



2017 Capitalization Rate Study  
*Final*

**Scheduled Airlines - Freight**

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**MONTANA DEPARTMENT OF REVENUE**

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**Yield Capitalization Rate Study  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

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**Capital Structure**

Equity	<b>75.00%</b>	<i>Page AF-4</i>
Debt	<b>25.00%</b>	<i>Page AF-4</i>

**Equity Cost of Capital**

Capital Asset Pricing Model	9.39%	<i>Page AF-5</i>
Dividend Growth Model (g = Earnings Growth)	10.00%	<i>Page AF-9</i>
Dividend Growth Model (g = Dividends Growth)	11.40%	<i>Page AF-9</i>
Dividend Growth Model (g = b x ROE)	18.20%	<i>Page AF-9</i>
	<b>9.60%</b>	

**Debt Cost of Capital**

Standard and Poor's Yield to Maturity	3.70%	<i>Page AF-13</i>
Mergent's Corporate Bond Yields:		
A	3.96%	
Baa - Corporate (Annual Avg)	4.72%	
Baa - Corporate (4th Qtr Avg)	4.64%	
Baa - Corporate (December)	4.83%	
	<b>4.83%</b>	

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**Freight Airlines - Weighted Average Cost of Capital (WACC)**

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<b>Source of Capital</b>	<b>Capital Structure</b>	<b>Cost of Capital</b>	<b>Marginal Tax Rate</b>	<b>After-tax Cost of Capital</b>	<b>Weighted Cost</b>
Equity	75.00%	9.60%		9.60%	7.20%
Debt	25.00%	4.83%	38.00%	2.99%	0.75%
<b>WACC</b>	<b>100.00%</b>				<b>7.95%</b>
<b>WACC (Rounded)</b>					<b>8.00%</b>

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**MONTANA DEPARTMENT OF REVENUE**

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**Direct Capitalization Rate Study  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

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**Capital Structure**

Equity	<b>75.00%</b>	<i>Page AF-4</i>
Debt	<b>25.00%</b>	<i>Page AF-4</i>

**Equity Cost of Capital**

NOI After-tax	<b>5.80%</b>	<i>Page AF-14</i>
GCF	<b>12.20%</b>	<i>Page AF-14</i>

**Debt Cost of Capital**

Standard and Poor's Current Yield	4.80%	<i>Page AF-15</i>
Calculated Current Yield	3.00%	<i>Page AF-16</i>
	<b>4.00%</b>	

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**Freight Airlines - NOI After-tax Direct Capitalization Rate**

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Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	After-tax Cost of Capital	Weighted Cost
Equity	75.00%	5.80%		5.80%	4.35%
Debt	25.00%	4.00%	38.00%	2.48%	0.62%
<b>Total</b>	<b>100.00%</b>				<b>4.97%</b>
<b>Total (Rounded)</b>					<b>5.00%</b>

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**Freight Airlines - GCF Direct Capitalization Rate**

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Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	After-tax Cost of Capital	Weighted Cost
Equity	75.00%	12.20%		12.20%	9.15%
Debt	25.00%	4.00%	38.00%	2.48%	0.62%
<b>WACC</b>	<b>100.00%</b>				<b>9.77%</b>
<b>Total (Rounded)</b>					<b>9.80%</b>

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**MONTANA DEPARTMENT OF REVENUE**

Support for Capital Structure  
Industry: Scheduled Freight Airlines  
2017 Assessment Year

A	B	C	D	E	F	G	H	I	J	K	L	M	N
Company	Ticker Symbol	Industry Group	Financial Strength	Shares Outstanding	Avg. 4Q Stock Price	MV Common Stock	MV Preferred Stock*	MV Long Term Debt	PV of Operating Leases	Total Common, Preferred, LT Debt, & OpLeases	% Common	% Preferred	% Debt & OpLeases
		<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>(000)</i>		<i>(\$000)</i>	<i>(\$000)</i>	<i>(\$000)</i>	<i>(\$000)</i>	<i>(\$000)</i>			
Atlas Air Worldwide	AAWW	AIRTRANS	B+	25,017	46.61	1,166,137	0	1,968,173	754,769	3,889,079	30%	0%	70%
Air T Inc	AIRT	AIRTRANS	C+	2,373	19.24	45,655	0	1,864	8,741	56,261	81%	0%	19%
Air Transport Services Grp.	ATSG	AIRTRANS	B	59,461	15.13	899,451	0	458,900	31,154	1,389,505	65%	0%	35%
FedEx Corp.	FDX	AIRTRANS	A++	318,000	182.39	58,000,021	0	14,363,000	14,345,579	86,708,599	67%	0%	33%
United Parcel Serv.	UPS	AIRTRANS	A	869,000	112.23	97,530,768	0	17,134,000	1,275,300	115,940,068	84%	0%	16%
<b>All Companies</b>						157,642,032	0	33,925,937	16,415,543	207,983,512	<b>76%</b>	<b>0%</b>	<b>24%</b>
<b>Average</b>											<b>65%</b>	<b>0%</b>	<b>35%</b>
<b>Median</b>											<b>67%</b>	<b>0%</b>	<b>33%</b>
High											84%	0%	70%
Low											30%	0%	16%
<b>Say</b>											<b>75%</b>		<b>25%</b>

\*Market value of preferred stock assumed to equal book value. Market value of long term debt is fair value.

**Notes/Rational for Changes to Guideline Companies**

2017 - No changes to Guideline Companies

2016 - No changes to Guideline Companies

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**MONTANA DEPARTMENT OF REVENUE**

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**Capital Asset Pricing Model (CAPM)  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

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

$k_e =$	Cost of Equity	<b>Freight</b>
$R_f =$	Risk Free Rate	<b>9.39%</b>
$\beta =$	Beta	1.10
$ERP =$	Equity Risk Premium ( $R_m - R_f$ )	6.00%
$R_m =$	Market Rate of Return	8.79%

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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 6, 2017

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Selected Yields on Taxable U.S. Treasury Securities

10-year	2.51%
30-year	3.09%

Federal Reserve Statistical Release<sup>2</sup> and U.S. Department of the Treasury, Daily Treasury Yield Curve Rates<sup>3</sup>

U.S. government securities, Treasury constant maturities, Nominal, December 30, 2016

10-year	2.45%
20-year	2.79%
30-year	3.06%

**Risk Free Rate Selected**

**2.79%**

<sup>1</sup> "Value Line Selection & Opinion", Value Line (January 6, 2017)

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

<sup>3</sup> <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2016>

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**MONTANA DEPARTMENT OF REVENUE**

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**Capital Asset Pricing Model (CAPM)  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

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

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**Equity Risk Premium Measures (ERP = R<sub>m</sub> - R<sub>f</sub>)**

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

	<u>R<sub>m</sub><sup>4</sup></u>	<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
ERP - <i>Ex Ante</i>	8.00%	8.00%	2.79%	5.21%

Duff & Phelps, 2017 Valuation Handbook

		<u>R<sub>m</sub><sup>4</sup></u>	<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>	9.73%	9.66%	2.72%	6.94%
	<i>Arithmetic Avg.</i>	8.76%	8.69%	2.72%	5.97%
ERP "Adj. Supply-side" - <i>Ex Post</i>	<i>Arithmetic Avg.</i>	7.89%	7.82%	2.72%	5.10%
ERP "Conditional" - <i>Ex Ante</i>			9.50%	4.00%	5.50%

Damodaran Implied ERP (Jan 1, 2017)

	<u>R<sub>m</sub><sup>4</sup></u>	<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
Implied Premium (FCFE) - <i>Ex Ante</i>	8.48%	8.14%	2.45%	5.69%
Implied Premium (FCFE with sustainable payout) - <i>Ex Ante</i>	7.29%	6.95%	2.45%	4.50%

	<u>R<sub>m</sub><sup>4</sup></u>	<u>R<sub>m</sub></u>	<u>R<sub>f</sub></u>	<u>ERP</u>
<u>Average</u>	8.36%	8.39%		5.56%
<u>Median</u>	8.24%	8.14%		5.50%
<u>High</u>	9.73%	9.66%		6.94%
<u>Low</u>	7.29%	6.95%		4.50%

**Equity Risk Premium Selected**

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<b>8.79%</b>	<b>2.79%</b>	<b>6.00%</b>
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<sup>4</sup> R<sub>m</sub> estimated using selected Risk Free Rate (R<sub>f</sub>)

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**MONTANA DEPARTMENT OF REVENUE**

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Capital Asset Pricing Model (CAPM)  
 Industry: Scheduled Freight Airlines  
 2017 Assessment Year

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

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**Inflation and Growth Estimates<sup>5</sup>**

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	<u>Inflation</u> (CPI)	<u>Real Growth</u> (GDP)	<u>Nominal</u> <u>Growth</u>	<u>Nominal Growth</u>	
				<u>Low</u>	<u>High</u>
Livingston Survey	2.30%	2.20%	4.50%		
Survey of Professional Forecasters	2.30%	2.45%	4.75%		
Congressional Budget Office	2.53%	2.17%	4.70%		
Office of Budget and Management	2.38%	2.07%	4.45%		
OASDI Trustee Report	2.70%	2.70%	5.40%		
Average	2.44%	2.32%	4.76%		
Median	2.38%	2.20%	4.58%		
High	2.70%	2.70%	5.40%		
Low	2.30%	2.07%	4.37%		
<b>Say</b>	<b>2.40%</b>	<b>2.20%</b>	<b>4.60%</b>	<b>4.37%</b>	<b>5.40%</b>
<b>Rounded</b>				<b>4.00%</b>	<b>6.00%</b>

<sup>5</sup> Real Growth Sources: "The Livingston Survey", Federal Reserve Bank of Philadelphia (December 9, 2016); "Survey of Professional Forecasters", Federal Reserve Bank of Philadelphia (February 10, 2017); "Congressional Budget Office", An Update to the Budget and Economic Outlook: 2016 to 2026 (August 2016); "Office of Budget and Management", FY 2017 Mid-Session Review (July 15, 2016); "OASDI Trustee Report", Board of Trustees of the Federal Old-Age Survivors Insurance and Federal Disability Insurance Trust Funds (June 22, 2016)

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**MONTANA DEPARTMENT OF REVENUE**

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Support for Beta Selection in CAPM  
Industry: Scheduled Freight Airlines  
2017 Assessment Year

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A	B	C	D	E
Company	Ticker Symbol	Industry Group	Financial Strength	Beta
		<i>Value Line</i>	<i>Value Line</i>	<i>Value Line</i>
Atlas Air Worldwide	AAWW	AIRTRANS	B+	1.35
Air T Inc	AIRT	AIRTRANS	C+	0.45
Air Transport Services Grp.	ATSG	AIRTRANS	B	1.35
FedEx Corp.	FDX	AIRTRANS	A++	1.10
United Parcel Serv.	UPS	AIRTRANS	A	0.85
<b>Average</b>				<b>1.02</b>
<b>Median</b>				<b>1.10</b>
High				1.35
Low				0.45
<b>Say</b>				<b>1.10</b>



MONTANA DEPARTMENT OF REVENUE

Support for Yield Capitalization Cost of Equity Component - Based on Dividend Growth Model  
 Industry: Scheduled Freight Airlines  
 2017 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 Growth  
 $b$  = Retention Ratio (1 - Payout Ratio)  
 ROE = Return on Equity

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Company Name	Ticker	Avg. 4Q Stock Price	2017 Est Dividend	Dividend Yield	2017 Est Earnings Per Share	2017 Est Payout Ratio	Retention Ratio	2017 Est Return on Equity	Multistage Long Term Earnings Growth Estimate	Multistage Long Term Dividends Growth Estimate	Sustainable Growth*	Cost of Equity	Cost of Equity	Cost of Equity
		$P_0$	$D_1$	$D_1/P_0$	EPS	$D_1/EPS$	$b = 1 - \text{Payout Ratio}$	ROE	$g = \text{Earnings } g$	$g = \text{Dividends } g$	$g = b \times ROE$	$K_e$ $g = \text{Earnings } g$	$K_e$ $g = \text{Dividends } g$	$K_e$ $g = b \times ROE$
		Yahoo	Value Line	D/C	Value Line	D/F	1-G	Value Line	Multi Stg g Wrksht	Multi Stg g Wrksht	H*I	E+J	E+K	E+L
Atlas Air Worldwide	AAWW	46.61	0.00		4.65			2.50%	3.64%	1.82%				
Air T Inc	AIRT	19.24	0.00		0.00			0.00	3.22%	3.22%				
Air Transport Services Grp.	ATSG		0.00		0.00			0.00	3.22%	3.22%				
FedEx Corp.	FDX	182.39	1.60	0.88%	11.95	13.39%	86.61%	20.00%	8.63%	12.71%	17.32%	9.50%	13.59%	18.20%
United Parcel Serv.	UPS	112.23	3.12	2.78%	5.90	52.88%	47.12%	0.00%	7.68%	6.42%		10.46%	9.20%	
<b>Average</b>				<b>1.83%</b>		<b>33.14%</b>	<b>66.86%</b>	<b>4.50%</b>	<b>5.28%</b>	<b>5.48%</b>	<b>17.32%</b>	<b>9.98%</b>	<b>11.40%</b>	<b>18.20%</b>
<b>Median</b>				<b>1.83%</b>		<b>33.14%</b>	<b>66.86%</b>	<b>0.00%</b>	<b>3.64%</b>	<b>3.22%</b>	<b>17.32%</b>	<b>9.98%</b>	<b>11.40%</b>	<b>18.20%</b>
High				2.78%		52.88%	86.61%	20.00%	8.63%	12.71%	17.32%	10.46%	13.59%	18.20%
Low				0.88%		13.39%	47.12%	0.00%	3.22%	1.82%	17.32%	9.50%	9.20%	18.20%
<b>Say</b>												<b>10.00%</b>	<b>11.40%</b>	<b>18.20%</b>

Support for Yield Capitalization Cost of Equity Component - Multi-Stage Growth Model  
 Industry: Scheduled Freight Airlines  
 2017 Assessment Year

Company	Atlas Air WW	AAWW
Value Line 5 yr est. earnings growth		3.00%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.030
2	29	0.030
3	28	0.030
4	27	0.030
5	26	0.030
6	25	0.031
7	24	0.040
8	23	0.033
9	22	0.034
10	21	0.035
11	20	0.036
12	19	0.037
13	18	0.038
14	17	0.039
15	16	0.040
16	15	0.041
17	14	0.042
18	13	0.043
19	12	0.044
20	11	0.045
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>3.64%</b>

Company	Air T Inc	AIRT
Selected Inflation Rate - CAPM Sheet		2.40%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.024
2	29	0.024
3	28	0.024
4	27	0.024
5	26	0.024
6	25	0.025
7	24	0.027
8	23	0.028
9	22	0.030
10	21	0.031
11	20	0.032
12	19	0.034
13	18	0.035
14	17	0.036
15	16	0.038
16	15	0.039
17	14	0.041
18	13	0.042
19	12	0.043
20	11	0.045
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>3.22%</b>

Company	Air Transport Svc.	ATSG
Selected Inflation Rate - CAPM Sheet		2.40%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.024
2	29	0.024
3	28	0.024
4	27	0.024
5	26	0.024
6	25	0.025
7	24	0.027
8	23	0.028
9	22	0.030
10	21	0.031
11	20	0.032
12	19	0.034
13	18	0.035
14	17	0.036
15	16	0.038
16	15	0.039
17	14	0.041
18	13	0.042
19	12	0.043
20	11	0.045
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>3.22%</b>

Company	FedEx Corp.	FDX
Value Line 5 yr est. earnings growth		11.00%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.110
2	29	0.110
3	28	0.110
4	27	0.110
5	26	0.110
6	25	0.106
7	24	0.102
8	23	0.098
9	22	0.094
10	21	0.090
11	20	0.086
12	19	0.082
13	18	0.078
14	17	0.074
15	16	0.070
16	15	0.066
17	14	0.062
18	13	0.058
19	12	0.054
20	11	0.050
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>8.63%</b>

Company	United Parcel Serv	UPS
Value Line 5 yr est. earnings growth		9.50%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.095
2	29	0.095
3	28	0.095
4	27	0.095
5	26	0.095
6	25	0.092
7	24	0.089
8	23	0.086
9	22	0.083
10	21	0.080
11	20	0.077
12	19	0.074
13	18	0.071
14	17	0.067
15	16	0.064
16	15	0.061
17	14	0.058
18	13	0.055
19	12	0.052
20	11	0.049
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>7.68%</b>

Company	United Parcel Serv	UPS
Selected Inflation Rate - CAPM Sheet		2.40%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.024
2	29	0.024
3	28	0.024
4	27	0.024
5	26	0.024
6	25	0.025
7	24	0.027
8	23	0.028
9	22	0.030
10	21	0.031
11	20	0.032
12	19	0.034
13	18	0.035
14	17	0.036
15	16	0.038
16	15	0.039
17	14	0.041
18	13	0.042
19	12	0.043
20	11	0.045
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>3.22%</b>

Company	FedEx Corp.	FDX
Value Line 5 yr est. div/d growth		17.50%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.175
2	29	0.175
3	28	0.175
4	27	0.175
5	26	0.175
6	25	0.167
7	24	0.159
8	23	0.151
9	22	0.143
10	21	0.135
11	20	0.127
12	19	0.119
13	18	0.111
14	17	0.102
15	16	0.094
16	15	0.086
17	14	0.078
18	13	0.070
19	12	0.062
20	11	0.054
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>12.71%</b>

Company	United Parcel Serv	UPS
Value Line 5 yr est. div/d growth		7.50%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.075
2	29	0.075
3	28	0.075
4	27	0.075
5	26	0.075
6	25	0.073
7	24	0.071
8	23	0.070
9	22	0.068
10	21	0.066
11	20	0.064
12	19	0.062
13	18	0.061
14	17	0.059
15	16	0.057
16	15	0.055
17	14	0.053
18	13	0.051
19	12	0.050
20	11	0.048
21	10	0.046
22	9	0.046
23	8	0.046
24	7	0.046
25	6	0.046
26	5	0.046
27	4	0.046
28	3	0.046
29	2	0.046
30	1	0.046
<b>Weighted Average</b>		<b>6.42%</b>

**MONTANA DEPARTMENT OF REVENUE**

**Support for Yield Capitalization Cost of Debt Component - Yield to Maturity From Standard & Poor's Bond Guide  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

Company Name	Coupon	CUSIP	Issue	Maturity Date	Years to Maturity	Old S&P Bond Rating	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Avg Full Year	Avg 4th QTR
United Parcel Service of Amer	8.38	911308AA2	Deb	4/1/2020	4	A+	2.16	1.95	1.78	1.80	1.86	1.37	1.50	1.63	1.72	1.72	2.32	2.46	1.86%	2.17%
United Parcel Service Inc.	5.5		Sr Nt	1/15/2018	2	A+	1.10	1.36	1.41	1.52	1.88	1.95	2.06	0.02	0.02	0.33	0.91	1.21	1.15%	0.82%
United Parcel Service Inc.	5.125		Note	10/1/2019	3	A+	1.41	1.49	1.41	1.41	1.58	1.46	1.58	1.68	1.78	0.57	1.17	1.38	1.41%	1.04%
United Parcel Service, Inc.	3.125		Fixed Rt Sr. Nt	1/15/2021	5	A+	2.02	1.88	1.61	1.68	1.78	1.61	1.58	1.36	1.29	1.46	2.12	2.27	1.72%	1.95%
United Parcel Service, Inc.	2.45		Sr Nt	10/1/2022	6	A+	2.46	2.15	1.85	1.83	2.10	1.76	1.63	1.66	1.68	1.91	2.54	2.55	2.01%	2.33%
United Parcel Service, Inc.	6.2		Sr Nt	1/15/2038	22	A+	4.07	3.95	3.76	3.68	3.66	3.34	3.20	3.15	3.29	3.59	3.98	3.99	3.64%	3.85%
United Parcel Service, Inc.	4.875		Fixed Rt Sr. Nt	11/15/2040	24	A+	4.03	3.95	3.68	3.66	3.63	3.27	3.05	3.17	3.22	3.66	4.03	3.98	3.61%	3.89%
FedEx Corp	8		Nts	1/15/2019	3	BBB	2.24	2.12	2.07	2.17	2.41	2.35	2.54	0.41	0.56	0.99	1.61	1.88	1.78%	1.49%
FedEx Corp	2.625		Gtd NTs	8/1/2022	6	BBB	2.90	2.98	2.39	2.41	2.54	2.17	2.05	2.10	2.10	2.17	2.61	2.71	2.43%	2.50%
FedEx Corp	4		Gtd Fixed Rt NTs	1/15/2024	8	BBB	3.38	3.29	2.88	2.61	4.42	2.68	2.44	2.29	2.17	2.56	3.02	3.17	2.91%	2.92%
FedEx Corp	4.9		Gtd Fixed Rt NTs	1/15/2034	18	BBB	4.64	4.68	4.29	4.07	4.12	3.83	3.66	3.66	3.66	3.93	4.40	4.37	4.11%	4.23%
FedEx Corp	3.7875		Gtd NTs	8/1/2042	26	BBB	4.79	4.78	4.35	4.20	4.34	4.01	3.78	3.81	3.78	4.20	4.54	4.49	4.26%	4.41%
FedEx Corp	4.1		Sr Nt	10/15/2043	27	BBB	4.81	4.79	4.46	4.10	4.32	3.98	3.85	3.85	3.83	4.15	4.59	4.56	4.27%	4.43%
FedEx Corp	5.1		Gtd Fixed Rt NTs	1/15/2044	28	BBB	4.93	4.95	4.44	4.22	4.39	4.10	3.93	3.98	3.93	4.24	4.66	4.59	4.36%	4.50%
Federal Express	7.6	313309AP1	Nts	7/1/2097	81	BBB	5.91	5.76	5.42	5.32	5.39	5.45	5.45	5.51	5.84	5.84	6.21	6.09	5.68%	6.05%
							15	15	15	15	15	15	15	15	15	15	15	15	15	15

NOTES:

Data downloaded from the S&P website and missing data supplemented from month end Bond Guides when available.  
  means the data was not available in S&P Guide  
  means issuance matured or called

\*Floating Rates Not Included in Calculations

Scheduled Airlines	All Bonds	
	Annual	4th Qtr
All Ratings	3.01%	3.11%
Investment Grade (BBB- & Above)	3.01%	3.01%
<b>Bonds With 20 or More Years to Maturity</b>		
All Ratings	4.30%	4.52%
Investment Grade (BBB- & Above)	4.30%	4.52%
<b>Say:</b>	<b>3.70%</b>	

**MONTANA DEPARTMENT OF REVENUE**

**Support for Direct Capitalization Cost of Equity (k<sub>e</sub>)  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Company	Ticker Symbol	Avg. 4Q 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)
		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
Atlas Air Worldwide	AAWW	46.61	0.53	4.65	87.95	10.02	1.14%	9.98%	5.52	7.25	8.44	6.43	11.84%	15.55%
Air T Inc	AIRT	19.24	(1.07)	0.00					2.61	0.00	7.37		13.56%	
Air Transport Services Grp.	ATSG	15.13	0.36	0.00	42.02		2.38%		2.57	0.00	5.89		16.99%	
FedEx Corp.	FDX	182.39	11.51	11.95	15.85	15.26	6.31%	6.55%	21.27	23.60	8.57	7.73	11.66%	12.94%
United Parcel Serv.	UPS	112.23	5.77	5.90	19.45	19.02	5.14%	5.26%	7.91	8.65	14.19	12.97	7.05%	7.71%
<b>Average</b>					<b>41.32</b>	<b>14.77</b>	<b>3.74%</b>	<b>7.26%</b>			<b>8.89</b>	<b>9.04</b>	<b>12.22%</b>	<b>12.07%</b>
<b>Median</b>					<b>30.73</b>	<b>15.26</b>	<b>3.76%</b>	<b>6.55%</b>			<b>8.44</b>	<b>7.73</b>	<b>11.84%</b>	<b>12.94%</b>
High					87.95	19.02	6.31%	9.98%			14.19	12.97	16.99%	15.55%
Low					15.85	10.02	1.14%	5.26%			5.89	6.43	7.05%	7.71%
<b>Say</b>							<b>5.80%</b>						<b>12.20%</b>	

**MONTANA DEPARTMENT OF REVENUE**

**Support for Direct Capitalization Cost of Debt Component - Current Yield From Standard & Poor's Bond Guide  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

Company Name	Coupon	CUSIP	Issue	Maturity Date	Years to Maturity	Old S&P Bond Rating	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Avg Full Year	Avg 4th QTR
United Parcel Service of Amer	8.38	911308AA2	Deb	4/1/2020	4	A+	6.71	6.69	6.69	6.71	6.75	6.67	6.72	6.78	6.86	6.86	7.01	7.07	6.79%	6.98%
United Parcel Service Inc.	5.5		Sr Nt	1/15/2018	2	A+	5.06	5.09	5.09	5.10	5.14	5.15	5.16	5.18	5.20	5.23	5.26	5.28	5.16%	5.26%
United Parcel Service Inc.	5.125		Note	10/1/2019	3	A+	4.62	4.63	4.62	4.62	4.65	4.63	4.65	4.66	4.67	0.07	4.75	4.77	4.28%	3.20%
United Parcel Service, Inc.	3.125		Fixed Rt Sr. Nt	1/15/2021	5	A+	2.97	2.95	2.91	2.92	2.94	2.92	2.91	2.93	2.92	2.94	3.01	3.03	2.95%	2.99%
United Parcel Service, Inc.	2.45		Sr Nt	10/1/2022	6	A+	2.45	2.40	2.36	2.37	2.40	2.36	2.34	2.34	2.35	2.38	2.46	2.46	2.39%	2.43%
United Parcel Service, Inc.	6.2		Sr Nt	1/15/2038	22	A+	4.76	4.67	4.55	4.50	4.50	4.31	4.22	4.24	4.32	4.49	4.73	4.73	4.50%	4.65%
United Parcel Service, Inc.	4.875		Fixed Rt Sr. Nt	11/15/2040	24	A+	4.31	4.26	4.08	4.07	4.06	3.85	3.72	3.80	3.83	4.08	4.32	4.28	4.06%	4.23%
FedEx Corp	8		Nts	1/15/2019	3	BBB	6.86	6.84	6.84	6.85	6.90	6.89	6.92	6.95	6.97	7.03	7.11	7.15	6.94%	7.10%
FedEx Corp	2.625		Gtd Nts	8/1/2022	6	BBB	2.67	2.68	2.59	2.60	2.61	2.56	2.54	2.55	2.55	2.56	2.62	2.64	2.60%	2.61%
FedEx Corp	4		Gtd Fixed Rt Nts	1/15/2024	8	BBB	3.84	3.81	3.70	3.64	3.68	3.66	3.59	3.60	3.58	3.66	3.77	3.80	3.69%	3.74%
FedEx Corp	4.9		Gtd Fixed Rt Nts	1/15/2034	18	BBB	4.75	4.77	4.55	4.44	4.46	4.31	4.22	4.24	4.24	4.38	4.63	4.61	4.47%	4.54%
FedEx Corp	3.7875		Gtd Nts	8/1/2042	26	BBB	4.49	4.48	4.18	4.08	4.17	3.96	3.81	3.84	3.82	4.07	7.11	4.28	4.36%	5.15%
FedEx Corp	4.1		Sr Nt	10/15/2043	27	BBB	4.58	4.58	4.34	4.11	4.25	4.02	3.94	3.94	3.92	4.13	4.42	4.41	4.22%	4.32%
FedEx Corp	5.1		Gtd Fixed Rt Nts	1/15/2044	28	BBB	4.98	4.99	4.61	4.46	4.58	4.38	4.26	4.30	4.28	4.49	4.78	4.74	4.57%	4.67%
Federal Express	7.6	313309AP1	Nts	7/1/2097	81	BBB	5.92	5.77	5.44	5.64	5.41	5.47	5.47	5.53	5.85	5.85	6.22	6.10	5.72%	6.06%
Southwest Airlines Co.	7.375	844741AN8	Deb	03/01/2027	11	BBB	5.77	5.66	5.69	5.74	5.76	5.60	5.61	5.66	5.80	5.80	6.04	6.01	5.76%	5.95%
Southwest Airlines Co.	5.12	844741AX6	Nts	03/01/2017	1	BBB	4.93	4.95	4.96	4.96	4.98	4.98	5.01	5.02	5.05	5.05	5.07	5.09	5.00%	5.07%
Southwest Airlines Co.	5.75	844741AY4	Nts	12/15/2016	0	BBB	5.53	5.56	5.57	5.58	5.62	5.63	5.65	5.67	5.71	5.71	5.74	5.75	5.64%	5.73%
Southwest Airlines Co.	5.75	844741AY4	Nt	12/15/2016	0	BBB	5.53	5.56	5.57	5.58	5.62	5.63	5.65	5.67	5.71	5.71	5.74	5.75	5.64%	5.73%
AMR Corp.	9	001765AC0	Deb	09/15/2016	0	NR	7.43	7.43	7.43	7.43	7.43	7.43	7.43	7.43					7.43%	
AMR Corp.	10.2	001765AE6	Deb	03/15/2020	4	NR	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.21	8.15	8.21%	8.19%
AMR Corp.	9.88	001765AG1	Deb	06/15/2020	4	NR	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84%	7.84%
AMR Corp.	10	001765AK2	Deb	04/15/2021	5	NR	8.14	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15	8.15%	8.15%
AMR Corp.	9.75	001765AP1	Deb	08/15/2021	5	NR	7.86	7.86	7.86	7.86	7.99	7.99	7.86	7.86	7.86	7.86	7.86	7.86	7.88%	7.86%
AMR Corp.	9.8	001765AQ9	Deb	10/01/2021	5	NR	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	7.99	6.12	7.99	7.99	7.83%	7.37%
							25	25	25	25	25	25	25	25	24	24	24	24		

NOTES:

Data downloaded from the S&P website and missing data supplemented from month end Bond Guides when available.

means the data was not available in S&P Guide

means issuance matured or called

\*Floating Rates Not Included in Calculations

Scheduled Airlines	All Bonds	
	Annual	4th Qtr
All Ratings	5.44%	5.41%
Investment Grade (BBB- & Above)	4.67%	4.67%
<b>Bonds With 20 or More Years to Maturity</b>		
All Ratings	4.57%	4.85%
Investment Grade (BBB- & Above)	4.57%	4.85%
<b>Say:</b>	<b>4.80%</b>	

**MONTANA DEPARTMENT OF REVENUE**

**Support for Direct Capitalization Cost of Debt Component - Current Yield Calculations  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

A	B	C	D	E	F	G	H	I	J	K
Company	2016 Ticker	YE 2016 Interest Exp.	YE 2015 MV LT Debt	YE 2015 BV LT Debt	YE 2016 MV LT Debt	YE 2016 BV LT Debt	2016 Avg MV LT Debt	2016 Current Yield	2016 Avg BV LT Debt	MTBR
Source		10-K	10-K	10-K	10-K	10-K	(D+F)/2	(C/H)	(E+G)/2	(H/I)
		(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)		(\$000)	
Air T Inc	AIRT	81	5,000	5,000	1,864	1,864	3,432	2.35%	3,432	1.00
Air Transport Services Grp.	ATSG	11,318	319,000	317,700	458,900	458,700	388,950	2.91%	388,200	1.00
Atlas Air Worldwide	AAWW	84,650	1,981,074	1,901,307	1,968,173	1,851,411	1,974,624	4.29%	1,876,359	1.05
FedEx Corp.	FDX	336,000	7,451,000	7,268,000	14,363,000	13,867,000	10,907,000	3.08%	10,567,500	1.03
United Parcel Serv.	UPS	381,000	15,524,000	14,334,000	17,134,000	16,075,000	16,329,000	2.33%	15,204,500	1.07
<b>Total</b>		813,049					29,603,006	<b>2.75%</b>	28,039,991	<b>1.06</b>
<b>Average</b>								<b>2.99%</b>		<b>1.03</b>
<b>Median</b>								<b>2.91%</b>		<b>1.03</b>
High								4.29%		1.07
Low								2.33%		1.00
<b>Say</b>								<b>3.00%</b>		<b>1.03</b>

**MONTANA DEPARTMENT OF REVENUE**

**Support of Stock Price - From YAHOO Finance  
Industry: Scheduled Freight Airlines  
2017 Assessment Year**

<b>Ticker</b>	<b>Company</b>		<b>Jan-16</b>	<b>Feb-16</b>	<b>Mar-16</b>	<b>Apr-16</b>	<b>May-16</b>	<b>Jun-16</b>	<b>Jul-16</b>	<b>Aug-16</b>	<b>Sep-16</b>	<b>Oct-16</b>	<b>Nov-16</b>	<b>Dec-16</b>	<b>End of Year Closing</b>	<b>4th Qtr Average</b>	<b>Annual Average</b>
AAWW	Atlas Air Worldwide	high	\$ 41.19	\$ 39.93	\$ 43.44	\$ 42.22	\$ 57.77	\$ 47.24	\$ 43.50	\$ 43.95	\$ 43.14	\$ 43.73	\$ 51.50	\$ 53.95	\$ 52.15	\$ 46.61	\$ 42.01
		low	\$ 31.99	\$ 33.37	\$ 36.30	\$ 38.03	\$ 38.23	\$ 37.88	\$ 39.13	\$ 34.22	\$ 37.01	\$ 40.85	\$ 40.25	\$ 49.40			
AIRT	Air T Inc	high	\$ 24.21	\$ 25.22	\$ 26.62	\$ 26.00	\$ 26.99	\$ 25.74	\$ 23.50	\$ 23.25	\$ 22.20	\$ 20.37	\$ 19.75	\$ 23.55	\$ 23.00	\$ 19.24	\$ 21.87
		low	\$ 18.70	\$ 19.52	\$ 24.16	\$ 23.00	\$ 23.04	\$ 21.50	\$ 18.53	\$ 19.50	\$ 17.75	\$ 17.25	\$ 17.24	\$ 17.30			
ATSG	Air Transport Services Grp.	high	\$ 9.99	\$ 11.85	\$ 15.53	\$ 15.43	\$ 14.31	\$ 13.88	\$ 14.57	\$ 14.91	\$ 14.90	\$ 14.76	\$ 16.95	\$ 17.29	\$ 15.96	\$ 15.13	\$ 13.51
		low	\$ 9.05	\$ 9.33	\$ 11.42	\$ 14.06	\$ 12.41	\$ 12.36	\$ 12.72	\$ 13.62	\$ 13.08	\$ 13.04	\$ 12.94	\$ 15.78			
FDX	FedEx Corp.	high	\$ 147.00	\$ 139.53	\$ 164.84	\$ 169.30	\$ 168.18	\$ 166.50	\$ 163.64	\$ 169.57	\$ 177.36	\$ 176.35	\$ 192.58	\$ 201.57	\$ 186.20	\$ 182.39	\$ 161.23
		low	\$ 119.71	\$ 122.78	\$ 137.30	\$ 160.73	\$ 156.91	\$ 145.00	\$ 150.00	\$ 158.62	\$ 158.20	\$ 168.00	\$ 170.16	\$ 185.68			
GLUX	Great Lakes Aviation	high	\$ 0.28	\$ 0.28	\$ 0.23	\$ 0.25	\$ 0.14	\$ 0.14	\$ 0.17	\$ 0.14	\$ 0.13	\$ 0.25	\$ 0.24	\$ 0.15	\$ 0.09	\$ 0.15	\$ 0.13
		low	\$ 0.10	\$ 0.04	\$ 0.04	\$ 0.05	\$ 0.01	\$ 0.04	\$ 0.06	\$ 0.12	\$ 0.11	\$ 0.09	\$ 0.09	\$ 0.08			
RJETQ	Republic Airways Holdings Inc no Tissues	high	\$ 3.87	\$ 3.54	\$ 2.72	\$ 2.05	\$ 1.04	\$ 0.90	\$ 0.71	\$ 1.13	\$ 1.18	\$ 0.94	\$ 0.70	\$ 0.45	\$ 0.06	\$ 0.48	\$ 1.09
		low	\$ 1.61	\$ 0.61	\$ 0.68	\$ 0.76	\$ 0.55	\$ 0.61	\$ 0.33	\$ 0.20	\$ 0.73	\$ 0.51	\$ 0.25	\$ 0.04			
UPS	United Parcel Serv.	high	\$ 96.10	\$ 99.50	\$ 106.61	\$ 107.21	\$ 105.60	\$ 107.74	\$ 111.83	\$ 111.03	\$ 110.72	\$ 109.61	\$ 116.96	\$ 120.44	\$ 114.64	\$ 112.23	\$ 105.44
		low	\$ 87.30	\$ 92.04	\$ 97.03	\$ 103.41	\$ 100.05	\$ 101.95	\$ 105.96	\$ 106.92	\$ 106.07	\$ 105.87	\$ 106.16	\$ 114.36			