



2017 Capitalization Rate Study
Final

Scheduled Airlines - Passenger

MONTANA DEPARTMENT OF REVENUE

Yield Capitalization Rate Study
 Industry: Scheduled Passenger Airlines
 2017 Assessment Year

Capital Structure

Equity	64.00%	<i>Page AP-4</i>
Debt	36.00%	<i>Page AP-4</i>

Equity Cost of Capital

Capital Asset Pricing Model	9.99%	<i>Page AP-5</i>
Dividend Growth Model (g = Earnings Growth)	9.10%	<i>Page AP-9</i>
Dividend Growth Model (g = Dividends Growth)	15.90%	<i>Page AP-9</i>
Dividend Growth Model (g = b x ROE)	23.70%	<i>Page AP-9</i>
	10.00%	

Debt Cost of Capital

Standard and Poor's Yield to Maturity	4.00%	<i>Page AP-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%	
	4.83%	

Passenger Airlines - 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	64.00%	10.00%		10.00%	6.40%
Debt	36.00%	4.83%	38.00%	2.99%	1.08%
WACC	100.00%				7.48%
WACC (Rounded)					7.50%

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

Capital Structure

Equity	64.00%	<i>Page AP-4</i>
Debt	36.00%	<i>Page AP-4</i>

Equity Cost of Capital

NOI After-tax	9.60%	<i>Page AP-14</i>
GCF	16.00%	<i>Page AP-14</i>

Debt Cost of Capital

Standard and Poor's Current Yield	5.50%	<i>Page AP-15</i>
Calculated Current Yield	4.40%	<i>Page AP-16</i>
	4.95%	

Passenger Airlines - NOI After-tax Direct Capitalization Rate

Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	After-tax Cost of Capital	Weighted Cost
Equity	64.00%	9.60%		9.60%	6.14%
Debt	36.00%	4.95%	38.00%	3.07%	1.10%
Total	100.00%				7.25%
Total (Rounded)					7.30%

Passenger Airlines - GCF Direct Capitalization Rate

Source of Capital	Capital Structure	Cost of Capital	Marginal Tax Rate	After-tax Cost of Capital	Weighted Cost
Equity	64.00%	16.00%		16.00%	10.24%
Debt	36.00%	4.95%	38.00%	3.07%	1.10%
WACC	100.00%				11.34%
Total (Rounded)					11.40%

MONTANA DEPARTMENT OF REVENUE

**Support for Capital Structure
Industry: Scheduled Passenger 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>			
American Airlines Group	AAL	AIRTRANS	B+	507,294	43.31	21,970,910	0	24,983,000	10,713,057	57,666,967	38%	0%	62%
Allegiant Travel	ALGT	AIRTRANS	B++	16,633	153.89	2,559,801	0	808,871	18,128	3,386,800	76%	0%	24%
Alaska Air Group	ALK	AIRTRANS	B	123,328	77.69	9,580,740	0	3,002,000	2,408,649	14,991,389	64%	0%	36%
Delta Air Lines	DAL	AIRTRANS	B+	744,887	45.27	33,722,273	0	7,300,000	10,287,753	51,310,025	66%	0%	34%
JetBlue Airways	JBLU	AIRTRANS	B+	337,000	19.59	6,602,392	0	1,336,000	1,055,394	8,993,786	73%	0%	27%
Southwest Airlines	LUV	AIRTRANS	A	807,612	44.11	35,623,750	0	3,445,000	2,756,921	41,825,671	85%	0%	15%
Spirit Airlines	SAVE	AIRTRANS	B++	69,326	51.37	3,561,171	0	1,033,700	1,400,188	5,995,059	59%	0%	41%
SkyWest	SKYW	AIRTRANS	B+	79,781	33.07	2,638,368	0	2,566,500	809,884	6,014,752	44%	0%	56%
United Cont'l Hldgs.	UAL	AIRTRANS	B	314,613	63.11	19,855,210	0	11,993,000	14,872,906	46,721,117	42%	0%	58%
All Companies						136,114,615	0	56,468,071	44,322,879	236,905,565	57%	0%	43%
Average											61%	0%	39%
Median											64%	0%	36%
High											85%	0%	62%
Low											38%	0%	15%
Say											64%		36%

*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

2016 - Added Virgin America Inc.

2017 - RJET removed. Filed bankruptcy in 2016.

2017 - VA removed sold to Alaska Air Group in 2016

MONTANA DEPARTMENT OF REVENUE

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

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

$k_e =$	Cost of Equity	Passenger
$R_f =$	Risk Free Rate	9.99%
$\beta =$	Beta	2.79%
$ERP =$	Equity Risk Premium ($R_m - R_f$)	1.20
$R_m =$	Market Rate of Return	6.00%
		8.79%

Risk Free Rate Measures (R_f):

The Value Line Investment Survey: Selection & Opinion¹

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 Release² and U.S. Department of the Treasury, Daily Treasury Yield Curve Rates³

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%

¹ "Value Line Selection & Opinion", Value Line (January 6, 2017)

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

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

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

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

Equity Risk Premium Measures (ERP = R_m - R_f)

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

	<u>R_m⁴</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP - <i>Ex Ante</i>	8.00%	8.00%	2.79%	5.21%

Duff & Phelps, 2017 Valuation Handbook

		<u>R_m⁴</u>	<u>R_m</u>	<u>R_f</u>	<u>ERP</u>
ERP "Historical" - <i>Ex Post</i>	<i>Arithmetic Avg.</i>	9.73%	9.66%	2.72%	6.94%
ERP "Supply-side" - <i>Ex Post</i>	<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_m⁴</u>	<u>R_m</u>	<u>R_f</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_m⁴</u>	<u>R_m</u>	<u>R_f</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

8.79%	2.79%	6.00%
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⁴ R_m estimated using selected Risk Free Rate (R_f)

MONTANA DEPARTMENT OF REVENUE

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

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

Inflation and Growth Estimates⁵

	<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%		
Say	2.40%	2.20%	4.60%	4.37%	5.40%
Rounded				4.00%	6.00%

⁵ *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)*

MONTANA DEPARTMENT OF REVENUE

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

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>
American Airlines Group	AAL	AIRTRANS	B+	1.25
Allegiant Travel	ALGT	AIRTRANS	B++	0.80
Alaska Air Group	ALK	AIRTRANS	B	1.10
Delta Air Lines	DAL	AIRTRANS	B+	1.20
JetBlue Airways	JBLU	AIRTRANS	B+	1.10
Southwest Airlines	LUV	AIRTRANS	A	1.10
Spirit Airlines	SAVE	AIRTRANS	B++	1.40
SkyWest	SKYW	AIRTRANS	B+	1.45
United Cont'l Hldgs.	UAL	AIRTRANS	B	1.20
Average				1.18
Median				1.20
High				1.45
Low				0.80
Say				1.20

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Support for Yield Capitalization Cost of Equity Component - Based on Dividend Growth Model
 Industry: Scheduled Passenger 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	$g = \text{Earnings } g$	$g = \text{Dividends } g$	$g = b \times \text{ROE}$	K_e $g = \text{Earnings } g$	K_e $g = \text{Dividends } g$	K_e $g = b \times \text{ROE}$
		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
American Airlines Group	AAL	43.31	0.40	0.92%	4.35	9.20%	90.80%	0.00%	3.22%	3.22%		4.14%	4.14%	
Allegiant Travel	ALGT	153.89	2.40	1.56%	10.95	21.92%	78.08%	34.50%	7.37%	25.30%	26.94%	8.93%	26.85%	28.50%
Alaska Air Group	ALK	77.69	1.20	1.54%	7.90	15.19%	84.81%	32.50%	7.68%	12.40%	27.56%	9.23%	13.94%	29.11%
Delta Air Lines	DAL	45.27	0.81	1.79%	5.25	15.43%	84.57%	25.00%	8.94%	16.17%	21.14%	10.73%	17.96%	22.93%
JetBlue Airways	JBLU	19.59	-		1.95			18.00%	9.88%	1.71%				
Southwest Airlines	LUV	44.11	0.48	1.09%	3.70	12.97%	87.03%	26.00%	12.40%	21.21%	22.63%	13.49%	22.29%	23.72%
Spirit Airlines	SAVE	51.37	-		3.65			17.00%	15.23%	1.71%				
SkyWest	SKYW	33.07	0.20	0.60%	3.00	6.67%	93.33%	10.00%	8.31%	1.71%	9.33%	8.92%	2.31%	9.94%
United Cont'l Hldgs.	UAL	63.11	-		6.75			30.00%	5.48%	1.71%				
Average				1.25%		13.56%	86.44%	21.44%	8.72%	9.46%	21.52%	9.24%	14.58%	22.84%
Median				1.32%		14.08%	85.92%	25.00%	8.31%	3.22%	22.63%	9.08%	15.95%	23.72%
High				1.79%		21.92%	93.33%	34.50%	15.23%	25.30%	27.56%	13.49%	26.85%	29.11%
Low				0.60%		6.67%	78.08%	0.00%	3.22%	1.71%	9.33%	4.14%	2.31%	9.94%
Say												9.10%	15.90%	23.70%

MONTANA DEPARTMENT OF REVENUE

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

Company	American Airlines	AAL
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
Weighted Average		3.22%
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
Weighted Average		3.22%

Company	Allegiant Travel	ALGT
Value Line 5 yr est. earnings growth		9.00%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.090
2	29	0.090
3	28	0.090
4	27	0.090
5	26	0.090
6	25	0.087
7	24	0.085
8	23	0.082
9	22	0.079
10	21	0.076
11	20	0.074
12	19	0.071
13	18	0.068
14	17	0.065
15	16	0.063
16	15	0.060
17	14	0.057
18	13	0.054
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
Weighted Average		7.37%
Value Line 5 yr est. div'd growth		37.50%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.375
2	29	0.375
3	28	0.375
4	27	0.375
5	26	0.375
6	25	0.354
7	24	0.334
8	23	0.313
9	22	0.293
10	21	0.272
11	20	0.252
12	19	0.231
13	18	0.211
14	17	0.190
15	16	0.169
16	15	0.149
17	14	0.128
18	13	0.108
19	12	0.087
20	11	0.067
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
Weighted Average		25.30%

Company	Alaska Air Group	ALK
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
Weighted Average		7.68%
Value Line 5 yr est. div'd growth		17.00%
LT nominal economic growth rate		4.60%
Year	Weight	Adj. Growth Rate
1	30	0.170
2	29	0.170
3	28	0.170
4	27	0.170
5	26	0.170
6	25	0.162
7	24	0.155
8	23	0.147
9	22	0.139
10	21	0.131
11	20	0.124
12	19	0.116
13	18	0.108
14	17	0.100
15	16	0.093
16	15	0.085
17	14	0.077
18	13	0.069
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
Weighted Average		12.40%

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

Delta Air Lines			JetBlue Airways			Southwest Airlines		
Company	Delta Air Lines	DAL	Company	JetBlue Airways	JBLU	Company	Southwest Airlines	LUV
Value Line 5 yr est. earnings growth			Value Line 5 yr est. earnings growth			Value Line 5 yr est. earnings growth		
11.50%			13.00%			17.00%		
LT nominal economic growth rate			LT nominal economic growth rate			LT nominal economic growth rate		
4.60%			4.60%			4.60%		
Year	Weight	Adj. Growth Rate	Year	Weight	Adj. Growth Rate	Year	Weight	Adj. Growth Rate
1	30	0.115	1	30	0.130	1	30	0.170
2	29	0.115	2	29	0.130	2	29	0.170
3	28	0.115	3	28	0.130	3	28	0.170
4	27	0.115	4	27	0.130	4	27	0.170
5	26	0.115	5	26	0.130	5	26	0.170
6	25	0.111	6	25	0.125	6	25	0.162
7	24	0.106	7	24	0.120	7	24	0.155
8	23	0.102	8	23	0.114	8	23	0.147
9	22	0.098	9	22	0.109	9	22	0.139
10	21	0.093	10	21	0.104	10	21	0.131
11	20	0.089	11	20	0.099	11	20	0.124
12	19	0.085	12	19	0.093	12	19	0.116
13	18	0.081	13	18	0.088	13	18	0.108
14	17	0.076	14	17	0.083	14	17	0.100
15	16	0.072	15	16	0.078	15	16	0.093
16	15	0.068	16	15	0.072	16	15	0.085
17	14	0.063	17	14	0.067	17	14	0.077
18	13	0.059	18	13	0.062	18	13	0.069
19	12	0.055	19	12	0.057	19	12	0.062
20	11	0.050	20	11	0.051	20	11	0.054
21	10	0.046	21	10	0.046	21	10	0.046
22	9	0.046	22	9	0.046	22	9	0.046
23	8	0.046	23	8	0.046	23	8	0.046
24	7	0.046	24	7	0.046	24	7	0.046
25	6	0.046	25	6	0.046	25	6	0.046
26	5	0.046	26	5	0.046	26	5	0.046
27	4	0.046	27	4	0.046	27	4	0.046
28	3	0.046	28	3	0.046	28	3	0.046
29	2	0.046	29	2	0.046	29	2	0.046
30	1	0.046	30	1	0.046	30	1	0.046
Weighted Average			Weighted Average			Weighted Average		
8.94%			9.88%			12.40%		
Value Line 5 yr est. div'd growth			Value Line 5 yr est. div'd growth			Value Line 5 yr est. div'd growth		
23.00%			0.00%			31.00%		
LT nominal economic growth rate			LT nominal economic growth rate			LT nominal economic growth rate		
4.60%			4.60%			4.60%		
Year	Weight	Adj. Growth Rate	Year	Weight	Adj. Growth Rate	Year	Weight	Adj. Growth Rate
1	30	0.230	1	30	0.000	1	30	0.310
2	29	0.230	2	29	0.000	2	29	0.310
3	28	0.230	3	28	0.000	3	28	0.310
4	27	0.230	4	27	0.000	4	27	0.310
5	26	0.230	5	26	0.000	5	26	0.310
6	25	0.219	6	25	0.003	6	25	0.294
7	24	0.207	7	24	0.006	7	24	0.277
8	23	0.196	8	23	0.009	8	23	0.261
9	22	0.184	9	22	0.012	9	22	0.244
10	21	0.173	10	21	0.014	10	21	0.228
11	20	0.161	11	20	0.017	11	20	0.211
12	19	0.150	12	19	0.020	12	19	0.195
13	18	0.138	13	18	0.023	13	18	0.178
14	17	0.127	14	17	0.026	14	17	0.162
15	16	0.115	15	16	0.029	15	16	0.145
16	15	0.104	16	15	0.032	16	15	0.129
17	14	0.092	17	14	0.035	17	14	0.112
18	13	0.081	18	13	0.037	18	13	0.096
19	12	0.069	19	12	0.040	19	12	0.079
20	11	0.058	20	11	0.043	20	11	0.063
21	10	0.046	21	10	0.046	21	10	0.046
22	9	0.046	22	9	0.046	22	9	0.046
23	8	0.046	23	8	0.046	23	8	0.046
24	7	0.046	24	7	0.046	24	7	0.046
25	6	0.046	25	6	0.046	25	6	0.046
26	5	0.046	26	5	0.046	26	5	0.046
27	4	0.046	27	4	0.046	27	4	0.046
28	3	0.046	28	3	0.046	28	3	0.046
29	2	0.046	29	2	0.046	29	2	0.046
30	1	0.046	30	1	0.046	30	1	0.046
Weighted Average			Weighted Average			Weighted Average		
16.17%			1.71%			21.21%		

MONTANA DEPARTMENT OF REVENUE

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

Company	Spirit Airlines	SAVE
Value Line 5 yr est. earnings growth	21.50%	
LT nominal economic growth rate	4.60%	
Year	Weight	Adj. Growth Rate
1	30	0.215
2	29	0.215
3	28	0.215
4	27	0.215
5	26	0.215
6	25	0.204
7	24	0.194
8	23	0.183
9	22	0.173
10	21	0.162
11	20	0.152
12	19	0.141
13	18	0.131
14	17	0.120
15	16	0.109
16	15	0.099
17	14	0.088
18	13	0.078
19	12	0.067
20	11	0.057
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
Weighted Average		15.23%
Value Line 5 yr est. div'd growth	0.00%	
LT nominal economic growth rate	4.60%	
Year	Weight	Adj. Growth Rate
1	30	0.000
2	29	0.000
3	28	0.000
4	27	0.000
5	26	0.000
6	25	0.003
7	24	0.006
8	23	0.009
9	22	0.012
10	21	0.014
11	20	0.017
12	19	0.020
13	18	0.023
14	17	0.026
15	16	0.029
16	15	0.032
17	14	0.035
18	13	0.037
19	12	0.040
20	11	0.043
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
Weighted Average		1.71%

Company	SkyWest	SKYW
Value Line 5 yr est. earnings growth	10.50%	
LT nominal economic growth rate	4.60%	
Year	Weight	Adj. Growth Rate
1	30	0.105
2	29	0.105
3	28	0.105
4	27	0.105
5	26	0.105
6	25	0.101
7	24	0.098
8	23	0.094
9	22	0.090
10	21	0.087
11	20	0.083
12	19	0.079
13	18	0.076
14	17	0.072
15	16	0.068
16	15	0.064
17	14	0.061
18	13	0.057
19	12	0.053
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
Weighted Average		8.31%
Value Line 5 yr est. div'd growth	0.00%	
LT nominal economic growth rate	4.60%	
Year	Weight	Adj. Growth Rate
1	30	0.000
2	29	0.000
3	28	0.000
4	27	0.000
5	26	0.000
6	25	0.003
7	24	0.006
8	23	0.009
9	22	0.012
10	21	0.014
11	20	0.017
12	19	0.020
13	18	0.023
14	17	0.026
15	16	0.029
16	15	0.032
17	14	0.035
18	13	0.037
19	12	0.040
20	11	0.043
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
Weighted Average		1.71%

Company	United Cont'l	UAL
Value Line 5 yr est. earnings growth	10.50%	6.00%
LT nominal economic growth rate	4.60%	4.60%
Year	Weight	Adj. Growth Rate
1	30	0.060
2	29	0.060
3	28	0.060
4	27	0.060
5	26	0.060
6	25	0.059
7	24	0.058
8	23	0.057
9	22	0.057
10	21	0.056
11	20	0.055
12	19	0.054
13	18	0.053
14	17	0.052
15	16	0.051
16	15	0.050
17	14	0.050
18	13	0.049
19	12	0.048
20	11	0.047
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
Weighted Average		5.48%
Value Line 5 yr est. div'd growth	0.00%	
LT nominal economic growth rate	4.60%	
Year	Weight	Adj. Growth Rate
1	30	0.000
2	29	0.000
3	28	0.000
4	27	0.000
5	26	0.000
6	25	0.003
7	24	0.006
8	23	0.009
9	22	0.012
10	21	0.014
11	20	0.017
12	19	0.020
13	18	0.023
14	17	0.026
15	16	0.029
16	15	0.032
17	14	0.035
18	13	0.037
19	12	0.040
20	11	0.043
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
Weighted Average		1.71%

MONTANA DEPARTMENT OF REVENUE

**Support for Yield Capitalization Cost of Debt Component - Yield to Maturity From Standard & Poor's Bond Guide
Industry: Scheduled Passenger 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
Southwest Airlines Co.	7.375	844741AN8	Deb	03/01/2027	11	BBB	4.21	3.95	4.00	4.11	4.14	3.74	3.77	3.84	4.12	4.12	4.65	4.57	4.10%	4.45%
Southwest Airlines Co.	5.12	844741AX6	Nts	03/01/2017	1	BBB	1.61	1.65	1.69	1.19	1.33	0.93	1.23	1.13	1.03	1.03	1.07	1.55	1.29%	1.22%
Southwest Airlines Co.	5.75	844741AY4	Nts	12/15/2016	0	BBB	1.36	1.58	2.40	1.15	1.55	1.34	1.27	1.24	1.30	1.30			1.45%	1.30%
Southwest Airlines Co.	5.75	844741AY4	Nt	12/15/2016	0	BBB	1.36	1.58	2.40	1.15	1.55	1.34	1.27	1.24	1.30	1.30			1.45%	1.30%
AMR Corp.	9	001765AC0	Deb	09/15/2016	0	NR	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73					1.73%	
AMR Corp.	10.2	001765AE6	Deb	03/15/2020	4	NR	3.80	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.37	5.24%	5.37%
AMR Corp.	9.88	001765AG1	Deb	06/15/2020	4	NR	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33	5.33%	5.33%
AMR Corp.	10	001765AK2	Deb	04/15/2021	5	NR	4.99	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.94	5.86%	5.94%
AMR Corp.	9.75	001765AP1	Deb	08/15/2021	5	NR	4.77	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.90	5.81%	5.90%
AMR Corp.	9.8	001765AQ9	Deb	10/01/2021	5	NR	5.14	6.12	6.12	6.12	6.12	6.12	6.12	6.12	7.99	6.12	6.12	6.12	6.19%	6.12%
							10	10	10	10	10	10	10	10	9	9	7	7	10	9

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

	All Bonds	
	Annual	4th Qtr
<u>All Bonds</u>		
All Ratings	3.84%	4.10%
Investment Grade (BBB- & Above)	2.07%	2.07%
<u>Bonds With 20 or More Years to Maturity</u>		
All Ratings	-	-
Investment Grade (BBB- & Above)	-	-
Say:	4.00%	

MONTANA DEPARTMENT OF REVENUE

Support for Direct Capitalization Cost of Equity (k_e)

Industry: Scheduled Passenger 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)
		<i>Yahoo</i>	<i>Value Line</i>	<i>Value Line</i>	<i>C/D</i>	<i>C/E</i>	<i>1/F</i>	<i>1/G</i>	<i>Value Line</i>	<i>Value Line</i>	<i>C/J</i>	<i>C/K</i>	<i>1/L</i>	<i>1/M</i>
American Airlines Group	AAL	43.31	4.81	4.35	9.00	9.96	11.11%	10.04%	8.28	7.95	5.23	5.45	19.12%	18.36%
Allegiant Travel	ALGT	153.89	13.21	10.95	11.65	14.05	8.58%	7.12%	19.53	17.75	7.88	8.67	12.69%	11.53%
Alaska Air Group	ALK	77.69	7.32	7.90	10.61	9.83	9.42%	10.17%	9.54	11.05	8.14	7.03	12.28%	14.22%
Delta Air Lines	DAL	45.27	5.31	5.25	8.53	8.62	11.73%	11.60%	7.12	7.95	6.36	5.69	15.73%	17.56%
JetBlue Airways	JBLU	19.59	2.22	1.95	8.83	10.05	11.33%	9.95%	3.42	3.20	5.73	6.12	17.46%	16.33%
Southwest Airlines	LUV	44.11	3.54	3.70	12.46	11.92	8.03%	8.39%	5.63	5.85	7.83	7.54	12.76%	13.26%
Spirit Airlines	SAVE	51.37	3.76	3.65	13.66	14.07	7.32%	7.11%	5.47	5.25	9.39	9.78	10.65%	10.22%
SkyWest	SKYW	33.07	2.62	3.00	12.62	11.02	7.92%	9.07%	7.50	8.35	4.41	3.96	22.68%	25.25%
United Cont'l Hldgs.	UAL	63.11	8.73	6.75	7.23	9.35	13.83%	10.70%	17.27	13.30	3.65	4.75	27.36%	21.07%
Average					10.51	10.99	9.92%	9.35%			6.51	6.56	16.75%	16.42%
Median					10.61	10.05	9.42%	9.95%			6.36	6.12	15.73%	16.33%
High					13.66	14.07	13.83%	11.60%			9.39	9.78	27.36%	25.25%
Low					7.23	8.62	7.32%	7.11%			3.65	3.96	10.65%	10.22%
Say							9.60%						16.00%	

MONTANA DEPARTMENT OF REVENUE

**Support for Direct Capitalization Cost of Debt Component - Current Yield From Standard & Poor's Bond Guide
Industry: Scheduled Passenger 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
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%
							10	10	10	10	10	10	10	10	9	9	9	9		

NOTES:

*Floating Rates Not Included in Calculations

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

All Bonds	
Annual	4th Qtr

All Bonds		
All Ratings	6.94%	6.88%
Investment Grade (BBB- & Above)	5.51%	5.51%

Bonds With 20 or More Years to Maturity

All Ratings	-	-
Investment Grade (BBB- & Above)	-	-

Say: 5.50%

MONTANA DEPARTMENT OF REVENUE

**Support for Direct Capitalization Cost of Debt Component - Calculated Current Yield
Industry: Scheduled Passenger 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/J)
		(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)		(\$000)	
Alaska Air Group	ALK	55,000	723,000	686,000	3,002,000	2,982,000	1,862,500	2.95%	1,834,000	1.02
Allegiant Travel	ALGT	28,836	626,571	646,179	808,871	813,178	717,721	4.02%	729,679	0.98
American Airlines Group	AAL	991,000	21,111,000	20,561,000	24,983,000	24,344,000	23,047,000	4.30%	22,452,500	1.03
Delta Airlines	DAL	388,000	8,400,000	7,946,000	7,300,000	7,008,000	7,850,000	4.94%	7,477,000	1.05
JetBlue Airways	JBLU	111,000	2,096,000	1,688,000	1,336,000	1,255,000	1,716,000	6.47%	1,471,500	1.17
SkyWest	SKYW	78,177	1,939,800	1,948,800	2,566,500	2,570,900	2,253,150	3.47%	2,259,850	1.00
Southwest Airlines	LUV	122,000	3,477,000	3,178,000	3,445,000	3,387,000	3,461,000	3.52%	3,282,500	1.05
Spirit Airlines	SAVE	41,654	652,400	659,300	1,033,700	1,012,400	843,050	4.94%	835,850	1.01
United Cont'l Holdings	UAL	614,000	12,233,000	11,759,000	11,993,000	11,705,000	12,113,000	5.07%	11,732,000	1.03
Total		2,429,667					53,863,421	4.51%	52,074,879	1.03
Average								4.41%		1.04
Median								4.30%		1.03
High								6.47%		1.17
Low								2.95%		0.98
Say								4.40%		1.03

MONTANA DEPARTMENT OF REVENUE

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

Ticker	Company		Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	End of Year Closing	4th Qtr Average	Annual Average
AAL	American Airlines Group	high	\$ 42.74	\$ 41.60	\$ 43.78	\$ 41.76	\$ 35.17	\$ 33.58	\$ 36.74	\$ 37.35	\$ 39.52	\$ 40.93	\$ 47.14	\$ 50.64	\$ 46.69	\$ 43.31	\$ 37.79
		low	\$ 36.20	\$ 34.76	\$ 40.05	\$ 34.10	\$ 30.99	\$ 24.85	\$ 27.12	\$ 33.00	\$ 33.90	\$ 36.33	\$ 39.24	\$ 45.58			
ALGT	Allegiant Travel	high	\$ 167.35	\$ 170.00	\$ 182.50	\$ 183.91	\$ 162.80	\$ 155.32	\$ 152.81	\$ 139.89	\$ 147.55	\$ 158.00	\$ 169.95	\$ 173.82	\$ 166.40	\$ 153.89	\$ 151.54
		low	\$ 134.64	\$ 144.73	\$ 163.73	\$ 158.87	\$ 135.57	\$ 135.87	\$ 128.86	\$ 121.70	\$ 127.50	\$ 131.45	\$ 132.65	\$ 157.50			
ALK	Alaska Air Group	high	\$ 79.29	\$ 75.51	\$ 83.09	\$ 83.26	\$ 71.00	\$ 67.95	\$ 68.85	\$ 68.48	\$ 71.63	\$ 75.31	\$ 83.47	\$ 91.89	\$ 88.73	\$ 77.69	\$ 71.20
		low	\$ 64.18	\$ 61.58	\$ 73.96	\$ 70.12	\$ 64.43	\$ 54.51	\$ 56.45	\$ 64.25	\$ 64.19	\$ 65.60	\$ 69.12	\$ 80.72			
DAL	Delta Air Lines	high	\$ 49.75	\$ 49.45	\$ 50.50	\$ 49.80	\$ 44.66	\$ 43.71	\$ 41.35	\$ 39.51	\$ 40.23	\$ 42.41	\$ 49.41	\$ 52.76	\$ 49.19	\$ 45.27	\$ 42.91
		low	\$ 42.42	\$ 40.03	\$ 46.01	\$ 41.22	\$ 40.64	\$ 32.60	\$ 34.08	\$ 35.84	\$ 36.32	\$ 37.91	\$ 41.55	\$ 47.59			
JBLU	JetBlue Airways	high	\$ 22.14	\$ 23.67	\$ 22.67	\$ 21.54	\$ 20.00	\$ 18.77	\$ 18.94	\$ 18.50	\$ 17.91	\$ 19.32	\$ 21.25	\$ 23.12	\$ 22.42	\$ 19.59	\$ 19.07
		low	\$ 19.43	\$ 18.51	\$ 19.49	\$ 18.88	\$ 17.61	\$ 14.76	\$ 15.98	\$ 15.72	\$ 15.70	\$ 17.10	\$ 16.85	\$ 19.91			
LUV	Southwest Airlines	high	\$ 43.50	\$ 42.86	\$ 45.39	\$ 48.00	\$ 45.00	\$ 44.33	\$ 45.00	\$ 38.03	\$ 39.18	\$ 42.93	\$ 47.99	\$ 51.31	\$ 49.84	\$ 44.11	\$ 41.44
		low	\$ 35.51	\$ 33.96	\$ 39.99	\$ 43.09	\$ 40.74	\$ 36.48	\$ 37.01	\$ 35.42	\$ 36.31	\$ 36.91	\$ 39.33	\$ 46.19			
SAVE	Spirit Airlines	high	\$ 45.62	\$ 48.98	\$ 51.63	\$ 53.53	\$ 45.68	\$ 46.92	\$ 50.09	\$ 42.98	\$ 42.86	\$ 49.74	\$ 55.93	\$ 60.40	\$ 57.86	\$ 51.37	\$ 45.60
		low	\$ 35.17	\$ 38.46	\$ 45.76	\$ 43.01	\$ 38.85	\$ 40.49	\$ 41.21	\$ 37.79	\$ 37.17	\$ 41.42	\$ 46.80	\$ 53.92			
SKYW	SkyWest	high	\$ 18.67	\$ 18.35	\$ 20.48	\$ 24.64	\$ 24.64	\$ 26.46	\$ 29.71	\$ 29.32	\$ 29.87	\$ 30.50	\$ 38.25	\$ 39.60	\$ 36.45	\$ 33.07	\$ 25.32
		low	\$ 13.23	\$ 13.94	\$ 17.96	\$ 18.46	\$ 22.34	\$ 23.19	\$ 26.34	\$ 26.67	\$ 25.04	\$ 26.16	\$ 28.80	\$ 35.11			
UAL	United Cont'l Hldgs.	high	\$ 56.34	\$ 57.80	\$ 61.41	\$ 58.90	\$ 47.54	\$ 46.91	\$ 49.87	\$ 51.53	\$ 54.53	\$ 56.81	\$ 70.18	\$ 76.80	\$ 72.88	\$ 63.11	\$ 52.60
		low	\$ 42.17	\$ 44.00	\$ 55.29	\$ 45.58	\$ 43.33	\$ 37.41	\$ 37.64	\$ 44.15	\$ 49.28	\$ 51.34	\$ 55.53	\$ 68.00			