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Admissible Rate Bases, Fair Rates of Return, and the Structure of Regulation: Discussion

Author(s): Richard S. Bower

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DISCUSSION

RICHARD S. BOWER*: As a regulator I find the three papers stimulating and helpful. Each is reassuring because it supports some aspect of regulatory practice, rewarding because it suggests an opportunity to improve practice and less than totally satisfying because it does not provide all the answers.

Bruce Greenwald's paper on admissible rate bases may be too rich to digest at a single sitting. Greenwald starts conventionally by stating that the Hope decision criteria for fairness to investors and capital attraction are met by any rate base valuation formula which permits market value to equal rate base and which causes rate base to increase dollar for dollar with new investment. He then argues, less conventionally, that to be admissible a formula must allow regulators to establish cash revenue requirements and rate base appreciation through time and

* Dartmouth College and Commissioner, New York State Public Service Commission.

across states of nature which maximize rate payer welfare by distributing risk properly, avoiding input inefficiencies and minimizing deadweight losses. His arguments are reassuring. They indicate that embedded cost rate bases are admissible. They support efforts to allocate revenue requirements among periods using CWIP, AFUDC and various types of deferrals. And they justify such specific policies as rejection of financing devices aimed at filling holes in incomplete markets, pushing revenue requirements into later, more elastic periods when price must be set below marginal cost, and using forecast test years to avoid a downward rate base bias that would distort investment and operating choices.

His arguments are also rewarding. Current regulation forces investors to bear the risk of management error and, during the period of regulatory lag between cases, to bear state of nature risks such as a cool summer or an unanticipated increase in labor costs. Greenwald's analysis suggests that the state of nature risks to be borne by investors should not be limited to those left to them by lag. They should include the risk of changes in plant value; risk such as the loss in value of an oil plant or gain in value of a coal plant that accompanies a drastic OPEC oil price increase. This risk, currently passed to rate payers, would fall on investors if rate base was written down or up to reflect the state of nature at the time of a rate case decision. Investors, as Greenwald implies, could act on it in ways that rate payers cannot. Better capital budgeting decisions would result. This is a rewarding idea. I think it is the right idea but it is less than totally satisfying because the method of implementation has not yet been described.

In his paper, Roger Clarke finds that shareholders in utilities given fuel adjustment clause coverage during the years 1970-74 experienced a reduction in systematic risk. He also finds that shareholders received no excess return. The result is reassuring. A policy intended to reduce shareholder risk apparently accomplished its purpose. In addition, the regulators involved recognized the risk change and adjusted allowed return as well. Finally, the rate payers who assumed the risk of fuel cost changes, received some compensation in the form of the lower revenue requirements that were associated with lower allowed return. There is also some rewarding insight in the findings for the question of whether or for which companies the fuel adjustment clause should be continued. Although Clarke found that the clause reduced systematic risk, as represented by beta, .06 in the 5 years 1970-74, he also found that its affect on beta was only .005 and not significantly different from zero for the 10 years 1965-74. This suggests that shareholder risk may have gone up for utilities that received clause coverage in the 1965-69 period. This finding, although surprising, could be explained by stable fuel prices during these years and by the clause's transfer from shareholders to ratepayers of the advantage of greater use of fuel efficient generating plants in the low output months of a recession. To me this means that companies for which fuel input prices can be forecast reasonably well and output fluctuations can not, may be good candidates for clause discontinuation. In spite of the reassurance and the reward Clarke's work is not completely satisfying. The reason for this is simply that it does not show when a shift of risk between shareholders and ratepayers is worthwhile. Is there some situation in which both groups may gain from the shift? Is the fuel adjustment clause being applied to such a situation? Or

is any shift of risk away from the investors who can act on it a threat to efficient resource decisions as Greenwald seems to argue?

Litzenberger, Ramaswamy and Sosin provide a paper that should be useful to all rate case participants. They review theory and evidence on the capital asset pricing model, support its use in determining allowed return, and argue that it can provide downward biased estimates. The downward bias comes from failure to provide upward correction to betas below one and from assuming that a stock with a beta of zero has a required return equal to the treasury bill rate. It is reassuring for a regulator to hear that risk can be measured by beta and that there is a return/risk relationship that can give some substance to the idea of "comparables" in a regulatory proceeding. It is rewarding to find a guide to further study, a basis for deciding that utility dividend decreases may not be all bad and a method for estimating both beta and the capital market line that could put an upper bond on allowed return. But it is less than totally satisfying to consider that the relationship between capital asset pricing model and discounted cash flow estimates of allowed return is still obscure and that the allowed return being sought has not really been defined as either a long or short term rate.

Difficult as it is to imagine, regulation is responsive to advances in understanding of economics and finance. It should be, because papers such as the three given in this session provide practical guidance for regulatory action.

DISCUSSION

WILLIAM MARSHALL*: Roger Clarke's empirical study focuses directly on the aspect of these diverse papers that I find most interesting: the endogeneity of the risk bore by a firm's investors and the role of market institutions in determining the allocation of risk. Clarke notes that the use of a fuel adjustment clause has equity implications if the risks bore by investors are altered. There are implications for efficiency as well, on both the input and output sides. *Ceterus paribus*, prices that accurately reflect costs in a timely fashion, will promote efficiency in the use of a utility's product. But the shift in risk that accompanies the change in a pricing rule may induce a change in behavior beyond that attributable solely to the change in expected prices. The less risk tolerant is the consumer, the more his behavior will be altered, simply by the knowledge that he bears the risk of uncertain energy costs. Likewise, utilities may vary the technology they employ in the production process, depending on the portion of the uncertainty about factor prices that they bear. It seems plausible, and is potentially a testable proposition, that utilities located in jurisdictions that do not employ fuel adjustment clauses will utilize technologies that rely on input factors with less volatile supplies, and that integration vertically to gain control over inputs will be more extensive among these firms. Warranties, incentive contracts, and tenure systems are free market responses to the often conflicting goals of providing incentives for efficient resource use and obtaining efficiency in risk bearing. The complexity

* Washington University, St. Louis.