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A Guide To Corporate Valuation *Gaining Credibility And Avoiding Pitfalls*

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One of the most frequently debated yet least understood issues in business law is the value of a firm. Among the many situations in which valuation is a critical element are those involving buy-sell agreements, purchase and sale of privately held companies, partnership disputes, divorce and estate settlements, pre-IPO valuations, fraudulent conveyance in buyouts, bankruptcy/solvency issues and numerous others.

A wide range of methodologies has been applied in estimating a firm's value. These approaches range from the accounting-based book value methodology to the more rigorous discounted cash flow (DCF) analysis. Each of the

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valuation methods requires careful attention to the assumptions and details involved in each specific case. When it comes to valuation, any short cut taken is likely to lead to a distortion in the firm's estimated value.

Several of the commonly used techniques to value a company expose the user to significant potential criticism, while others that are based on a stronger foundation, provide greater robustness and flexibility. The strengths and pitfalls of the most commonly used valuation techniques are described below.

Book Value

In applying this method, the total value of the assets is estimated by summing the total value on the company's books. If the objective is to determine the value of the firm's equity, those using the book value approach would then subtract the firm's liabilities as stated on the books from the total book value of the company's assets. While the strength of the approach is its simplicity, its weakness derives from the lack of a relationship of the assets' book value to their fair market value. For example, a company's buildings are stated on its books at their historical cost less depre-

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ciation. However, consider the case of New England, where real estate values nearly tripled in the decade of the '80s and then plummeted by 20 to 30 percent in the early '90s. Such wild fluctuations in market values are nowhere on the company's books. Similarly, unexpected changes in the nature of the industry can cause severe distortions in the estimated value of a firm's equipment. Consider an investment in telex equipment that became nearly obsolete soon after the introduction of fax technology. Nevertheless, for a certain time period, telex machines were carried at a positive value on companies' books. One of the balance sheet items most susceptible to criticism is the book value of inventory. Except for commodity-like products, the market value of work-in-process often deviates dramatically from its reported book value. Similarly, both finished goods and raw materials inventory may vary significantly from their book value as a result of changing market conditions. In addition, similar disparities are often observed on the liability side of the balance sheet. For example, in an environment of unanticipated increasing interest rates, long-term debt such as bonds is stated on the books at a value much higher than its value in the marketplace. Given the potential disparity between the value of both assets and liabilities recorded on a company's books and their corresponding market values, anyone who adopts the pure book value must be prepared to defend a likely attack on the fundamentals of this methodology.

Adjusted Book Value

The adjusted book value of a company's assets is determined by beginning with the company's stated book value of assets and liabilities and adjusting it for differences between the historical cost and the estimated market value.

For certain assets such as plant, equipment and inventory, the estimated market value is frequently obtained by either estimating the replacement cost or determining the appraised value of the specific assets. Appraisers have typically adopted three frameworks for valuing an asset — namely cost, income and market value. The cost framework simply considers the cost of the asset; the income valuation approach considers the future income expected to be generated by the asset, and the market approach considers the value in the marketplace of assets that have comparable features. Yet both the replacement cost approach and the appraised value approach have pitfalls. While the replacement of an asset might be costly, it is an insufficient indication of the value of the benefits of the asset. For example, although the replacement of a machine may be expensive, it is possible that the demand for the product produced by the machine declined, resulting in a diminished market value of the equipment. Using the appraised value to adjust the firm's

book value, one still faces the dilemma of selecting one of the three frameworks generally considered by appraisers. In a recent case in which we were retained, one of the tangible assets was appraised under one appraisal method at \$80 million while \$65 million was obtained under another method. For the company in question, the difference in value placed on these specific assets corresponded to the difference between being solvent and insolvent.

In using the adjusted book value approach, careful attention must be given to off balance sheet items that impact the firm's fair market value. For example, even though operating leases are reported only in the footnotes to financial statements, they should be considered liabilities for purposes of determining a firm's net worth. Those that apply the adjusted book value methodology frequently fall prey to its most common pitfall — an inappropriate adjustment of the firm's historical book value.

Earnings Multiple Valuation

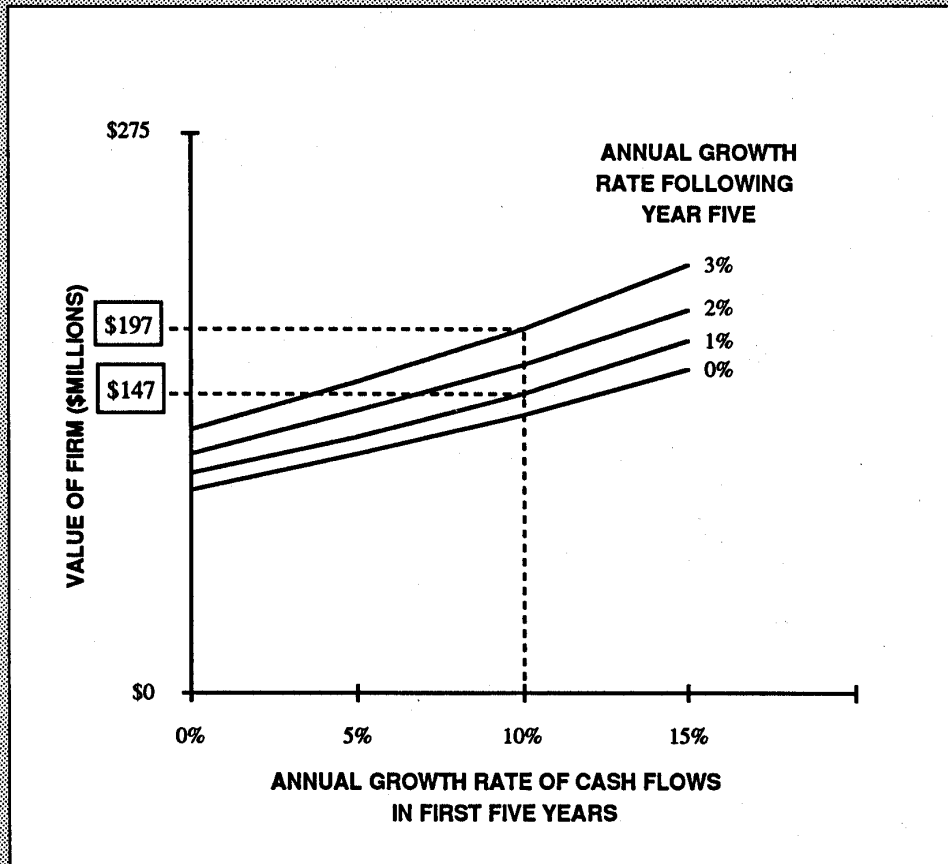
Applying this method involves the multiplication of a firm's current earnings by a factor commonly referred to as the earnings multiplier. Those using this approach suggest that the multiplier is the relevant number to translate the firm's current earnings to an estimate of the firm's value. The primary potential pitfall is an inappropriate selection of the earnings multiplier. Ideally, in selecting this multiple, one would like to rely on similar firms in the same industry. However, what constitutes a "similar" set of firms is the focus of disagreement that surrounds this approach. Another difficulty is the choice of the appropriate accounting figure to be used as the basis for determining the firm's value. Commonly used multiples are based on net earnings; earnings before interest and taxes (EBIT); earnings before interest, depreciation and taxes (EBIDT), and various accounting-based cash flow measures. One of the most critical elements in using the earnings multiple approach is the reconciliation of the various estimates of a firm's value generated by using different bases. Though the strength of this method is its simplicity, inability to substantiate a firm's value using these different bases is often the primary source of exposure associated with the earnings multiplier methodology.

Discounted Cash Flow (DCF)

The focus of this approach is to discount a firm's projected cash flows using the firm's cost of capital. One of the major pitfalls stems from the use of incorrect cash flows. If the objective is to obtain an estimate of the total value of the firm's assets, the appropriate cash flow is that generated prior to the deduction of financing costs. A typical mistake in applying the DCF approach is to first deduct interest expense and then discount the resulting cash flows, thus double counting the cost of funds. The cash flows should also reflect the impact of projected changes in working capital and planned capital expenditures. A second pitfall is the selection of an incorrect discount rate. The relevant

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expense and then discount the resulting cash flows, thus double counting the cost of funds. The cash flows should also reflect the impact of projected changes in working capital and planned capital expenditures. A second pitfall is the selection of an incorrect discount rate. The relevant discount rate is the weighted average cost of capital. Given that the value of a firm is based on after-tax cash flows, the relevant discount rate should be based on the after-tax cost of capital. One of the common mistakes of those applying this methodology is to double count for risk. They pessimistically downward adjust the cash flows and simultaneously increase the discount rate. Any risk specific to the company should be incorporated in deriving the

estimated cash flows, while any risk associated with industry or general market characteristics should be accounted for in the cost of capital.

Another issue often debated is the length of the investment horizon. Typically, the projections are detailed for five to seven years, with the length dependent on the quality of the firm's projections. Following this period, one approach is to assume a steady state growth rate, while another is to assume the sale of the firm's assets. Inevitably, a significant portion of the firm's estimated value is attributed to the present value of the cash flows following

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the first five to seven year period. Not only does a significant proportion of value result from the cash flows following the initial horizon, but the proportion is dependent on the estimate of the firm's long-term growth rate. For example, in a recent valuation assignment for a transportation company, an initial 20 percent growth rate was assumed for the first five years. When this growth rate was combined with a conservative 1 percent growth rate following year five, the firm's assets were valued at \$10.3 million. However, at a 2 percent long-term growth rate, the value substantially increases to \$11.8 million. If this transportation company can double its steady-state growth rate from 1 to 2 percent, its value indeed increases by \$1.5 million.

To better understand the nature of this sensitivity, consider a firm whose first year's cash flow — \$10 million — is expected to grow at an annual rate of 10 percent for five years, followed by a conservative 1 percent per year thereafter. As illustrated by the graph, if the firm's cost of capital is 10 percent, its total value, as determined by the present value of the future cash flows, is \$147 million.

However, if an assumption of a 3 percent long-term growth rate can be substantiated, the revised estimate of

the firm's value is \$197 million. Thus, a "what if" analysis incorporating a 2 percent increase in the cash flow growth rate results in a 34 percent increase in the firm's estimated value. This sensitivity to the assumed growth rate is often perceived as a major pitfall of the DCF approach. However, it is simply a true representation of the value of creating growth.

No doubt the DCF methodology is one of the most sophisticated valuation tools. However, its sophistication requires careful implementation. Without substantiation of the key assumptions, advocates of this methodology expose themselves to potential criticism.

Summary

Certain strengths and weaknesses are associated with each of the valuation methodologies discussed. Across the spectrum of techniques is the tradeoff between simplicity and sophistication. While the appeal of some of the approaches is their simplicity, this feature is often associated with increased exposure. The appeal of other approaches is their sophistication. However, they often require a more comprehensive framework and skillful presentation. Delivering a credible valuation framework requires the art of balancing the benefits of simplicity with the rigor of sophistication.

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