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REQUESTED, RECOMMENDED AND ALLOWED RETURNS TO EQUITY: SERENDIPITY OR SUBSTANCE

R. Charles Moyer, Raymond E. Spudeck and David B. Cox

Introduction

In a series of landmark decisions, the United States Supreme Court has established the judicial standards which guide the determination of the fair rate of return on common equity capital which is appropriate for a regulated utility to earn as it discharges its public obligation to serve its customers. Notably, in the **Federal Power Commission v. Hope Natural Gas Company** (320 U.S. 591, 603 (1944)) and the **Bluefield Water Works and Improvement Company v. Public Service Commission of West Virginia** (262 U.S. 679, 692-3 (1923)), the court defined a fair rate of return in terms of (1) assuring confidence in the financial integrity of the enterprise, so as to maintain its credit, (2) achieving a level of return comparable to the levels earned by investors in other enterprises of corresponding risk and uncertainty, and (3) attracting capital on reasonable terms.

In reality, the fair rate of return concept has been viewed by many regulatory bodies as representing a zone of reasonableness - "bounded at one level by investor interest against confiscation and the need for averting any threat to the security for the capital embarked upon the enterprise. At the other level it is bounded by consumer interest against excessive and unreasonable charges for service" (**Pennsylvania Public Utility Commission v. Bell Telephone Company of Pennsylvania** (43 PUR 3d 241, 246 (Pa, 1962)).

Thus, within this judicial framework of a fair rate of return, we find that regulators have frequently sought to achieve a balance between the interests of the stockholders of the utility and the interests of consumers served by that utility. The objective of this paper is to examine the relative influence of the various parties represented in a typical rate proceeding (the company, the commission staff, and intervenors) in the final determination of an allowed rate of return in a particular case. We intend to provide some insight into how this balance is achieved.

The Process

In a typical rate proceeding, testimony is offered by the company, the regulatory staff, and one or more intervenors, regarding a fair rate of return on common equity for the applicant utility. Commonly, the company files its testimony on rate of return well in advance of the actual hearing (a lag of 6 to 9 months between the company's filing and the actual hearing is common, both at the state level and before the FERC). Staff and intervenors normally file their testimony about one month or less prior to the actual hearing. Because of the lag between the time the firm files its testimony and the time the case is actually heard, one might expect, *a priori*, that the company's testimony might have less impact on the final rate decision than that provided by the other parties in the hearing. The company sometimes updates its initial cost of equity capital testimony just prior to the hearing of the case, often in the context of rebuttal testimony it prepares.

With this information at hand, the regulatory commission establishes an allowed rate of return on common equity which is announced as part of its final order in the case. The allowed rate of return on common equity together with the embedded cost of debt and preferred stock, weighted in accordance with the proportions of each in the firm's approved capital structure, forms the overall rate of return which the firm is authorized to earn on its rate base assets.

The focus of this article is on the degree of influence each of the three major parties to a rate proceeding has in the determination of the final authorized rate of return on common equity.

The Model

Our model considers the authorized return on common equity (ROE) to be a function of (1) the utility's requested ROE, (2) the commission staff's recommended ROE, (3) the intervenor's recommended ROE (or the average of intervenors' recommended ROE's in cases where more than one intervenor supplies ROE testimony), and (4) the perceived "quality" of the regulatory environment as reported by **Value Line**. The model is written as:

$$ROE = \alpha + \beta_1 CO + \beta_2 ST + \beta_3 IN + \beta_4 REG1 + \beta_5 REG2 \quad [1]$$

where

- ROE = commission's final authorized return on common equity;
- CO = utility company's requested return on common equity;
- ST = commission staff's recommended return on common equity;
- REG1 = a control variable equal to 1 if the regulatory environment is considered average, and zero otherwise;
- REG2 = a control variable equal to 1 if the regulatory environment is considered above-average, and zero otherwise;

The excluded set for the regulatory quality variable is the below-average regulatory environment.

To estimate equation [1] using ordinary least squares regression techniques, data on fifty-five electric utility rate proceedings occurring from 1977 through 1983 were collected from **Public Utility Reports**. All cases with complete information were included in the sample. The quality of regulation measures were obtained from **Value Line**. The model was then estimated using ordinary least squares regression. In addition to the variables shown in equation [1], we also controlled for nuclear risk by including a zero-one "dummy" variable (variable equals 1 for nuclear involvement, zero otherwise) in order to account for a firm's nuclear generation or construction activity. Although it did not turn out to be statistically significant, the nuclear generation and construction variable is reported along with the other results in Table 1.

The R^2 (coefficient of determination) of the model is .8341, indicating that over 83 percent of the variation in the final authorized return on common equity is explained by the recommended and requested returns which are filed by the various parties to a case and by the quality of the regulatory environment.

A closer examination of Table 1 reveals several interesting insights. First, notice that the coefficient of the intervenor's recommended ROE is not statistically different from zero, indicating that, on average, intervenor's recommendations

TABLE 1

Regression Results of Equation [1]

(Dependent Variable = ROE (Return on Equity Authorized in the Commissions' Final Rate Order))

Independent Variable	Coefficient	t-Statistic
Intercept (constant term)	1.635	1.827*
CO (company ROE request)	0.342	4.071**
ST (staff ROE recommendation)	0.428	3.894**
IN (intervenor ROE recommendation)	0.082	0.659
REG1 (Average Regulatory Environment)	0.090	0.496
REG2 (Above-average Reg Environment)	0.509	1.822*
NUC (Nuclear reliant utility)	0.174	0.957

$$R^2 = 0.8341$$

$$F = 46.244$$

* Coefficient significant at 10% level

**Coefficient significant at 1% level

did not carry a significant weight in these rate proceedings. Compare the magnitude of the statistically significant coefficients of the utility company's and the staff's ROEs, 0.342 and 0.428 respectively. These coefficients suggest that although, on average, the staff's recommended ROE receives greater weight by the commission in its final order, the utility's requested ROE is also an important consideration. The greater weight placed on the staff's recommendation may reflect, in part, the fact that the staff will have filed its testimony in closer proximity to the actual rate proceeding, and therefore it may more accurately reflect capital market conditions at the time of the hearing. The model also suggests that, on average, neither the staff nor the utility firm's recommendations dominate the decision process.

Regarding the quality of regulation, the model indicates that commissions considered below average do not systematically grant lower ROEs than those commissions considered to be average (the coefficient of REG1 is not statistically different from zero). Those commissions considered above average, however, appear to systematically grant higher returns on equity than those considered below

average. The magnitude of the difference is approximately 51 basis points. Finally, notice that no preferential treatment is given to nuclear-reliant utilities above that contained in the requested and recommended ROEs presented in the hearing (the coefficient of the NUC variable is not statistically different from zero).

Forecasting with the Model

In addition to explaining the relative importance of the ROE recommendations made by the various parties to a rate proceeding, this model also has potential value as a forecasting tool to predict authorized returns on equity. The ability to forecast returns on equity prior to a final rate order would be of value to management in its internal budgeting process, and it might also be of value to investors.

A prediction of the final ROE can be found by substituting the known values into the model as reported in Table 1. For example, assume that a utility has filed for rate relief and in the process has asked for a 17 percent return on common equity. The commission staff analysis recommends 15 percent, and an intervenor has suggested 14 percent. The utility has no nuclear facilities, and the regulatory commission is considered to be of average quality. Using this information and substituting in the estimated model, a prediction of the authorized return on common equity ROE can be made as follows:

$$\begin{aligned} \text{ROE(est)} &= 1.635 + .342(17) + .428(15) + .082(14) \\ &\quad + .09(1) + .509(0) + .174(0) \\ &= 15.11\% \end{aligned}$$

Note that for prediction purposes, all variables in the model are used, regardless of whether or not they were statistically significant when the model was estimated. In general this procedure will result in more accurate forecasts.

Given the same information, the forecasted ROE in the case where a commission is considered to be of above-average quality is:

$$\begin{aligned} \text{ROE(est)} &= 1.635 + .342(17) + .428(15) + .082(14) \\ &\quad + .09(0) + .509(1) + .174(0) \\ &= 15.53\% \end{aligned}$$

The difference between the two forecasts represents the expected impact of the change in the regulatory environment from average to above-average.

Conclusions and Limitations

We have examined the determinants of the final allowed rate of return on common equity using a sample of 55 cases which were decided between 1977 and 1983. In general, we concluded that the commission staff recommendations carry the greatest weight in the final determination, followed by the company's recommendations. Thus it appears that commissions do attempt to achieve a "balance" between the interests of ratepayers and those of stockholders. Intervenor's recommendations regarding ROE were not statistically significant in explaining the final authorized ROE. Finally, we found that above-average regulatory commissions authorize returns approximately 51 basis points higher than those authorized by below-average commissions.

Although the model has potential use as a tool to forecast the final authorized ROE to a utility, it would be desirable to test this forecasting accuracy using an independent sample of rate cases from a different time period, and to compare the accuracy of this model to other "naive" forecasting models.

Finally, it is useful to remember that return on common equity is only one element in the final rate case decision. Our analysis has been done under the simplifying assumption that there were no systematic offsets to high or low allowed returns, such as disallowances from rate base, expense disallowances, the use of hypothetical capital structures, and the like. Each of these factors, and many more like them, can greatly influence the company's ability to actually earn the authorized return on common equity.

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