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Business Valuation Issues in the Litigation Process—

Developing Discount Rates and Capitalization Rates to Determine the Value of a Closely-Held Business

Development of appropriate discount rates and capitalization rates to determine value of the small closely-held business, in the process of litigation, can be a tricky business. This article focuses on the development and application of discount rates and capitalization rates to determine the value of a business. Specifically, this article analyzes the “Build-up Method” utilizing Ibbotson data to develop either a discount rate or a capitalization rate and the application of such rate to an appropriate income stream to develop a premise of value.

There are several widely accepted methods for developing both discount and capitalization rates for use in the valuation of a closely-held company. These include the Capital Asset Pricing Model (CAPM), the Build-up Method, and the Arbitrage Pricing Model, amongst others. However, several of these methods are more applicable to determining value of very large privately-held businesses. The build-up method provides empirical data for a significant portion of the discount or capitalization rate being developed and is more appropriate for smaller closely-held businesses. For purposes of this article, any business with an estimated market value of less than ten million dollars is considered a small closely-held business. However, much of the discussion in this article is applicable to

larger businesses, as well.

Defining Discount Rates and Capitalization Rates

Discount rates and capitalization rates are two distinctly different concepts. The American Society of Appraisers defines a discount rate as a rate of return used to convert a monetary sum, payable or receivable in the future, into a present value. In his new book, *Cost of Capital*, Shannon Pratt tells us “By a discount rate, the financial community means an annually compounded rate by which each increment of expected economic income is discounted back to its present value.” Therefore, the discount rate can be applied to an expected future economic benefit stream to determine the present value of a particular business. Any growth anticipated in the discounted income formula is represented in the expected future economic benefit stream. It should be noted a discount rate is comprised of two elements, the time value of money and the risk associated with a particular investment (or business).

The *International Glossary of Business Valuation Terms*, as approved by the 5 major business valuation organizations, defines capitalization rate as any divisor (usually expressed as a percentage) used to convert anticipated benefits into value.

The American Society of Appraisers defines a capitalization rate as any

divisor (usually expressed as a percentage) used to convert income into value. The capitalization method, for which a capitalization rate is used, is a process applied to an amount representing some measure of economic income for a single period to convert economic income into the present value of a particular business. The capitalization method involves dividing the economic income for a single period by the capitalization rate to derive an estimate of business value. This is basically an inverted price to earnings ratio calculation. If growth is expected from the economic income being capitalized then the expected growth is reflected in the capitalization rate. This differs from the discounted future earnings method where growth is reflected in the future income projection (not in the discount rate). As a result, a discount rate can be converted to a capitalization rate by subtracting long-term sustainable growth from the discount rate (capitalization rate = discount rate minus long-term sustainable growth).

The Discounted Future Earnings Method and the Capitalized Earnings Method

Discounting generally involves the completion of estimated normalized cash flow projections. The discount rate is then applied to those expected cash flow projections to discount those amounts back to a present value. In this manner

an estimate of business value is obtained. The discounting process can also be applied to other measures of projected future economic income, such as projected net income or projected net income before interest and taxes (EBIT). However, the discounting process generally involves projected net cash flows. The capitalization method involves developing a single period of normalized economic income based on recent historical data. The single period of economic income used may be based on historical net income, historical cash flows or some other measures of historical economic benefit. The single period of economic income may be based on the most recent year-end financial activity or an average of the past several years of financial activity. A weighted average of the past five years

financial activity is quite commonly used. This is probably derived from the language in Revenue Ruling 59-60. A five year average may or may not make sense depending on the facts and circumstances of a particular case. What is important is the historical data used to derive a single period of economic income, in the capitalization process, be realistically representative of the probable future economic activity of the business. Otherwise, the capitalization process is an exercise in futility.

When using either the discounted earnings method or the capitalization method any one of several economic income measures can be utilized. The business appraiser must be careful to apply the selected discount rate or

capitalization rate to an appropriate earnings stream.

One of the most common types of error in application of the income approach to valuation is the use of a discount rate or capitalization rate not appropriate for the definition of economic income being discounted or capitalized. The potential for errors in this area are numerous. For instance, an inexperienced business appraiser may use a discount rate as a capitalization rate, or vice versa. The business appraiser may erroneously apply an after-tax discount rate to a pre-tax income stream. The results achieved in either situation would be quite flawed.

Attorneys involved in business valuation litigation should make certain their business valuation expert understands the development and application of discount and capitalization rates. They should carefully review (or retain a competent business appraiser to review) the business valuation report of the opposing party for any significant errors or inconsistencies. Such errors quickly undermine the credibility of a business valuation report. An example of just how skewed the results of such errors can be is shown in *Table I*.

Build-up Method Utilizing Ibbotson Data

The build-up method utilizing Ibbotson data is commonly applied by business valuers. The method's name has been coined by the valuation industry. The strongest benefit of the build-up method is much of the data applied is based on empirical evidence. Ibbotson data is the usual source of that data. The build-up method is actually a variation of the Capital Asset Pricing Model. As part of the variation, the build-up method introduces a company specific risk premium adjustment. This adjustment



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Table I: Example of Skew

Assume a 24% after-tax capitalization rate, developed utilizing Ibbotson data, and a 40% tax rate. (A capitalization rate developed utilizing Ibbotson data is appropriately applied to after-tax cash flow.*)

Pre-tax cash flow	\$ 275,000
Tax rate 40%	(110,000)
After-tax cash flow	\$ 165,000

Converting an after-tax capitalization rate (ATR) to a pre-tax capitalization rate (PTR).

$$PTR = \frac{ATR}{1-TR} \quad PTR = \frac{24\%}{(1-40\%)} \quad = \quad \frac{24\%}{.60} \quad = \quad 40\%$$

Proof:	Pre-tax <u>cash-flow</u>	After-tax <u>cash-flow</u>
Cash-flow	\$275,000	\$165,000
Capitalization rate	<u>.40</u>	<u>.24</u>
Indicated value	\$687,500	\$687,500

The error:

The erroneous application of an after-tax capitalization rate to pre-tax cash flows provides the following result:

Cash-flow	\$ 275,000
Capitalization rate	<u>.24</u>
Indicated value	\$1,145,800

In this hypothetical example the incorrect application of an after-tax capitalization rate to pre-tax cash flows results in an overstatement of indicated value by approximately \$458,000. (Is it any wonder different business appraisers often arrive at such disparate conclusion)?

*(Stocks, Bonds, Bills and Inflation 1998 Yearbook, Ibbotson Associates)

Table II: Example of the Build-up Method

Risk-free rate (December 14, 1998)	5.3%
Equity risk premium*	7.8%
Size premium*	6.2%
Company – specific risk premium	8.8%
Discount Rate	28.1%
Long-term growth	-5.0%
Capitalization rate	23.1%
Capitalization rate applicable to current year's cash-flow (d/l+g)	22.0%

*(Stocks, Bonds, Bills and Inflation 1998 Yearbook, Ibbotson Associates)

(Note: these rates are applicable to after-tax net cash flows, SBBI 1998 yearbook, pg. 155, reprint by permission.)

(see Table II), while quite subjective, allows the business valuator to adjust for specific risk inherent to the subject company being considered. This allowance for adjustment makes the build-up method more applicable to smaller closely-held businesses.

Components of the Build-up Method

Risk-Free Rate - The "risk-free" rate generally used is that rate available on instruments considered to have virtually no possibility of default, such as U.S. Treasury obligations. Ibbotson Associates uses a 20 year treasury bond to measure the income return in computing the long-horizon risk premium. This is an interesting fact, because the Treasury currently does not issue a 20 year bond. A 30 year bond would be theoretically more correct. The reason Ibbotson utilizes the 20 year treasury composite is that prior years information, dating back to 1926, was compiled using the 20 year bond rate. To be consistent with the Ibbotson data the business appraiser should use the current published rate of treasury bonds with a 20 year maturity.

Equity Risk Premium - This rate adjustment represents the premise investors expect some additional rate of return to induce them to invest in non-Treasury bonds, in equities, or in similar securities to compensate for the additional risk associated with such investment. A common source for this information is the *SBBI Yearbook* by Ibbotson Associates. It is important that information from the most current yearbook be utilized.

Size Premium - This rate adjustment includes an addition to the discount rate to reflect research showing additional returns to stocks of companies smaller than the S&P 500. Ibbotson data indicates the overall size of companies decreases the risk associated with investing in such companies increases. The *SBBI 1998 Yearbook*, table 7-6, indicates the micro-cap stocks (ninth and tenth deciles)

actual return in excess of the riskless rate to be 13.97%. Subtracting from this the long-horizon equity risk premium of 7.8% implies a size premium of approximately 6.2%.

Company - Specific Risk Premium - The information relied upon to develop a discount rate up to this point has been based on objective empirical data. The company-specific risk premium is a matter of the business appraiser's professional judgement. Several factors should be considered in determining this risk adjustment. Quantitative factors of the subject company estimate financial risk and liquidity risk. Quantitative factors to be considered include size analysis, growth analysis, financial leverage analysis, profitability analysis, turnover analysis and liquidity analysis. Qualitative factors seek to measure general business risk. Qualitative factors to be considered include strength and depth of management, customer and supplier base, market share and position, quality of business workplace, quality of the workforce, industry competition, proprietary processes, and other factors. The information relied upon to develop the company-specific risk premium should be presented in the business valuation report.

Conclusion

The preceding discussion analyzes the process of developing a discount rate or a capitalization rate using the build-up method with Ibbotson data. As can be readily determined there is a significant amount of subjectivity in developing such rates. The equity cost of capital estimation is far from a precise science. We should avoid a tendency toward spurious accuracy. However, there are correct ways and there are incorrect ways to develop and apply discount and capitalization rates. The business valuator should employ an acceptable method to estimate these rates and develop that method correctly. It is difficult enough to defend a business

appraiser's professional judgement, in the litigation process, without introducing technical errors.

The business valuator should provide a comprehensive business valuation report that is supportable, defensible, and adheres to applicable association standards. One should also be very familiar with Revenue Ruling 59-60. Attorneys involved in business valuation litigation should consider choosing a business appraiser certified or accredited, in business valuation, by one or more of the following organizations: The National Association of Certified Valuation Analysts, The American Society of Appraisers, The Institute of Business Appraisers, or the American Institute of Certified Public Accountants. Otherwise as the saying goes "you pay your money and you take your chances." ❖

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