



**MONTANA**  
DEPARTMENT OF  
**REVENUE**

**2024 Capitalization Rate Study  
Telecommunications - Large**

*Completed: April 26, 2024*

## MONTANA DEPARTMENT OF REVENUE

### Yield Capitalization Rate Conclusion Industry: Telecommunications - Large 2024 Assessment Year

#### Capital Structure <sup>[1]</sup>

Equity	55.00%
Debt	45.00%

#### Equity Cost of Capital

		Weighting
Capital Asset Pricing Model - Ex Post <sup>[2]</sup>	9.94%	48%
Capital Asset Pricing Model - Ex Ante <sup>[2]</sup>	8.11%	12%
3 Stage Dividend Discount Model - Dividends <sup>[3]</sup>	9.70%	20%
3 Stage Dividend Discount Model - Earnings <sup>[3]</sup>	10.80%	20%
Weighted Average	9.84%	100%
Selected Cost of Equity	9.84%	

#### Debt Cost of Capital

		Weighting
A - Mergent's - Avg. YTM of A Rated Corporate Bonds <sup>[4]</sup>	5.25%	20%
Baa - Mergent's - Avg. YTM of Baa Rated Corporate Bonds <sup>[4]</sup>	5.64%	60%
Ba - MTDOR Debt Study <sup>[5]</sup>	6.85%	20%
B - MTDOR Debt Study <sup>[5]</sup>	7.46%	0%
Weighted Average	5.80%	100%
Selected Cost of Debt	5.80%	

### Weighted Average Cost of Capital (WACC)

Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	Pre-tax Cost of Capital	After-tax Cost of Capital
Equity	55.00%	9.84%		5.41%	5.41%
Debt	45.00%	5.80%	24.00%	2.61%	1.98%
<b>WACC</b>	<b>100.00%</b>			<b>8.03%</b>	<b>7.40%</b>
<b>WACC (Rounded)</b>					<b>7.40%</b>

#### Notes

- [1] From worksheet: Capital Structure
- [2] From worksheet: Capital Asset Pricing Model Summary
- [3] From worksheet: Yield Equity Summary
- [4] January 2024, Mergent Bond Record
- [5] Montana Department of Revenue High Yield Debt Study

**MONTANA DEPARTMENT OF REVENUE**

**Direct Capitalization Rate Conclusion  
Industry: Telecommunications - Large  
2024 Assessment Year**

**Capital Structure <sup>[1]</sup>**

Equity	<b>55.00%</b>
Debt	<b>45.00%</b>

**Equity Capitalization Rate <sup>[2]</sup>**

NOI After-tax	<b>10.23%</b>
GCF	<b>21.89%</b>

**Debt Capitalization Rate <sup>[3]</sup>**

Calculated Current Yield	<b>4.93%</b>
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**NOI After-tax Direct Capitalization Rate**

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	Pre-tax Capitalization Rate	After-tax Capitalization Rate
Equity	55.00%	10.23%		5.62%	5.62%
Debt	45.00%	4.93%	24.00%	2.22%	1.69%
<b>Total</b>	<b>100.00%</b>			<b>7.84%</b>	<b>7.31%</b>
<b>Total (Rounded)</b>					<b>7.35%</b>

**GCF Direct Capitalization Rate**

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	Pre-tax Capitalization Rate	After-tax Capitalization Rate
Equity	55.00%	21.89%		12.04%	12.04%
Debt	45.00%	4.93%	24.00%	2.22%	1.69%
<b>Total</b>	<b>100.00%</b>			<b>14.26%</b>	<b>13.73%</b>
<b>Total (Rounded)</b>					<b>13.75%</b>

Notes:

[1] From worksheet: Capital Structure

[2] From worksheet: Direct Equity Summary

[3] From worksheet: Calculated Current Yield

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## MONTANA DEPARTMENT OF REVENUE

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Selection of Guideline Companies  
Industry: Telecommunications - Large  
2024 Assessment Year

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**Screening Requirements:**

The universe of companies is all companies listed in Value Line under the Cable TV and Telecom Services industries.

Companies were then selected using the following screening criteria:

1. Market value of equity above 50 billion USD.
2. Incorporated in the United States of America.
3. Primarily provides two-way transmission of voice, image, data, or other information over wire, cable, fiber optics, microwave, radio, satellite, or similar facilities.
4. No significant merger & acquisition activity during the year.

The Value Line industry groups listed above were analyzed to determine which companies had a market capitalization over 50 billion U.S. dollars at December 31, 2023. Initial analysis revealed seven companies that met this criteria: Comcast Corp. (CMCSA), Charter Communications (CHTR), AT&T Inc. (T), T-Mobile US, Inc. (TMUS), Verizon Communications (VZ), Deutsche Telekom ADR (DTEGY), and America Movil (AMX). Five companies were then verified as incorporated in the United States (all except DTEGY & AMX). The five remaining companies (CHTR, CMCSA, T, TMUS, VZ) were analyzed for significant merger and acquisition activity during the previous year. Finding no disqualifying activity, the five companies were selected for use as guideline public companies in estimating the cost of capital in this study.

**MONTANA DEPARTMENT OF REVENUE**

Support for Capital Structure  
Industry: Telecommunications - Large  
2024 Assessment Year

(\$ and Shares Outstanding In Millions, Except Per Share Amounts)

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Ticker Symbol	Company	Industry Group	Financial Strength	Shares Outstanding	End of Year Closing Stock Price	MV Common Stock	MV Preferred Stock	MV Long Term Debt	PV of Operating Leases	Total Common, Preferred, LT Debt, & Op Leases	% Common	% Preferred	% Debt & Op Leases
		Value Line	Value Line	10-K	Yahoo	ExF	10-K	10-K	10-K	G+H+I+J	G/K	H/K	(I+J)/K
							Note [1]	Note [2]					
CHTR	Charter Communic.	CABLETV	B+	145	388.68	56,446	0	87,729	1,418	145,593	39%	0%	61%
CMCSA	Comcast Corp.	CABLETV	A+	3,969	43.85	174,055	0	92,190	6,586	272,831	64%	0%	36%
T	AT&T Inc.	TELESERV	B++	7,150	16.78	119,978	0	132,403	21,092	273,473	44%	0%	56%
TMUS	T-Mobile US	TELESERV	A	1,196	160.33	191,724	0	70,416	31,795	293,935	65%	0%	35%
VZ	Verizon Communic.	TELESERV	A+	4,204	37.70	158,501	0	147,701	24,268	330,470	48%	0%	52%
<b>All Companies</b>						700,703	0	530,439	85,159	1,316,301	<b>53%</b>	<b>0%</b>	<b>47%</b>
<b>Average</b>											<b>52%</b>	<b>0%</b>	<b>48%</b>
<b>Median</b>											<b>48%</b>	<b>0%</b>	<b>52%</b>
<b>Trimmed Average</b>											<b>52%</b>	<b>0%</b>	<b>48%</b>
High											65%	0%	61%
Low											39%	0%	35%
<b>Selected</b>											<b>55%</b>		<b>45%</b>

Notes:

[1] Market value of preferred stock assumed to equal book value

[2] Market value of debt is fair value of long term debt from 10-K notes

**MCA 15-1-210, rationale for changes to guideline companies:**

2024 - No changes to guideline companies

		<b>Median</b>	
Current Year	48%	0%	52%
Prior Year	50%	0%	50%
2 Years Prior	53%	0%	47%
3 Year Average	50%	0%	50%

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**MONTANA DEPARTMENT OF REVENUE**

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**Capital Asset Pricing Model (CAPM)  
Industry: Telecommunications - Large  
2024 Assessment Year**

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$$k_e = R_f + \beta \times ERP$$

		<i>Ex Post</i>	<i>Ex Ante</i>
$k_e =$	Cost of Equity	<b>9.94%</b>	<b>8.11%</b>
$R_f =$	Risk Free Rate	4.20%	4.20%
$\beta =$	Beta	0.80	0.80
$ERP =$	Equity Risk Premium ( $R_m - R_f$ )	7.17%	4.88%
$R_m =$	Market Rate of Return	11.37%	9.08%

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**Risk Free Rate Measures ( $R_f$ ):**

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The Value Line Investment Survey: Selection & Opinion<sup>[1]</sup>

January 5, 2024 Page 841

Selected Yields on Taxable U.S. Treasury Securities as of 12/22/23

10-year	3.90%
30-year	4.05%

Federal Reserve Statistical Release<sup>[2]</sup>

U.S. government securities, Treasury constant maturities, Nominal, December 29, 2023

10-year	3.88%
20-year	4.20%
30-year	4.03%

**Risk Free Rate Selected**

**4.20%**

Notes

[1] "Value Line Selection & Opinion", Value Line (January 5, 2024)

[2] <https://www.federalreserve.gov/releases/h15/>

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**MONTANA DEPARTMENT OF REVENUE**

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Capital Asset Pricing Model (CAPM)  
 Industry: Telecommunications - Large  
 2024 Assessment Year

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$$k_e = R_f + \beta \times ERP$$

**Ex Post - Equity Risk Premium Measures (ERP = Rm - Rf)**

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Kroll, 2024 Cost of Capital Navigator

		<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
ERP "Historical" - <i>Ex Post</i>	<i>Arithmetic Avg.</i>	11.31%	4.14%	7.17%
ERP "Supply-side" - <i>Ex Post</i>	<i>Arithmetic Avg.</i>	10.36%	4.14%	6.22%
<b>Ex Post Equity Risk Premium Selected</b>		<b>11.37%</b>	<b>4.20%</b>	<b>7.17%</b>

**Ex Ante - Equity Risk Premium Measures (ERP = Rm - Rf)**

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DOR 3 Stage Dividend Growth Model, S & P 500, See Exhibit

		<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
ERP - <i>Ex Ante</i>		7.22%	4.20%	3.02%

Kroll, 2024 Cost of Capital Navigator

		<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
ERP "Conditional" - <i>Ex Ante</i>		9.00%	3.50%	5.50%

Damodaran Implied ERP (Jan 5, 2024)

		<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
Implied Premium - <i>Ex Ante</i> - Trailing 12 month, with adjusted payout		8.45%	3.88%	4.57%
Implied Premium - <i>Ex Ante</i> - Trailing 12 month cash yields		8.48%	3.88%	4.60%
Implied Premium - <i>Ex Ante</i> - Average CF yield last 10 years		9.95%	3.88%	6.07%
Implied Premium - <i>Ex Ante</i> - Net cash yield		8.31%	3.88%	4.43%
Implied Premium - <i>Ex Ante</i> - Normalized earnings and payout		<u>8.17%</u>	<u>3.88%</u>	<u>4.29%</u>
Damodaran Average		8.67%	3.88%	4.79%

		<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
<u>Average</u>		8.51%		4.64%
<u>Median</u>		8.45%		4.57%
<u>High</u>		9.95%		6.07%
<u>Low</u>		7.22%		3.02%

<b>Ex Ante Equity Risk Premium Selected</b>		<b>9.08%</b>	<b>4.20%</b>	<b>4.88%</b>
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**MONTANA DEPARTMENT OF REVENUE**

Support for Beta Selection in CAPM  
 Industry: Telecommunications - Large  
 2024 Assessment Year

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>Ticker Symbol</b>	<b>Company</b>	<b>Industry Group</b>	<b>Financial Strength</b>	<b>Beta</b>
		<i>Value Line</i>	<i>Value Line</i>	<i>Value Line</i>
CHTR	Charter Communic.	CABLETV	B+	0.95
CMCSA	Comcast Corp.	CABLETV	A+	0.85
T	AT&T Inc.	TELESERV	B++	0.80
TMUS	T-Mobile US	TELESERV	A	0.75
VZ	Verizon Communic.	TELESERV	A+	0.65
<b>Average</b>				<b>0.80</b>
<b>Median</b>				<b>0.80</b>
<b>Trimmed Average</b>				<b>0.80</b>
High				0.95
Low				0.65
<b>Selected</b>				<b>0.80</b>



**MONTANA DEPARTMENT OF REVENUE**

**Inflation & Real Growth**

**Industry: Telecommunications - Large**

**2024 Assessment Year**

A	B	C	D	Nominal Growth	
				E	F
Source Description	Inflation (CPI)	Real Growth (GDP)	Nominal Growth	Low	High
Livingston Survey <sup>[1]</sup>	2.30%	2.00%	4.30%		
Survey of Professional Forecasters <sup>[2]</sup>	2.24%	2.00%	4.24%		
Congressional Budget Office <sup>[3]</sup>	2.20%	1.90%	4.10%		
<b>Average</b>	<b>2.25%</b>	<b>1.97%</b>	<b>4.21%</b>		
<b>Median</b>	<b>2.24%</b>	<b>2.00%</b>	<b>4.24%</b>		
High	2.30%	2.00%	4.30%		
Low	2.20%	1.90%	4.10%		
<b>Selected</b>	<b>2.25%</b>	<b>2.00%</b>	<b>4.25%</b>	<b>4.10%</b>	<b>4.30%</b>

Inflationary Trend Factors						
Year	Dec. CPI-U Index	Percent Change From Previous	Dec. to Dec. Conversion Factor	Annual Avg. CPI-U Index	Percent Change From Previous	Annual Conversion Factor
	<i>Note [5]</i>	<i>Note [6]</i>	<i>Note [7]</i>	<i>Note [5]</i>	<i>Note [6]</i>	<i>Note [7]</i>
2012	229.601	1.7%	1.3360	229.594	2.0%	1.3271
2013	233.049	1.5%	1.3162	232.957	1.4%	1.3080
2014	234.812	0.8%	1.3063	236.736	1.6%	1.2871
2015	236.525	0.7%	1.2969	237.017	0.1%	1.2856
2016	241.432	2.0%	1.2705	240.007	1.2%	1.2696
2017	246.524	2.1%	1.2443	245.120	2.1%	1.2431
2018	251.233	1.9%	1.2210	251.107	2.4%	1.2134
2019	256.974	2.2%	1.1937	255.657	1.8%	1.1918
2020	260.474	1.3%	1.1776	258.811	1.2%	1.1773
2021	278.802	6.6%	1.1002	270.970	4.5%	1.1245
2022	296.797	6.1%	1.0335	292.655	7.4%	1.0412
2023	306.746	3.2%	1.0000	304.702	4.0%	1.0000

**Notes**

[1] Federal Reserve Bank of Philadelphia The Livingston Survey December 15, 2023 Table 3 Inflation Rate and Real GDP mean

<https://www.philadelphiafed.org/research-and-data/real-time-center/livingston-survey>

[2] Federal Reserve Bank of Philadelphia Survey of Professional Forecasters February 9, 2024 Table 8 and Table 9 Average over next 10-Year mean

<https://www.philadelphiafed.org/surveys-and-data/real-time-data-research/survey-of-professional-forecasters>

[3] The Budget and Economic Outlook: 2024 To 2034, Table 2-1

<https://www.cbo.gov/about/products/budget-economic-data#4>

[5] Historical Consumer Price Index for All Urban Consumers (CPI-U): U.S. city average, all items, index averages (1982-84=100, unless otherwise noted)

<https://www.bls.gov/cpi/tables/supplemental-files/>

[6] (Row year - Previous Year) / Row Year

[7] Most current year / Row year

## MONTANA DEPARTMENT OF REVENUE

### 3 Stage Dividend Discount Model (DDM)

Industry: Telecommunications - Large

2024 Assessment Year

$$k_e = (D_1 / P_0) + g$$

$k_e$  = Cost of Equity

$D_1$  = Expected Dividend

$P_0$  = Current Price Per Share

$g$  = Sustainable Long-Term Growth

A	B	C	D	E	F	G	H	I
Ticker	Company	2023 Year End Stock Price	2024 Est Div'ds Decl'd per sh	Expected Equity Payout Yield	Sustainable Long-Term Growth Rate <sup>[1]</sup>	Sustainable Long-Term Growth Rate <sup>[1]</sup>	Cost of Equity Dividend Growth	Cost of Equity Earnings Growth
		<i>Yahoo</i>	<i>Value Line</i>	<i>D/C</i>	<i>Dividends</i>	<i>Earnings</i>	<i>E+F</i>	<i>E+G</i>
		$P_0$	$D_1$	$D_1/P_0$	$g$	$g$	$k_e$	$k_e$
CHTR	Charter Communic.	388.68	0.00	0.00%	0.00%	0.00%		
CMCSA	Comcast Corp.	43.85	1.23	2.81%	6.46%	6.08%	9.27%	8.88%
T	AT&T Inc.	16.78	1.11	6.62%	3.93%	7.16%	10.55%	13.78%
TMUS	T-Mobile US	160.33	2.60	1.62%	6.71%	7.09%	8.34%	8.72%
VZ	Verizon Communic.	37.70	2.70	7.16%	3.48%	4.67%	10.65%	11.83%
<b>Average</b>							<b>9.70%</b>	<b>10.80%</b>
<b>Median</b>							<b>9.91%</b>	<b>10.36%</b>
High							10.65%	13.78%
Low							8.34%	8.72%
<b>Selected</b>							<b>9.70%</b>	<b>10.80%</b>

Notes

[1] From worksheet: DDM Sustainable Long-Term Growth

*Implied Sustainable LTG:*

5.15%

6.25%

**MONTANA DEPARTMENT OF REVENUE**

**Support for DDM - Short Term Growth Rate Calculations**

**Industry: Telecommunications - Large**

**2024 Assessment Year**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Ticker</b>	<b>Company</b>	<b>End of Year Closing Stock Price</b>	<b>Div'ds Decl'd per sh 2024 Est<sup>[1]</sup></b>	<b>Expected Dividend Yield</b>	<b>Div'ds Decl'd per sh 2026-2028 Est<sup>[1]</sup></b>	<b>Short Term Growth Rate</b>
		<i>Yahoo</i>	<i>Value Line</i>	<i>D / C</i>	<i>Value Line</i>	<i>Note [2]</i>
CHTR	Charter Communic.	388.68	0.00	0.00%	0.00	0.00%
CMCSA	Comcast Corp.	43.85	1.23	2.81%	1.60	9.16%
T	AT&T Inc.	16.78	1.11	6.62%	1.24	3.76%
TMUS	T-Mobile US	160.33	2.60	1.62%	3.60	11.46%
VZ	Verizon Communic.	37.70	2.70	7.16%	2.96	3.11%

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>Ticker</b>	<b>Company</b>	<b>Earnings per share 2024 Est<sup>[1]</sup></b>	<b>Earnings per share 2026-2028 Est<sup>[1]</sup></b>	<b>Short Term Growth Rate</b>
		<i>Value Line</i>	<i>Value Line</i>	<i>Note [2]</i>
CHTR	Charter Communic.	38.50	48.25	7.81%
CMCSA	Comcast Corp.	4.20	5.35	8.40%
T	AT&T Inc.	2.55	3.25	8.42%
TMUS	T-Mobile US	9.25	13.10	12.30%
VZ	Verizon Communic.	4.90	5.65	4.86%

Notes

[1] From Value Line Tissue

[2] 4 year compound annual growth rate (CAGR) - 3 periods

**MONTANA DEPARTMENT OF REVENUE**

**Support for DDM - Sustainable Long Term Growth**

**Industry: Telecommunications - Large**

**2024 Assessment Year**

Dividend Growth Rate									Stage 1				
Ticker	Company	Year End Stock Price	Expected Short-Term Dividend Growth Rate	Expected Long-Term Growth Rate	Expected Dividend Yield	Internal Rate of Return	Implied Sustainable Long-Term Growth Rate (g)	Initial Investment	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>
		Yahoo	Note [1]	Note [2]	$D_1/P_0$	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. \text{ Yield}$						
CHTR	Charter Communic.	388.68	0.00%	4.25%	0.00%	0.00%	0.00%	(388.68)	0.00	0.00	0.00	0.00	0.00
CMCSA	Comcast Corp.	43.85	9.16%	4.25%	2.81%	9.27%	6.46%	(43.85)	1.23	1.34	1.47	1.60	1.75
T	AT&T Inc.	16.78	3.76%	4.25%	6.62%	10.55%	3.93%	(16.78)	1.11	1.15	1.20	1.24	1.29
TMUS	T-Mobile US	160.33	11.46%	4.25%	1.62%	8.34%	6.71%	(160.33)	2.60	2.90	3.23	3.60	4.01
VZ	Verizon Communic.	37.70	3.11%	4.25%	7.16%	10.65%	3.48%	(37.70)	2.70	2.78	2.87	2.96	3.05

Earnings Growth Rate									Stage 1				
Ticker	Company	Year End Stock Price	Expected Short-Term Earnings Growth Rate	Expected Long-Term Growth Rate	Expected Dividend Yield	Internal Rate of Return	Implied Sustainable Long-Term Growth Rate (g)	Initial Investment	D <sub>1</sub>	D <sub>2</sub>	D <sub>3</sub>	D <sub>4</sub>	D <sub>5</sub>
		Yahoo	Note [1]	Note [2]	$D_1/P_0$	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. \text{ Yield}$						
CHTR	Charter Communic.	388.68	7.81%	4.25%	0.00%	0.00%	0.00%	(388.68)	0.00	0.00	0.00	0.00	0.00
CMCSA	Comcast Corp.	43.85	8.40%	4.25%	2.81%	8.88%	6.08%	(43.85)	1.23	1.33	1.45	1.57	1.70
T	AT&T Inc.	16.78	8.42%	4.25%	6.62%	13.78%	7.16%	(16.78)	1.11	1.20	1.30	1.41	1.53
TMUS	T-Mobile US	160.33	12.30%	4.25%	1.62%	8.72%	7.09%	(160.33)	2.60	2.92	3.28	3.68	4.14
VZ	Verizon Communic.	37.70	4.86%	4.25%	7.16%	11.83%	4.67%	(37.70)	2.70	2.83	2.97	3.11	3.26

Notes

[1] From worksheet: DDM Short Term Growth Rate Calculations

[2] From worksheet: Inflation & Real Growth

**MONTANA DEPARTMENT OF REVENUE**

Support for DDM - Sustainable Long Term Growth

Industry: Telecommunications - Large

2024 Assessment Year

Dividend	Stage 2															Stage 3		
	D <sub>6</sub>	D <sub>7</sub>	D <sub>8</sub>	D <sub>9</sub>	D <sub>10</sub>	D <sub>11</sub>	D <sub>12</sub>	D <sub>13</sub>	D <sub>14</sub>	D <sub>15</sub>	D <sub>16</sub>	D <sub>17</sub>	D <sub>18</sub>	D <sub>19</sub>	D <sub>20</sub>	D <sub>21</sub>	D <sub>22</sub>	D <sub>500</sub>
CHTR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
CMCSA	1.90	2.07	2.25	2.45	2.67	2.90	3.16	3.44	3.74	4.07	4.43	4.82	5.25	5.71	6.22	6.48	6.76	2,952,602,006
T	1.34	1.39	1.44	1.49	1.55	1.61	1.67	1.73	1.80	1.87	1.94	2.01	2.09	2.17	2.25	2.34	2.44	1,067,840,338
TMUS	4.45	4.94	5.48	6.09	6.75	7.50	8.32	9.23	10.25	11.37	12.62	14.00	15.54	17.25	19.14	19.95	20.80	9,087,059,713
VZ	3.15	3.25	3.35	3.46	3.57	3.68	3.80	3.92	4.05	4.18	4.31	4.45	4.59	4.74	4.89	5.09	5.31	2,320,291,517

Earnings	Stage 2															Stage 3		
	D <sub>6</sub>	D <sub>7</sub>	D <sub>8</sub>	D <sub>9</sub>	D <sub>10</sub>	D <sub>11</sub>	D <sub>12</sub>	D <sub>13</sub>	D <sub>14</sub>	D <sub>15</sub>	D <sub>16</sub>	D <sub>17</sub>	D <sub>18</sub>	D <sub>19</sub>	D <sub>20</sub>	D <sub>21</sub>	D <sub>22</sub>	D <sub>500</sub>
CHTR	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0
CMCSA	1.84	1.99	2.15	2.32	2.51	2.71	2.93	3.17	3.43	3.71	4.01	4.34	4.69	5.07	5.48	5.71	5.96	2,602,700,830
T	1.66	1.79	1.94	2.10	2.27	2.45	2.65	2.87	3.10	3.36	3.63	3.92	4.24	4.59	4.96	5.17	5.39	2,356,552,443
TMUS	4.62	5.17	5.77	6.45	7.21	8.06	9.01	10.07	11.25	12.57	14.05	15.70	17.55	19.62	21.92	22.86	23.83	10,409,614,866
VZ	3.42	3.59	3.76	3.94	4.13	4.33	4.54	4.76	4.99	5.23	5.48	5.74	6.02	6.31	6.62	6.90	7.19	3,141,025,867

**MONTANA DEPARTMENT OF REVENUE**

Support for Yield Capitalization Rate - Debt Rating

Industry: Telecommunications - Large

2024 Assessment Year

A	B	C	D	E	F
Ticker Symbol	Company	Industry Group	Financial Strength	Moody's Long Term Rating	Yield to Maturity
		<i>Value Line</i>	<i>Value Line</i>	<i>Moodys.com</i>	
CHTR	Charter Communic.	CABLETV	B+	Ba2	6.85%
CMCSA	Comcast Corp.	CABLETV	A+	A3	5.25%
T	AT&T Inc.	TELESERV	B++	Baa2	5.64%
TMUS	T-Mobile US	TELESERV	A	Baa	5.64%
VZ	Verizon Communic.	TELESERV	A+	Baa1	5.64%
<b>Average</b>					<b>5.80%</b>
<b>Median</b>					<b>5.64%</b>
<b>Trimmed Average</b>					<b>5.64%</b>
High					6.85%
Low					5.25%
<b>Selected</b>					<b>5.80%</b>

*\*Highlighted ratings are estimated based on financial strength and historical interest coverage ratios*

**MONTANA DEPARTMENT OF REVENUE**

Support for Direct Capitalization - Equity Capitalization Rates

Industry: Telecommunications - Large

2024 Assessment Year

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
Ticker Symbol	Company	End of Year Closing Stock Price	VL Historic EPS	VL Est EPS	VL Historic P/E Ratio	VL Est P/E Ratio	Ke Estimate - Earnings (Hist. P/E)	Ke Estimate - Earnings (Est. P/E)	VL Historic Cash Flow Per Share	VL Est Cash Flow Per Share	VL Historic P/CF Ratio	VL Est P/CF Ratio	Ke Estimate Cash Flow (Hist. P/CF)	Ke Estimate Cash Flow (Est. P/CF)	Market Value of Equity	Book Value of Equity	MTBR	
		Yahoo	Value Line	Value Line	C/D	C/E	1/F	1/G	Value Line	Value Line	C/J	C/K	1/L	1/M	Price x Shrs	10-K	P/Q	
CHTR	Charter Communic.	388.68	30.02	38.50	12.95	10.10	7.72%	9.91%	91.26	97.25	4.26	4.00	23.48%	25.02%	56,446	11,086	5.09	
CMCSA	Comcast Corp.	43.85	3.97	4.20	11.05	10.44	9.05%	9.58%	7.20	7.85	6.09	5.59	16.42%	17.90%	174,055	82,703	2.10	
T	AT&T Inc.	16.78	2.36	2.55	7.11	6.58	14.06%	15.20%	5.01	5.45	3.35	3.08	29.86%	32.48%	119,978	103,297	1.16	
TMUS	T-Mobile US	160.33	6.93	9.25	23.14	17.33	4.32%	5.77%	17.67	20.75	9.07	7.73	11.02%	12.94%	191,724	64,715	2.96	
VZ	Verizon Communic.	37.70	4.71	4.90	8.00	7.69	12.49%	13.00%	9.25	9.00	4.08	4.19	24.54%	23.87%	158,501	91,144	1.74	
<b>Average</b>					<b>12.45</b>	<b>10.43</b>	<b>9.53%</b>	<b>10.69%</b>				<b>5.37</b>	<b>4.92</b>	<b>21.06%</b>	<b>22.44%</b>			<b>2.61</b>
<b>Median</b>					<b>11.05</b>	<b>10.10</b>	<b>9.05%</b>	<b>9.91%</b>				<b>4.26</b>	<b>4.19</b>	<b>23.48%</b>	<b>23.87%</b>			<b>2.10</b>
<b>Trimmed Average</b>					<b>10.67</b>	<b>9.41</b>	<b>9.76%</b>	<b>10.83%</b>				<b>4.81</b>	<b>4.59</b>	<b>21.48%</b>	<b>22.27%</b>			<b>1.59</b>
High					23.14	17.33	14.06%	15.20%				9.07	7.73	29.86%	32.48%			5.09
Low					7.11	6.58	4.32%	5.77%				3.35	3.08	11.02%	12.94%			1.16
<b>Selected</b>					9.78		<b>10.23%</b>					4.57		<b>21.89%</b>				<b>2.61</b>

**MONTANA DEPARTMENT OF REVENUE**

**Support for Direct Capitalization Cost of Debt Component - Calculated Current Yield**

**Industry: Telecommunications - Large**

**2024 Assessment Year**

(\$ in Millions)

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>	<b>J</b>
<b>Ticker</b>	<b>Company</b>	<b>Current Year Interest Exp.</b>	<b>Previous Year MV LT Debt</b>	<b>Previous Year BV LT Debt</b>	<b>Current Year MV LT Debt</b>	<b>Current Year BV LT Debt</b>	<b>Average MV LT Debt</b>	<b>Current Yield</b>	<b>MTBR</b>
		<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>10-K</i>	<i>(D+F)/2</i>	<i>(C/H)</i>	<i>(F/G)</i>
CHTR	Charter Communic.	5,188	82,798	97,603	87,729	97,777	85,264	6.08%	0.90
CMCSA	Comcast Corp.	4,087	86,911	94,811	92,190	97,090	89,551	4.56%	0.95
T	AT&T Inc.	6,704	125,207	135,890	132,403	137,331	128,805	5.20%	0.96
TMUS	T-Mobile US	3,335	64,199	71,960	70,416	75,018	67,308	4.95%	0.94
VZ	Verizon Communic.	5,524	140,771	150,639	147,701	150,674	144,236	3.83%	0.98
<b>All Companies</b>		24,838			530,439	557,890	515,163	<b>4.82%</b>	<b>0.95</b>
<b>Average</b>								<b>4.93%</b>	<b>0.95</b>
<b>Median</b>								<b>4.95%</b>	<b>0.95</b>
<b>Trimmed Average</b>								<b>0.05</b>	<b>0.95</b>
High								6.08%	0.98
Low								3.83%	0.90
<b>Selected</b>								<b>4.93%</b>	<b>0.95</b>



**MONTANA DEPARTMENT OF REVENUE**

Support of Stock Price - From YAHOO Finance

Industry: Telecommunications - Large

2024 Assessment Year

		End of Period Closing Stock Price											
1	2	3	4	5	6	7	8	9	10	11	12	13	14
A	B	C	D	E	F	G	H	I	J	K	L	M	N
Ticker	Company	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
CHTR	Charter Communic.	384.31	367.61	357.61	368.7	326.15	367.37	405.19	438.12	439.82	402.8	400.13	388.68
CMCSA	Comcast Corp.	39.35	37.17	37.91	41.37	39.35	41.55	45.26	46.76	44.34	41.29	41.89	43.85
T	AT&T Inc.	20.37	18.91	19.25	17.67	15.73	15.95	14.52	14.79	15.02	15.4	16.57	16.78
TMUS	T-Mobile US	149.31	142.18	144.84	143.9	137.25	138.9	137.77	136.25	140.05	143.86	150.45	160.33
VZ	Verizon Communic.	41.57	38.81	38.89	38.83	35.63	37.19	34.08	34.98	32.41	35.13	38.33	37.7

