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REGULATION AND MODERN FINANCE THEORY*

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I. INTRODUCTION

IN RECENT YEARS, we have experienced numerous disputes over the rate a public utility should be allowed to earn. More often than not the difference between what a company requests and what the staff of a public utility commission recommends is substantial. Prolonged hearings are held with great costs to both parties. Even when the Commission reaches a decision, it sometimes is appealed to the courts with additional costs and delays. The problem is that the law relating to regulation is subject to ambiguous interpretations in a number of key areas.

The purpose of my address is to explore this ambiguity in some detail and to examine an alternative approach to establishing a proper rate of return on equity capital. While this examination is rooted in modern finance theory, the focus of my address is on developing a better understanding of the problem and on policy implications as opposed to extending the theory. We begin by reviewing the legal principles underlying regulation followed by an examination of the rate-making process as it is practiced. The meaning of a "just and reasonable" rate of return to the equity holder is next explored. An alternative approach to regulation and its implications will be discussed in Sections V and VI. Concluding comments appear in the last section.

II. THE LEGAL PRINCIPLES UNDERLYING REGULATION

The regulation of public utility companies is not a task assigned to a single governmental agency. Quite the contrary is true. At the national level, a number of federal agencies (such as the Federal Communications Commission, the Federal Power Commission, and others) are involved in regulating the companies engaged in interstate commerce. At the state level, each state has a "public utilities commission." In addition, many smaller jurisdictions (such as cities) regulate local utilities such as garbage collection, etc.

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The legal principles underlying the regulation of public utility companies rest primarily on two Supreme Court cases: *Bluefield Water Works & Investment Co. v. Public Service Commission of the State of West Virginia* (262 U.S. 679, 1923), and *Federal Power Commission v. Hope Natural Gas Company* (320 U.S. 591, 1944). The two cases will henceforth be referred to simply as "*Bluefield*" and "*Hope*." The case law specifies that the rate-making process "involves a balancing of the investor and consumer interests." (*Hope*, 603).

The Congress in the Natural Gas Act of 1938 defines the rate-making process as the fixing of "just and reasonable rates." (*Hope*, 603). The legal standard against which "just" and "reasonable" is measured was stated in the *Bluefield* case: "A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties.... The return should be reasonably sufficient to assure confidence in the financial soundness of the utility, and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise money necessary for the proper discharge of its public duties." (*Bluefield*, 693).

In the *Hope* case, the Court explicitly recognized that revenues must also cover "capital costs." The Court stated: "From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock.... By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks." (*Hope*, 603).

Some of the most difficult issues in regulatory cases have concerned the manner in which a regulatory body is to determine what constitutes "just and reasonable" rates. The Supreme Court has held that the regulatory commissions need not be "bound to the use of any single formula or combination of formulae in determining rates." (*Hope*, 602). The Court stated further that "under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling...." It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry... is at an end. The fact that the method employed to reach that result may contain infirmities is not then important." (*Hope*, 603).

Several Justices who took part in the *Hope* decision disagreed with the majority opinion on some of these issues. For example, Justice Reed, dissenting, states: "When the phrase (just and reasonable) was used by Congress to describe allowable rates, it had relation to something ascertainable.... The rates fixed would produce an annual return and that annual return was to be compared with a theoretical just and reasonable return..." (*Hope*, 621). He continues, "My disagreement with the Court arises primarily from its view that it makes no difference how the Commission reached the rate fixed so long as the result is fair and reasonable." (*Hope*, 623).

Justice Jackson, dissenting on the same point, states: "We need not be slaves to a formula but unless we can point out a rational way of reaching our conclusions they can only be accepted as resting on intuition or predilection.... The Court sustains this order as reasonable, but what makes it so or what could possibly make it otherwise, I cannot learn." (*Hope*, 645-646).

Justice Frankfurter, also dissenting, makes a telling point when he states: "The requirement that rates must be 'just and reasonable' means just and reasonable in relation to appropriate standards. ... To what sources then are the Commission and the courts to go for ascertaining the standards relevant to the regulation of... rates? ... There appear to be two alternatives. Either the fixing of... rates must be left to the unguided discretion of the Commission so long as the rates it fixes do not reveal a glaringly bad prophecy of the ability of a regulated utility to continue its service in the future. Or, the Commission's rate orders must be founded on due consideration of all the elements of the public interest..." (*Hope*, 626). Frankfurter continues, "In order for this Court to discharge its duty of reviewing the Commission's order, the Commission should set forth with explicitness the criteria by which it is guided in determining that rates are 'just and reasonable'..." (*Hope*, 627-628).

In order to better understand some of the reasons for the difficulties encountered by regulatory Commissions and the courts in resolving rate controversies, the next section will provide a review of various practical aspects of the rate-making process.

III. REVIEW OF THE RATE MAKING PROCESS

A. *The Approach in General*

The process of determining the "just and reasonable" rates is difficult to discuss in the abstract. For this reason, Figure 1 and Table 1 were prepared to illustrate the principal areas of controversy. Figure 1 presents a simplified summary of the process used to reach the "allowed return to capital." The "allowed return to total capital" of \$81,000,000 shown as the final step in Figure 1, is reached by first determining a "just and reasonable" rate of return (9.0% in the example and then multiplying this rate by the approved "capital base" (\$900,000,000). To reach the "rate of return," the commissions usually follow the steps illustrated in the upper part of Figure 1. That is, the commissions determine the "just and reasonable" rates to debt and to the equity (7.0% and 12.0% respectively).¹ These rates are then multiplied by the appropriate proportions of debt and equity in the firm. Thus, the 9.0 per cent "rate of return to total capital" is a weighted average of the return to the debt holders and to the equity holders.

Table 1 presents a sample of calculation of the amount of "total revenue" to be generated from the allowed rates, using as the basis the values of Figure 1. One item to be noticed is that the allowed rates must provide not only the "return to the capital" but also be sufficient to cover the operating expenses of the business

1. Preferred stock and interest charged construction are ignored for purposes of this illustration.

TABLE 1

SAMPLE CALCULATIONS TO DETERMINE TOTAL COSTS TO SERVICE CAPITAL AND TOTAL
REQUIRED REVENUE

		%
Assume: Debt =	\$540,000,000	60%
Equity =	360,000,000	40%
Total Capital	<u>\$900,000,000</u>	<u>100%</u>
"Just and Reasonable" Return to Equity (12% × 360,000,000)		\$43,200,000
+ Income Taxes (50% of Profit Before Taxes)		<u>43,200,000</u>
Required Profit Before Taxes		\$86,400,000
+ Interest (7% × 540,000,000)		<u>37,800,000</u>
Required Profit Before Interest and Taxes		\$124,200,000
+ Operating Expenses (Assumed)		<u>350,000,000</u>
= Total Required Revenue		<u>\$474,200,000</u>

Memo:

Cost Rate to Service Capital and Taxes = (Required Profit Before
Interest and Taxes) ÷ Capital Base

or

Cost "Rate" = 124,200,000 / 900,000,000 = 13.8%.

(assumed at \$350,000,000 in the example) and income taxes (assumed at 50% of profits before taxes). Since income taxes are based on the profit before taxes but *after* interest expense, the amount of total revenue required to service capital cannot be determined merely from a knowledge of the allowed rate on total capital. The required amount of revenue will also depend on the proportions of debt and equity in the firm. In other words, knowledge of the 9.0% allowed rate of return on total capital (Figure 1) is not sufficient information to determine the total cost to the consumers of servicing capital.

Given our current tax laws, to provide a \$1 return to the debt holders (*i.e.*, interest), the commission need provide only \$1 of revenue. But, it takes approximately \$2 of revenue to provide a \$1 return to the equity holders because the firm must pay income taxes. In Table 1, in order to provide a return of \$43,200,000 to the equity holders, the commission must allow a profit before taxes of \$86,400,000. From the point of view of the consumer, the total cost to service capital *and* taxes is the "profit before interest and taxes" or \$124,200,000 in Table 1. The last item on Table 1 shows this total to be 13.8 per cent of the total capital.

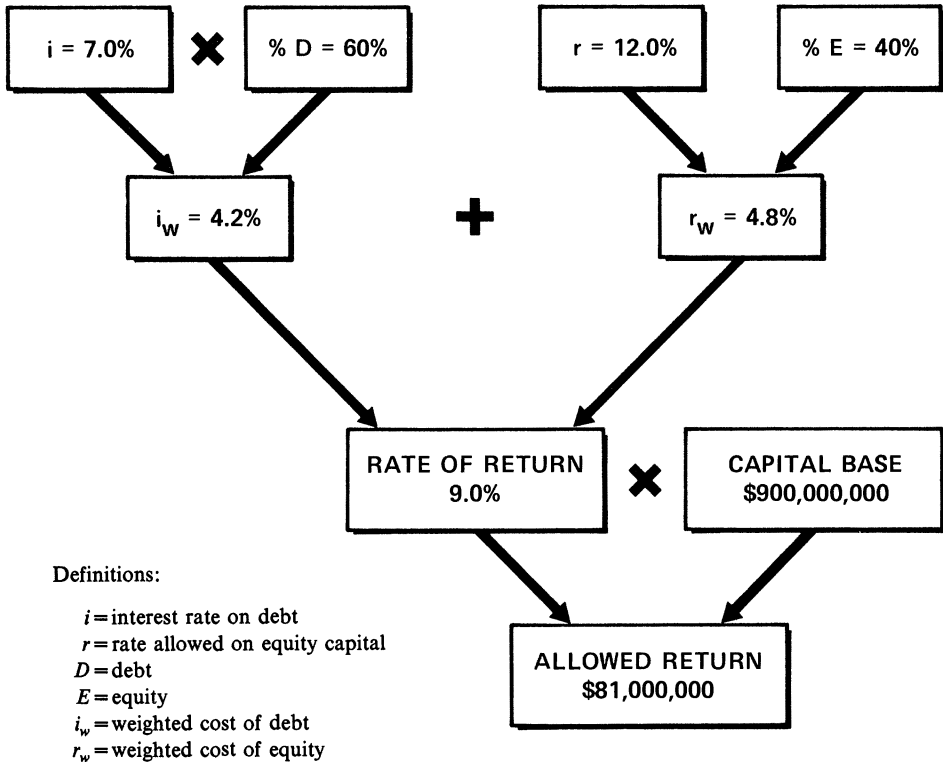


FIGURE 1. A Summary View of the Regulatory Process

B. Areas of Regulatory Controversy

Almost all items shown in Figure 1 and Table 1 are subjects of controversy in regulatory proceedings. A brief summary of the principal questions at issue is given below.

1. As a rule the rate of return on debt is the least controversial item. Still, the problems arise in resolving the questions of what the rate should be in a period where future interest rates can be expected to exceed the interest costs of the existing debt. In the last dozen years, there has been a steep rise in interest rates and this issue has become more significant in recent regulatory hearings.
2. The "just and reasonable" rate of return to the equity holders is a matter of major controversy. It is not at all unusual for various expert witnesses in a case to recommend widely differing rates in this regard.
3. The appropriate proportions of debt and equity are on occasion a matter at issue. An important reason is traceable to the fact that equity "costs" the consumer roughly twice as much as debt, because of the tax effect. If the commission accepts the company's capital proportions as reasonable, the problem does not arise. But, in some instances, the commissions do not accept such proportions and impute debt/equity proportions other than those actu-

ally used by the firm. As a rule, the imputed proportions assume a larger proportion of debt than the actual proportions.

4. The appropriate level of the "capital base" usually is a controversial subject. A number of questions arise in this regard, the most common of which are concerned with: (a) what should be included in or excluded from the base; (b) which "test" period should be considered; and (c) should the base be measured in terms of historical cost or "fair" value.
5. The level of "operating expenses" generally is subjected to some regulatory scrutiny. Certain expenses (*e.g.*, advertising) are sometimes excluded from allowed expenses. Other expenses may be reviewed for reasonableness.
6. Finally, the commissions, having determined an allowed level of total revenue, must also regulate the manner in which such revenue is to be raised. Specifically, the commission approves a schedule of rates for each type of service offered by the utility. By estimating the rate of service use, the commissions can estimate the total revenue to be generated from all services.

The range of problems mentioned above should convince even the most severe critic of the regulatory procedures that the commissions are faced with a complex task. To an important extent, the difficulties facing regulators arise because the law itself is subject to alternative interpretations in a number of important areas affecting rate-making. The next section will describe some important aspects of rate-making where ambiguities in interpreting the law exist.

C. Problems in Interpreting the Law

As we know, the law on rate-making is a subject of considerable controversy even among the justices of the Supreme Court. The areas of controversy are numerous, as evidenced by the large number of dissenting opinions on a wide variety of issues. Four key areas of judicial controversy will be examined below: (1) the Rate of Return and the Rate Base; (2) Investment Risk; (3) Comparison of Rates and Return; and (4) Return to the Equity Owner.

1. *The Rate of Return and the Rate Base.* As shown in Figure 1, the process of rate-making generally involves the determination of a "just and reasonable" rate of return *and* a "capital base" against which this rate is to be applied. The legal basis for this general approach can be traced to one of the earliest Supreme Court decisions in the regulatory area. In *Smyth v. Ames* (169 U.S. 467) the court stated: "What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience.... And, in order to ascertain that value,..., the amount and market value of its bonds and stock,...are to be given such weight as may be just and right in each case."

Some of the problems of determining the proper "base" have been discussed in one of the earlier sections. But, the problem is far more complicated than the question of what to include or exclude from the "rate base." The Supreme Court recognized this problem in the *Hope* case: "It does, however, indicate that 'fair value' is the end product of the process of rate making not the starting point.... The heart of the matter is that rates cannot be made to depend upon 'fair value' when the value of the going enterprise depends on earnings under whatever rates

may be anticipated." (*Hope*, 601). Having recognized the existence of circularity, however, the court does not suggest how this issue is to be resolved.

2. *Investment Risk.* A similar problem to the one just described is present in the case of "investment risk." As noted in an earlier section, the law states that allowed rates of return should be commensurate with those earned by enterprises "attended by corresponding risks and uncertainties." (*Bluefield*, 692).

The problem arises because, for a regulated company, the business (and, hence, investment) risk *depends* on the regulatory decision. To require that the rates be set after giving due consideration to "risk" is circular when such "risk" is determined to a large extent by the rate-making process.

3. *Comparison of Rates of Return.* The law requires that regulators allow rates "equal to that generally being made at the same time...on investments in other business undertakings..." (*Bluefield*, 692).

Clearly, the law implies a concurrent standard. But, regulatory hearings typically stretch over several months. Testimony upon which the rate decision is based may often be several months old by the time the decision is rendered by the commission. Moreover, any comparisons to other business enterprises are based on the past, while the rates, once set, apply to the future.

4. *Return to the Equity Owner.* The law is explicit in identifying "the equity owner" as the investor group which should receive a return "commensurate with returns in investments in other enterprises having corresponding risks." (*Hope*, 603). Yet, the application of this standard has a number of problems. How is "return to the equity owner" to be measured? Should it be on the basis of "book" value or "market" value? Over what time period should the comparison be made?

Before attempting to suggest answers to some of these questions, one needs to understand the meaning of a "just and reasonable" return to the equity holder. To this problem we now turn.

IV. THE "JUST AND REASONABLE" RATE OF RETURN TO THE EQUITY HOLDER

A. *The General Problem*

The equity holder, of course, is the residual owner of the firm. This factor is nowhere more clearly evident than in regulated public utilities. *Ceteris paribus*, an increase or decrease in allowed revenues "flows"; except for income taxes, directly through to the equity owner. In contrast, the debt rate is determined by market forces. In the absence of defaults, the debt holder receives neither more nor less than the "just and reasonable" rate. Any difference (positive or negative) between the allowed rate on debt and the actual rate on debt will be absorbed approximately equally by the government (in the form of higher or lower income taxes) and the equity holders.

It follows that the test of whether allowed rates of return to the capital providers are "just and reasonable" must be applied to the company's equity holders. It is precisely on this issue that the commissions and the courts have experienced the

greater difficulties. The main problem has been one of defining the standard against which to measure the “just and reasonable” criterion.

Before considering the question of an appropriate standard, it is essential to understand the two main approaches used in regulatory proceedings to arrive at “just and reasonable” rates of return to the equity holders: “comparable earnings” and “discounted cash flow.”

B. “Comparable Earnings” vs. “Discounted Cash Flow”

Of the two approaches mentioned above, the “comparable earnings” approach has been around as long as the regulatory process itself. The essential elements of this approach are as follows:

1. Analyze rates of return earned on the *book value* of the equity capital of various industry groups—both regulated and unregulated.
2. Establish comparability of “investment risk.”
3. Determine the “just and reasonable” rate based on (1) and (2) above.

Several significant problems are encountered in applying the “comparable earnings” approach.

First, comparison of rates of earnings with other regulated companies leads to circularity. If all regulatory commissions looked merely at each other, no deviations of any magnitude would ever occur even if economic conditions were to warrant a change.

Second, comparisons of rates of earnings on book value between regulated and non-regulated companies are easily challenged on at least two grounds: (1) Lack of comparability of investment risk; and (2) Differences in accounting practices between regulated and non-regulated companies often make rate of return comparisons meaningless.

To avoid some of the problems noted above, the “discounted cash flow” (or DCF) approach has been proposed as an alternative to the “comparable earnings” approach. This approach is relatively new—its use in regulation is limited to the past dozen years. The “discounted cash flow” name derives from the basic financial principle that investors value securities by “discounting” to the present the expected future “cash flows” attributable to the securities. The “cash flows” include dividends and the expected eventual liquidation market value of the shares; the “discount” rate is a market determined rate that takes into account current market conditions *and* the investment risk of the particular security. The rationale for the DCF approach rests on the argument that by estimating the current investors’ required rate of return, one takes into account the investment risk of the security. If the estimate is correct, no longer is it necessary to make extensive comparisons to establish “comparability of investment risk.”

While the method has considerable intuitive appeal, its actual application in regulation is far from simple. The principal difficulties surround the process by which one estimates the investor’s required (DCF) rate of return and how one applies the estimated rate of return to determine the “just and reasonable” rate of return on the *book value* of the company’s equity.

If a company's allowed rate of return on book value is set exactly equal to the investors' required rate of return then the company's market value per share will approximate its book value. But, regulation which is intended to force the market price to equal book value is inconsistent with the concept that equity securities of regulated companies should be treated as equity securities. Maintaining market value around book value is tantamount to converting an equity security to a perpetual, subordinated bond. Such regulation could be unfair both to equity holders *and* to consumers. For example, the regulation of rates in such a way as to force the market value of shares to equal book value could be unfair to the equity holders when equity securities of non-regulated companies are rising in market value. On the other hand, not permitting the market price to decline at a time when the market values of equities of non-regulated companies are declining could cause utility rates to consumers to be higher than otherwise would be the case.

V. AN ALTERNATIVE APPROACH TO THE REGULATION OF "JUST AND REASONABLE" RATES

Rather than comparable earnings or DCF, we suggest in this section an alternative approach to the regulatory process of determining "just and reasonable" rates. It is based on the following five principles: 1. The role of regulation is to act as a substitute for competition. While this principle may be considered self-evident, it needs to be specifically stated. So long as it is the national policy to be a capitalistic society and to permit privately owned utility companies, the return to capital suppliers should be consistent on a risk-adjusted return basis with all the returns available from non-regulated companies. In particular, regulation should not eliminate equity characteristics from the equity securities issued by regulated companies. It is the role as well as expectation of common stockholders to bear the "residual investment risk" of a company and to be rewarded or penalized accordingly.

2. The desired *end product* of regulation is to set rates so as to "balance the interests of consumers and investors." From the point of view of the consumers, "just and reasonable" rates imply minimum operating expenses and minimum costs to service capital consistent with a given quality of service. From the point of view of providers of capital, "just and reasonable" rates imply rates of return comparable to rates of return on alternative investments of similar risk in the non-regulated sector. The task faced by regulators, then, is to set rates that are "just and reasonable" from the viewpoint of both the consumer *and* the investor.

3. Investments in equity shares are made by the purchase of shares at market prices. Therefore, the fairness of the rate of return to the investor must be judged from the investor's point of view in the market place and not on the basis of book value. Table 2 was prepared to illustrate the large differences which are possible in market versus book rates of return. The table shows annual rates of return on the two bases for an actual electric utility company from 1962 to 1976 inclusive. We see that the annual rates of return based on book value have fluctuated very little, while the annual rates of return to the investor in the market have fluctuated quite

TABLE 2

ANNUAL RATES OF RETURN TO THE INVESTORS OF SIERRA
PACIFIC POWER COMPANY SHARES COMPARED TO RATES
OF RETURN ON AVERAGE BOOK EQUITY
(1962-1972 Inclusive)

Year	Annual Rate of Return to the Investor*	Rate of Return on Average Book Equity
1962	— .4%	11.3%
1963	34.7	13.1
1964	22.3	12.3
1965	— 2.8	12.1
1966	— 12.8	11.9
1967	— 3.8	12.2
1968	37.0	12.7
1969	— 22.4	11.6
1970	15.4	11.3
1971	— 1.7	11.9
1972	— 11.5	11.0
1973	— 25.9	11.5
1974	— 12.0	11.8
1975	0.6	8.8
1976	106.3	11.8

* Annual Rate of Return = (Change in Price + Dividend) / Closing Price at End of Preceding Year

wildly. This illustration shows that a stable rate of return on book value *does not* necessarily lead to stable rates of return to the investor in the market place.

It is clear that regulators should be concerned with the rates of return in a *market value* context. Since the market value of a regulated firm's shares depends to an important extent on the rates allowed, regulatory commissions must be concerned with the expected impact of their decisions on the market price of the firm's shares. The allowed rate of return on the book value of the equity holders' interest may be considered as *the means* by which the commission attains its desired end, but should not be an end in itself.

4. The degree of investment risk is not independent of the rate-making process itself. Moreover, since "investment risk" may be defined in a variety of ways, it is necessary to state explicitly what is meant by the term. This topic will be explored in more detail below.

5. The fairness of the rate of return to the equity holders can only be judged retrospectively. The determination of whether the allowed rates will lead to a rate of return to the investors that is too high, too low, or "just and reasonable" cannot be made *ex ante*. The judgment can only be made *ex post*.

Given these five principles, the essential feature of the proposed approach is to compare the rate of return to the equity holder of a regulated utility company with a clearly identifiable standard from the non-regulated financial sector. The standard proposed draws on the well known capital asset pricing model and requires

the specification of two financial variables: (1) The return on a riskless security; and (2) the return on a broadly diversified portfolio of equity securities of non-regulated companies. The investment risk factor for a given company is defined in terms of a specified beta. With these inputs we know that we are able to compute the required rate of return on equity for the company in question. As the approach is well known, it is unnecessary to illustrate its application. The idea, of course, is to determine a "just and reasonable" rate of return to the equity holder. That the approach has appeal is evident in the recent State of Oregon hearings where the Public Utility Commission has ruled that the capital asset pricing model be the primary means by which required rates of return on equity are determined.

VI. IMPLICATIONS FOR THE REGULATORY PROCESS

The capital asset pricing model approach has a number of implications for regulation, and this is the area where attention needs to be focused. It is important to recognize that the approach can only be extended to the aggregate rate-making problem if several conditions are met:

1. The company's operating expenses are judged to be reasonable;
2. The company's expansion policy is appropriate to the needs of the consumers;
3. The company's financial structure (*i.e.*, the proportions of debt, preferred stock, and equity) is appropriate;
4. The company's specific financing choices (*e.g.*, timing of debt or equity issues) are justified; and
5. The regulation of the company's rates of return was judged "just and reasonable" as of a previous point in time. This point in time would then serve as the starting point from which to judge the fairness of realized rates.

If these conditions are met, the regulatory approach proposed in the paper would provide the basis for resolving some of the current conflicts in rate-making. Needless to say, however, these conditions pose considerable problems. The application of the capital-asset pricing model approach in this context requires a dramatic change in the manner in which regulation is handled.

In its idealized form, the approach would operate along the following lines:

1. The company and the regulators would agree on the specific parameters along which to measure the "just and reasonable" rate of return to the equity holders. These parameters would be along the lines discussed in the preceding section.
2. The regulators would need to approve the major items of operating expenses, such as salaries, labor contracts, etc., and major capital commitments.
3. An agreement would need to be reached on the appropriate capital structure for the company.
4. Major financing decisions would be subject to regulatory approval.
5. A starting point in time and a "fair market value of the shares" at that time would be subject to agreement.

Once agreement is reached on the above points, such agreement would be considered binding. For example, if the regulators approved the company's expan-

sion policy and the manner in which the expansion were to be financed, the investors would then become entitled to receive a "just and reasonable" expected return on the funds committed for expansion purposes. But, as noted above, the proposed approach would work well *if and only if* the company and the regulators were to agree on all the various points mentioned above.

If implemented properly, however, the proposed approach would serve to partially resolve or even to eliminate a number of complex and controversial issues in rate-making. The list below illustrates some of the principal benefits.

1. The approach provides a standard against which to measure the fairness of the rates of return to the equity holders. The standard takes into account investment risk and avoids the problem of circularity by using the non-regulated sector as the basis for comparison.
2. The question of whether "flow-through" or "normalization" should be used for purposes of rate-making would no longer be relevant. Similarly, other accounting questions (such as over-capitalization, interest charged construction, etc.) would no longer be a matter of great concern.
3. It no longer would be necessary to worry as much about what to include in the "capital base" and what "rate" to allow on that base. The overall rates allowed would have to provide for: (a) all proper operating expenses; (b) interest on debt; (c) income taxes; and (d) "just and reasonable" rates of return to the equity holders in the market place.
4. Finally, the proposed approach should be simpler to administer than the current method of rate-making. Given the high cost of regulatory hearings, the savings could be significant.

While the capital-asset pricing model approach should eliminate some of the complex issues facing regulators, the approach brings with it some new problems.

1. The approach itself would need to be studied, understood, and probably revised so as to meet the practical needs of regulators.
2. What external standards should be selected for investment comparison purposes?
3. How often should rates be adjusted?
4. Is there a possible "chicken or egg" problem? That is, if the market *expects* the commission to act so as to bring the rate of return of a regulated company's shares to a particular target level, will the price adjustment affect the rate of return calculations?
5. How does the market react to regulatory action? In particular, how does the rate of return on a book value basis influence the market value of the company's shares?
6. How should the regulators deal with the "plant under construction?" That is, how does the commission provide a "just and reasonable" return on plant that is not yet in use?

The preceding sections discussed the extent to which the proposed approach to rate-making would eliminate some of the current problems facing regulators and

cause new ones. There exist, however, a set of problems that will continue to be with us whichever approach is used. Among these are:

1. How to compensate efficiency and penalize inefficiency. A well-managed, efficient company should be entitled to share to some extent the benefits resulting from an efficiently run operation. Similarly, an inefficient company should be forced to bear the costs of inefficiency. The mechanics of developing a system that would resolve this point in an equitable manner faces regulators today and will continue to face them under the proposed approach.
2. What is the economically justified manner of setting the rates to the various subscribers? Should rates be set so as to subsidize certain user groups?
3. How to resolve issues where the commission's staff and the company disagree on key points.

In addition to the problems listed above, other issues may exist or arise as time passes. These were not intentionally omitted. Rather the intent was to list those issues with which I am most familiar.

VII. CONCLUDING COMMENTS

Much of the time in regulatory hearings is spent in presenting testimony or examining witnesses in areas where no useful standard exists against which to judge the reasonableness of the testimony. The approach examined in this address, while introducing some new issues into the regulatory process, suggests ways of resolving some of the most complex current issues. In particular, the approach provides a standard against which to measure the fairness of the rates of return to the firm's equity holders which does not contain elements of circular reasoning.

It is important that the capital-asset pricing model approach be evaluated in relation to the legal environment in which utilities and regulators operate, and that was the purpose of the early part of this address. It seems to me that the approach has much to offer in establishing a "just and reasonable" return standard, around which much of the hearings and legal complications revolve. To the extent such standardization would reduce the cost of and lags in rate hearings, there would be a real gain to society. The approach should not be viewed as the "finished product," but rather as a prototype which needs improvements, but which is beginning to prove its usefulness.