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Regulation and Corporate Investment Policy: Discussion

Author(s): S. C. Myers

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In passing, one should note that the exogeneity of the systematic risks that Diamond and Verrecchia assume may be true only as an approximation on an economy-wide level, for the factor-sensitivity of firms' cash flows presumably would not be invariant to the compensation schedules that managers face.

Given the intuitive plausibility of their results regarding managerial compensation and changes in a firm's market value, it is puzzling why such forms of managerial compensation as stock options take the form of a fixed dollar exercise price, instead of an exercise price tied to, say, an index of the stock prices of other firms in an industry. Perhaps the reason is that option contracts are revised by the granting of new options as things change—the idea behind the long-term implicit contracting school. Yet, these long-term implicit contracts are at best crude approximations to the first-best solutions we might hope to see.

DISCUSSION

S. C. MYERS*: The financial side of public utility economics began to get interesting in the late 1960's when financial economists gave economic content to the legal concept of fair return. They did so by defining fair return as the opportunity cost of capital, the equilibrium expected rate of return offered in capital markets by comparable risk securities.

Brennan and Schwartz call this definition the "modern consensus." It is a near-consensus in rate of return testimony, although apparently not among regulators. Regulators often don't allow utilities to earn their true cost of capital, and investors don't expect them to. We know that because many utilities' stock prices are consistently below rate base value per share.

Nevertheless the definition is the cornerstone of the normative theory of rate of return regulation. Therefore, Brennan and Schwartz are right to ask, "How can you treat the cost of capital as exogenous, when risk depends on the method of regulation and the firm's response to it?"

Most rate of return analysts would take the point but downplay its practical importance. There's an implicit belief that, although regulation does affect risk and the cost of capital, the effect is stable. That is, regulatory policy and the firm's responses to it do not change rapidly enough to upset estimates or applications of the cost of capital.

Maybe risk is stable because allowed rates of return are sticky. Regulators do not seem to respond to obvious changes in the current nominal cost of capital, as reflected in nominal interest rates. Certainly they don't respond as fast as the normative theory instructs them to. Perhaps endogeneity of risk and the cost of capital is not a problem for the rate of return analyst because everybody knows the regulators won't take the analyst's advice.

The theoretical weakness of the consensus definition of fair return can thus be dodged more or less gracefully. Brennan and Schwartz, however, confront the issue and solve it in a simple but consistent economic model. The model allows us to ask better questions about how regulated firms behave and how regulators should behave.

* Sloan School of Management, M.I.T.

I think the paper's most important point is the following one. Suppose regulators set x^* (the instantaneous rate of allowed earnings on the rate base) such that market value equals rate base when their decision is announced. Brennan and Schwartz call this a consistent policy. Then x^* is *not* equal to the instantaneous cost of capital or any sensible average of future costs of capital. Since the earnings rate x wanders randomly between hearings, the firm can invest more when earnings go up, less when they go down. This is a valuable option. Therefore x^* is less than the cost of capital, other things equal.

This is the story stressed by Brennan and Schwartz. However, there are other reasons why x^* should differ from the cost of capital. For example, if x wanders with a downward drift, then x^* has to be larger than in the no-drift case.

Also, regulatory intervention is probably asymmetrical. When costs are declining, regulators may allow excess earnings so long as prices charged consumers are cut from time to time. In other contexts, regulators may be more effective in setting ceilings than floors for profitability or market value. Some regulated firms' values would fall short of their rate bases even if rate of return regulation were abolished.

The distinction between fair return and the cost of capital is not in itself original, but it hasn't had much impact on regulatory theory or practice. The Brennan-Schwartz paper, and the work it will stimulate, could have an important impact. Therefore, it's an important paper.

The natural next step is a much more extensive numerical analysis—a sensitivity analysis to show what factors or situations are likely to give the greatest spread between the fair return x^* and the cost of capital. This will be a lot of number crunching, but worth it.

Brennan and Schwartz's model could also be applied to unregulated firms. For example, suppose we interpret x as the current operating earnings of an unregulated firm. The firm has some market power, but is vulnerable to entry. If x goes up, the probability of entry increases. When entry occurs, the earnings rate reverts to x^* .¹ This firm's investment policy, risk and value ought to behave as the regulated firm's do in the Brennan-Schwartz paper.²

¹ The probability of entry could be set at zero for $x < x^*$. If not, "entry" when $x < x^*$ would have to be interpreted as exit of other firms in the industry.

² Brennan and Schwartz's equations would not fit unregulated firms perfectly. For example, if the firm has some market power, then its current operating earnings should depend on the investment rate. In principle, the regulated firm's investment rate and current earnings should be linked also.

DISCUSSION

R. A. TAGGART, JR*: Just as his classic 1958 paper with Franco Modigliani did, Merton Miller's "Debt and Taxes" has stimulated a large volume of new research. A spate of papers has followed in its wake, examining the key assumptions, generalizing the basic results and integrating Miller's model with such other aspects of finance as the theory of portfolio selection.

Han Kim's paper is best viewed, I think, as a survey of this new research on

*J. L. Kellogg Graduate School of Management, Northwestern University.