A Risk-Adjusted Approach for Assessing Factors that Determine Utilities' Allowed Returns on Equity

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Abstract. This paper demonstrates that, even after adjustment for risk, state utility commissions are sensitive to the return on equity requests of electric utilities. This supports the hypothesis that commissions and utilities implicitly compensate for other ratemaking factors, so as to arrive at a reasonable rate of return. Publicized differences in allowed returns have superficial informational content with regard to regulatory treatment. An implication is that commissions are more efficient in both the performance of their duties and in the allocation of resources than is usually assumed.

Key words. Regulation, returns, risk, utilities.

I. Introduction

It is well known among observers of utility regulation that many factors, besides market costs, have a bearing on a utility's allowed return on equity. One factor that has received some econometric scrutiny is the return on equity requested (Joskow, 1972; Roberts, Maddala, and Enholm, 1978; and Im, Kaserman, and Melese, 1988). The general conclusion reached is that firms receive a higher return if they ask for more, although the regulators' response is less than one-for-one. However, these studies do not consider the possibility that the driving force behind the apparent correlation between requested and allowed returns may be risk. In other words, firms that request higher returns do so because of greater market risk, and regulators, recognizing that greater risk, grant higher returns. In those cases regulators are responding to greater risks not to greater requested returns.

This spurious correlation may not be much of a problem if there is very little difference in risk amongst utilities. However, in recent years it has become evident, especially in the electric utility industry, that there are substantial differences in risk (Bowen, 1981; Chandrasekaran and Dukes, 1981; Fitzpatrick and Stitzel, 1978; Lerner and Breen, 1981; Morin, 1984). A major risk factor is the extent to which an electric utility is involved in the construction of a nuclear plant (Berry and Loudenslager, 1987). Some of those plants may have to be written off, with
obvious unsavory implications for stockholders, and corresponding implications for risk.

If, indeed, regulators’ allowed returns, adjusted for risk, are significantly correlated with utilities’ requested returns, adjusted for risk, this may indicate that both regulators and utilities are implicitly compensating for other ratemaking factors, so as to arrive at a reasonable and achievable allowed rate of return. For example, if a utility commission usually disallows ‘Expense X’ from rates for statutory or political reasons, then the utility may ask for, and the commission may be receptive to, a slightly higher rate of return. This implies that differences in allowed returns amongst utilities are not necessarily significant indicators of different overall regulatory treatment. It also may imply that regulation is more efficient in allocating resources, if regulators compensate (“lean against the wind”) for uneconomic political factors through the allowed rate of return.

This paper presents an econometric model for regulatory behavior that implicitly considers differences in risk in gauging the impact that requested returns have on allowed returns for electric utilities. The model also considers institutional, or ‘political’ factors that may have a bearing on regulators’ decisions. In Section II we present a simple empirical model where it is assumed that regulators and utilities adjust their granted and requested returns on a one-for-one basis with changes in risk. Section III modifies this somewhat with a model where those reactions may deviate from the one-for-one assumption. Section IV considers a bifurcated empirical model where we examine the question of differential regulatory behavior at greater adjusted requested returns.

II. The Simple Model

We hypothesized that an electric utility’s allowed return on equity is dependent upon five factors. The first factor, already discussed above, is the return on equity requested by the utility. It was posited that as the requested return increases, the allowed return increases. To the extent the regulatory commissions attach any weight to the recommendations/requests of the firm we would expect a positive relationship. That result has been borne out in other studies (mentioned above). One explanation for this is that, from both institutional and legal perspectives, regulators will respond to the testimony and evidence presented by utilities in support of their requested returns. A rationale for this responsiveness is that regulators and utilities adjust granted and requested returns to compensate for other ratemaking factors, which may differ from state to state (see Fitzpatrick et al. 1988, p. 301).1 These differential treatments by states may be due to statutes, politics, or may have simply arisen by common practice. To the extent a commission employs certain ratemaking practices on a general basis, practices which are considered detrimental to the utility from either a cash-flow or income perspec-