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Application of Discount Rates in the Valuation of Closely Held Companies
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DISCOUNT RATES ARE AN INFLUENTIAL AND IMPORTANT VARIABLE WHEN PERFORMING A VALUATION. IN THIS ARTICLE, WE DISCUSS THE IMPACTS OF DISCOUNT RATES ON A VALUATION OF A CLOSELY HELD COMPANY AND THE IMPACT ON THE THREE VALUATION APPROACHES (ASSET, MARKET, AND INCOME). WE ALSO DETAIL THE DEVELOPMENT OF DISCOUNT RATES THROUGH THE USE OF COST OF EQUITY AND WEIGHTED AVERAGE COST OF CAPITAL MODELS AND WHEN IT IS APPROPRIATE TO USE ONE OVER THE OTHER.

Introduction

In business valuation, determining the appropriate discount rate is a foundational step in estimating the present value of future cash flows. The discount rate serves as a proxy for the opportunity cost of capital, capturing the return that investors would expect for taking on the risk of investing in a particular business rather than in alternative investments of similar risk. An accurate discount rate not only ensures the reliability of a valuation model but also directly impacts strategic decisions such as mergers and acquisitions, capital budgeting, and financial reporting.

Two of the most widely used discount rates in valuation are the Cost of Equity ("COE") and the Weighted Average Cost of Capital ("WACC"). Both models determine expected rates of return demanded by capital providers, but they differ in scope and application. The COE reflects the return required solely by equity holders for bearing the residual risk of ownership, and is typically applied when valuing equity directly, such as in dividend discount models or free cash flow to equity ("FCFE") models. In contrast, the WACC captures the blended return expected by both debt and equity holders, weighted according to the firm's selected capital structure. It is appropriate for valuing the overall enterprise, especially when using free cash flow to invested capital ("FCFIC") models.

This article discusses the impacts of discount rates on a valuation of a closely held company (i.e., a business that is privately owned and not publicly traded) and, specifically, the impact of discount rates on the three valuation approaches (asset, market, and income). We will also detail the development of discount rates using the COE and the WACC models and when it is appropriate to use one over the other.

Impact of Discount Rates on Valuation

Income Approach

The income approach, specifically the Discounted Cash Flow ("DCF") and Capitalized Cash Flow ("CCF") methods, are the valuation methodologies most directly affected by the discount rate. The DCF method of the income approach involves projecting the future cash flows a business is expected to generate and then discounting those cash flows back to their present value using an appropriate risk-adjusted discount rate.

The concept is that money received in the future is worth less than money today. The difference in value of money received in the future relative to money today becomes more pronounced as the discount rate increases. Therefore, when a higher discount rate is applied, the present value of the future cash flows decreases, leading to a lower overall value under the income approach, all else being equal. Conversely, a lower discount rate increases the present value of the projected cash flows, resulting in a higher valuation under the income approach, all else being equal.

The CCF method is a simplified form of the income approach and is most appropriate for companies with stable, predictable cash flows and a relatively low risk of a change in operations. Instead of projecting future cash flows over multiple years and discounting each year separately (as in the DCF method), the CCF method involves identifying a single representative level of normalized cash flow and applying a capitalization rate to it. This capitalization rate is calculated as the discount rate minus a long-term growth rate, and it represents the rate at which future cash flows are assumed to continue into perpetuity.

The discount rate in the CCF method is fundamental, as it directly influences the capitalization rate, and thus the value. For example, if a company has normalized FCFE/FCFIC of $1 million, a discount rate of 12.0 percent, and an assumed long-term growth rate of 2.0 percent, the capitalization rate

would be 10.0 percent (i.e., 12.0 percent – 2.0 percent). The business equity value would then be calculated by dividing $1 million by 10.0 percent equaling $10 million (less interest bearing debt if using FCFIC). However, if the discount rate increases to 14.0 percent due to changes in the perceived business risk or market conditions, the capitalization rate becomes 12.0 percent, reducing the equity value to $8.33 million ($1.0 million divided by 12.0 percent). This example illustrates how even modest changes in the discount rate can significantly impact the business value, particularly because the CCF method assumes cash flow continues into perpetuity.

Market Approach

In contrast to the income approach, the market approach does not directly incorporate a discount rate in its mechanics, but the market approach is still indirectly influenced by it. This approach values a business by comparing it to guideline companies, either publicly traded peers or those involved in transactions, and applying market-derived multiples to comparable financial metrics. While a discount rate is not formally part of the computation, its presence is factored into the market multiples themselves. For instance, in an environment with low interest rates and a favorable risk climate, investors are willing to accept lower returns (i.e., lower discount rates), leading to higher valuation multiples across the market. Conversely, in periods of rising rates or increased economic uncertainty, discount rates (or required returns) rise, which puts downward pressure on market multiples and, in turn, valuations. Additionally, one must compare certain metrics of the equity discount rate and adjust for them appropriately when applying GPC multiples.

Asset Approach

The asset approach, by contrast, is less directly affected by the discount rate. This method assesses a company's value based on the net value of its assets, often adjusting them to reflect fair market value rather than book value. This approach is commonly used to value holding companies or operating companies that are asset-intensive or facing liquidation.

In the asset approach, the business is valued based on the fair market value of its underlying assets minus its liabilities. Unlike the income approach, which directly discounts projected future cash flows, the asset approach focuses on determining what the company owns and owes as of the valuation date. However, the discount rate still plays an important, albeit an indirect role, particularly when valuing certain types of assets whose worth depends on future economic benefits.

The discount rate is critical when valuing income-producing or intangible assets under the asset approach. While tangible assets like equipment or inventory may be appraised based on more current values, intangible assets such as patents, contract backlog, customer relationships, or internally developed technology often require estimating future cash flows attributable to those assets. Those projected cash flows are discounted to present value using an appropriate discount rate that reflects the risk associated with realizing those benefits. A higher discount rate reduces the present value of these assets, lowering the overall business valuation under the asset approach.

Although the asset approach is often viewed as more static and balance-sheet-focused than income-based methods, it is not immune to broader financial market conditions. Market-derived discount rates incorporate factors such as cost of capital, inflation expectations, and risk premiums. As these factors change, they influence how future benefits embedded in certain assets are measured. Thus, even in an asset-based valuation, the discount rate indirectly shapes the company's estimated net asset value by affecting how future-oriented components of asset values are calculated.

One method, although rarely used, within the asset approach that illustrates the role of discount rates is the *Capitalized Excess Earnings Method* (or "CEEM"). The CEEM values intangible assets by capitalizing the residual earnings remaining after a reasonable return is allocated to net tangible and contributory assets, using a rate that reflects the risk of realizing those future benefits. As with other future-oriented assets, the selected capitalization rate directly affects the present value of these excess earnings: higher rates reduce value, while lower rates increase it. In this way, the CEEM operates as an income-based approach applied to specific assets, within the asset approach.[1]

Cost of Equity

The COE model is appropriate when a valuation of a company is performed using the FCFE basis. If the valuation is being performed on a FCFIC basis, this COE can then be combined with the cost of debt ("COD") to compute the company's WACC. The WACC will be discussed in greater detail later in this article.

FCFE is the amount of cash generated by a company that is available to be distributed to its equity

[1] This is a non-exhaustive description of how discount rates affect an asset approach analysis. For example, if valuing certain assets using a cost approach methodology, the valuation analyst may be required to measure external obsolescence related to such assets. In particular, the valuation analyst may measure the economic component of external obsolescence (i.e., economic obsolescence) in which the actual rate of return for the Company is often compared to the required rate of return for the Company. This comparison directly relies on estimated discount rates to indicate the required rate of return.

shareholders after accounting for all expenses, reinvestment needs, and debt-related cash flows. In other words, FCFE represents the cash that remains after the company has met all its operating expenses, taxes, working capital needs, capital expenditures, and debt obligations, including interest and principal repayments.

The COE, therefore, aligns with the level of risk borne solely by shareholders and is commonly used in scenarios in which the firm has little to no debt, such as early-stage startups, companies with rapidly changing capital structures, or companies operating in an industry with low capital requirements.

In this article, two common models used to determine the COE will be described, the Modified Capital Asset Pricing Model ("MCAPM") and the Build-Up Model ("BUM").

Modified Capital Asset Pricing Model (MCAPM)

One of the most widely used models for determining the appropriate equity discount rate for a closely-held company is the MCAPM model. The original "CAPM" model is commonly used to estimate the COE for publicly traded or larger companies.

The CAPM formula is:

Where:

- = Cost of equity (expected return on equity)
- = Risk-free rate
- = Beta coefficient of the company or asset
- = Expected market return
- = Market risk premium (MRP)

Risk Free Rate

The risk-free rate represents the return on an investment with no risk and is typically represented by the yield on a 20-year U.S. Treasury Bond as of the valuation date.

For example, the yield of a 20-year U.S. Treasury Bond on June 30, 2025, was 4.79 percent. As a result, the risk-free rate for a valuation as of June 30, 2025 would be 4.79 percent. If a rate was not available as of June 30, 2025, a valuator would use the most recent yield prior to June 30, 2025.

The 20-year U.S. Treasury Bond yield is widely used as the risk-free rate for valuing privately held companies because it aligns with the long-term nature of equity investments and provides a more stable, "normalized" benchmark than shorter-term alternatives. The 20-year U.S. Treasury Bond is preferred for its ability to match the typical investment horizon of a private firm.

Beta

Beta measures the sensitivity of the company's returns to movements in the overall market:

- $\beta = 1 \rightarrow$ company moves directly in line with the market
- $\beta > 1 \rightarrow$ company is more volatile (riskier) than the market
- $\beta < 1 \rightarrow$ company is less volatile (less risky) than the market

An estimation of a company's beta can be determined by identifying comparable publicly traded peers in the same industry. There are multiple databases that can be used by valuators, such as Kroll's Cost of Capital Navigator or Tagnifi, which can help determine a company's beta.

Market Risk Premium (MRP)

The MRP represents the additional return that investors expect to earn by investing in the overall stock market instead of a risk-free asset. Firms such as Kroll, KPMG, and PwC publish annual studies that summarize survey results and often provide recommended MRPs for use in specific markets considering opinions of financial professionals (such as investment managers, corporate financial analysts, and academia). These studies capture the current market sentiment and expectations rather than relying solely on historical averages from sources like Ibbotson Stocks, Bonds, Bills, and Inflation ("SBBI") Yearbook (now part of the Kroll Cost of Capital Navigator) which tracks the average excess return of large-cap U.S. stocks over Treasury bonds. It is particularly useful during periods when market conditions or interest rates have shifted significantly from historical norms.

Modified Capital Asset Pricing Model Conclusion

Using the CAPM formula and the inputs described above, the discount rate under the CAPM model is able to be determined. For example, a company with a risk-free rate of 4.79 percent, beta of 1.25, and market risk premium of 6.26 percent would produce a discount rate/cost of equity of 12.62 percent.

Additionally, the discount rate calculated through this process may be adjusted to reflect specific

factors that CAPM does not directly capture (i.e., in the MCAPM). Analysts often add a size premium ("SP") to account for the historically higher returns required by investors in smaller companies, and a company-specific risk premium ("CSRP") to reflect operational or strategic risks unique to the business. For valuations in high-risk regions or industries, a country risk adjustment may also be necessary. The SP and CSRP will be discussed further in the section on the BUM.

Build-Up Model (BUM)

While the CAPM model is commonly used to estimate the COE for publicly traded or larger companies, the BUM, much like the MCAPM previously discussed, is particularly useful for estimating the COE for privately held companies, small businesses, or firms for which there is insufficient market data to estimate a beta.

The BUM begins with the fundamental assumption that an investor's required return is composed of several layers, or "build-ups," of risk. Each layer represents an additional source of return that investors demand to compensate for specific types of uncertainty inherent in the investment.

The general formula for the BUM can be expressed as:

Where:

- : Required rate of return (cost of equity)
- : Risk-free rate
- : Market risk premium
- : Size premium
- : Industry risk premium
- : Company-specific risk premium

As discussed in the MCAPM model section, the 20-year U.S. Treasury Bond yield is used as a proxy for the risk-free rate in the BUM.

Market Risk Premium (MRP)

The MRP (also known as the "equity risk premium" or "ERP") represents the additional return investors expect from investing in a diversified portfolio of equities instead of risk-free securities. The MRP was

discussed previously in this article.

Size Premium (SP)

The SP is added to capture the additional return that investors require for investing in smaller companies. Empirical research has shown that smaller firms, on average, generate higher returns than larger companies because smaller companies are generally considered riskier. Smaller firms typically have less diversified product lines, fewer financing options, lower market visibility, and greater vulnerability to economic downturns.

The SP is derived from market studies, most notably the Kroll Valuation Handbook, which publishes historical returns segmented by company size deciles based on market capitalization. The premium increases as firm size decreases. For instance, large-cap firms may have a negligible (or even negative) SP, while small or micro-cap companies might warrant an additional 3.0 percent to 6.0 percent return.

A common criticism of the SP is that it (a) includes risk related to other factors and/or (b) has largely disappeared over time. While a full discussion of these criticisms is beyond the scope of this article, it is important to note that the application of a SP (for the above reasons) may be disputed between valuation professionals.

Industry Risk Premium (IRP)

The IRP is included to reflect risks that are specific to the company's sector or line of business. Some industries are more volatile, cyclical, or exposed to regulatory uncertainty than others. For instance, technology startups, commodity-based businesses, and construction firms tend to face higher industry risks compared to utility companies or consumer staples, which often have more stable earnings.

Industry risk premiums are generally obtained from valuation data sources such as the Kroll Risk Premium Report or Ibbotson Associates, which provide estimates of excess returns required for specific industries relative to the overall market. Incorporating this component ensures that the discount rate captures the business cycle sensitivity and structural risks unique to the industry.

Another area of some valuation professional disagreement (similar to the SP issues noted above)

concerns the potential for double counting risk when applying an industry risk premium. Critics may assert that industry-related risk may already be reflected in the SP or CSRP. Other practitioners maintain that much like how the MCAPM incorporates industry risk through beta, the BUM must incorporate industry risk through the IRP. And, that either beta or the IRP are separate and distinct risk components from all others, including SP and CSRP.

Company-Specific Risk Premium (CSRP)

The CSRP is added to account for unique factors affecting the particular business being valued. Unlike the previous components, which are based on empirical market data, the CSRP is more subjective and requires professional judgment. It compensates investors for risks that are not captured by broader market or industry averages. Common factors that influence the CSRP include the company's financial stability, customer and supplier concentration, depth and quality of management, dependence on key individuals, lack of operating history, limited geographic diversification, and exposure to legal and regulatory issues.

For example, a small closely held company heavily reliant on one major customer may warrant an additional risk premium of 2.0 percent to 10.0 percent to reflect this concentration risk. It should be noted that analysts typically justify the magnitude of the CSRP qualitatively in their valuation report, providing a rationale for each element of CSRP.

Build-Up Model Conclusion

Once each component is estimated, the discount rate is determined by adding together all the risk elements. For instance, assume the risk-free rate is 4.79 percent, the MRP is 6.26 percent, the SP is 4.47 percent, the IRP is 1.50 percent, and CSRP is 3.00 percent. The sum of all risk elements represents a discount rate/COE of 20.02 percent.

Weighted Average Cost of Capital

The WACC represents the overall required rate of return on a company's invested capital, reflecting both the Company's equity and debt financing sources. The WACC is appropriate for valuations in which FCFIC is discounted.

FCFIC represents the cash flows generated by a company's operations that are available to all

sources of financing—that is, both debt and equity investors—prior to payments of interest to debt holders or distributions to shareholders. Because FCFIC measures the cash available to both debt and equity holders, the discount rate must represent the combined opportunity cost of capital from both groups. This is precisely what the WACC captures; it blends the required return on equity with the after-tax cost of debt, weighted by their proportions in the selected capital structure for the company.

The WACC represents the average rate of return required by all investors in the company, taking into account their respective contributions to total financing. The WACC is calculated as follows:

- : Cost of Equity - the return required by equity holders, reflecting the firm's business risk.
- : Cost of Debt - the after-tax return required by debt holders, incorporating the tax benefit of interest deductibility.
- and : The proportions of equity and debt in the firm's capital structure.
- : Debt + Equity.

The formula above does not include preferred equity. For purposes of this article preferred equity is outside the scope of our conversation. In the event a company has preferred equity, it would also be considered within the WACC, and the cost of preferred equity would need to be determined.

The determination of the COE for the WACC is the same as discussed previously. So, we will only be exploring in detail the calculation of the after-tax return required by debt holders.

Cost of Debt (COD)

The effective rate a company pays on its debt (loans, bonds, credit facilities) reflects the return required by lenders. Since, in most instances, interest is tax-deductible, the after-tax cost of debt is used in the WACC formula.

The COD takes into consideration the company's credit quality, capital structure, and prevailing market interest rates. The COD is typically derived from the yield to maturity on existing debt or the rate at which the firm could borrow under current conditions.

Because interest expenses are tax-deductible, the after-tax cost of debt is used in the WACC formula

to reflect the true cost to the company. The after-tax cost of debt is calculated as , where is the applicable income tax rate. For instance, if a company borrows at an 8.0 percent interest rate and faces a 25 percent tax rate, its after-tax cost of debt would be 6.0 percent (8.0 percent × (1 – 0.25)).

The applicable income tax rate typically represents the combined federal and state corporate tax rate applicable to a C-Corporation. When valuing pass-through entities such as Limited Liability Companies ("LLCs"), S-Corporations, or Partnerships, valuation analysts will typically apply the C-Corporation tax rates to their earnings, even though these entities are not directly subject to these tax rates. The primary rationale behind this is that the cost of capital data, market approach data, and other industry data often used by valuation analysts is sourced from public C-Corporations who pay such income taxes. To ensure that the valuation is performed on an "apples-to-apples" basis, tax-affecting pass-through entity income at C-Corporation tax rates ensures that the valuation is internally consistent.[2]

Another rationale for using applicable C-Corporation tax rates is that in many instances, the standard of value applied in business valuations (e.g., fair market value, etc.) considers hypothetical willing buyers and hypothetical willing sellers. Often, hypothetical buyers of closely-held companies are publicly traded companies (i.e., often C-Corporations). By using C-Corporation tax rates, the valuator can ensure that their analysis is consistent with the selected standard of value.

Weighted Average Cost of Capital Conclusion

After determining the COE, COD, tax rate, and capital structure, the WACC is calculated using these inputs.

To illustrate the calculation, assume a given company has a COE of 20.0 percent, a pre-tax COD of 8.0 percent, a corporate tax rate of 25.0 percent, and a capital structure with an equity weight of 60.0 percent, and a debt weight of 40.0 percent. The after-tax COD is calculated as 8.0 percent × (1 – 0.25) = 6 percent. Substituting these values into the WACC formula yields:

The resulting WACC of 14.4 percent represents the firm's overall required rate of return, reflecting the blended cost of its financing sources after accounting for the tax benefit of debt. This measure

[2] Alternatively, analyses can be done on a pre-tax basis, but this would require developing pre-tax discount rates and the data valuators usually rely on are from public C-Corporations that pay corporate taxes.

provides a comprehensive reflection of the firm's financing mix and risk profile and is the appropriate discount rate for valuing companies using FCFIC under the income approach.

Conclusion

In conclusion, the discount rate is a pivotal component in business valuation. The discount rate is most critical in the income approach, where it directly drives the present value of future cash flows (DCF) and the capitalization rate applied in the CCF. Depending on the projected capital structure of the company, cash flows may be looked at on a FCFE or FCFIC basis, in turn affecting the way the discount rate is developed (COE vs WACC). Understanding the function and implications of the discount rate is essential for accurate, context-sensitive business valuation. Misapplication of the discount rate can distort the valuation. Therefore, appropriately developing and applying discount rates is essential when performing business valuations.

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