METHODOLOGY

The Business Tax and Valuation Bureau develops a capitalization rate for each centrally assessed utility industry group using the band-of-investment technique, also known as the weighted average cost of capital. 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 a corresponding estimate of the company's comparable benefit stream to derive an income indicator of value for the company.

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

COMPARABLE COMPANIES

The comparable or "guideline companies" are taken from the appropriate industry group in the Value Line Investment Survey. That universe of companies is tested against several industry specific criterion to select which will be used in the study. This selection process is outlined at the beginning of each industry study.

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). The measure of the cost of debt capital 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.

The debt rates used in yield capitalization are those reported by Mergent, Inc. Corporate bond yields are grouped according to credit rating and matched appropriately to the corresponding industries' average credit rating. In certain instances, an equivalent rating from Standard & Poor's Financial Services LLC is used in place of the Mergent, Inc. rating.

The present value of operating leases, as reported in guideline companies annual reporting forms, are included in the debt portion of the weighted average cost of capital.

THE RATE FOR PREFERRED STOCK

The measure of the rate for preferred stock used in this study is equal to the book value reported in the annual reporting forms of the guideline companies selected.

DIRECT CAPITALIZATION OF NET OPERATING PROFIT AFTER TAX (NOPAT)

Under direct capitalization of NOPAT, the measure of the rate for common equity is the price to earnings (P/E) ratio. The P/E ratio is the ratio for valuing a company that measures its current share price relative to its per-share earnings. The price to earnings ratio is sometimes known as the price multiple or the earnings multiple.

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

P/E (VL) Historic	The end of year closing stock price as reported by Yahoo! Finance is divided by the historic earnings per share as reported in the Value Line Investment Analyzer.
P/E (VL) Projected	The end of year closing stock price as reported by Yahoo! Finance is divided by the projected earnings per share as reported in the Value Line Investment Analyzer.

The cost of equity for direct capitalization is then selected according to the quality and quantity of data analyzed.

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 denominator in the ratio is “gross” cash flow per share. This results in a price to cash flow ratio.
The price to cash flow ratio (P/CF) is a valuation indicator or multiple that measures the value of a stock’s price relative to its

operating cash flow per share. The ratio uses operating cash flow which adds back non-cash expenses such as depreciation and amortization to NOPAT.

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.

YIELD CAPITALIZATION OF PROJECTED FUTURE (FREE) 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 Mergent Bond Record and matched to the set of comparable companies for each industry group. The cost of equity capital is calculated using several methods, including two variants of the dividend discount model (DDM) and two variants of the capital asset pricing model (CAPM), or a combination thereof depending on the quantity and quality of available data.

CAPITAL ASSET PRICING MODEL (CAPM)

The capital asset pricing model is a model that describes the relationship between the expected return and risk of investing in a security. It shows that the expected return on a security is equal to the risk-free return plus a risk premium, which is based on the beta of that security.

The formula for CAPM is $\mathbf{k_e = R_f + \beta \times ERP}$ where k_e is the cost of equity, R_f is the risk-free rate, β is beta, and ERP is the equity risk premium.

The yield on a 20-year constant maturity U.S. government bond, as reported by the Federal Reserve, is used as a proxy for the risk-free rate. The 20-year maturity is selected as it matches the term used when developing the equity risk premium.

The beta used in CAPM is selected from an analysis of the betas reported for each guideline company in the Value Line Investment Analyzer.

The equity risk premium is an excess return earned by an investor when they invest in the stock market over a risk-free rate defined as the R_m (market return) less the R_f (risk-free) rate. The market return is selected based on an analysis of several independent reporting sources. These include measures calculated ex-post, which measures results after events have occurred, and ex-ante, which looks at future events based on possible predictions.

DIVIDEND DISCOUNT MODEL (DDM)

The dividend discount model (DDM) is a quantitative method used for predicting the price of a company's stock based on the theory that its present-day price is worth the sum of all its future dividend payments when discounted back to their present value. The future dividend payments are projected through five hundred years using three separate growth rates, one for each stage.

The first stage of the model encompasses the first five years of the calculation. The growth rate is the compound annual growth rate between dividends declared per share (estimated for the next year) and dividends declared per share (estimated 3-5 years in the future) as reported by the Value Line investment analyzer. This is the "short-term" growth rate.

The second stage of the model encompasses years six through twenty. The growth rate is a linear regression beginning at the short-term growth rate and regressing to a long-term growth rate as determined by the Business Tax and Valuation Bureau. The long-term growth rate used is a nominal growth rate defined as the sum of inflation and real growth in gross domestic product. Inflation and real growth figures are selected by analyzing what is reported by several widely used and available surveys and forecasts.

The third stage of the model encompasses years twenty-one through five hundred. The growth rate used is the long-term nominal growth rate described above.

The internal rate of return is then calculated for the entire model. The model is completed using two separate measures of growth, earnings and dividends.

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

The Centrally Assessed Property Appraisers, of the Business Tax & Valuation Bureau of the Montana Department of Revenue, produced this study. The team members include:

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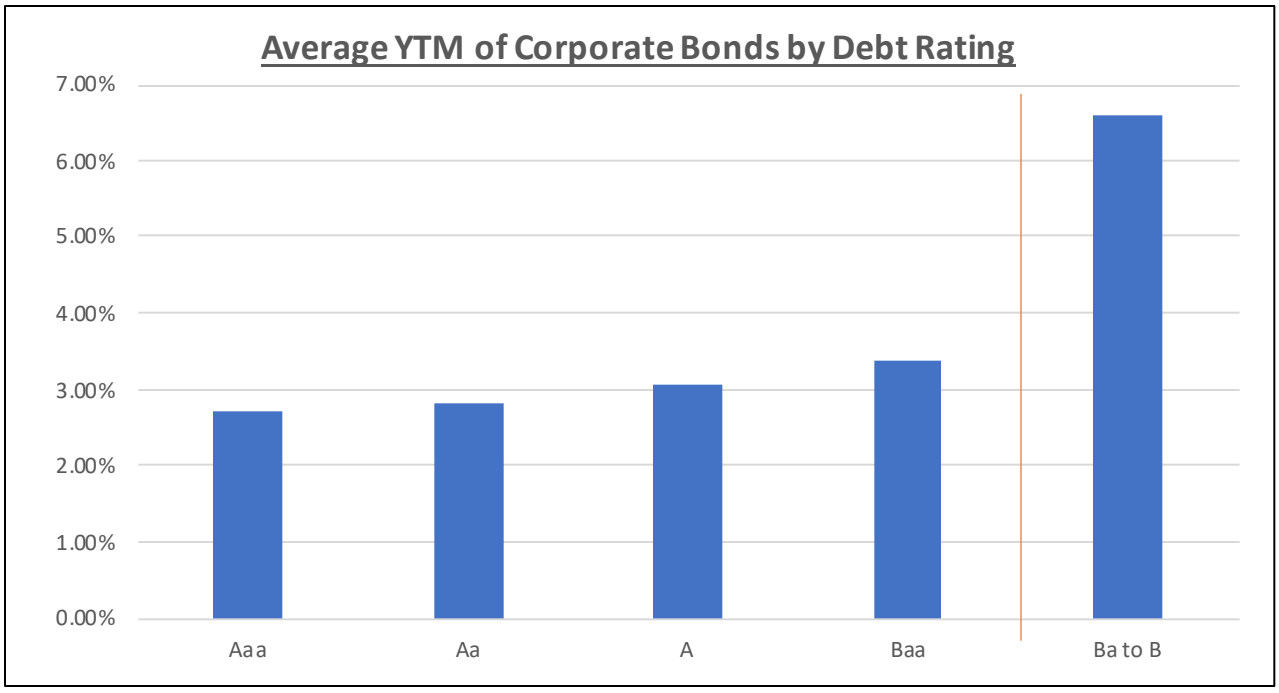
MONTANA DEPARTMENT OF REVENUE

High Yield Debt Study
Yield to Maturity of Debt by Rating
Based on Corporate Bond Yields
For Tax Year 2022

Rating	Average YTM of Corporate Bonds	Risk Free Rate (R_f)	Spread Over R_f	Source Note
Aaa	2.71%	1.94%	0.77%	Mergent Bond Record, January 2022
Aa	2.82%	1.94%	0.88%	Mergent Bond Record, January 2022
A	3.04%	1.94%	1.10%	Mergent Bond Record, January 2022
Baa	3.37%	1.94%	1.43%	Mergent Bond Record, January 2022
Ba to B	6.57%	1.94%	4.63%	Mergent, Moodys.com (Average of non-investment grade bonds



S&P 500, 3 Stage Dividend Growth Model
Developed by the Montana Department of Revenue
To Be Used in Conjunction with the 2022 Capitalization Rate Studies

Determines The Implied Risk Premium Using Macroeconomic Data
This type of calculation can also be found in Chapter 9 of Ibbotson's (MorningStar) SBBI, Supply Side Model

3 Stage Dividend Growth Model

Assumptions:

Stages	**Years**		**Growth**	**Model 1**				**Model 2**				
1st Stage	1-5 years		Constant @:	15.98%				17.21%				*S & P Dow Jones Indices Index Earnings, S&P 500 Earnings Estimate Report, February 4, 2022*
2nd Stage	6-15 years		Linear from:	15.02%	to	5.38%	OR	16.01%	to	4.06%		*Linear from 1st Stage to 3rd Stage*
				Real Growth				Inflation				
3rd Stage	15 years -perpetuity	GDP Growth:	Real and Inflation	1.70%		2.49%	+	2.36%		2.89%		*Inflation Range = Federal Reserve, Treasuries Inflation - Indexed*
		GDP Growth*:	Real + Inflation	5.38%			TO	4.06%				**GDP Growth = Real growth + Inflation*
												First Quarter 2021 Survey of Professional Forecasters - Philadelphia Federal Reserve Release Date 2/11/2022

Model 1

Year	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
		Expected	1st Stage Growth Rates					2nd Stage Growth Rates										
Starting Industry	**Start Price**	**Dividends**	15.980%	15.980%	15.980%	15.980%	15.980%	15.02%	14.053%	13.089%	12.125%	11.162%	10.198%	9.235%	8.271%	7.307%	6.344%	5.380%
S & P 500	$ (4,766.18)	$ 63.32	$ 73.44	$ 85.17	$ 98.78	$ 114.57	$ 132.88	$ 152.83	$ 174.31	$ 197.13	$ 221.03	$ 245.70	$ 270.76	$ 295.76	$ 320.22	$ 343.62	$ 365.42	$ 385.08

Implied Market Return = 8.36%

Model 2

Year	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**
		Expected	1st Stage Growth Rates					2nd Stage Growth Rates										
Starting Industry	**Start Price**	**Dividends**	17.210%	17.210%	17.210%	17.210%	17.210%	16.01%	14.819%	13.624%	12.428%	11.233%	10.037%	8.842%	7.646%	6.451%	5.255%	4.060%
S & P 500	$ (4,766.18)	$ 63.32	$ 74.22	$ 86.99	$ 101.96	$ 119.51	$ 140.08	$ 162.51	$ 186.59	$ 212.01	$ 238.36	$ 265.14	$ 291.75	$ 317.54	$ 341.82	$ 363.87	$ 383.00	$ 398.55

Implied Market Return = 7.74%

Conclusions:

Implied Market Rate Range =	**7.74%**	**to**	**8.36%**

Mean	***8.05%***
Market Rate Selected	**8.05%**

2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
$ 405.79	$ 427.63	$ 450.63	$ 474.88	$ 500.42	$ 527.35	$ 555.72	$ 585.62	$ 617.12	$ 650.32	$ 685.31	$ 722.18	$ 761.03	$ 801.98	$ 845.12	$ 890.59	$ 938.51	$ 989.00

2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 414.73	$ 431.57	$ 449.09	$ 467.32	$ 486.29	$ 506.04	$ 526.58	$ 547.96	$ 570.21	$ 593.36	$ 617.45	$ 642.52	$ 668.61	$ 695.75	$ 724.00	$ 753.39	$ 783.98	$ 815.81

2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
$ 1,042.20	$ 1,098.28	$ 1,157.36	$ 1,219.63	$ 1,285.24	$ 1,354.39	$ 1,427.26	$ 1,504.04	$ 1,584.96	$ 1,670.23	$ 1,760.09	$ 1,854.78	$ 1,954.57	$ 2,059.73	$ 2,170.54	$ 2,287.32	$ 2,410.37	$ 2,540.05

2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 848.93	$ 883.40	$ 919.26	$ 956.59	$ 995.42	$ 1,035.84	$ 1,077.89	$ 1,121.66	$ 1,167.19	$ 1,214.58	$ 1,263.89	$ 1,315.21	$ 1,368.61	$ 1,424.17	$ 1,481.99	$ 1,542.16	$ 1,604.77	$ 1,669.93

2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092
														3rd Stage Growth Rates			
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
$ 2,676.71	$ 2,820.71	$ 2,972.47	$ 3,132.39	$ 3,300.91	$ 3,478.50	$ 3,665.64	$ 3,862.85	$ 4,070.67	$ 4,289.67	$ 4,520.46	$ 4,763.66	$ 5,019.94	$ 5,290.02	$ 5,574.62	$ 5,874.53	$ 6,190.58	$ 6,523.64

2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092
														3rd Stage Growth Rates			
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 1,737.73	$ 1,808.28	$ 1,881.69	$ 1,958.09	$ 2,037.59	$ 2,120.32	$ 2,206.40	$ 2,295.98	$ 2,389.20	$ 2,486.20	$ 2,587.14	$ 2,692.18	$ 2,801.48	$ 2,915.22	$ 3,033.58	$ 3,156.74	$ 3,284.90	$ 3,418.27

2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
$ 6,874.61	$ 7,244.46	$ 7,634.22	$ 8,044.94	$ 8,477.75	$ 8,933.86	$ 9,414.50	$ 9,921.00	#########	#########	#########	#########	#########	#########	#########	#########	#########	#########

2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 3,557.05	$ 3,701.47	$ 3,851.75	$ 4,008.13	$ 4,170.86	$ 4,340.20	$ 4,516.41	$ 4,699.77	$ 4,890.58	$ 5,089.14	$ 5,295.76	$ 5,510.77	$ 5,734.51	$ 5,967.33	$ 6,209.60	$ 6,461.71	$ 6,724.06	$ 6,997.05

2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
#########	#########	#########	#########	$ 21,773.50	$ 22,944.92	$ 24,179.36	$ 25,480.21	$ 26,851.04	$ 28,295.63	$ 29,817.93	$ 31,422.14	$ 33,112.65	$ 34,894.11	$ 36,771.41	$ 38,749.71

2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 7,281.13	$ 7,576.75	$ 7,884.36	$ 8,204.47	$ 8,537.57	$ 8,884.20	$ 9,244.89	$ 9,620.24	$ 10,010.82	$ 10,417.26	$ 10,840.20	$ 11,280.31	$ 11,738.29	$ 12,214.86	$ 12,710.79	$ 13,226.85

2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138
5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%	5.380%
$ 40,834.45	$ 43,031.34	$ 45,346.43	$ 47,786.06	$ 50,356.95	$ 53,066.16	$ 55,921.12	$ 58,929.67	$ 62,100.09	$ 65,441.07	$ 68,961.80	$ 72,671.95

2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138
4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%	4.060%
$ 13,763.86	$ 14,322.67	$ 14,904.17	$ 15,509.28	$ 16,138.96	$ 16,794.20	$ 17,476.04	$ 18,185.57	$ 18,923.90	$ 19,692.21	$ 20,491.72	$ 21,323.68