



MONTANA
DEPARTMENT OF
REVENUE

**2023 Capitalization Rate Study
Telecommunications - Medium & Small**

Completed: March 24, 2023

MONTANA DEPARTMENT OF REVENUE

Yield Capitalization Rate Conclusion

Industry: Telecommunications - Medium & Small

2023 Assessment Year

Capital Structure ^[1]

| | |
|--------|---------------|
| Equity | 45.00% |
| Debt | 55.00% |

Equity Cost of Capital

| | | Weighting |
|--|---------------|------------------|
| Capital Asset Pricing Model - Ex Post ^[2] | 11.67% | 56% |
| Capital Asset Pricing Model - Ex Ante ^[2] | 10.10% | 14% |
| 3 Stage Dividend Discount Model - Dividends ^[3] | 8.35% | 15% |
| 3 Stage Dividend Discount Model - Earnings ^[3] | 15.00% | 15% |
| Weighted Average | 11.45% | 100% |
| Selected Cost of Equity | 11.45% | |

Debt Cost of Capital ^[4]

| | | Weighting |
|--|--------------|------------------|
| A - Mergent's - Avg. YTM of A Rated Corporate Bonds ^[4] | 5.12% | 0% |
| Baa - Mergent's - Avg. YTM of Baa Rated Corporate Bonds ^[4] | 5.59% | 0% |
| Ba - MTDOR High Yield Debt Study ^[5] | 6.97% | 43% |
| B - MTDOR High Yield Debt Study ^[5] | 7.71% | 43% |
| Caa - MTDOR High Yield Debt Study ^[5] | 8.45% | 14% |
| Weighted Average | 7.50% | 100% |
| Selected Cost of Debt | 7.50% | |

Weighted Average Cost of Capital (WACC)

| Source of Capital | Capital Structure | Cost of Capital | Marginal Tax Rate | After-tax Cost of Capital | Weighted Cost |
|--------------------------|--------------------------|------------------------|--------------------------|----------------------------------|----------------------|
| Equity | 45.00% | 11.45% | | 11.45% | 5.15% |
| Debt | 55.00% | 7.50% | 24.00% | 5.70% | 3.14% |
| WACC | 100.00% | | | | 8.29% |
| WACC (Rounded) | | | | | 8.30% |

Notes

- [1] From worksheet: Capital Structure
- [2] From worksheet: Capital Asset Pricing Model Summary
- [3] From worksheet: Yield Equity Summary
- [4] January 2023, Mergent Bond Record
- [5] Montana Department of Revenue High Yield Debt Study

MONTANA DEPARTMENT OF REVENUE

**Direct Capitalization Rate Conclusion
Industry: Telecommunications - Medium & Small
2023 Assessment Year**

Capital Structure ^[1]

| | |
|--------|---------------|
| Equity | 45.00% |
| Debt | 55.00% |

Equity Capitalization Rate ^[2]

| | |
|---------------|---------------|
| NOI After-tax | 5.30% |
| GCF | 36.93% |

Debt Capitalization Rate ^[3]

| | |
|--------------------------|--------------|
| Calculated Current Yield | 5.47% |
|--------------------------|--------------|

NOI After-tax Direct Capitalization Rate

| Source of Capital | Capital Structure | Capitalization Rate | Marginal Tax Rate | After-tax Capitalization Rate | Weighted Capitalization Rate |
|------------------------|-------------------|---------------------|-------------------|-------------------------------|------------------------------|
| Equity | 45.00% | 5.30% | | 5.30% | 2.38% |
| Debt | 55.00% | 5.47% | 24.00% | 4.16% | 2.29% |
| Total | 100.00% | | | | 4.67% |
| Total (Rounded) | | | | | 4.70% |

GCF Direct Capitalization Rate

| Source of Capital | Capital Structure | Capitalization Rate | Marginal Tax Rate | After-tax Capitalization Rate | Weighted Capitalization Rate |
|------------------------|-------------------|---------------------|-------------------|-------------------------------|------------------------------|
| Equity | 45.00% | 36.93% | | 36.93% | 16.62% |
| Debt | 55.00% | 5.47% | 24.00% | 4.16% | 2.29% |
| WACC | 100.00% | | | | 18.90% |
| Total (Rounded) | | | | | 18.95% |

Notes:

- [1] From worksheet: Capital Structure
- [2] From worksheet: Direct Equity Summary
- [3] From worksheet: Calculated Current Yield

MONTANA DEPARTMENT OF REVENUE

Selection of Guideline Companies

Industry: Telecommunications - Medium & Small

2023 Assessment Year

Screening Requirements:

The universe of companies is all companies listed in Value Line under the Cable TV and Telecom Services industries with a market capitalization under \$50B (excludes CHTR, CMCSA, T, TMUS, VZ, DTEGY, AMX).

Companies were then selected using the following screening criteria:

1. Headquartered and primarily operated in the United States.
2. Actively traded on an American exchange. All OTC and TO companies excluded.
3. Primarily provides two-way transmission of voice, image, data, or other information over wire, cable, fiber optics, microwave, or similar facilities.
4. Not engaged in material M&A activity.
5. Under \$50 Billion in market capitalization.

| Ticker Symbol | Headquartered /Incorporated in the U.S. | Actively traded on American exchange | Under \$50 Billion in Market Capitalization | Primarily operates a two-way comm network | Consider as Potential Guideline Company | Not Engaged in Material M&A Activity (No = M&A) | Use as Guideline Company | Note |
|---------------|---|--------------------------------------|---|---|---|---|--------------------------|------|
| AMX | | | No | | | | | |
| ATNI | Yes | Yes | Yes | No | | | | |
| ATUS | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| BAND | Yes | Yes | Yes | No | | | | |
| BCE | No | | | | | | | |
| CABO | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| CCA.TO | No | | | | | | | |
| CHTR | Yes | Yes | No | | | | | |
| CMCSA | Yes | Yes | No | | | | | |
| DISH | Yes | Yes | Yes | No | | | | |
| DTEGY | No | | | | | | | |
| DY | Yes | Yes | Yes | No | | | | |
| FYBR | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| GOGO | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| IDT | Yes | Yes | Yes | No | | | | |
| IRDM | | | | | | | No | [1] |
| LBTYA | No | | | | | | | |
| LILA | No | | | | | | | |

MONTANA DEPARTMENT OF REVENUE

Selection of Guideline Companies

Industry: Telecommunications - Medium & Small

2023 Assessment Year

Screening Requirements:

The universe of companies is all companies listed in Value Line under the Cable TV and Telecom Services industries with a market capitalization under \$50B (excludes CHTR, CMCSA, T, TMUS, VZ, DTEGY, AMX).

Companies were then selected using the following screening criteria:

1. Headquartered and primarily operated in the United States.
2. Actively traded on an American exchange. All OTC and TO companies excluded.
3. Primarily provides two-way transmission of voice, image, data, or other information over wire, cable, fiber optics, microwave, or similar facilities.
4. Not engaged in material M&A activity.
5. Under \$50 Billion in market capitalization.

| Ticker Symbol | Headquartered /Incorporated in the U.S. | Actively traded on American exchange | Under \$50 Billion in Market Capitalization | Primarily operates a two-way comm network | Consider as Potential Guideline Company | Not Engaged in Material M&A Activity (No = M&A) | Use as Guideline Company | Note |
|----------------------|--|---|--|--|--|--|---------------------------------|-------------|
| LUMN | Yes | Yes | Yes | Yes | Yes | No | | [2] |
| NUVR | Yes | No | | | | | | |
| OOMA | Yes | Yes | Yes | No | | | | |
| SATS | | | | | | | No | [1] |
| SHEN | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| SJRB.TO | No | | | | | | | |
| T | | | No | | | | | |
| T.TO | No | | | | | | | |
| TCX | No | | | | | | | |
| TDS | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| TEF | No | | | | | | | |
| TIGO | No | | | | | | | |
| TMUS | | | No | | | | | |
| USM | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| VOD | No | | | | | | | |
| VZ | | | No | | | | | |
| WOW | Yes | Yes | Yes | Yes | Yes | Yes | Yes | |
| ZD | Yes | Yes | Yes | No | | | | |
| ZM | Yes | Yes | Yes | No | | | | |

[1] Removed because primarily satellite based operations are not sufficiently comparable with other guideline public companies.

[2] Removed for significant M&A activity.

MONTANA DEPARTMENT OF REVENUE

Support for Capital Structure
Telecommunications - Medium & Small
2023 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 | 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 |
| | | <i>Value Line</i> | <i>Value Line</i> | <i>10-K</i> | <i>Yahoo</i> | <i>ExF</i> | <i>10-K</i> | <i>10-K</i> | <i>10-K</i> | <i>G+H+I+J</i> | <i>G/K</i> | <i>H/K</i> | <i>(I+J)/K</i> |
| | | | | | | | <i>Note [1]</i> | <i>Note [2]</i> | | | | | |
| ATUS | Altice USA | CABLETV | B | 456 | 4.60 | 2,098 | 0 | 21,935 | 299 | 24,332 | 9% | 0% | 91% |
| CABO | Cable One | CABLETV | B++ | 6 | 711.86 | 4,105 | 0 | 3,415 | 11 | 7,530 | 55% | 0% | 45% |
| FYBR | Frontier Commun. Parent | TELESERV | B+ | 244 | 25.48 | 6,228 | 0 | 9,125 | 213 | 15,566 | 40% | 0% | 60% |
| GOGO | Gogo Inc. | TELESERV | B | 128 | 14.76 | 1,887 | 0 | 694 | 88 | 2,669 | 71% | 0% | 29% |
| SHEN | Shenandoah Telecom. | TELESERV | B+ | 50 | 15.88 | 796 | 0 | 75 | 53 | 924 | 86% | 0% | 14% |
| TDS | Telephone & Data | TELESERV | B+ | 112 | 10.49 | 1,180 | 1,074 | 3,008 | 1,054 | 6,316 | 19% | 17% | 64% |
| USM | U.S. Cellular | TELESERV | B+ | 85 | 20.85 | 1,766 | 0 | 2,454 | 976 | 5,196 | 34% | 0% | 66% |
| WOW | WideOpenWest Inc. | CABLETV | C++ | 86 | 9.11 | 787 | 0 | 695 | 17 | 1,498 | 53% | 0% | 47% |
| All Companies | | | | | | 18,846 | 1,074 | 41,400 | 2,711 | 64,031 | 29% | 2% | 69% |
| Average | | | | | | | | | | | 46% | 2% | 52% |
| Median | | | | | | | | | | | 46% | 0% | 54% |
| Trimmed Average | | | | | | | | | | | 45% | 0% | 52% |
| High | | | | | | | | | | | 86% | 17% | 91% |
| Low | | | | | | | | | | | 9% | 0% | 14% |
| Selected | | | | | | | | | | | 45% | | 55% |

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

Rationale for Changes to Guideline Companies

2023 Changes to Guideline Companies

Added CABO, FYBR, SHEN

Removed LUMN for M&A activity

| | | Median | |
|----------------|------------|---------------|------------|
| Current Year | 46% | 0% | 54% |
| Prior Year | 30% | 0% | 64% |
| 2 Years Prior | 30% | 0% | 70% |
| 3 Year Average | <u>35%</u> | <u>0%</u> | <u>62%</u> |

MONTANA DEPARTMENT OF REVENUE

Capital Asset Pricing Model (CAPM)
Telecommunications - Medium & Small
2023 Assessment Year

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

| | | <i>Ex Post</i> | <i>Ex Ante</i> |
|-----------|-------------------------------------|----------------|----------------|
| $k_e =$ | Cost of Equity | 11.67% | 10.10% |
| $R_f =$ | Risk Free Rate | 4.14% | 4.14% |
| $\beta =$ | Beta | 1.05 | 1.05 |
| $ERP =$ | Equity Risk Premium ($R_m - R_f$) | 7.17% | 5.68% |
| $R_m =$ | Market Rate of Return | 11.31% | 9.82% |

Risk Free Rate Measures (R_f):

The Value Line Investment Survey: Selection & Opinion^[1]

January 6, 2023 Page 1465

Selected Yields on Taxable U.S. Treasury Securities as of 12/27/22

| | |
|---------|-------|
| 10-year | 3.84% |
| 30-year | 3.93% |

Federal Reserve Statistical Release^[2]

U.S. government securities, Treasury constant maturities, Nominal, December 30, 2022

| | |
|--------------------------------|--------------|
| 10-year | 3.88% |
| 20-year | 4.14% |
| 30-year | 3.97% |
| Risk Free Rate Selected | 4.14% |

Notes

[1] "Value Line Selection & Opinion", Value Line (January 6, 2023)

[2] <https://www.federalreserve.gov/datadownload/Choose.aspx?rel=H.15>

MONTANA DEPARTMENT OF REVENUE

**Capital Asset Pricing Model (CAPM)
Telecommunications - Medium & Small
2023 Assessment Year**

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

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

Kroll, 2023 Cost of Capital Navigator

| | | <u>R_m</u> | <u>R_f</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> | 10.49% | 4.14% | 6.35% |
| Ex Post Equity Risk Premium Selected | | 11.31% | 4.14% | 7.17% |

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

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

| | <u>R_m</u> | <u>R_f</u> | <u>ERP</u> |
|----------------------|----------------------|----------------------|------------|
| ERP - <i>Ex Ante</i> | 8.81% | 4.14% | 4.67% |

Kroll, 2023 Cost of Capital Navigator

| | <u>R_m</u> | <u>R_f</u> | <u>ERP</u> |
|------------------------------------|----------------------|----------------------|------------|
| ERP "Conditional" - <i>Ex Ante</i> | 9.50% | 3.50% | 6.00% |

Damodaran Implied ERP (Jan 1, 2023)

| | <u>R_m</u> | <u>R_f</u> | <u>ERP</u> |
|--|----------------------|----------------------|------------|
| Implied Premium - <i>Ex Ante</i> - Trailing 12 month, with adjusted payout | 8.99% | 3.88% | 5.11% |
| Implied Premium - <i>Ex Ante</i> - Trailing 12 month cash yields | 9.82% | 3.88% | 5.94% |
| Implied Premium - <i>Ex Ante</i> - Average CF yield last 10 years | 9.73% | 3.88% | 5.85% |
| Implied Premium - <i>Ex Ante</i> - Net cash yield | 9.56% | 3.88% | 5.68% |
| Implied Premium - <i>Ex Ante</i> - Normalized earnings and payout | 8.71% | 3.88% | 4.83% |

| | <u>R_m</u> | <u>R_f</u> | <u>ERP</u> |
|----------------|----------------------|----------------------|------------|
| <u>Average</u> | 9.30% | | 5.44% |
| <u>Median</u> | 9.50% | | 5.68% |
| <u>High</u> | 9.82% | | 6.00% |
| <u>Low</u> | 8.71% | | 4.67% |

Ex Ante Equity Risk Premium Selected

| | | |
|--------------|--------------|--------------|
| 9.82% | 4.14% | 5.68% |
|--------------|--------------|--------------|

MONTANA DEPARTMENT OF REVENUE

**Support for Beta Selection in CAPM
Telecommunications - Medium & Small
2023 Assessment Year**

| A | B | C | D | E |
|------------------------|-------------------------|-----------------------|---------------------------|-------------------|
| Ticker | Company | Industry Group | Financial Strength | Beta |
| | | <i>Value Line</i> | <i>Value Line</i> | <i>Value Line</i> |
| ATUS | Altice USA | CABLETV | B | 1.15 |
| CABO | Cable One | CABLETV | B++ | 0.95 |
| FYBR | Frontier Commun. Parent | TELESERV | B+ | 1.30 |
| GOGO | Gogo Inc. | TELESERV | B | 0.90 |
| SHEN | Shenandoah Telecom. | TELESERV | B+ | |
| TDS | Telephone & Data | TELESERV | B+ | 0.95 |
| USM | U.S. Cellular | TELESERV | B+ | 0.70 |
| WOW | WideOpenWest Inc. | CABLETV | C++ | 1.45 |
| Average | | | | 1.06 |
| Median | | | | 0.95 |
| Trimmed Average | | | | 1.05 |
| High | | | | 1.45 |
| Low | | | | 0.70 |
| Selected | | | | 1.05 |

MONTANA DEPARTMENT OF REVENUE

**Inflation & Real Growth
Telecommunications - Medium & Small
2023 Assessment Year**

| A | B | C | D | Nominal Growth | |
|---|-----------------|-------------------|----------------|----------------|--------------|
| | | | | E | F |
| Source Description | Inflation (CPI) | Real Growth (GDP) | Nominal Growth | Low | High |
| Livingston Survey ^[1] | 2.55% | 1.97% | 4.52% | | |
| Survey of Professional Forecasters ^[2] | 2.44% | 1.96% | 4.40% | | |
| Congressional Budget Office ^[3] | 2.30% | 1.80% | 4.10% | | |
| Average | 2.43% | 1.91% | 4.34% | | |
| Median | 2.44% | 1.96% | 4.40% | | |
| High | 2.55% | 1.97% | 4.52% | | |
| Low | 2.30% | 1.80% | 4.10% | | |
| Selected | 2.45% | 2.00% | 4.45% | 4.10% | 4.52% |

| 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> |
| 2011 | 225.672 | 2.9% | 1.3152 | 224.939 | 3.1% | 1.3010 |
| 2012 | 229.601 | 1.7% | 1.2927 | 229.594 | 2.0% | 1.2747 |
| 2013 | 233.049 | 1.5% | 1.2735 | 232.957 | 1.4% | 1.2563 |
| 2014 | 234.812 | 0.8% | 1.2640 | 236.736 | 1.6% | 1.2362 |
| 2015 | 236.525 | 0.7% | 1.2548 | 237.017 | 0.1% | 1.2347 |
| 2016 | 241.432 | 2.0% | 1.2293 | 240.007 | 1.2% | 1.2194 |
| 2017 | 246.524 | 2.1% | 1.2039 | 245.120 | 2.1% | 1.1939 |
| 2018 | 251.233 | 1.9% | 1.1814 | 251.107 | 2.4% | 1.1655 |
| 2019 | 256.974 | 2.2% | 1.1550 | 255.657 | 1.8% | 1.1447 |
| 2020 | 260.474 | 1.3% | 1.1394 | 258.811 | 1.2% | 1.1308 |
| 2021 | 278.802 | 6.6% | 1.0645 | 270.970 | 4.5% | 1.0800 |
| 2022 | 296.797 | 6.1% | 1.0000 | 292.655 | 7.4% | 1.0000 |

Notes

[1] Federal Reserve Bank of Philadelphia The Livingston Survey December 16, 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 10, 2023 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: 2023 To 2033, Table B-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/historical-cpi-u-202212.pdf>

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

[7] Most current year / Row year

MONTANA DEPARTMENT OF REVENUE

3 Stage Dividend Discount Model (DDM)

Telecommunications - Medium & Small

2023 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 | 2022 Year End Stock Price | 2023 Est Div'ds Decl'd per sh | Expected Equity Payout Yield | Sustainable Long-Term Growth Rate ^[1] | Sustainable Long-Term Growth Rate ^[1] | 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 |
| ATUS | Altice USA | 4.60 | 0.00 | 0.00% | 0.00% | 0.00% | | |
| CABO | Cable One | 711.86 | 11.50 | 1.62% | 4.38% | 6.68% | 6.00% | 8.29% |
| FYBR | Frontier Commun. Parent | 25.48 | 0.00 | 0.00% | 0.00% | 0.00% | | |
| GOGO | Gogo Inc. | 14.76 | 0.00 | 0.00% | 0.00% | 0.00% | | |
| SHEN | Shenandoah Telecom. | 15.88 | 0.09 | 0.57% | 7.64% | 7.64% | 8.21% | 8.21% |
| TDS | Telephone & Data | 10.49 | 0.74 | 7.05% | 3.80% | 21.45% | 10.86% | 28.51% |
| USM | U.S. Cellular | 20.85 | 0.00 | 0.00% | 0.00% | 0.00% | | |
| WOW | WideOpenWest Inc. | 9.11 | 0.00 | 0.00% | 0.00% | 0.00% | | |
| Average | | | | | | | 8.35% | 15.00% |
| Median | | | | | | | 8.21% | 8.29% |
| High | | | | | | | 10.86% | 28.51% |
| Low | | | | | | | 6.00% | 8.21% |
| Selected | | | | | | | 8.35% | 15.00% |

Notes

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

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Short Term Growth Rate Calculations

Telecommunications - Medium & Small

2023 Assessment Year

| A | B | C | D | E | F | G |
|---------------|-------------------------|--|--------------------------------------|--------------------------------|---|-------------------------------|
| Ticker | Company | End of Year Closing Stock Price | Div'ds Decl'd per sh 2023 Est | Expected Dividend Yield | Div'ds Decl'd per sh 2025-2027 Est | Short-Term Growth Rate |
| | | <i>Yahoo</i> | <i>Value Line</i> | <i>D / C</i> | <i>Value Line</i> | <i>Note [1]</i> |
| ATUS | Altice USA | 4.60 | 0.00 | 0.00% | 0.00 | 0.00% |
| CABO | Cable One | 711.86 | 11.50 | 1.62% | 13.00 | 4.17% |
| FYBR | Frontier Commun. Parent | 25.48 | 0.00 | 0.00% | 0.00 | 0.00% |
| GOGO | Gogo Inc. | 14.76 | | | | |
| SHEN | Shenandoah Telecom. | 15.88 | 0.09 | 0.57% | 0.15 | 18.56% |
| TDS | Telephone & Data | 10.49 | 0.74 | 7.05% | 0.82 | 3.48% |
| USM | U.S. Cellular | 20.85 | 0.00 | 0.00% | 0.00 | 0.00% |
| WOW | WideOpenWest Inc. | 9.11 | 0.00 | 0.00% | 0.00 | 0.00% |

| A | B | C | D | E |
|---------------|-------------------------|------------------------------------|---|-------------------------------|
| Ticker | Company | Earnings per share 2023 Est | Earnings per share 2025-2027 Est | Short-Term Growth Rate |
| | | <i>Value Line</i> | <i>Value Line</i> | <i>Note [1]</i> |
| ATUS | Altice USA | 0.85 | 1.85 | 29.59% |
| CABO | Cable One | 52.50 | 72.05 | 11.13% |
| FYBR | Frontier Commun. Parent | 0.60 | 1.50 | 35.72% |
| GOGO | Gogo Inc. | | | |
| SHEN | Shenandoah Telecom. | 0.09 | 0.15 | 18.56% |
| TDS | Telephone & Data | 0.80 | 1.60 | 25.99% |
| USM | U.S. Cellular | 1.35 | 2.00 | 14.00% |
| WOW | WideOpenWest Inc. | 0.35 | 0.70 | 25.99% |

Notes

[1] 4 year compound annual growth rate (CAGR) - 3 periods

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Sustainable Long Term Growth

Telecommunications - Medium & Small

2023 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 ₁ | D ₂ | D ₃ | D ₄ | D ₅ |
| | | Yahoo | Note [1] | Note [2] | D_1/P_0 | $K_e = IRR \text{ of } D_1 : D_{500}$ | $g = IRR - Div. \text{ Yield}$ | | | | | | |
| ATUS | Altice USA | 4.60 | 0.00% | 4.45% | 0.00% | | | (4.60) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| CABO | Cable One | 711.86 | 4.17% | 4.45% | 1.62% | 6.00% | 4.38% | (711.86) | 11.50 | 11.98 | 12.48 | 13.00 | 13.54 |
| FYBR | Frontier Commun. Paren | 25.48 | 0.00% | 4.45% | 0.00% | | | (25.48) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GOGO | Gogo Inc. | 14.76 | 0.00% | 4.45% | 0.00% | | | (14.76) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SHEN | Shenandoah Telecom. | 15.88 | 18.56% | 4.45% | 0.57% | 8.21% | 7.64% | (15.88) | 0.09 | 0.11 | 0.13 | 0.15 | 0.18 |
| TDS | Telephone & Data | 10.49 | 3.48% | 4.45% | 7.05% | 10.86% | 3.80% | (10.49) | 0.74 | 0.77 | 0.79 | 0.82 | 0.85 |
| USM | U.S. Cellular | 20.85 | 0.00% | 4.45% | 0.00% | | | (20.85) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOW | WideOpenWest Inc. | 9.11 | 0.00% | 4.45% | 0.00% | | | (9.11) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| 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 ₁ | D ₂ | D ₃ | D ₄ | D ₅ |
| | | Yahoo | Note [1] | Note [2] | D_1/P_0 | $K_e = IRR \text{ of } D_1 : D_{500}$ | $g = IRR - Div. \text{ Yield}$ | | | | | | |
| ATUS | Altice USA | 4.60 | 29.59% | 4.45% | 0.00% | | | (4.60) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| CABO | Cable One | 711.86 | 11.13% | 4.45% | 1.62% | 8.29% | 6.68% | (711.86) | 11.50 | 12.78 | 14.20 | 15.78 | 17.54 |
| FYBR | Frontier Commun. Paren | 25.48 | 35.72% | 4.45% | 0.00% | | | (25.48) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| GOGO | Gogo Inc. | 14.76 | 0.00% | 4.45% | 0.00% | | | (14.76) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| SHEN | Shenandoah Telecom. | 15.88 | 18.56% | 4.45% | 0.57% | 8.21% | 7.64% | (15.88) | 0.09 | 0.11 | 0.13 | 0.15 | 0.18 |
| TDS | Telephone & Data | 10.49 | 25.99% | 4.45% | 7.05% | 28.51% | 21.45% | (10.49) | 0.74 | 0.93 | 1.17 | 1.48 | 1.86 |
| USM | U.S. Cellular | 20.85 | 14.00% | 4.45% | 0.00% | | | (20.85) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| WOW | WideOpenWest Inc. | 9.11 | 25.99% | 4.45% | 0.00% | | | (9.11) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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

Telecommunications - Medium & Small

2023 Assessment Year

| Dividend | Stage 2 | | | | | | | | | | | | | | | Stage 3 | | |
|----------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| | D ₆ | D ₇ | D ₈ | D ₉ | D ₁₀ | D ₁₁ | D ₁₂ | D ₁₃ | D ₁₄ | D ₁₅ | D ₁₆ | D ₁₇ | D ₁₈ | D ₁₉ | D ₂₀ | D ₂₁ | D ₂₂ | D ₅₀₀ |
| ATUS | 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 |
| CABO | 14.11 | 14.70 | 15.32 | 15.96 | 16.63 | 17.32 | 18.05 | 18.81 | 19.59 | 20.42 | 21.27 | 22.16 | 23.09 | 24.06 | 25.07 | 26.18 | 27.35 | 29,863,044,065 |
| FYBR | 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 |
| GOGO | 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 |
| SHEN | 0.21 | 0.25 | 0.29 | 0.34 | 0.40 | 0.47 | 0.55 | 0.65 | 0.77 | 0.90 | 1.06 | 1.25 | 1.47 | 1.73 | 2.03 | 2.12 | 2.21 | 2,417,884,706 |
| TDS | 0.88 | 0.91 | 0.94 | 0.98 | 1.01 | 1.05 | 1.08 | 1.12 | 1.16 | 1.20 | 1.24 | 1.29 | 1.33 | 1.38 | 1.43 | 1.49 | 1.56 | 1,704,919,526 |
| USM | 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 |
| WOW | 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 |

| Earnings | Stage 2 | | | | | | | | | | | | | | | Stage 3 | | |
|----------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|------------------|
| | D ₆ | D ₇ | D ₈ | D ₉ | D ₁₀ | D ₁₁ | D ₁₂ | D ₁₃ | D ₁₄ | D ₁₅ | D ₁₆ | D ₁₇ | D ₁₈ | D ₁₉ | D ₂₀ | D ₂₁ | D ₂₂ | D ₅₀₀ |
| ATUS | 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 |
| CABO | 19.41 | 21.49 | 23.78 | 26.32 | 29.13 | 32.25 | 35.69 | 39.50 | 43.73 | 48.40 | 53.57 | 59.29 | 65.62 | 72.63 | 80.39 | 83.97 | 87.71 | 95,779,455,255 |
| FYBR | 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 |
| GOGO | 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 |
| SHEN | 0.21 | 0.25 | 0.29 | 0.34 | 0.40 | 0.47 | 0.55 | 0.65 | 0.77 | 0.90 | 1.06 | 1.25 | 1.47 | 1.73 | 2.03 | 2.12 | 2.21 | 2,417,884,706 |
| TDS | 2.32 | 2.89 | 3.60 | 4.49 | 5.59 | 6.96 | 8.67 | 10.80 | 13.46 | 16.76 | 20.87 | 26.00 | 32.39 | 40.34 | 50.24 | 52.48 | 54.81 | 59,858,559,726 |
| USM | 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 |
| WOW | 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 |

MONTANA DEPARTMENT OF REVENUE

Support for Yield Capitalization Rate - Debt Rating

Telecommunications - Medium & Small

2023 Assessment Year

| A | B | C | D | E | I |
|------------------------|-------------------------|-----------------------|---------------------------|---------------------------------|--------------------------|
| Ticker | Company | Industry Group | Financial Strength | Moody's Long Term Rating | Yield to Maturity |
| | | <i>Value Line</i> | <i>Value Line</i> | <i>Moody's</i> | |
| ATUS | Altice USA | CABLETV | B | B | 7.71% |
| CABO | Cable One | CABLETV | B++ | Ba3 | 6.97% |
| FYBR | Frontier Commun. Parent | TELESERV | B+ | B3 | 7.71% |
| GOGO | Gogo Inc. | TELESERV | B | B2 | 7.71% |
| SHEN | Shenandoah Telecom. | TELESERV | B+ | | |
| TDS | Telephone & Data | TELESERV | B+ | Ba1 | 6.97% |
| USM | U.S. Cellular | TELESERV | B+ | Ba2 | 6.97% |
| WOW | WideOpenWest Inc. | CABLETV | C++ | Caa | 8.45% |
| Average | | | | | 7.50% |
| Median | | | | | 7.71% |
| Trimmed Average | | | | | 7.41% |
| High | | | | | 8.45% |
| Low | | | | | 6.97% |
| Selected | | | | | 7.50% |

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

MONTANA DEPARTMENT OF REVENUE
Support for Direct Capitalization - Equity Capitalization Rates
Telecommunications - Medium & Small
2023 Assessment Year

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | |
|------------------------|-------------------------|---------------------------------|-----------------|------------|-----------------------|------------------|------------------------------------|-----------------------------------|---------------------------------|----------------------------|------------------------|-------------------|--------------------------------------|-------------------------------------|------------------------|----------------------|--------|---------------|
| Ticker | 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 | Value Line | P/Q | |
| ATUS | Altice USA | 4.60 | 0.42 | 0.45 | 10.95 | 10.22 | 9.13% | 9.78% | 6.11 | 4.40 | 0.75 | 1.05 | 132.83% | 95.65% | 2,098 | (820) | (2.56) | |
| CABO | Cable One | 711.86 | 38.06 | 52.50 | 18.70 | 13.56 | 5.35% | 7.38% | 104.33 | 110.00 | 6.82 | 6.47 | 14.66% | 15.45% | 4,105 | 1,793 | 2.29 | |
| FYBR | Frontier Commun. Parent | 25.48 | 1.79 | 0.50 | 14.23 | 50.96 | 7.03% | 1.96% | 4.70 | 0.00 | 5.42 | | 18.45% | | 6,228 | 4,600 | 1.35 | |
| GOGO | Gogo Inc. | 14.76 | 0.71 | 0.00 | 20.79 | | 4.81% | | 2.31 | 0.00 | 6.39 | | 15.65% | | 1,887 | (320) | (5.89) | |
| SHEN | Shenandoah Telecom. | 15.88 | (0.10) | 0.00 | | | | | 1.27 | 1.40 | 12.50 | 11.34 | 8.00% | 8.82% | 796 | 638 | 1.25 | |
| TDS | Telephone & Data | 10.49 | (0.08) | (0.10) | | | | | 8.23 | 8.35 | 1.27 | 1.26 | 78.46% | 79.60% | 1,180 | 5,849 | 0.20 | |
| USM | U.S. Cellular | 20.85 | 0.34 | 0.65 | 61.32 | 32.08 | 1.63% | 3.12% | 8.59 | 8.90 | 2.43 | 2.34 | 41.20% | 42.69% | 1,766 | 4,554 | 0.39 | |
| WOW | WideOpenWest Inc. | 9.11 | 0.04 | 0.30 | 227.75 | 30.37 | NMF | 3.29% | 1.15 | 2.55 | 7.92 | 3.57 | 12.62% | 27.99% | 787 | 571 | 1.38 | |
| Average | | | | | 58.96 | 27.44 | 5.59% | 5.11% | | | | 5.44 | 4.34 | 40.23% | 45.03% | | | (0.20) |
| Median | | | | | 19.75 | 30.37 | 5.08% | 3.29% | | | | 5.91 | 2.96 | 17.05% | 35.34% | | | 0.82 |
| Trimmed Average | | | | | 28.76 | 25.33 | 4.70% | 4.60% | | | | 5.04 | 3.41 | 30.17% | 41.43% | | | 0.34 |
| High | | | | | 227.75 | 50.96 | 9.13% | 9.78% | | | | 12.50 | 11.34 | 132.83% | 95.65% | | | 2.29 |
| Low | | | | | 10.95 | 10.22 | 1.63% | 1.96% | | | | 0.75 | 1.05 | 8.00% | 8.82% | | | (5.89) |
| Selected | | | | | 18.87 | | 5.30% | | | | | 2.71 | | 36.93% | | | | 0.34 |

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization - Debt Capitalization Rate

Telecommunications - Medium & Small

2023 Assessment Year

(\$ in Millions)

| A | B | C | D | E | F | G | H | I | J |
|------------------------|-------------------------|----------------------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------|---------------|--------------|
| Ticker | Company | Current Year Interest Exp. | Previous Year MV LT Debt | Previous Year BV LT Debt | Current Year MV LT Debt | Current Year BV LT Debt | Average MV LT Debt | Current Yield | MTBR |
| | | <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> |
| ATUS | Altice USA | 1,332 | 26,694 | 26,547 | 21,935 | 26,588 | 24,314 | 5.48% | 0.82 |
| CABO | Cable One | 138 | 3,803 | 3,838 | 3,415 | 3,809 | 3,609 | 3.82% | 0.90 |
| FYBR | Frontier Commun. Parent | 512 | 7,983 | 7,983 | 9,125 | 9,125 | 8,554 | 5.99% | 1.00 |
| GOGO | Gogo Inc. | 39 | 937 | 804 | 694 | 697 | 815 | 4.77% | 1.00 |
| SHEN | Shenandoah Telecom. | | | | | | | | |
| TDS | Telephone & Data | 174 | 3,152 | 2,934 | 3,008 | 3,750 | 3,080 | 5.65% | 0.80 |
| USM | U.S. Cellular | 163 | 2,940 | 2,731 | 2,454 | 3,200 | 2,697 | 6.04% | 0.77 |
| WOW | WideOpenWest Inc. | 39 | 724 | 741 | 695 | 743 | 709 | 5.46% | 0.94 |
| All Companies | | 2,396 | 46,232 | 45,579 | 41,325 | 47,911 | 43,779 | 5.47% | 0.86 |
| Average | | | | | | | | 5.31% | 0.89 |
| Median | | | | | | | | 5.48% | 0.90 |
| Trimmed Average | | | | | | | | 5.47% | 0.89 |
| High | | | | | | | | 6.04% | 1.00 |
| Low | | | | | | | | 3.82% | 0.77 |
| Selected | | | | | | | | 5.47% | 0.89 |

MONTANA DEPARTMENT OF REVENUE

Support of Stock Price - From YAHOO Finance

Telecommunications - Medium & Small

2023 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. |
| ATUS | Altice USA | 14.42 | 11.56 | 12.48 | 9.28 | 11.38 | 9.25 | 10.51 | 10.00 | 5.83 | 6.61 | 4.56 | 4.60 |
| CABO | Cable One | 1,544.73 | 1,432.85 | 1,464.24 | 1,166.20 | 1,303.10 | 1,289.32 | 1,376.68 | 1,135.00 | 853.05 | 859.43 | 724.29 | 711.86 |
| FYBR | Frontier Commun. Parent | 26.66 | 27.55 | 27.67 | 26.39 | 25.93 | 23.54 | 25.91 | 25.76 | 23.43 | 23.42 | 25.77 | 25.48 |
| GOGO | Gogo Inc. | 12.45 | 14.24 | 19.06 | 18.41 | 20.26 | 16.19 | 17.36 | 14.86 | 12.12 | 14.22 | 15.69 | 14.76 |
| SHEN | Shenandoah Telecom. | 22.77 | 22.35 | 23.58 | 20.20 | 22.96 | 22.20 | 22.30 | 22.29 | 17.02 | 22.66 | 19.47 | 15.88 |
| TDS | Telephone & Data | 19.80 | 17.35 | 18.88 | 18.32 | 17.73 | 15.79 | 15.81 | 16.27 | 13.90 | 17.00 | 10.54 | 10.49 |
| USM | U.S. Cellular | 30.62 | 27.51 | 30.23 | 28.78 | 30.71 | 28.96 | 29.29 | 28.59 | 26.03 | 31.17 | 21.26 | 20.85 |
| WOW | WideOpenWest Inc. | 18.61 | 16.99 | 17.44 | 20.05 | 21.98 | 18.21 | 18.38 | 17.80 | 12.27 | 13.71 | 10.38 | 9.11 |

