



American Finance Association

Impact of Regulation on Economic Behavior: Discussion

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Source: *The Journal of Finance*, Vol. 36, No. 2, Papers and Proceedings of the Thirty Ninth Annual Meeting American Finance Association, Denver, September 5-7, 1980 (May, 1981), pp. 397-399

Published by: Blackwell Publishing for the American Finance Association

Stable URL: <http://www.jstor.org/stable/2327023>

Accessed: 27/11/2009 08:25

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REFERENCES

1. Friend, I., Blume, M. and Crockett, J., *Mutual Funds and Other Institutional Investors: A New Perspective*, New York, McGraw-Hill 1970.
2. Securities and Exchange Commission, *The Institutional Investor Study Report* 92nd Congress, 1st Session, House Document 92-64 (1971).
3. Wharton School of Finance and Commerce, University of Pennsylvania, *Study of Mutual Funds*, Government Printing Office, Washington, D.C., 1962.

DISCUSSION

R. S. BOWER*: A regulated firm facing a return constraint is not like other firms. For a regulated firm the net operating income stream that maximizes market value is not only dependent on demand, production, input price and security market relationships but also on the decisions of a regulatory agency. Because the decisions recognize financial structure effects on net operating income requirements a regulated firm finds that neither the level nor the risk of net operating income is independent of its financial structure. Firm and regulatory agency actions reflect this link between net operating income and financial structure and Robert Taggart's paper analyzes these actions.

The analysis is helpful. It distinguishes the direct effect of financial structure from the indirect, price influence, effect. It shows that the price influence effect depends on how the regulatory agency varies its decision on utility prices with changes in financial structure, how prices influence net operating income and how net operating income affects market value. It indicates the conditions under which the price influence effect is likely to cause the financial structure of the regulated firm to vary most from the structure that would exist without regulation. And it illustrates how a firm would respond to various regulatory agency decision functions and how an agency might react. But there is a problem in this analysis. The model being analyzed may not be a good abstraction of the regulatory process.

The process that is analyzed is one in which the firm chooses initial capital stock and financial structure and the agency sets prices in each period to provide a fair return. The simplifying assumptions are that capital stock and financial structure do not change through time, that the agency may revise prices but not its price-effect analysis from period to period and that the only risk is in the quantity demanded, which is unknown at the time price is set.

I think there is a better description of the process. The firm files revisions in its price schedule from time to time at its own initiative or at the insistence of the regulatory agency. The time between filings will vary with demand, production, input price and other conditions. A filing is the occasion for a full review of all aspects of the firm's operation and structure. The review is conducted in an adversary proceeding in which the firm must bear the burden of proving that its capital stock, financial structure, required return and operating cost justify the

* New York State Public Service Commission and Amos Tuck School of Business Administration, Dartmouth College.

revenue that its price schedule is purported to raise. The firm also must support in this proceeding the design of its price schedule and the demand function linking quantity demanded to the schedule. The proceeding ends with the revised price schedule or some other schedule ordered into effect by the regulatory agency. From the time the new schedule is put into effect until the time of the next revision, the period of regulatory lag, the firm, with some conditions and decisions excepted, suffers the losses and gets the gains of variations of actual from forecast conditions. Even more important, management is free to take actions that increase the gains and reduce the losses.

The regulated firm in this process can be taken as a market value maximizing entity. Its customers could be described in a similar way. So can the regulatory agency. The agency objective is to maximize the weighted sum of consumer and producer surplus through time and the weight accorded producer surplus, not all of which remains within the jurisdiction, will be small if it is a state regulatory agency.¹ The regulatory agency, like the firm it regulates, will consider the response function of the utility and its customers in setting its rules. It will recognize the legal and market constraint of a fair return, that is, a return consistent with market price for equity approximating book, and it will try to set rules and take actions that pass everything beyond this constraint to ratepayers.

The actions of the parties as well as the particulars of the process will change in response to changes in production relationships, demand conditions, input price patterns and other factors in the environment that have a place in the maximizing decisions of either the firm or the agency.

Picturing the process in this way may help in discussing the financial structures of regulated firms and in evaluating the tax effect and allowed return issues that concerned Gordon, Elton and Gruber, Sherman, Meyer and others. Essentially, what Gordon says is that the regulatory agency will pick up all the value advantages associated with debt tax shelters with a rule that keeps the sum of interest payments and net income the same regardless of structure. Elton and Gruber respond that Gordon could be right but that he would be right only if there is constant risk in the combined interest/net income variance. If this constant risk is in net operating income then the regulatory agency rule Gordon uses would let the firm pick up some of the value of the shelter for its owners and the agency would fail to capture all benefits for ratepayers. Given Gordon's rule and conditions the firm is indifferent to financial structure. Given Gordon's rule but constant risk in net operating income the firm has a proper, if not an excessive, preference for debt.

But think of this issue in terms of the process I've described. If the lag between regulatory actions is long, as it was in the 1960s, then the firm picks up the shelter values, however discounted, that occur during the lag period. Because of this, it has reason to establish an optimum structure even if the shelters that follow the lag are fully captured for ratepayers by the regulatory agency. Whatever the lag,

¹ The description is self serving but I don't suggest it, to justify my regulator's role. I suggest it because I think it provides a better beginning for a model that will explain observed behavior than one that ignores agency objectives and moves directly to the problems that are created because commissioners, like other managers, have personal objectives that conflict with the objectives of the organization they serve.

the regulatory agency is unlikely to adhere to a policy that fails to fully capture the post-lag shelter values for ratepayers. This is so because staff and intervenors will be out to get these values for ratepayers in the proceeding and because the allowed return on total capital that supports the agency's revenue and price actions is built up from an empirically supported cost of equity capital. The empiricism may be sloppy but it will tend to pick up the return on equity the market requires given the firm's capital structure. If that rate is less than a Gordon type rule would imply then the agency will, in effect, follow a different rule.

Should the firm propose less debt in its structure for the forecast rate year in a proceeding, the Sherman/Meyer problem, the agency might be deluded into using the historic, empirically estimated cost of equity capital and so give the firm a windfall and a reason for including too much equity in its capital structure. But this is unlikely. Intervenors have experts and even experts can quote Modigliani and Miller. In addition, if the agency errs in the forecast rate year then the lower return requirement will be a matter of history for the next proceeding. The firm's benefit, even from this error, will be limited to the period of regulatory lag and, of course, the agency will learn and even that lag will disappear if changes in structure are proposed in subsequent proceedings.

The case of a utility adding excessive debt in order to force a regulatory agency, fearful of financial distress, to give excessive revenue awards in difficult times may seem to be a different type of problem. I don't think it is. This is a case where, because of regulatory response, the risk of the net operating income stream is reduced to match the greater leverage in the structure. If the agency does act to reduce risk it will again capture all but the lag period advantages with lower return allowances in later years. The result of this deliberate introduction of a coverage constraint could be a signalling advantage to both the firm and ratepayers. Whether it is or not will be tested in the proceedings that follow rather quickly upon each other under conditions that make coverage a matter of concern.

This discussion is not intended to suggest that regulation works perfectly to produce optimal financial structure and to pass all benefits of structure along to ratepayers. The imperfections of the system are much too obvious. My aim is, first, to point out that the models of the regulatory process used by students of finance are much too unsophisticated to pick up the relationships among financial structure, revenue requirements and income stream risk that exist and, second, to indicate that even a slightly more sophisticated model will suggest that regulation is unlikely either to divert firms from optimal financial structure on a continuing basis or to keep the advantages of optimal structure away from the ratepayers.