Montana Department of
REVENUE

Capitalization Rate Study

Centrally Assessed Properties
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Montana Department of Revenue

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Steve Bullock
Governor

METHODOLOGY

The Business Tax and Valuation Bureau develops a capitalization rate for each centrally assessed utility industry group using the band-of-investment technique. The typical industry rate for each source of capital (common equity and debt) is weighted according to its proportion in the typical market capital structure for each industry to derive a weighted average direct capitalization rate for the specific industry. The rate for each of the sources of capital is taken from directly observed information in the market.

For a company in a given industry, the capitalization rate for its industry is applied directly to an estimate of the company's typical net utility operating income to derive an income indicator of value for the company.

COMPARABLE COMPANIES

The comparable or "Guideline Companies" are taken from the appropriate industry group in the Value Line Investment Survey.

THE RATE FOR COMMON EQUITY

Under direct capitalization, the measure of the rate for common equity is the Earnings/Price (E/P) ratio. The E/P ratio is the annual earnings (net income) per share of common stock divided by the average market price per share of common stock.

For each of the companies included in the equity portion of the industry capitalization rate data set, the Bureau calculates two different measures of the E/P ratio, and then calculates an industry (simple) average and median for each of these measures:

E/P (VL) Historic	The historic earning per share reported in the Value Line Investment Survey is divided by the 4th quarter stock price calculated from data reported by Yahoo Finance.
E/P (VL) Projected	The projected next quarter and last three historic previous earnings per share reported in the Value Line Investment Survey is divided by the 4th quarter average calculated from data reported by Yahoo Finance.

THE RATE FOR PREFERRED STOCK

The measure of the rate for preferred stock is percent dividend yield.

The Business Tax and Valuation Bureau does not calculate an annual (simple) average of the monthly percent yields for all preferred stock issues as a separate rate used in the band of investment. Instead, the preferred stock is included in the debt portion of the capital structure.

THE RATE FOR DEBT

The measure of the rate for debt used in the direct capitalization rate is the current yield. Current yield is equal to the annual coupon rate divided by price (expressed as a percent). While the measure of the rate of debt for the yield rate is yield to maturity. The yield to maturity is the interest rate that equates the present value of a bond’s cash flow to its current price (expressed as a percent). Yield to maturity assumes that the bond will be held to maturity. If the bond is not held until maturity, or if the interim cash flows are reinvested at a rate that differs from the yield to maturity, an investor’s actual yield will differ from the yield to maturity. The yield to maturity calculation equates a bond’s cash flows to its current price; this yield calculation considers both coupon and income and any capital gain or loss the investor will realize by holding the bond to maturity.

Valuation theory typically requires the use of current yields (the annual coupon rate divided by price) for direct capitalization and the use of yield to maturity for yield capitalization, the two rates will generally not vary significantly for seasoned issues (except under certain circumstances) and they will be the same for new issues.

For each of the companies included in the embedded debt portion, the embedded debt of the industry capitalization rate data set, the bureau calculates an annual (simple) average of the monthly yield to maturities for all debt issues listed in the Standard & Poor’s Bond Guide. The average yields are then used to select a value for the appropriate cap rate..

DIRECT CAPITALIZATION of "GROSS" CASH FLOW

The Business Tax and Valuation Bureau develops another direct capitalization rate for each centrally assessed utility industry group. This direct capitalization rate is calculated like the rate for capitalizing net operating income. The only difference is that the rate for common equity is "gross" cash flow per share divided by the average 4th quarter price per share.

"Gross" cash flow is defined as net utility operating income plus depreciation and amortization expense minus preferred stock

For a company in a given industry, the capitalization rate for its industry is applied directly to an estimate of the company's typical "gross" cash flow to derive an income indicator of value for the company.

The use of the "gross" cash flow capitalization model is less common than the traditional net operating income capitalization model. The "gross" cash flow model can be valuable in developing an income indicator of value for industries or companies that have been experiencing net operating losses, or in cases where book depreciation does not reflect economic depreciation.

YIELD CAPITALIZATION of PROJECTED FUTURE (NET) CASH FLOWS

The Business Tax and Valuation Bureau also develops a yield capitalization rate for each centrally assessed utility industry group.

The rate for each source of capital is the “cost of capital” for each industry group. The cost of debt is the yield to maturity for debt derived from the set of comparable companies for each industry group. The cost of equity capital is calculated using several methods, including the DCF (discounted cash flow) model, the ERP (equity risk premium model), the CAPM (capital asset pricing model) or a combination there of depending on the quantity and quality of available data.

The correct application of a yield capitalization rate is to use the rate for the industry to discount a stream of estimated future (net) cash flows for a company to present value.

It is important to note that the cash flow used in yield capitalization is “true”, “net” or “free” cash flow and not the ”gross” cash flow used in the Department’s direct ”gross” cash flow indicator.

The development of a valid future cash flow stream requires considerable time and effort. Most companies choose not to spend the time and effort to develop this future cash flow stream. Therefore, in the event a company does not provide a future cash flow stream as requested in the Annual Reporting Forms, the Department normalizes “net” historical cash flows to determine a cash flow stream. The yield capitalization rate for specific industries is applied directly to this derived cash flow stream.

Properly developed and applied, yield capitalization and direct capitalization usually result in similar indicators of value.

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