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VALUING a Business



FOURTH EDITION

▶ **The Analysis and Appraisal
of Closely Held Companies**

Shannon P. Pratt • Robert F. Reilly • Robert P. Schweih

- Characteristics of Closely Held Preferred Stocks. *Dividend Rate. Liquidation Preference. Cumulative versus Noncumulative Dividends. Redeemable versus Nonredeemable. Put Option. Voting versus Nonvoting. Participating versus Nonparticipating. Convertible versus Nonconvertible. Method of Valuation. Assessing Dividend and Liquidation Payment Risk. Comparison with Publicly Traded Preferred Stocks. Capitalizing the Income Stream. Marketability Aspects of Closely Held Preferred Stock. Revenue Ruling 83-120. Summary. Bibliography.*
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Exhibit 25-1

Influence of Management Actions on the Value of an Investment

Black-Scholes Variables	Management Actions
Time to expiration	Extend the option's duration. Maintain the regulatory barriers. Signal ability to exercise. Innovate to hold technology lead.
Risk-free interest rate	Monitor the impact of changes in the risk-free interest rate.
Exercise price	Reduce present value of fixed costs. Leverage economies of scale. Leverage economies of scope. Leverage economies of learning.
Stock price	Increase present value of expected cash flows. Develop marketing strategies. Develop alliances with low cost suppliers.
Uncertainty of stock price movements	Increase uncertainty of expected cash flows. Extend opportunity to related markets. Encourage complementary products, product innovations, product bundling.
Dividends	Reduce value lost by waiting to exercise. Create implementation hurdles for competition. Lock up key resources.

decisions for long-term investments in intangible assets like research and development or even tangible assets like plant capacity.

For the valuation analyst, ROV theory includes elements of investment value because, to a great extent, it is based upon the opportunity that the holder of the option has to influence the value of the option after acquiring it. ROV theory may provide some insight into the traditional interpretation of levels of value and the definitions of investment value, fair market value, and fair value.

ROV theory has at least three implications for financial advisers:

1. Guideline transactions that are used to derive value indications may be the result of ROV theory and may include elements of investment value, not just fair market value.
2. When identifying acquisition or divestiture opportunities, consider simultaneous, multistage investments where the buyer can influence the value at some later point in time. This perspective might help the buyer compete at higher bid prices.
3. Pricing and structuring transactions may benefit from consideration of option variables by giving the participants proprietary rights, escalating financial obligations with expiration dates.

ROV includes a noteworthy departure from net present value theory. This is the power of real options: ROV encourages uncertainty and risk. ROV changes the way opportunities are valued by—and influenced by—management. It changes the way value is created.

Summary

Derivative securities permit their holders to alter return distributions to satisfy particular investment objectives. Derivative securities come in all sizes and types. The derivatives addressed in this article are those issued by the company on whose stock the option constitutes a call, usually as part of an employee incentive stock option or in conjunction with raising capital for the company.

The most famous stock option valuation formula is Black-Scholes. It incorporates all of the components of stock options: the current price of the underlying stock, the strike price, the time to expiration, the volatility of the stock price, the risk-free interest rate, and the dividends expected during the life of the option.

Real option valuation theory applies financial option pricing theory more broadly than just for valuing options. It is possible for management to view and price investment opportunities more dynamically. Management can, after consideration of subsequent information, change the course of an investment or even abandon a project after it has been launched. Managers take action on existing investments as if those investments were options. In this way, real option valuation theory relies on the investment value standard and uses financial option theory to make capital expenditure and other investment decisions.

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