



**2021 Capitalization Rate Study
Railroads**

FINAL

Completed: April 16, 2021

MONTANA DEPARTMENT OF REVENUE

Yield Capitalization Rate Conclusion

Industry: Railroads

2021 Assessment Year

Capital Structure ^[1]

Equity	80.00%
Debt	20.00%

Equity Cost of Capital

		Weighting
Capital Asset Pricing Model - Ex Post ^[2]	9.43%	35%
Capital Asset Pricing Model - Ex Ante ^[2]	7.67%	35%
3 Stage Dividend Discount Model - Dividends ^[3]	6.35%	15%
3 Stage Dividend Discount Model - Earnings ^[3]	7.60%	15%
Weighted Average	8.07%	100%
Selected Cost of Equity	8.07%	

Debt Cost of Capital

		Weighting
A - Mergent's - Avg. YTM of A Rated Corporate Bonds ^[4]	2.72%	0%
Baa - Mergent's - Avg. YTM of Baa Rated Corporate Bonds ^[4]	3.16%	100%
Ba - MTDOR - Avg. YTM of Ba Rated Corporate Bonds ^[5]	6.54%	0%
Weighted Average	3.16%	100%
Selected Cost of Debt	3.16%	

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	80.00%	8.07%		8.07%	6.46%
Debt	20.00%	3.16%	24.00%	2.40%	0.48%
WACC	100.00%				6.94%
WACC (Rounded)					6.95%

Notes

- [1] From worksheet: Capital Structure
- [2] From worksheet: Capital Asset Pricing Model Summary
- [3] From worksheet: Yield Equity Summary
- [4] January 2021, Mergent Bond Record
- [5] Montana Department of Revenue High Yield Debt Study

MONTANA DEPARTMENT OF REVENUE

Direct Capitalization Rate Conclusion

Industry: Railroads

2021 Assessment Year

Capital Structure ^[1]

Equity	80.00%
Debt	20.00%

Equity Capitalization Rate ^[2]

NOI After-tax	4.35%
GCF	6.10%

Debt Capitalization Rate ^[3]

Calculated Current Yield	3.85%
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NOI After-tax Direct Capitalization Rate

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	80.00%	4.35%		4.35%	3.48%
Debt	20.00%	3.85%	24.00%	2.93%	0.59%
Total	100.00%				4.07%
Total (Rounded)					4.10%

GCF Direct Capitalization Rate

Source of Capital	Capital Structure	Capitalization Rate	Marginal Tax Rate	After-tax Capitalization Rate	Weighted Capitalization Rate
Equity	80.00%	6.10%		6.10%	4.88%
Debt	20.00%	3.85%	24.00%	2.93%	0.59%
WACC	100.00%				5.47%
Total (Rounded)					5.50%

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: Railroads

2021 Assessment Year

Screening Requirements:

The universe of companies is all companies listed in Value Line under the Railroad industry.

Companies were then selected using the following screening criteria:

1. Primarily provides rail, intermodal transportation, and rail-to-truck transload services.
2. Actively traded on an American exchange.
3. Headquartered / incorporated in the United States
4. No significant merger & acquisition activity during the year.

Company Ticker	Primarily provide rail services	Actively Traded on an American Exchange	Headquartered/Incorporated in the U.S.	Consider as Potential Guideline Company	Not Engaged in Material M&A Activity	Use as Guideline Company	Note
CNI			No				
CP			No				
CSX	Yes	Yes	Yes	Yes	Yes	Yes	
GATX	No						
GBX	No						
KSU	Yes	Yes	Yes	Yes	Yes	Yes	
NSC	Yes	Yes	Yes	Yes	Yes	Yes	
RAIL	No						
TRN	No						
UNP	Yes	Yes	Yes	Yes	Yes	Yes	
USDP	No						
WAB	No						

MONTANA DEPARTMENT OF REVENUE

Support for Capital Structure

Industry: Railroads

2021 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>					
CSX	CSX Corp.	RAILROAD	B++	763	90.48	68,990	0	21,076	500	90,566	76%	0%	24%
KSU	Kansas City South'n	RAILROAD	A	91	203.13	18,495	5	4,369	70	22,939	81%	0%	19%
NSC	Norfolk Southern	RAILROAD	A+	252	236.65	59,659	0	16,664	433	76,756	78%	0%	22%
UNP	Union Pacific	RAILROAD	A++	671	207.26	139,147	0	31,829	1,604	172,580	81%	0%	19%
All Companies						286,291	5	73,938	2,607	362,841	79%	0%	21%
Average											79%	0%	21%
Median											79%	0%	21%
High											81%	0%	24%
Low											76%	0%	19%
Selected											80%		20%

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:

2021 - No changes to guideline companies.

		<u>Median</u>	
Current Year	79%	0%	21%
Prior Year	78%	0%	22%
2 Years Prior	77%	0%	23%
3 Year Average	78%	0%	22%

MONTANA DEPARTMENT OF REVENUE

Capital Asset Pricing Model (CAPM)

Industry: Railroads

2021 Assessment Year

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

		<i>Ex Post</i>	<i>Ex Ante</i>
$k_e =$	Cost of Equity	9.43%	7.67%
$R_f =$	Risk Free Rate	1.45%	1.45%
$\beta =$	Beta	1.10	1.10
$ERP =$	Equity Risk Premium ($R_m - R_f$)	7.25%	5.65%
$R_m =$	Market Rate of Return	8.70%	7.10%

Risk Free Rate Measures (R_f):

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

January 1, 2021 Page 701

Selected Yields on Taxable U.S. Treasury Securities as of 12/21/20

10-year	0.95%
30-year	1.68%

Federal Reserve Statistical Release ^[2] and U.S. Department of the Treasury, Daily Treasury Yield Curve Rates ^[3]

U.S. government securities, Treasury constant maturities, Nominal, December 31, 2020

10-year	0.93%
20-year	1.45%
30-year	1.65%
Risk Free Rate Selected	<u>1.45%</u>

Notes

[1] "Value Line Selection & Opinion", Value Line (January 3, 2020)

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

[3] <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/>

Ex Post - Equity Risk Premium Measures ($ERP = R_m - R_f$)

Duff & Phelps, 2021 Cost of Capital Navigator

		R_m ^[4]	R_m	R_f	ERP
ERP "Historical" - <i>Ex Post</i>	Arithmetic Avg.	8.70%	8.70%	1.45%	7.25%
ERP "Supply-side" - <i>Ex Post</i>	Arithmetic Avg.	7.45%	7.45%	1.45%	6.00%
Ex Post Equity Risk Premium Selected		<u>8.70%</u>		<u>1.45%</u>	<u>7.25%</u>

MONTANA DEPARTMENT OF REVENUE

Capital Asset Pricing Model (CAPM)

Industry: Railroads

2021 Assessment Year

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

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

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

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP - <i>Ex Ante</i>	7.44%	7.44%	1.45%	5.99%

Duff & Phelps, 2021 Cost of Capital Navigator

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP "Conditional" - <i>Ex Ante</i>		8.00%	2.50%	5.50%

Damodaran Implied ERP (Jan 5, 2021)

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
Implied Premium (FCFE) - <i>Ex Ante</i>	6.17%	5.65%	0.93%	4.72%
Implied Premium (FCFE with sustainable payout) - <i>Ex Ante</i>	6.39%	5.87%	0.93%	4.94%

	<u>R_m^[4]</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
<u>Average</u>	6.67%	6.74%		5.29%
<u>Median</u>	6.39%	6.66%		5.22%
<u>High</u>	7.44%	8.00%		5.99%
<u>Low</u>	6.17%	5.65%		4.72%

Equity Risk Premium Selected

7.10%	1.45%	5.65%
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Notes

[4] R_m estimated using selected Risk Free Rate (R_f)

MONTANA DEPARTMENT OF REVENUE

Support for Beta Selection in CAPM**Industry: Railroads****2021 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>
CSX	CSX Corp.	RAILROAD	B++	1.05
KSU	Kansas City South'n	RAILROAD	A	1.05
NSC	Norfolk Southern	RAILROAD	A+	1.10
UNP	Union Pacific	RAILROAD	A++	1.10
Average				1.08
Median				1.08
High				1.10
Low				1.05
Selected				1.10

MONTANA DEPARTMENT OF REVENUE

**Inflation & Real Growth
Industry: Railroads
2021 Assessment Year**

A	B	C	D	Nominal Growth	
				E	F
Source Description	Inflation (CPI)	Real Growth (GDP)	Nominal Growth	Low	High
Livingston Survey ^[1]	2.19%	2.21%	4.40%		
Survey of Professional Forecasters ^[2]	2.24%	2.27%	4.51%		
Congressional Budget Office ^[3]	1.90%	3.70%	5.60%		
Average	2.11%	2.73%	4.84%		
Median	2.19%	2.27%	4.46%		
High	2.24%	3.70%	5.94%		
Low	1.90%	2.21%	4.11%		
Selected	2.00%	2.50%	4.50%	4.11%	5.94%

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>
2008	210.228		1.2390	215.303		1.2021
2009	215.949	2.6%	1.2062	214.537	-0.4%	1.2064
2010	219.179	1.5%	1.1884	218.056	1.6%	1.1869
2011	225.672	2.9%	1.1542	224.939	3.1%	1.1506
2012	229.601	1.7%	1.1345	229.594	2.0%	1.1273
2013	233.049	1.5%	1.1177	232.957	1.4%	1.1110
2014	234.812	0.8%	1.1093	236.736	1.6%	1.0932
2015	236.525	0.7%	1.1013	237.017	0.1%	1.0920
2016	241.432	2.0%	1.0789	240.007	1.2%	1.0783
2017	246.524	2.1%	1.0566	245.120	2.1%	1.0559
2018	251.233	1.9%	1.0368	251.107	2.4%	1.0307
2019	256.974	2.2%	1.0136	255.657	1.8%	1.0123
2020	260.474	1.3%	1.0000	258.811	1.2%	1.0000

Notes

[1] Federal Reserve Bank of Philadelphia The Livingston Survey December 18, 2020 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 12, 2021 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] Congressional Budget Office, The Budget and Economic Outlook: 2021 to 2031, 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/historical-cpi-u-202001.pdf>

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

[7] Most current year / Row year

MONTANA DEPARTMENT OF REVENUE

3 Stage Dividend Discount Model (DDM)

Industry: Railroads

2021 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	2020 Year End Stock Price	2021 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
CSX	CSX Corp.	90.48	1.20	1.33%	4.77%	5.42%	6.09%	6.75%
KSU	Kansas City South'n	203.13	2.06	1.01%	5.19%	6.14%	6.20%	7.16%
NSC	Norfolk Southern	236.65	3.96	1.67%	4.90%	6.11%	6.58%	7.78%
UNP	Union Pacific	207.26	4.20	2.03%	4.49%	6.78%	6.51%	8.81%
Average							6.35%	7.62%
Median							6.36%	7.47%
High							6.58%	8.81%
Low							6.09%	6.75%
Selected							6.35%	7.60%

Notes

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

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Short Term Growth Rate Calculations

Industry: Railroads

2021 Assessment Year

A	B	C	D	E	F	G
Ticker	Company	End of Year Closing Stock Price	Div'ds Decl'd per sh 2021 Est	Expected Dividend Yield	Div'ds Decl'd per sh 2024-2026 Est	Short-Term Growth Rate
		<i>Yahoo</i>	<i>Value Line</i>	<i>D / C</i>	<i>Value Line</i>	<i>Note [1]</i>
CSX	CSX Corp.	90.48	1.20	1.33%	1.50	5.74%
KSU	Kansas City South'n	203.13	2.06	1.01%	2.80	7.97%
NSC	Norfolk Southern	236.65	3.96	1.67%	5.00	6.00%
UNP	Union Pacific	207.26	4.20	2.03%	5.00	4.46%

A	B	C	D	E
Ticker	Company	Earnings per share 2021 Est	Earnings per share 2024-2026 Est	Short-Term Growth Rate
		<i>Value Line</i>	<i>Value Line</i>	<i>Note [1]</i>
CSX	CSX Corp.	4.45	6.10	8.20%
KSU	Kansas City South'n	9.10	14.00	11.37%
NSC	Norfolk Southern	11.35	16.35	9.55%
UNP	Union Pacific	9.65	14.40	10.52%

Notes

[1] 5 year compound annual growth rate (CAGR) - 4 periods

MONTANA DEPARTMENT OF REVENUE

Support for DDM - Sustainable Long Term Growth

Industry: Railroads

2021 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	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. Yield$						
CSX	CSX Corp.	90.48	5.74%	4.50%	1.33%	6.09%	4.77%	(90.48)	1.20	1.27	1.34	1.42	1.50
KSU	Kansas City South'n	203.13	7.97%	4.50%	1.01%	6.20%	5.19%	(203.13)	2.06	2.22	2.40	2.59	2.80
NSC	Norfolk Southern	236.65	6.00%	4.50%	1.67%	6.58%	4.90%	(236.65)	3.96	4.20	4.45	4.72	5.00
UNP	Union Pacific	207.26	4.46%	4.50%	2.03%	6.51%	4.49%	(207.26)	4.20	4.39	4.58	4.79	5.00

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	$K_e = IRR \text{ of } D_1:D_{500}$	$g = IRR - Div. Yield$						
CSX	CSX Corp.	90.48	8.20%	4.50%	1.33%	6.75%	5.42%	(90.48)	1.20	1.30	1.40	1.52	1.64
KSU	Kansas City South'n	203.13	11.37%	4.50%	1.01%	7.16%	6.14%	(203.13)	2.06	2.29	2.56	2.85	3.17
NSC	Norfolk Southern	236.65	9.55%	4.50%	1.67%	7.78%	6.11%	(236.65)	3.96	4.34	4.75	5.21	5.70
UNP	Union Pacific	207.26	10.52%	4.50%	2.03%	8.81%	6.78%	(207.26)	4.20	4.64	5.13	5.67	6.27

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: Railroads

2021 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
CSX	1.58	1.67	1.77	1.87	1.97	2.09	2.20	2.33	2.46	2.60	2.75	2.90	3.07	3.24	3.42	3.58	3.74	5,131,448,637
KSU	3.02	3.25	3.50	3.77	4.07	4.38	4.72	5.08	5.48	5.90	6.36	6.85	7.38	7.95	8.57	8.96	9.36	12,847,730,067
NSC	5.30	5.61	5.94	6.29	6.66	7.05	7.47	7.91	8.38	8.87	9.40	9.95	10.54	11.16	11.82	12.35	12.91	17,717,757,007
UNP	5.22	5.46	5.70	5.95	6.22	6.50	6.79	7.09	7.40	7.73	8.08	8.44	8.82	9.21	9.62	10.05	10.50	14,418,771,033

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
CSX	1.78	1.92	2.07	2.23	2.41	2.60	2.81	3.03	3.28	3.54	3.82	4.12	4.45	4.80	5.19	5.42	5.66	7,775,432,520
KSU	3.52	3.90	4.32	4.80	5.32	5.90	6.54	7.26	8.05	8.93	9.90	10.98	12.18	13.51	14.99	15.66	16.36	22,464,652,461
NSC	6.23	6.80	7.43	8.12	8.87	9.68	10.57	11.55	12.61	13.78	15.05	16.43	17.95	19.60	21.41	22.37	23.38	32,094,122,269
UNP	6.90	7.60	8.37	9.22	10.15	11.18	12.31	13.56	14.93	16.44	18.10	19.94	21.95	24.18	26.62	27.82	29.07	39,908,905,763

MONTANA DEPARTMENT OF REVENUE

Support for Yield Capitalization Rate - Debt Rating

Industry: Railroads

2021 Assessment Year

A	B	C	D	E	F
Ticker	Company	Industry Group	Financial Strength	Moody's Long Term Rating	Numeric Rating
		<i>Value Line</i>	<i>Value Line</i>	<i>Moodys.com</i>	
CSX	CSX Corp.	RAILROAD	B++	Baa1	8
KSU	Kansas City South'n	RAILROAD	A	Baa2	9
NSC	Norfolk Southern	RAILROAD	A+	Baa1	8
UNP	Union Pacific	RAILROAD	A++	Baa1	8
Average					8
Median					8
High					9
Low					8
Selected				Baa1	8

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization - Equity Capitalization Rates

Industry: Railroads

2021 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
CSX	CSX Corp.	90.48	3.60	4.45	25.13	20.33	3.98%	4.92%	6.05	5.45	14.96	16.60	6.69%	6.02%	68,990	11,848	5.82
KSU	Kansas City South'n	203.13	6.96	9.10	29.19	22.32	3.43%	4.48%	11.09	13.35	18.32	15.22	5.46%	6.57%	18,495	4,057	4.56
NSC	Norfolk Southern	236.65	9.25	11.35	25.58	20.85	3.91%	4.80%	14.97	14.00	15.81	16.90	6.33%	5.92%	59,659	15,184	3.93
UNP	Union Pacific	207.26	8.12	9.65	25.53	21.48	3.92%	4.66%	11.49	13.10	18.04	15.82	5.54%	6.32%	139,147	16,958	8.21
Average					26.36	21.25	3.81%	4.71%			16.78	16.14	6.00%	6.21%			5.63
Median					25.55	21.16	3.91%	4.73%			16.92	16.21	5.93%	6.17%			3.93
High					29.19	22.32	3.98%	4.92%			18.32	16.90	6.69%	6.57%			5.82
Low					25.13	20.33	3.43%	4.48%			14.96	15.22	5.46%	5.92%			3.93
Selected							4.35%						6.10%				5.60

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization - Debt Capitalization Rate

Industry: Railroads

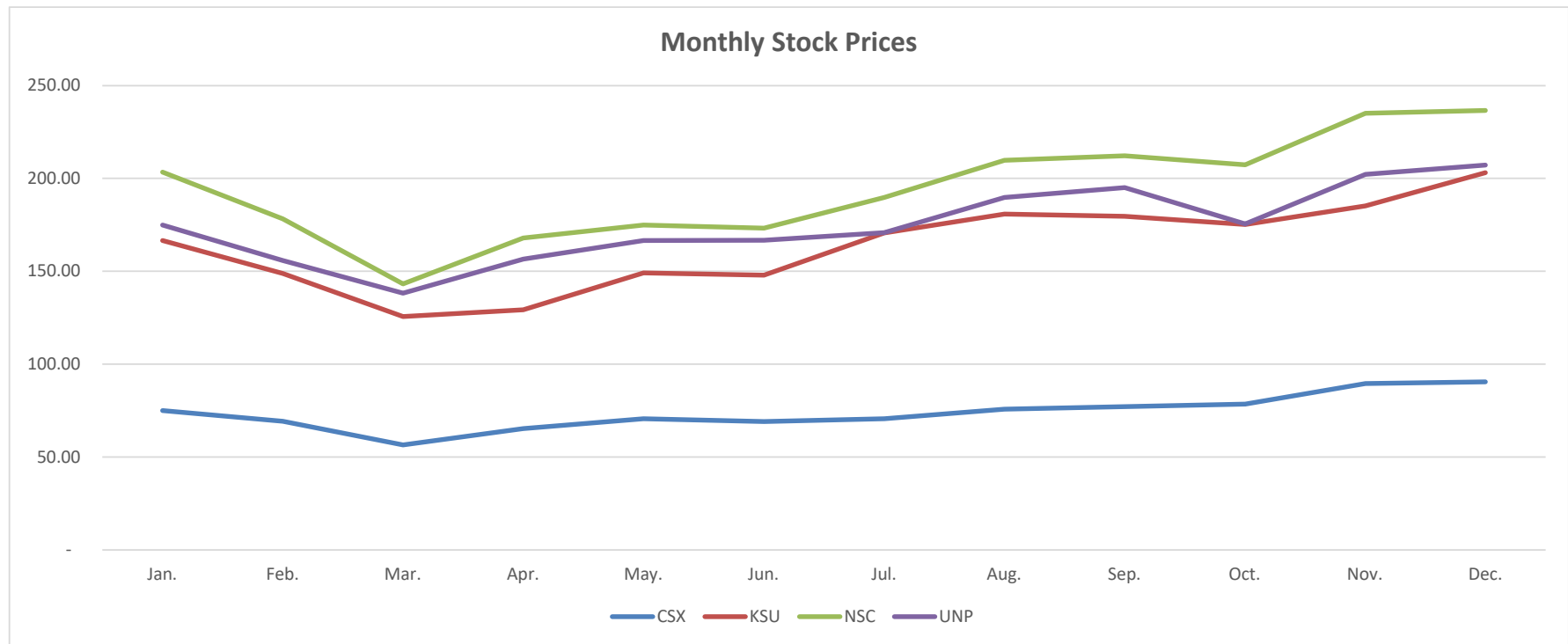
2021 Assessment Year

(\$ 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>Source</i>	<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>
CSX	CSX Corp.	754	18,503	16,238	21,076	16,705	19,790	3.81%	1.26
KSU	Kansas City South'n	151	3,536	3,246	4,369	3,771	3,952	3.82%	1.16
NSC	Norfolk Southern	625	14,806	12,196	16,664	12,681	15,735	3.97%	1.31
UNP	Union Pacific	1,141	27,200	25,200	31,829	26,729	29,515	3.87%	1.19
All Companies		2,671			73,938	59,886	68,991	3.87%	1.23
Average								3.87%	1.23
Median								3.84%	1.23
High								3.97%	1.31
Low								3.81%	1.16
Selected								3.85%	1.23

MONTANA DEPARTMENT OF REVENUE
Support of Stock Price - From YAHOO Finance
Industry: Railroads
2021 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.
CSX	CSX Corp.	75.11	69.32	56.57	65.39	70.67	69.10	70.68	75.76	77.22	78.48	89.53	90.48
KSU	Kansas City South'n	166.64	148.85	125.63	129.30	149.08	147.86	170.64	180.76	179.56	175.28	185.26	203.13
NSC	Norfolk Southern	203.44	178.17	143.28	167.92	174.97	173.27	189.69	209.75	212.22	207.39	235.06	236.65
UNP	Union Pacific	174.86	155.75	138.26	156.64	166.51	166.67	170.89	189.71	195.05	175.55	202.19	207.26



MONTANA DEPARTMENT OF REVENUE

Maintenance Capital Expenditures Estimate Based on Guideline Companies

Industry: Railroads

2021 Assessment Year

(\$ In Millions)

1	2		3	4	5	6	7	8	9	10	11
A	B	C	D	E	F	G	H	I	J	K	L
Ticker	Company	Inflation	PP&E, Gross	PP&E, Gross	Average PP&E	Depreciation Expense	Average Life of Assets			Replacement Cost (RC)	RC as % of Depreciation
			Current Year	Previous Year				Note [1]	Note [1]	Note [1]	
		MTDOR (CPI)	10-K, Notes	10-K, Notes	(D+E)/2	10-K (CF)	F/G	C*H	1/(1+C)^H	G*I/(1-J)	K/G
CSX	CSX Corp.	2.00%	45,530	45,100	45,315	1,383	32.77	0.66	0.52	1,899	137.28%
KSU	Kansas City South'n	2.00%	11,902	11,496	11,699	358	33	0.65	0.52	491	137.19%
NSC	Norfolk Southern	2.00%	43,330	43,596	43,463	1,154	38	0.75	0.47	1,654	143.30%
UNP	Union Pacific	2.00%	75,420	74,246	74,833	2,210	34	0.68	0.51	3,063	138.61%
Average											139.10%
Median											137.95%
High											143.30%
Low											137.19%
Selected											139.00%

Notes:

[1] Cornell, B. & Gerger, R. (2017). Estimating Terminal Values with Inflation: The Inputs Matter-It Is Not a Formulaic Exercise. *Business Valuation Review*, Volume 36, Number 4, 117-123.