company	Wisconsin Railroad Commission	1929 D 65	301,082	211,574	89,508	42.31

Reproduction cost estimates in rate cases—1928–1942—Continued

YEAR 1929—Continued

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
12. Re Lincoln Telephone & Telegraph Company	Nebraska State Railway Commission.	1929 D 116, 119	$53,817	$40,194	$13,623	33.89
13. Re Lambertville Water Co	N. J. Board of Public Util. Commissioners.	1929 D 138	203,984	114,772	89,212	77.73
14. Franke *v.* Johnstown Tel. Co	Pa. Public Service Comm	1929 D 161	2,403,115	1,719,507	683,608	39.76
15. Columbia *v.* Columbia Water Co	Pa. Public Service Comm	1929 D 269	498,431	372,481	125,950	33.81
16. Greencastle Water Works Co. *v.* P. S. Comm. of Indiana et al.	U. S. Dist. Ct. S. D. Indiana, Indianapolis Division.	1929 D 287, 293, 294, 295.	523,500	334,164	189,336	56.66
17. James W. Sharp et al. *v.* Newville Water Co	Pa. Public Service Comm	1929 D 618	67,474	40,238	27,236	67.69
18. Re City of Los Angeles et al	Cal. R. R. Comm	1929 C 389, 396	827,818	668,330	159,488	23.86
19. City of Erie *v.* Pa. P. S. Comm	Pa. Superior Court	1929 C 568	5,023,494	4,251,828	771,666	18.15
20. Worcester Electric Lt. Co. *v.* Henry C. Atwill et al.	U. S. District Court, Massachusetts.	1929 B 1, 34	16,242,027	9,898,805	6,343,222	64.08
21. P. S. Comm. *v.* Great Northern Utilities Co	Montana P. S. Comm	1929 B 177	199,709	36,267	163,442	450.66
22. James W. Sharp et al. and Borough of Newville *v.* Newville Water Co.	Penn. P. S. Comm	1929 B 320	67,474	40,238	27,236	67.69
23. Re Madison Telephone Co	Nebr. State Railway Comm	1929 B 385	103,379	91,825	11,554	12.58
24. Re Middle States Telephone Co	Ill. Comm. Comm	1929 B 390, 393	582,196	567,042	15,154	2.67
25. Re Dixon Water Co	Ill. Comm. Comm	1929 B 403	491,885	434,027	57,858	13.33
26. Re Vermont Teleph. & Exch. Co	Ill. Comm. Comm	1929 B 411	17,923	14,611	3,312	22.67
27. Pittsburgh *v.* Peoples Natural Gas Co	Penn. P. S. Comm	1929 B 526, 529	53,426,392	24,374,307	29,052,085	119.19
28. Re Middle States Utilities Co	Mo. P. S. Comm	1929 B 554, 556	72,011	56,351	15,660	27.79

29. Jones *v.* Wabash Valley Elec. Co	Indiana P. S. Comm	1929 B 562	88, 721	72, 157	16, 564	22. 96
30. University City *v.* West St. Louis Water & Light Co.	Mo. P. S. Comm	1929 B 612	4, 331, 634	4, 278, 427	53, 207	1. 24
31. Re Northern Indiana Tel. Co	Ind. P. S. Comm	1929 A 74	564, 340	506, 597	57, 743	11. 40
32. Long *v.* Snow Shoe Water Co	Penn. P. S. Comm	1929 A 655	55, 240	33, 990	21, 250	62. 52
Total for 1929			396, 382, 303	267, 409, 792	128, 972, 511	48. 23

YEAR 1930

1. Re Salamonia Tel. Co	Ind. P. S. Comm	1930 E 39, 40	$29, 352	$17, 899	$11, 453	63. 99
2. Re Cambridge Home Tel. Co	Ohio P. U. Comm	1930 E 65, 73	630, 396	395, 576	234, 820	59. 36
3. Re Ind. Service Corp	Ind. P. S. Comm	1930 E 276, 278	6, 106, 011	5, 664, 009	442, 002	7. 80
4. Re Kansas City Public Service Co	Mo. P. S. Comm	1930 E 384, 395	40, 615, 610	33, 826, 216	6, 789, 394	20. 07
5. Re Iroquois Gas Corp	N. Y. Dept. of Public Service, State Div., P. S. Comm.	1930 D 31, 32	53, 430, 014	27, 137, 668	26, 292, 346	96. 89
6. Me. P. U. Comm. *v.* Gould Elec. Co	Me. P. U. Comm	1930 D 289, 294	546, 495	375, 630	170, 865	45. 49
7. Re Home Telephone Co	Ind. P. S. Comm	1930 D 481	243, 647	157, 738	85, 909	54. 46
8. Re Mich. Federated Utilities, Mt. Clemens Division.	Mich. P. U. Comm	1930 D 506	1, 453, 088	1, 413, 733	39, 355	2. 78
9. Fort Worth Gas Co. *v.* City of Fort Worth et al.	U. S. Dist. Ct. N. D., Texas, Fort Worth Division.	1930 C 203, 205, 210	6, 297, 976	3, 426, 570	2, 871, 406	83. 80
10. Re Pacific Telephone & Telegraph Co	Cal. R. R. Comm	1930 C 481, 498	63, 086, 600	56, 863, 987	6, 222, 613	10. 94
11. Vincennes Water Supply Co. *v.* P. S. Comm. of Ind.	U. S. Circuit Court of Appeals Seventh Circuit.	1930 B 216, 220, 221	1, 163, 719	778, 769	384, 950	49. 43
12. Re Starke County Tel. Co	Ind. P. S. Comm	1930 B 336	58, 544	49, 351	9, 193	18. 63
13. Re Northwestern Ind. Tel. Co	Ind. P. S. Comm	1930 B 431, 434	199, 350	181, 477	17, 873	9. 85
14. Re Ill. Bell Tel. Co., Decatur Exchange	Ill. Comm. Comm	1930 B 455, 456	2, 076, 386	1, 865, 078	211, 308	11. 33
15. Re Wisconsin Public Util. Co	Wis. R. R. Comm	1930 A 119	564, 584	500, 526	64, 058	12. 80
16. Re Ill. Bell Tel. Co., Edwardsville Exchange	Ill. Comm. Comm	1930 A 143, 145	269, 492	220, 283	49, 209	22. 34

Reproduction cost estimates in rate cases—1928–1942—Continued

YEAR 1930—Continued

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
17. West Palm Beach Water Co. *v.* City of West Palm Beach.	U. S. Dist. Ct. Sou. Dist. of Florida.	1930 A 177, 187	$5,969,186	$3,544,835	$2,424,351	68.39
18. Re Citizens Independent Tel. Co	Ind. P. S. Comm	1930 A 431	2,802,079	2,521,438	280,641	11.13
Total for 1930			185,542,529	138,940,783	46,601,746	33.54

YEAR 1931

1. Village of Blair *v.* Northern States Power Company.	Wisconsin R. R. Commission	1931 A 91	$22,357	$15,482	$6,875	44.41
2. Re Los Angeles Gas & Electric Corp	California R. R. Commission	1931 A 147, A 166	95,767,351	65,500,000	30,267,351	46.21
3. Re Southern Indiana Gas & Elec. Co	Indiana P. S. C	1931 A 404	689,455	598,275	91,180	15.24
4. Re Johnson County Telephone Co	Indiana P. S. C	1931 A 451	401,443	303,881	97,562	32.11
5. Re Bowdoin Utilities Company	Montana P. S. C	1931 B 35, B 43	750,564	622,606	127,958	20.55
6. Re Ohio Bell Telephone Company	Ohio P. U. C	1931 B 51	144,995,146	91,061,900	53,933,246	59.23
7. Re Springfield City Water Company	Missouri P. S. C	1931 B 82	4,066,500	3,203,566	862,934	26.94
8. Re Beckley Water Company	West Virginia P. S. C	1931 B 279	532,404	326,495	205,909	63.07
9. Re United Corporation	Indiana P. S. C	1931 B 501	102,409	74,059	28,350	38.28
10. City of Elko *v.* Elko Lamoille Power Company	Nevada P. S. C	1931 C 20	428,759	319,909	108,850	34.03
11. Re Mondovi Telephone Company	Wisconsin R. R. Commission	1931 C 442	61,412	56,252	5,160	9.17
12. Re Escanaba Power & Traction Co	Michigan P. U. C	1931 D 154	2,162,364	1,428,223	734,141	51.40
13. Re Utica Gas & Electric Company	New York Dept. of P. S. State	1931 D 339	20,285,500	9,246,468	11,039,032	119.39

	Div. Public Service Commission.					
14. Re City of Spooner	Wisconsin R. R. Com	1931 E 43	99,657	54,805	44,852	81.84
15. Re Community Telephone Co	Wisconsin P. S. C	1931 E 63	64,362	56,998	7,364	12.92
16. City of Charleston et al. *v.* Public Service Commission.	W. Va. Supreme Court of Appeals.	1931 E 76	38,243,345	26,569,430	11,673,915	43.94
17. Re Michigan Home Telephone Co	Michigan P. U. C	1931 E 440	1,643,302	1,475,384	167,918	11.38
18. Re Atlanta Gas Company	Georgia P. S. C	1931 E 464, E 466	10,940,819	10,018,125	922,694	9.21
Total for 1931			321,257,149	210,931,858	110,325,291	52.30

YEAR 1932

1. City of Vincennes *v.* Vincennes Water Supply Co.	Indiana P. S. C	1932 A 21	$1,517,810	$611,588	$906,222	148.18
2. International Railway Co. *v.* William A. Prendergast, et al.	U. S. District Court, Western District of N. Y.	1932 A 167	55,000,000	18,788,884	36,211,116	192.73
3. Re United Fuel Gas Co	W. Virginia P. S. C	1932 B 66	47,186,190	29,659,150	17,527,040	59.09
4. City of Moncton *v.* Moncton Tramways, Electricity & Gas Company, Ltd.	New Brunswick Board of Comrs. of P. U.	1932 B 374	385,214	336,020	49,194	14.64
5. Re Alexandria Water Co	Virginia State Corp. Com	1932 C 350	2,026,895	1,145,000	881,895	77.02
6. Scranton-Spring Brook Water Service Company et al. *v.* Public Service Commission of Pennsylvania.	Pennsylvania Superior Court	1932 C 477	39,976,705	19,586,596	20,390,109	104.10
7. Re City of Visalia	California R. R. Commission	1932 C 520	248,408	89,329	159,079	178.08
8. Re Ohio Central Telephone Corp	Ohio P. U. C	1932 D 441	1,594,203	953,511	640,692	67.19
9. Central Kentucky Gas Co. *v.* Railroad Comsion of Kentucky et al.	U. S. District Court, Eastern Dist. of Ky.	1932 E 71	2,028,069	1,189,489	838,580	70.50
10. Re Missouri Utilities Company et al	Missouri P. S. C	1932 E 462	2,449,623	1,960,455	489,168	24.95
Total for 1932			152,413,117	74,320,022	78,093,095	105.08

Reproduction cost estimates in rate cases—1928–1942—Continued

YEAR 1933

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
1. Public Util. Comm. etal. *v.* Newport Water Corp.	R. I. Public Util. Comm	1933 E 1	$3,533,087	$2,241,720	$1,291,367	57.61
2. Borough of Grove City *v.* Union Heat & Light Co.	Penn. P. S. Comm	1933 E 90	823,344	430,477	392,867	91.26
3. City of Mauston *v.* Mauston Tel. Co	Wis. P. S. Comm	1933 E 161	55,903	48,842	7,061	14.46
4. City of Seattle *v.* Seattle Gas Co	Wash. Dept. of Public Works	1933 E 253	15,327,289	11,761,320	3,565,969	30.32
5. City of Trenton *v.* Mo. Public Service Company	Mo. P. S. Comm	1933 E 270	288,890	231,972	56,918	24.54
6. P. S. Comm. of Mo. *v.* East Mo. Power Co	Mo. P. S. Comm	1933 E 369	707,566	548,276	159,290	29.05
7. City of Wheeling *v.* Natural Gas Co. of W. Va.	W. Va. P. S. Comm	1933 D 1, 21	10,061,736	6,695,387	3,366,349	50.28
8. Clark's Ferry Bridge Co. *v.* P. S. Comm. of Pa.	Pa. Superior Court	1933 D 173, 178	1,029,297	741,871	287,426	38.74
9. Mont. P. S. Comm. *v.* Billings Gas Co. (and Gallatin Natural Gas Co.).	Mont. P. S. Comm	1933 D 341	1,165,798 1,678,826	719,331 949,723	446,467 729,103	62.07 76.77
10. Okla. Corp. Comm. Re Lone Star Gas Co. et al.	Okla. Corp. Comm	1933 C 1, 17, 22	70,595,343	41,391,666	29,203,677	70.55
11. Re Indiana (Interstate) Public Service Company.	Ind. Public Service Comm	1933 C 274	209,681	155,000	54,681	35.28
12. Re Broad River Power Co	S. C. R. R. Comm	1933 C 351, 359	26,319,132	12,847,671	13,471,461	104.86
13. Re Potomac Edison Co	Maryland P. S. Comm	1933 B 6, 41	14,801,560	10,131,370	4,670,190	46.10
14. Re Yonkers Railroad Co	N. Y. Dept. of P. S., State Division.	1933 B 61, 65	5,104,648	3,851,865	1,252,783	32.52
15. Elko-Lamoille Power Co. *v.* P. S. Comm. of Nevada et al.	U. S. Dist. Ct. D. Nevada	1933 B 191, 193	518,138	372,884	145,254	38.95
16. Wichita Gas Co. *v.* P. S. Comm. of Kans	U. S. Dist. Ct. D. Kansas, First Division.	1933 B 225, 242, 243	105,000,000	73,000,000	32,000,000	43.84
17. Re Augusta Lt. & Tel. Co	Wis. P. S. Comm	1933 B 478, 481	38,512	24,477	14,035	57.34

18. Fort Fairfield Lt. & Pr. Co. et al. *v.* Me. Public Service Co.	Me. P. S. Comm	1933 B 493	1, 882, 508	1, 504, 864	377, 644	25. 09
19. Re Patrons of Clinton Electric Lt. & Pr. Co	Conn. P. U. Comm	1933 A 467, 472	355, 450	254, 107	101, 343	39. 88
20. Re Northwestern Elec. Co	Oreg. P. U. Comm	1933 A 493, 499	17, 452, 569	12, 666, 669	4, 785, 900	37. 78
Total for 1933			276, 949, 277	180, 569, 492	96, 379, 785	53. 38

YEAR 1934

1. City of Douglas *v.* Arizona Edison Co	Arizona Corporation Comm	1 (NS) 501	$603, 455	$306, 994	$296, 461	96. 57
2. Chesapeake & Potomac Telephone Co	Maryland P. S. C	1 (NS) 350	48, 144, 672	32, 498, 094	15, 646, 578	48. 15
3. Texas Border Gas Co. *v.* City of Laredo	Texas R. R. Comm	2 (NS) 509	1, 231, 601	810, 698	420, 903	51. 92
4. Re City of Yuma	Arizona Corporation Comm	2 (NS) 17	1, 277, 059	466, 879	810, 180	173. 53
5. Re Commonwealth Ex Rel Rosslyn Gas Company.	Virginia Corporation Comm	3 (NS) 67	780, 654	392, 097	388, 557	99. 10
6. City of National City *v.* The Sweetwater Water Corp.	California R. R. Comm	3 (NS) 412	2, 471, 491	1, 316, 726	1, 154, 765	87. 70
7. Dept. Pub. Works of Washington *v.* Seattle Gas Co.	Washington Dept. Pub. Works	3 (NS) 460, 468	14, 198, 953	7, 416, 826	6, 782, 127	91. 44
8. Dept. Pub. Works of Washington v. Washington Water Power Co.	Washington Dept. Pub. Works	4 (NS) 376, 377	520, 654	386, 769	133, 885	34. 62
Total for 1934			69, 228, 539	43, 595, 083	25, 633, 456	58. 80

Reproduction cost estimates in rate cases—1928–1942—Continued

YEAR 1935

Name of case	Jurisdiction	P. U. R. reference	Appraisal amounts			Percent excess of company appraisal
			Company	City or commission	Excess of company appraisal	
1. City of Wheeling *v.* Natural Gas Co. of W. Va.	W. Va. S. C. A.	5 (NS) 475	$9,468,016	$8,766,362	$701,654	8.00
2. Re Central Arizona Light & Power Co.	Arizona Corporation Comm.	6 (NS) 55	16,005,563	10,706,530	5,299,033	49.49
3. City of Fredericton *v.* Maritime Electric Co. Ltd.	New Brunswick Bd. P. U. Comm.	6 (NS) 165	158,298	135,199	23,099	17.08
4. City of Sullivan *v.* Missouri Electric Power Co.	Missouri P. S. C.	6 (NS) 237	1,385,840	1,281,945	103,895	8.10
5. Alexandria Water Company *v.* City Council of Alexandria.	Virginia S. C. A.	7 (NS) 74	1,959,376	1,382,637	576,739	41.71
6. Frackville Taxpayers Assn. *v.* Frackville Sewerage Co.	Pennsylvania P. S. C.	7 (NS) 521	180,320	109,561	70,759	64.58
7. D. P. W. of Washington *v.* Oregon-Washington W. Ser. Co.	Washington Dept. P. W.	8 (NS) 301	80,978	41,420	39,558	95.50
8. Mallette *v.* Terrington Water Co.	Connecticut P. U. C.	9 (NS) 83, 85	1,616,036	1,363,311	252,725	18.54
9. Re Southwestern Bell Telephone Company	Oklahoma Corp. Comm.	9 (NS) 139	8,234,306	5,994,809	2,239,497	37.36
Total for 1935			39,088,733	29,781,774	9,306,959	32.34