



CFA Institute

CFA Institute Research Challenge

Hosted by

**Atlanta Society of Finance and Investment
Professionals**

Team J

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Delta Air Lines

Date: 12 January 2017

Closing Price: \$50.88 USD

Recommendation: HOLD

Ticker: DAL

Headquarters: Atlanta, GA

Target Price: \$57.05 USD

Market Profile	
Closing Price	\$50.88
52-Week High	\$52.76
52-Week Low	\$32.60
2015 EPS	4.61
2016 EPS	5.78
Average Volume	9.5 M
Shares Outstanding	736.4 M
Market Cap	36.33 B
Dividend Yield	1.63%
P/ETTM	8.61
PEG	0.77
Beta	1.11
EV/Revenue	1.0x
EV/EBITDA	4.8x

Source: Bloomberg

Figure 1: Valuation Summary

Valuation Summary		
As of December 31, 2016		
Methodology	Price Range	Weight
DCF	\$54.28 - \$67.53	50%
P/E Valuation	\$47.66 - \$59.33	50%
Mean	\$50.97 - \$63.43	

Figure 2: Holding Returns of Delta Airlines versus Industry

Holding Return		
Period	DAL	Industry
2014	80.20%	96.50%
2015	3.90%	-7.20%
2016	-1.60%	10.70%

Source: Bloomberg

Figure 3: Price Change of Delta Airlines versus S&P 500 Airline Index and S&P 500

Price Change			
	2015	2Yr	5Yr
DAL	3.07%	83.00%	302.94%
\$SAIRL	-8.28%	78.74%	138.17%
SPX	-0.69%	11.57%	60.70%

Source: Yahoo Finance

Investment Thesis

Recommendation: Hold

We issue a "hold" recommendation for Delta Air Lines (DAL) with a price target of \$57 based on our intrinsic share analysis. This is a 11% potential premium to the closing price on January 12, 2017.

Strong Operating Leverage

Over the past ten years, Delta has grown its top-line by 8.8% annually, while, more importantly, generating positive operating leverage of 60% per annum over the same period. Its recent growth and operational performance has boosted Delta's investment attractiveness. Management's commitment to invest 50% of operating cash flows back into the company positions Delta to continue to sustain profitable growth.

Growth in Foreign Markets

Delta has made an initiative to partner with strong regional airlines across the world to leverage its world-class service into new branding opportunities with less capital investment. Expansion via strategic partnerships is expected to carry higher margin growth opportunities.

Valuation

The Discounted Cash Flows (DCF) and P/E analysis suggest a large range of potential share value estimates. Taking a weighted average between the two valuations, our bullish case of \$63 suggests an attractive opportunity. However, this outcome presumes strong U.S. economic conditions, significant and sustained top line revenue growth and operating expense containment.

Our baseline estimate of \$57 is in line with the current share price which is benefitting from historically high broad stock market valuations. Our bear case valuation estimate of \$50 assumes the pace of Delta's operating performance moderates from recent levels.

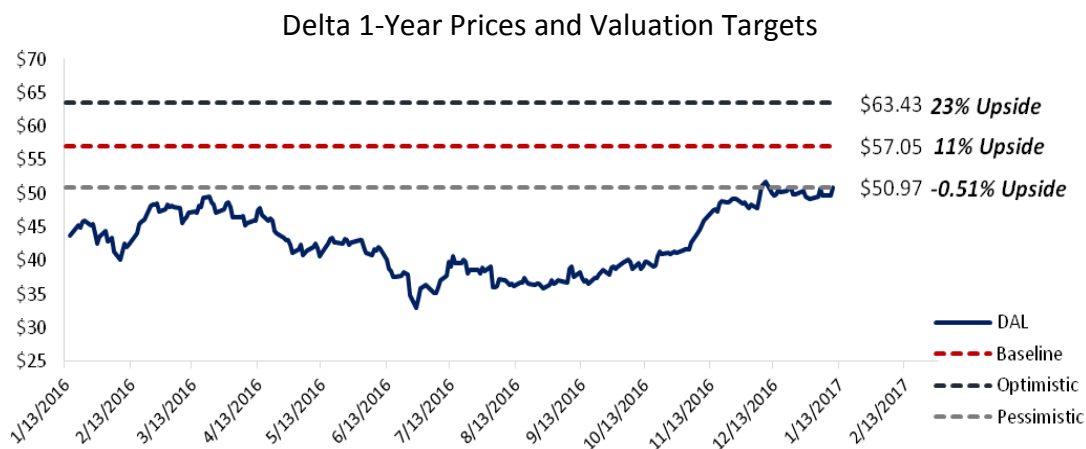


Figure 4: Betas of Delta Airlines, S&P500 Airline Index and S&P500 Index

BETA			
	2015	2Yr	5Yr
DAL	1.07	1.26	1.21
SSAIRL	1.06	1.22	1.05
SPX	1.00	1.00	1.00

Source: Yahoo Finance

Figure 5: Employee Satisfaction Survey Results, 2012-2016

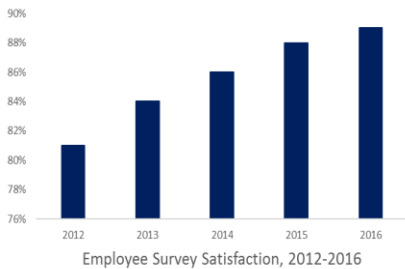
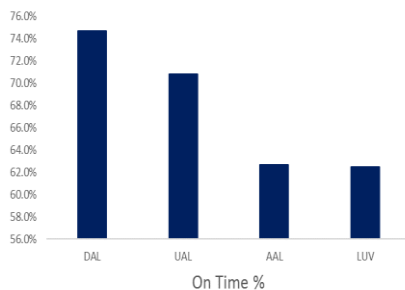


Figure 6: Delta's On-Time % versus United Airlines (UAL), American Airlines (AAL), and Southwest Airlines (LUV)



Investment Summary

Recommendation: Hold

We are initiating coverage of Delta Airlines "DAL" with a Hold rating and \$57 price target.

We believe that as a long term investment, Delta faces several challenges in reaching of our target price range.

- As a maturing airline, growth in Delta's topline is slowing, and margin growth has begun to level off.
- With 36% of revenue derived from the international market, both declining year-over-year and compound growth rates in international revenues opens Delta to a more significant risk than its competitors.
- Delta is focusing on competing in a highly saturated and competitive domestic market where larger industry competitors are finding growth harder to achieve.

Delta and the airline industry face some headwinds from global economic conditions:

- Declining gas prices over the past 3 years has driven down demand for flights as traveling via car is more affordable.
- Stagnation in airplane technology within the industry has not provided excess efficiency in the market through faster planes, higher fuel efficiency or dramatic increases in capacity.
- The 10YR compound annual growth rate (CAGR) for the quantity demanded within the air transportation industry is -0.9%, while the 10YR CAGR for the average price paid within the air transportation industry is 2.9%. If the trend in quantity demanded for air transport continues to fall, airline companies will either be forced to keep increasing prices to make up for lost business or find ways to cut costs in a capital-intensive market.

Revenue and Profitability Estimates

Given Delta's 2016 revenue results and a lackluster outlook for the airline industry as a whole, we project relatively flat revenue growth moving into 2017 and 2018. Forward-looking margins indicate that the company will maintain above average profitability with a decline in both long-term debt and operating expense per available seat mile (ASM). Driving down debt and costs will enhance Delta's financial strength into the future.

Creating a World-Class Company

In the early 2000's, Delta accumulated over \$10 billion worth of excess debt outside of its usual operations. In 2005, the Company declared Chapter 11 bankruptcy and restructured its debt obligations to its employees and lenders. Delta's management took pay cuts and convinced lenders to provide debtor-in-possession (DIP) financing while the company revitalized. Since 2007, Delta has grown to be one of the largest players in the airline industry, both domestically and internationally. Delta has shifted its focus towards improving customer experience through its implementation of unique technology, services and rewards programs. In addition to earning its spot as one of the most preferred airlines by corporate and non-corporate travelers alike, Delta has structured its debt payments from its bankruptcy to be paid off by 2020, created strong margins, and has outgrown the S&P 500 Airline Index by over 150% in the last 5 years.

Industry Preview

The global airline industry has a total market revenue of \$709 billion. The massive United States market comprises just over \$200 billion. Major airlines require large amount of capital spending to handle the purchasing and financing of aircraft and equipment, as well as the additional costs associated with gaining hub space in airports to expand route options. Airline companies are exposed to various risks including the cyclical nature of the industry, interest

Figure 7: Year over year Capacity Graph

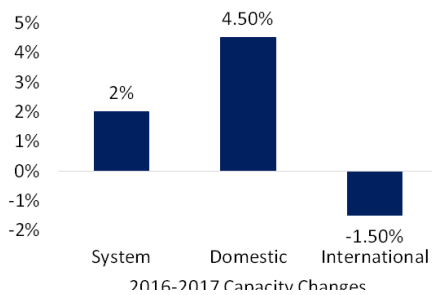
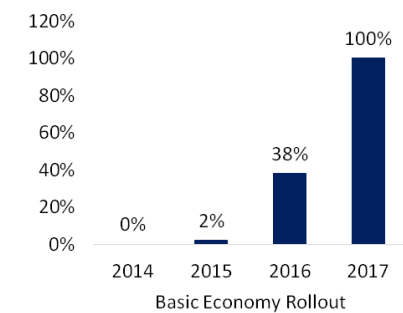
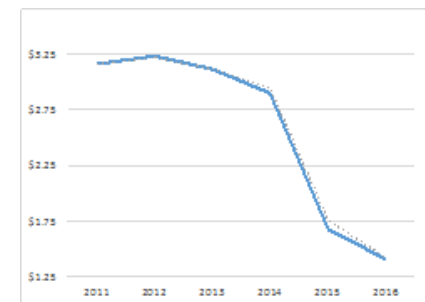


Figure 8: Year over year Capacity Graph



Figures 9 and 10: Delta begins to Realize Fuel Price Savings in 2014, and Obtains Advantage over Industry Peers



Unhedged Fuel Price		
Period	DAL	Industry
2011	\$3.16	\$3.16
2012	\$3.23	\$3.22
2013	\$3.11	\$3.11
2014	\$2.89	\$2.94
2015	\$1.67	\$1.76
2016	\$1.41	\$1.43

Source: Delta Investor Day Presentation, 2016

Figure 11: Seating Chart

rate changes which may adversely affect loan obligations, and volatility in fuel prices. The International Air Transportation Association (IATA) predicts that by 2034, 7 billion people will travel via airlines worldwide. This assumes a rate of 3.8% annual average growth.

Investment Risks

Economic Risk

Interest Rates

At the end of 2015, Delta had \$4.0 billion and \$4.1 billion in fixed and variable rate debt, respectively. A 100 bp increase in interest rates would decrease the fair value of the fixed rate debt by \$160 million and increase annual interest payments on the variable rate debt by \$39 million.

FOREX Rates

At the end of 2015, Delta had \$94 million in open currency forward contracts. Its primary exposures are the Japanese yen and the Canadian dollar. Delta estimates that a 10% appreciation in one of those currencies would cause a \$46 million loss, while a 10% depreciation would cause a \$38 million gain.

Internal Risk

Pension Obligations

Delta assumes a 9% rate of return on its pension obligations. Many forecasters do not foresee market returns this high going forward, reflecting a maturing U.S. economy. Both Delta's pension funding gap and their expected return on their pension assets are higher than their peers.

Technological Issues

An extended interruption in Delta's systems would adversely affect profits. On August 8, 2015, Delta lost power at its operations center in Atlanta. This outage affected some 2,000 flights, and Delta estimates it cost the company \$150 million.

Market Risk

Fuel Costs

In recent years, fuel costs have been highly volatile. Fuel costs made up 23% of operating expenses in 2015, but 35.4% and 33.3% in 2014 and 2013, respectively. If fuel prices were to rebound quickly, Delta may not be able to pass these costs fully on to customers. The airline industry is highly competitive, and despite Delta's brand loyalty, flyers have relatively low switching costs if ticket prices are higher than competitors'. Additionally, many flyers book tickets far in advance of travel. If fuel prices increase in the gap between ticket booking and the customer's flight, the price of the fare may not adequately cover the increase.

Fuel Supply Disruptions

Fuel supply could be disrupted by weather, geopolitical events, regulatory changes, or environmental challenges. The resulting increased fuel costs could create a drag on Delta's profits. For example, Hurricane Sandy caused the Trainer refinery to post a \$63 million loss in 2012.

Global Terrorism

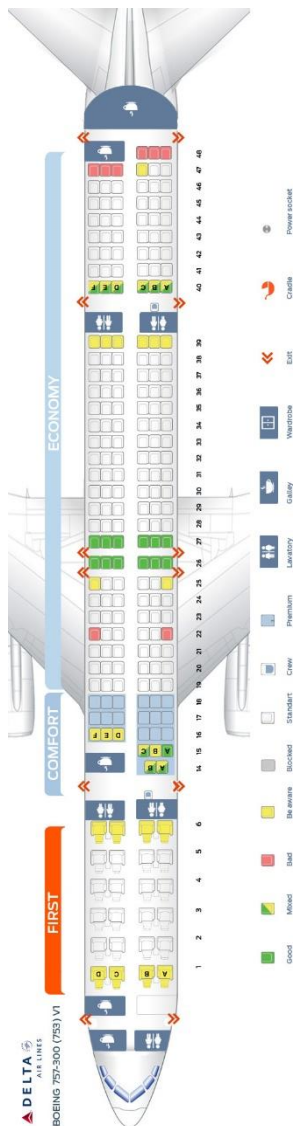
If consumer demand for travel is dampened by fear of terrorism, airlines will be affected. In the week following September 11th, the US Airlines Index fell by about a third. Even if domestic demand for flights does not sink, Delta could still be affected by regional drops in demand in conflict ridden areas. Security costs may also rise, pressuring Delta's margins.

Competition Risk

Low Cost Carriers

Low-cost carriers provide a potential risk to erode market share of Delta. Southwest remains the largest competitor to Delta and its business model reflects this low-cost strategy. To counter this potential risk, Delta has opted to provide a more premium and efficient, reliable service. The company also introduced a "basic economy" product to mitigate this risk.

Loss of Hub Space



Should Delta be forced to reduce its current supply of airport gates, they would experience a decline in passenger revenue simply by having less capacity to provide flights. Regional carrier partnerships play a key role in allowing the company to enter small hub spaces as well. Should these partnerships fall through, it leaves space for competitors to gain more flights.

(See Appendix A1)

Industry Overview: Broad Market Drivers of Airline Industry Performance

Global Economic Growth Fuels Discretionary Spending and Corporate Profits

Global economic growth increases the disposable income of consumers, raises the standard of living, and boosts company profits—all of which spur demand for air transportation for passengers and cargo. Estimates for 3Q16 indicate real gross domestic product (GDP) increased at an annual rate of 3.2%. U.S. real disposable income in 2016 has remained relatively flat, increasing only 0.1% in August, 0.2% in September, and 0.3% in October. Corporate profits from current production (corporate profits with inventory valuation adjustment and capital consumption adjustment) increased \$13.8 billion in 3Q16, in contrast to a decrease of \$12.5 in 2Q16. In recent years, U.S. corporate profits have been stressed by a strong dollar, rising labor costs, and the energy sector.

Vulnerability of the Airline Industry to Exogenous Events

The airline industry may be adversely affected by events such as infectious disease, weather patterns, terrorism or other security concerns.

Regulation Minimizing Consolidation

Consolidation in the airline industry alleviates fragmentation and overcapacity, which has driven financial performance of several airlines over the past 20 years. Though U.S. legal frameworks limit consolidation among airlines, many have created strategic partnerships which allow route sharing, among other synergies.

Data Analytics

Upgrading airplanes is incredibly expensive, which has caused airlines to shift focus towards utilizing data analytics to improve airport operations, loyalty programs, baggage handling, and customer engagement.

Pricing Pressure and Cost Reductions

The airline industry is one of the few industries in which product pricing has declined over the years. Deregulation of the airline industry in the 1970s and 1980s increased airlines' competition for customers and drove prices down. The emergence of low-cost carriers in recent years has led to further pricing pressure within the industry, which has caused margins to suffer for many major carriers.

Fuel Costs

Fuel is a major cost for airlines, and volatility in fuel prices causes large swings in profitability year-over-year. Delta purchased a refinery in 2012 that refines jet fuel, diesel and gasoline. This allows Delta to trade with other fuel companies across the US to obtain the optimal price for jet fuel. It also gives Delta power to lower the market price of jet fuel if it chooses to unload its stores and raise supply in the market. The Company currently enjoys a 3-cent discount compared to the industry average which has historically resulted in large fuel savings. During periods of high price inflation for fuel, Delta enjoys an even better 10 cent discount compared to the market. According to a Delta conference call on November 30th, 2016, every one-cent change in the price of jet fuel results in a \$40 million profit or loss.

Economic Indicators' Correlation to Revenue

Figure 12: Delta's Revenue as a % of Global Industry Market share

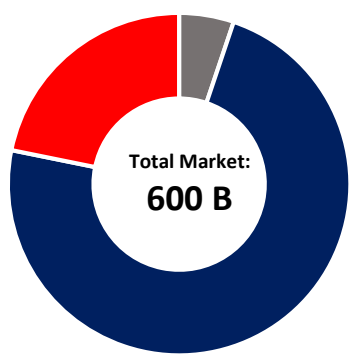


Figure 13: Delta's Virtuous Cycle

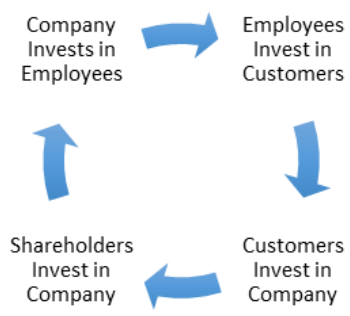


Figure 14: Delta's Ownership Summary

Ownership Summary	
Type	Percentage
Institutions	82.71%
Top 10 Inst.	30.34%
Insiders	0.26%
Retail	17.03%

Source: Factset

The demand for passenger flights, Delta's largest revenue stream, tracks closely with key economic indicators from the nations where the company provides air transport services. Gross domestic product (GDP), disposable personal income, business confidence, and consumer confidence can affect the demand for both business and leisure flights. US GDP regressed with the company's mainline revenue has the highest correlation. Disposable income and consumer confidence also have noticeable statistical significance as noted in the tables. The random variable of weather is also a large factor that plays into the demand for flights and the airlines' abilities to deliver their services. (See Appendix C4)

Load Factor

Delta maintains a high load factor compared to the industry which helps drive higher profits for the company. Load factor is the percent of seats that are filled on a flight. When airline demand is high and supply stays low, load factor rises and allows for improved profitability. Delta is a pioneer of revenue management and strategically manages seats available to offset pricing.

Debt, Employee Pensions and the Impact of Interest Rates

The company has been managing their debt and pension costs exceptionally as management expects to enter a rising interest rate environment. Historically, the airline industry has used high amounts of debt financing to fund normal operating expenses. If Delta can continue its path towards deleveraging, it will benefit more than its competitors as interest rates rise.

Business Description

Delta Airlines was founded in 1928, and is headquartered in Atlanta, Georgia. Delta's primary operations can be divided into three segments: Air Transportation, Airport Services, and Freight. It provides air transportation and freight serviced through a system of domestic and international routes, with access to 57 countries and over 300 destinations. Delta has remained an industry leader because of its network and has been ranked #1 by the Business Travel News Annual Airline Survey for five consecutive years. The company prides itself in its position as the industry leader for quality and efficient service, and ideal present in the company's use of "The Virtuous Circle".

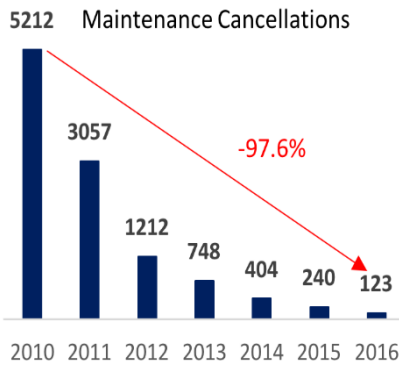
Monroe Energy LLC and MPIC LLC are wholly-owned subsidiaries of Delta, purchased in 2012. Located near Philadelphia, Pennsylvania, these companies operate the Trainer refinery for oil and jet fuel production. Their assets include pipelines and terminal assets, reflecting Delta's intention to mitigate the cost of jet fuel prices for its fleet. Delta estimates the refinery allows the airline to purchase fuel at an average of 3 cents per gallon less than the industry average.

Market Share

Delta prides itself on being a high-quality airline utilized by both business and leisure travelers. Delta represents 6.6% of the total market size for passenger transportation. Delta is the largest U.S. airline by market cap (\$35.7 billion), followed by Southwest Airlines (\$30.0 billion). The company maintains its market share through product differentiation, strategic alliances, and continual investments in its fleet. Low-cost carriers, such as Southwest, have been eroding Delta's market position over the last several years as both business and leisure travelers become more cost conscience during the recession. However, we think this represents an opportunity for Delta to regain share as the economy improves.

Shareholder Structure

Figure 15: Maintenance Cancellations since 2010



Delta is currently owned 82.7% by institutional investors, 17.0% by retain investors and 0.3% by company insiders. The top 10 institutional holders account for about 30% of all outstanding shares of Delta and include funds owned by Vanguard, JP Morgan, and Blackrock. Most recently, Berkshire Hathaway bought 6.3MM shares of Delta. This is an interesting take as it represents a shift in sentiment towards airline stocks becoming more favorable long-term investments (as Berkshire usually invests over long investment horizons).

Corporate Strategy

Innovative Technology

Delta set a fifth consecutive operational and customer service record in 2015, a product of its investments in technology. This technology assists Delta in staying on time, which, in turn, makes it a top choice for flyers. The company is also working towards increasing efficiency for their passengers. For example, in early 2016, Delta acquired a 5% stake in CLEAR, a biometrics firm. CLEAR produces iris and fingerprint scanners that may shorten wait times in security lines. Delta TechOps, the Maintenance, Repair, and Overhaul (MRO) division has been a huge point of strength for the company, providing excellent service to Delta’s fleet. As such, maintenance related cancellations fell 93% from 2009 to 2015. In 2015, Delta reported approximately 200 days with no domestic flight cancellations. The next three largest airlines combined had only 31 such days. This investment in serving customers ensures Delta remains the foremost U.S. airline. We believe leading the industry in reliability causes customers to both come back and spend more.

Delta is the first major airline to offer luggage tracking through its FlyDelta smartphone application. The tracking system incorporates radio frequency identification (RFID) through chips in luggage tags. Using this technology, scanners on the baggage belts read the chips on each luggage tag and indicate whether bags are on their appropriate route. RFID technology allows FlyDelta app users to check on their luggage at any point during their travel experience, therefore reducing some of the stress associated with airplane travel. Delta’s baggage accuracy is already outstanding, consistently rating near the top of the industry and significantly better than main competitors Southwest, United, and American. Spokeswoman Ashton Morrow said the system may increase Delta’s accuracy rate from 90.0% to 99.9%. Utilizing RFID technology to transition the task from employee to machine will not only increase efficiency and reduce the likelihood of mishandled baggage, but may present a money saving opportunity for Delta.

Maintaining Superior Culture

88% of Delta’s employees indicated they would recommend working at Delta to a friend—far above the industry average of 76%. This employee satisfaction filters into how customers are treated, improving their experience. Through Delta’s profit sharing plan, 10% of earnings before taxes and managers’ salaries is paid in bonuses through Delta’s profit sharing plan. Furthermore, 15% of Delta’s equity is owned by employees as part of Delta’s Equity Stock Ownership Plan (ESOP).

International Partnerships

Delta benefits from both joint ventures and equity partnerships with international airlines. The company has equity stakes in China Eastern, Virgin Atlantic, AeroMexico, and GOL, allowing Delta to have a presence in areas that encompass 98% of US-international passenger demand. International partnerships, such as SkyTeam, represent a significant source of revenue for its members, and allow carriers to engage in joint sales and marketing initiatives.

Cash Management

Figure 16: Delta vs. Competitor Missed bag Ratio

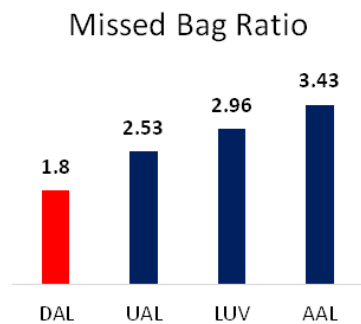


Figure 17:

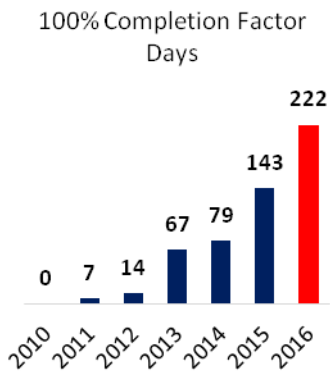


Figure 17: Delta vs. Competitor CapEx as % of OFC

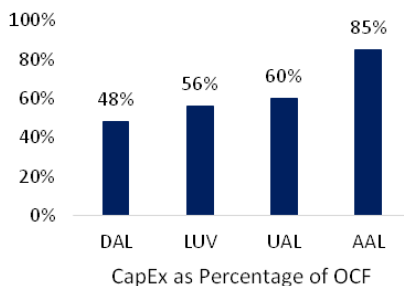
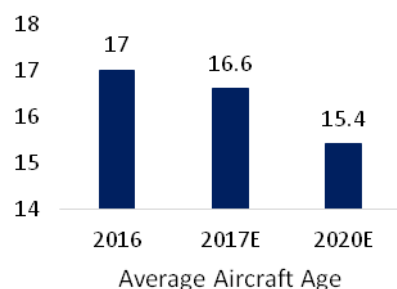


Figure 18: Average Age of Aircraft in Delta's Fleet



Delta has paid down \$10 billion in debt since 2009, and has raised its S&P credit rating to BB+. It spends about half of its operating cash flow on fleet, facility, and technology initiatives, totaling \$2.5-3.0 billion annually. Delta has worked diligently to maintain its strong financial position. As a result, default risk has steadily declined since the company's 2007 emergence from bankruptcy and is now 0.1525, below the industry average of 0.1624.

Airplane Assets

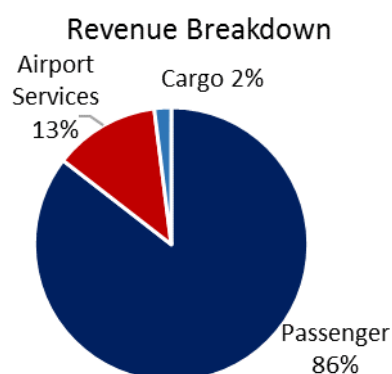
In total, Delta utilizes 809 planes for its operations. Of these, 612 are owned, while the remainder are either capital leases (79) or operating leases (118). The average airplane age is 17.1 years. Delta plans to replace about 50% of its mainline fleet by 2020, to make room for more modern planes while simultaneously trying to control capital expenditures. This also falls in line with its intention to have at least 75% of its planes owned and 25% leased. (Appendix C2)

Financial Analysis

Financial Analysis						
Ratios	2011	2012	2013	2014	2015	2016
Profitability						
Net Operating Income (MM)	\$2,243.0	\$2,600.0	\$3,548.0	\$5,268.0	\$6,608.0	\$6,502.0
Operating Margin	5.6%	5.9%	9.0%	5.5%	19.2%	
Net Profit Margin	2.4%	2.8%	27.9%	1.6%	11.1%	
Return on Assets	2.0%	2.3%	21.8%	1.2%	8.5%	
Return on Equity	0.0%	0.0%	0.0%	6.4%	46.0%	
EBITDA Margin	10.7%	11.4%	13.8%	17.4%	20.7%	
Liquidity						
Current Ratio	0.6	0.6	0.7	0.5	0.5	
Quick Ratio	0.4	0.4	0.4	0.3	0.3	
Total Line of Credit	\$1,825.0	\$1,825.0	\$1,925.0	\$1,903.0	\$2,207.0	
Leverage						
Total Debt to Equity	0.0	0.0	97.4	109.6	76.8	
Total Debt to Assets	31.7	28.8	21.7	17.9	15.7	
Equity Multiplier	0.0	0.0	4.5	6.1	4.9	
Credit						
Total Debt	\$13,791.0	\$12,829.0	\$11,342.0	\$9,661.0	\$8,329.0	
Short Term Debt	\$1,944.0	\$1,747.0	\$1,547.0	\$1,184.0	\$1,563.0	
Long Term Debt	\$11,847.0	\$11,082.0	\$9,795.0	\$8,477.0	\$6,766.0	
Interest Coverage Rate	2.5	3.2	1.5	0.9	0.6	
Net Debt/EBITDA	2.7	2.3	1.5	0.9	0.6	
Standard & Poor's Rating	B+	B+	BB-	BB	BB+	BB+

Source: Bloomberg

Figure 19:



Revenue Streams

Delta's operational revenue is derived from three segments: Passenger Transportation, Airport services, and Cargo Transportation. Passenger Transportation is revenue generated from tickets sold on flights, and accounts for 85.5% of total revenue. Airport Services consists of additional customer-facing services such as curbside check-in, kiosks, Delta Sky Club, and premium security lines, and accounts for 12.5% of total revenue. The remaining revenue is generated through Cargo Transportation, which is the use of jets for freight. This structure of revenue streams is similar to its United States peers—American Airlines and United Continental derive 98.2% and 97.5% of revenue from Passenger Transportation, respectively. With passenger transportation being its primary source of revenue, Delta looks to emphasize growth in this segment through efficient network operations and leading customer service.

International Revenue

Figure 20: Delta Revenue by International Region

Geographic Revenue		
Region	2015	Syr CAGR
North America	68.5%	1.2%
International	31.5%	-2.3%
Atlantic	16.0%	-2.9%
Pacific	8.6%	-3.7%
Latin America	6.9%	1.5%

Source: Bloomberg

Figure 21: SkyTeam Logo and Aeromexico Brand



Figure 22: Competitor PRASM Summary from 2013-2015

Equity	PRASM		
	2013	2014	As of 2015
DAL	14.15c	14.58c	14.1c
AAL	13.67	13.97	13.21
UAL	13.5	13.72	13.11
LUV	12.83	13.48	13.02
ALK	12.67	12.69	12.01
JBLU	11.61	11.88	11.96
SAVE	11.94	11.82	10.08
ALGT	8.00	8.18	6.99

Source: Bloomberg

Delta generates 64% of total revenue domestically, or within the United States. Internationally, the Company receives 19.0% of its overseas revenue from the Atlantic region, followed by 9.0% in the Pacific, and the remaining 8.0% from Latin America. On a five-year basis, Delta's domestic revenue CAGR comes in at 6.36% while international revenue has grown at a stagnant 0.6%. The growth rate for international is kept positive by a strong 6.5% CAGR in Latin America. Delta has stated they plan to concentrate resources towards growth in the domestic segment while relying on partnerships through international joint ventures with Virgin Atlantic, Air France, and Virgin Australia to drive their non-domestic revenue.

Several other services provide growth and diversification opportunities, including:

- *SkyTeam Global Airline Alliance*: Delta's membership in the SkyTeam global airline alliance, in addition to other partnerships, allows Delta to better serve its customers through a wider variety of travel destinations and frequencies as well as improved connection schedules.
- *Delta Connection Regional Carrier Program*: Regional partnerships allow Delta to better serve customers in small and medium-sized cities. In 2015, Delta Connection comprised approximately 17.0% of Delta's total passenger revenue.
- *Delta SkyMiles Rewards Program*: Delta's partnership with American Express is expected to produce over \$300 million in incremental value for 2016, and is expected to contribute \$4 billion annually by 2021. (appendix discuss features etc.)

Revenue and Margin Growth

Between 2006 and 2011, Delta experienced revenue growth of 15.4%. As the company enters the stage of maturity, its growth has since tapered off from such figures. The 10-year CAGRs for revenue growth, gross margin and operating margin are 8.7%, 8.4% and 60.6%, respectively. However, Delta has lowered its predicted operating margins due to increased pay for its pilots. It is realistic for Delta to continue to generate moderate revenue growth, as well as gross margin expansion, in future periods by staying focused on domestic growth using regional carriers.

High Profitability

Since 2011, Delta has consistently grown its revenue and net income and expanded its EBITDA margin. Compared to its peers, Delta ranks highly in profitability with an EBITDA and profit margins of 18.9% and 10.0%, though these have grown at a slower pace over the past five years relative to the industry. That said, on an absolute dollar basis, both revenue and net income are strong relative to Delta's competitors. The Company's revenue outperforms every other airline, with the exception of American and United.

Debt Management

Delta has committed to driving down total debt to \$4.0 billion by 2020. Since 2011, the average year over year decline in total debt is 11.8%. Applying this deleveraging rate to the 2015 year-end debt level (\$7.3 billion), Delta should achieve its goal by its target year. In 2005, the Company filed for chapter 11 bankruptcy. Through debtor-in-possession financing, restructuring of pension plans, worker layoffs, and selling off additional assets and subsidiaries, the management team successfully navigated the Company out of bankruptcy. Management then set a new goal for financial stability and redeeming its investment grade status. Since 2007, Delta has seen its S&P credit rating increase from a B to a BB+ rating, which is just under investment grade.

Earnings

Figure 23: 2015 Return on Equity using 3-Step DuPont Analysis

2015 Three-Step DuPont	
Equity	Result
AAL	111.27%
ALGT	63.47%
UAL	49.94%
ALK	34.92%
DAL	34.62%
LUV	32.01%
SAVE	25.80%
JBLU	20.91%

Source: Bloomberg

Figure 24: 2015 Return on Equity using 5-Step DuPont Analysis

2015 Five-Step DuPont	
Equity	Result
AAL	95.33%
UAL	42.84%
ALGT	35.52%
ALK	21.67%
LUV	19.30%
DAL	19.09%
SAVE	15.84%
JBLU	10.59%

Source: Bloomberg

Figure 25: 2011-2015 Delta vs. Competitors ROE using 3-Step DuPont Analysis

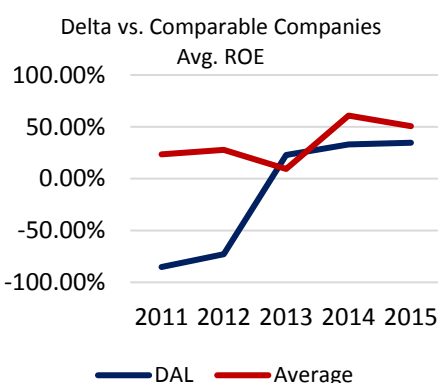


Figure 26: Discounted Cash Flow Inputs

Discounted Cash Flow	
Revenue	\$39,639
WACC	7.82%
Tax Rate	36.00%
Equity Weight	82.60%
Debt Weight	17.40%

Including the most recent quarter (4Q16), Delta has only missed earnings seven times since 2011; three of which occurred in the year 2011. Delta missed fourth-quarter 2016 earnings by only 0.5 bps and is estimated to have an EPS of \$0.93 for first-quarter 2017.

PRASM

At 14.10¢, Delta currently leads its industry in passenger revenue per available seat mile (PRASM). The Industry average according to MIT's Global Airline Industry Program is 12.48¢. From 2014 to 2015, PRASM declined slightly across all airlines while available seat miles (ASM) grew steadily. For companies to maintain revenue growth in slowing PRASM conditions, reducing expenses and maximizing revenue on every flight is a priority. Delta reduced its operating expense per passenger mile, which offset the decline in PRASM over the period.

DuPont Analysis

The three step DuPont Analysis provides a detailed look at a company's return on equity (ROE). By integrating profitability, efficiency, and financial leverage into one formula, changes in a company's ROE can be understood by their individual components. A five step DuPont Analysis can be used to further analyze the effects of taxation and interest on a company's profitability. As of 1/16/2017, Delta is the only Airline to have released its 4Q15 earnings which means all comparisons will be for 2015.

After negative years in 2011 and 2012, Delta has developed a strong and steady ROE relative to its competitors. Using the 3-step DuPont Analysis for 2015, Delta had a ROE of 35% which was up 1% from the previous year. This was the median for Delta's comparable companies group. The 5-Step DuPont Analysis shows how some of the leading ROE's in the peer group, American Airlines and United Airlines are benefitting from an effective tax rate of almost zero. While the average Airline pays between 34-38% tax, American and United pay 0.4% and 0.3% respectively.

Valuation

Discounted Cash Flow

We used the discounted cash flow method because of the correlation between financial performance, growth, and profitability. To properly gauge for variations in performance multiple scenarios were run to derive a range of valuations calculated in accordance with different growth estimates. This was performed using our calculated WACC of 7.3%. Revenue growth rates used were conservative in their movement in response to Delta's 2016 results. Compared to market consensus revenue estimates for upcoming years, our growths are revised downward to remain conservative. In our Bull, Bear, and Base valuations, we varied growth rates and ran sensitivities to account for Delta's ability to improve its margins on differing levels. If Delta is able to increase its margins, more value will be available to shareholders.

The terminal growth rate was calculated using compounded annual rates of the Air Transportation industry based off price and quantities served. Data was collected from the US Bureau of Economic Analysis during 2000 – 2015 indexes. We arrived at a terminal growth value of 2%. Continuing our theme of remaining conservative, have revised it downward for 1% in our baseline valuation. Our intentions are to assume the industry may continue to slow if quantity served continues to trend downward with prices within the Air Transportation industry trending upwards. One of the reasons for our conservative estimates is that Delta is the one of the largest in its industry, so we can reasonably expect its growth to slow.

Weighted Average Cost of Capital (WACC)

To properly value Delta for the upcoming 5 years, WACC was calculated as of 2016. Using publicly available comparable companies, a weighted average unlevered beta was calculated from our chosen peer set within the airline industry. To re-lever the beta, we applied Delta's capital structure based on the current debt to market capitalization ratio. This beta was then used for our CAPM calculation to arrive at a cost of equity of 7.97%, which we rounded up to 8.0%.

Figure 27: Cost of Equity Inputs

CAPM	
Risk Free Rate	2.36%
Expected Mkt Return	7.41%
Comp Beta	1.250
Unlevered Beta	0.99
Relevered Beta	1.11
Cost of Equity	7.97%

Figure 28: Bureau of Economic Analysis Price and Personal Consumption Indices

Price and Real Personal Consumption Indexes			
Air Transportation	2005	2015	CAGR
Quantity	119.36	106.38	-0.09
Price	90.23	120.71	0.03
Total			0.02

Source: Bureau of Economic Analysis Tables 2.4.4, 2.4.3

Figure 29 & 30: Historic and Forecasted P/E Ratios for Valuation

Actual PE: S&P500 versus Delta Airlines		
P/E - annual	S&P500	DAL
2016	20.86	9.36
2015	19.00	14.30
2014	18.60	4.30
2013	18.60	11.40
2012	15.00	10.00
AVG PE	18.41	9.87
STD DEV	2.12	3.65

Forecasted PE: S&P500 versus Delta Airlines		
Forecast	S&P500	DAL 2017 Est. PE
2017 Baseline	19.5	10.4
OPTIM (+ 1 Std Dev)	21.6	11.6
PESSIM (-1 Std Dev)	17.4	9.3

Figure 31: Valuation Price Estimates

Delta Airlines Price Estimate		
Delta	EPS Forecast *	2017 DAL Price
2017 Baseline	5.12	\$53.49
OPTIM (+ 1 Std Dev)		\$59.33
PESSIM (-1 Std Dev)		\$47.66

* Consensus EPS, Zacks Investment Research

Figure 32: Monte Carlo Simulation Results

Monte Carlo Results	
Low	\$19.29
High	\$140.20
Mean	\$53.64
Median	\$51.98
% Above \$49.19	58.50%

Cost of debt was calculated as a mean value of interest rates for BBB bonds between the period from 2002 – 2008. We added 25bps to the mean value as the credit rating of Delta recently moved into BB+ territory. The resulting cost of debt value is approximately 6.0%. The current interest rate environment implies an abnormally low cost of debt, which in turn, causes inflation in our valuation. In using historical rates, we are taking into account the likelihood of interest rates to move higher from current rates during the forecasted period and eventually return to pre-Great Recession levels. Using the market value of Delta's equity in tandem with the total amount of current debt for DAL, we find that about 83.0% of their capital is equity and 17.0% relying on debt. Using aforementioned data and a tax rate of 36.0%, a WACC of 7.3% was calculated and adopted for our DCF valuation.

P/E Valuation

A Delta share value estimate also was calculated using the Price-to-Earnings (P/E) Multiple Method. In recent years, Delta's P/E has remained at a significant discount to the S&P500 P/E. A Delta share value estimate is obtained from estimates of the 2017 S&P500 P/E, an assumed Delta's P/E discount and market analysts' forecast of Delta's earnings per share for 2017. Taking the average of the last 5 years' P/E of the S&P500, our calculations put the historical market P/E at 18.4. Comparing Delta's historical P/E for the same period puts its average at 9.9, a 0.53 ratio to the market P/E historically. Taking this ratio and expecting Delta to continue to be at a 0.53 discount to the market, the estimated P/E comes out to be 10.4 when compared with a market consensus P/E of 19.3. This puts DAL on par with historical numbers, implying moderate price growth in tandem with the growth in their earnings. Taking our estimate P/E and multiplying it by the market consensus EPS of \$5.12 gives a baseline \$53.49 one-year price target.

Monte Carlo Simulation

A Monte Carlo simulation was used to model possible stock prices a year from now in order to validate the DCF, comparable companies, and P/E analysis. The median return was roughly 4.2%, and 56.25% of simulations showed positive one-year returns. The standard deviation of the final returns was 28%, or \$14.16, putting the Base and Bull case prices derived from the DCF well within one standard deviation of the mean return. Our Bear case was slightly more than one standard deviation less than the mean. (See Appendix G4)

Corporate Governance

Management

Chief Executive Officer: Ed Bastian

Bastian has been with Delta for 16 years. He has been the CEO since May 2016, and was a vital leader during Delta's restructuring following bankruptcy.

Chief Operating Officer: Gil West

West joined Delta in 2008 following the Northwest merger. As COO, he is responsible for several departments concerning operations and customer experience.

Chief Financial Officer: Paul Jacobson

Jacobson was extremely important following Delta's reemergence from bankruptcy. He has overseen the pay down of \$10B in debt, an upgrade to investment grade credit status, and the firm's current capital allocation strategy.

Social Responsibility

Delta is committed to promoting diversity and acceptance. As a result, the company has been awarded with the following in 2016:

- Honor for workplace diversity by Fortune Magazine
- Best Place to Work for LGBT Equality by the Human Rights Campaign Foundation
- Companies that Care Honor Roll
- Most LGBT friendly airline in Latin America by GNETWORK360

Appendices

Appendix A Investment Risks

Appendix A1: Mitigation Discussion

Global Terrorism: If consumer demand for travel is dampened by fear of terrorism, airlines will be affected. In the week following September 11th, the US Airlines Index fell by about a third. Even if domestic demand for flights does not sink, Delta could still be affected by regional drops in demand in conflict ridden areas. Security costs may also rise, pressuring Delta's margins.

Mitigant: Despite international terrorism negatively impacting airline stocks on a short-term basis, an investor with a lengthy time horizon shouldn't be affected by temporary drops in price.

Fuel Costs: For several years, fuel costs have been highly volatile. Fuel costs made up 23% of operating expenses in 2015, but 35.4% and 33.3% in 2014 and 2013, respectively. If fuel prices were to rebound quickly, Delta may not be able to pass these costs on to customers. The airline industry is highly competitive, and despite Delta's brand loyalty, flyers have relatively low switching costs if ticket prices are higher than competitors'. Additionally, many flyers book tickets far in advance of travel. If fuel prices increase in the gap between ticket booking and the customer's flight, the price of the fare may not adequately cover the increase.

Mitigant: Delta has maintained a fuel hedging program to reduce the risk imparted by fuel price fluctuations. For 2016, Delta does not have any hedges in place.

Mitigant: Delta also maintains the Trainer refinery; a competitive advantage other airlines do not possess.

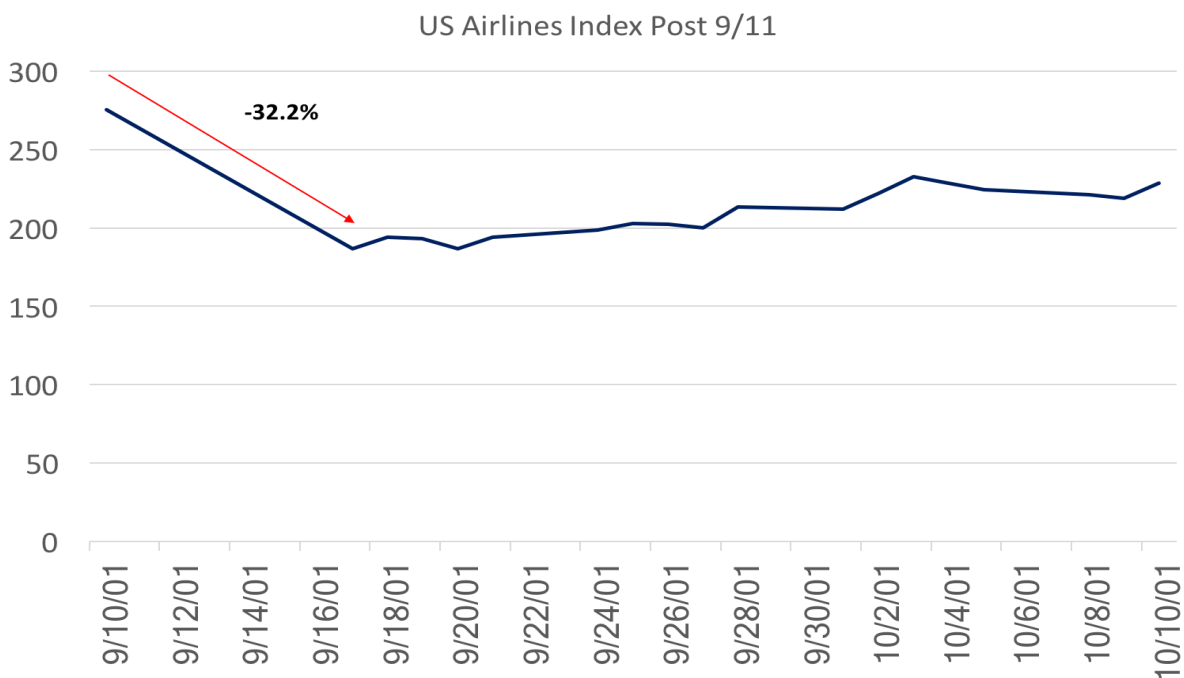
Fuel Supply Disruptions: Fuel supply could be disrupted by weather, geopolitical events, regulatory changes, or environmental challenges. The resulting increased fuel costs could create a large drag on Delta's profits. For example, Hurricane Sandy caused the Trainer refinery to post a \$63 million loss in 2012.

Mitigant: Delta forecasts fuel prices to rise 30% in 2017. Delta expects its refinery to operate profitably over the long term.

Pension Obligations: Delta assumes a 9% rate of return on its pension obligations. Many forecasters do not foresee market returns this high going forward, reflecting a maturing U.S. economy. Both Delta's pension funding gap and their expected return on their pension assets are higher than their peers.

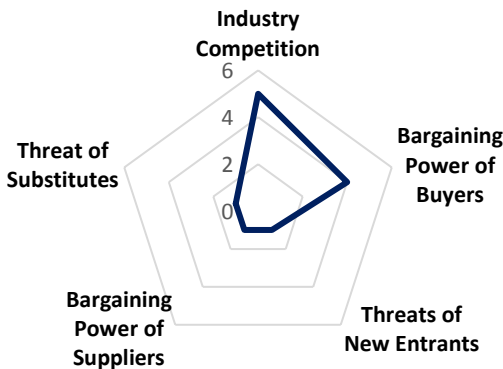
Mitigant: If the discount rate goes up by 2%, the pension plan will be considered fully funded.

Mitigant: Delta is contributing more than the minimum to its pension plans in order to reduce its funding gap.



Appendix B: Industry Overview and Competitive Positioning

Appendix B1: Porter's Five Forces Analysis



LEGEND	
0	No Threat
1	Insignificant Threat
2	Low Threat
3	Moderate Threat
4	Significant Threat
5	High Threat

Existing Rivalries: High

The four-firm concentration ratio (CR4) of the U.S. airlines industry is 86.99%. The Herfindahl-Hirschman Index for the industry is 2047, indicating that it is moderately concentrated. However, airline companies are fiercely competitive. The average flier will have a relatively similar experience no matter where they fly. Additionally, third party travel aggregators, such as Priceline, allow every flier easy access to price comparison tools. These two factors lead to enormous downward pricing pressure.

Bargaining Power of Buyers: High

Buyers, as mentioned, have very strong bargaining power over airlines. A Delta customer dissatisfied with price can easily take their business elsewhere. The switching costs for a prospective Delta customer to fly with United Airlines or Southwest are relatively low. Delta, however, can counter this by offering strong rewards programs, such as its Delta SkyMiles credit card rewards program. This increases switching costs, as consumers don't want to leave free miles on the table.

Threat of New Entrants to the Marketplace: Moderate

The threat of new entrants into the airline industry is low. Start up and operating costs are extremely high, regulations are growing more and more complicated, and there are few feasible ways to truly differentiate one's experience from any other airline. However, a larger threat is existing airlines pushing into new markets. For example, in 2015, Delta was forced to cancel its Atlanta-Dubai route due to unprofitability as a result of competition from Gulf airline carriers Emirates, Eithad, and Qatar. This brings up a second interesting point. Developing world airlines, such as the Gulf carriers, are often government-subsidized. The Gulf carriers' government subsidies total \$42 billion and are growing. These subsidies distort the market, making competition impossible.

Bargaining Power of Suppliers: Very Low

Suppliers to airline companies have very little bargaining power. Delta's scale is so large that they are the main determiners of pricing with their suppliers - Delta can always find another supplier, but the supplier likely won't be able to find a customer as large as Delta.

Threat of Substitutes: Very Low

There is little in the way of direct substitutes for long distance travel. Cars, buses, and trains are substantially slower than planes. Additionally, per AAA, the cost per mile to operate a motor vehicle is about 60 cents per mile, making personal automobiles only marginally cheaper by comparison.

Appendix B2: Herfindahl Index and Four Firm Concentration Ratio

Herfindahl Index and Four Firm Concentration Ratio			
Equity	Revenue	Market Share	Herfindahl
AAL	\$40,990	25.6%	656.38
DAL	\$40,506	25.3%	641.10
UAL	\$37,864	23.7%	560.27
LUV	\$19,820	12.4%	153.51
JBLU	\$6,416	4.2%	17.22
ALK	\$5,598	3.6%	13.11
SAVE	\$2,141	1.4%	1.92
ALGT	\$1,260	0.8%	0.66
Totals	\$154,595	87.0%	2044.19

Appendix C: Business Description, Management & Governance

Appendix C1: Analysis of Delta's Strengths, Weaknesses, Opportunities, and Threats

Strengths

Brand equity, identity, recognition: Delta reports gaining a 20% revenue premium in the US air market from the Delta brand. Delta has excellent brand recognition and is recognizable in all their US hubs where they receive most of their revenue. The company is known for having an image of great reliability and customer service. The claim to reliability is backed by the company's more than 200 100% completion factor days this year. This means Delta has had over 233 days in 2016 without canceling one mainline flights, "more than 4 times American Airlines, United Airlines, and Southwest Airlines combined" (per DAL investor day).

The company has also been recognized by JD power as being a top satisfaction airline. This year's rank put Delta closely behind Alaska Airlines; the first ranked traditional carrier for satisfaction.

Wholly owned oil refinery: The company's oil refinery gives it an advantage in minimizing one of the largest costs airline carriers incur, jet fuel. This allows Delta to have more visibility into its fuel costs and receive a 3-cent discount to the industry.

Network of efficient hubs: Delta has a network of efficient hubs that aid in the brand's functioning. Delta's home and largest presence is at the Hartsfield-Jackson International Airport in Atlanta, GA. This airport is the world's most efficient per the Air Transport Research Society (ATRS). Delta maintains its network and continues with only the routes and hubs that operate with a high efficiency.

Cost saving maintenance strategy: Delta has a superior cost saving maintenance strategy for their planes. Proficient in-house airline maintenance keeps third-party costs down, along with a longstanding partnership with Rolls Royce, who manufactures their engines. The company also keeps its maintenance costs low by its pioneering the part-out strategy, whereby the company utilizes retired planes' parts that are still serviceable.

Weaknesses

Dependence on North American market: Currently the most appealing air travel market, North America, accounts for 68.5% of Delta's revenue. If the company does not continue to expand out of its home market it could lose out on growth opportunities. However, it could also realize promising returns with relatively less risk than competing in international markets.

Highly cyclical industry: Possibly the largest weakness inherent to the airline industry is the fact it is highly cyclical. If the US, providing the majority of Delta's revenue, incurred an economic slowdown, then the company would experience financial stress.

Opportunities

Regional partnerships: Regional carriers present a portion of the airline market that main-line Delta has not put a focus toward. The company does have partnerships that allow it to benefit from these segments and expand the network. Recently they have been upgrading the regional 50 seat planes in their fleet to 70+ seating efficient planes. The expansion into regional markets allows Delta to grow its revenue base with the efficient airline practices they excel at as a large carrier.

Asian markets: China is one of the largest international hubs for travel, however supply has grown more rapidly in recent years than demand. It is difficult to capture revenues in this low passenger yield environment. Although Asia has seen local oversupply in recent years, Delta has a similar partnership position there as it does with regional carriers domestically.

Developing markets: The company is more interested in expanding its flights to emerging markets in South America where the potential for efficient networks is better. This region is producing positive RASM led by the Brazilian and Mexican markets.

Adopting newer planes: Delta continues to “Keep Climbing” and changing for the better. It has set out to replace 50% of the planes it owns with newer models to realize the efficiency gains. The company also keeps some 25% of its fleet as leased vehicles to allow for flex capacity; this giving Delta better pricing ability and demand response.

Threats

Pricing competition in industry: The airline industry has seen an overall trend in recent years to ultra-low cost flights. This is a separate segment than the traditional type of airline that Delta competes with. However, price competition throughout the airline industry is intense because of this and the sustained lower cost of fuel. Delta has tried to combat this by segmenting its general cabin seating into “Basic Economy,” “Main Cabin,” and “Delta Comfort+.”

The Basic Economy can compete with the fare pricing of the low-cost carriers while maintaining the basic benefits of flying Delta. The company’s experience with Basic Economy pricing created some \$20 million in additional revenue within the first quarter after initiating the plan. Delta showed its ability to adapt and create profitable pricing strategies in difficult times. This also reduces the threat of a domestic economic downturn drastically harming the company’s profits.

Changing regulations: The airline industry is subject to changing regulations. This possibility could hinder certain aspects of profitability as well as limit the high customer service level Delta is used to maintaining. Delta’s mainline has been relatively unaffected by this, although regional partners have experienced pressure. Republic Airways, a regional partner of Delta, suffered from new regulations for pilots to have additional training while continuing with outdated pilot contracts. This pressured the airline to ground a portion of its fleet that, in turn, created a loss of service for Delta. Delta has filed a lawsuit and reached a settlement in Delta’s favor.

Appendix C2: Airline Fleet Age

Flight Equipment: Operating Aircraft Fleet, Commitments, and Options at December 31, 2015							
Aircraft Type	Current Fleet				Average Age	Commitments	
	Owned	Capital Lease	Operating Lease	Total		Purchase	Lease
B-717-200	--	13	74	87	14.3	--	1
B737-700	10	--	--	10	6.9	--	--
B737-800	73	--	--	73	14.9	--	--
B-737-900ER	31	--	19	50	1.3	70	--
B-747-400	4	5	--	9	23.7	--	--
B-757-200	81	18	11	110	20	--	--
B-757-300	16	--	--	16	12.8	--	--
B-767-300	13	--	1	14	24.7	--	--
B-767-300ER	54	4	--	58	19.8	--	--
B-767-400ER	21	--	--	21	14.8	--	--
B-777-200ER	8	--	--	8	15.9	--	--
B-777-200LR	10	--	--	10	6.7	--	--
B-787-8	--	--	--	--	--	18	--
A319-100	55	--	2	57	13.9	--	--
A320-200	58	--	11	69	20.8	--	--
A321-200	--	--	--	--	--	45	--
A330-200	11	--	--	11	10.8	--	--
A330-300	25	--	--	25	8.8	6	--
A330-900neo	--	--	--	--	--	25	--
A350-900	--	--	--	--	--	25	--
E190-100	--	--	--	--	--	19	--
MD-88	83	33	--	116	25.4	--	--
MD-90	59	6	--	65	18.9	--	--
Total	612	79	118	809	17.1	208	1

Source: Delta 12/31/2015 10-K

Appendix C3: Management

CEO – Ed Bastian: Bastian has been with Delta airlines for 18 years. He was part of the team that led Delta out of bankruptcy in 2005. Starting as a VP of Finance and Control, Bastian eventually left Delta in 2004. Just six months after his departure he returned as Chief Financial Officer to play a leading role in Delta’s restructuring. After being named President in 2007 Bastian was named CEO in May of 2016. His philosophy is as follows: “If you take care of your people, they take care of your customers, whose business and loyalty allows you to reward your investors.”

COO – Gil West: West joined the Delta team in 2008 and played an integral role in Delta’s and Northwest’s customer service merger. Prior to his position as COO he served as VP of Customer Service and Technical Operations. He oversees operations and employees in several departments of Delta including but not limited to: Airport Customer Service; Cargo; Corporate Safety, Security and Compliance; Delta Connection; Delta Global ServiceAir’s; Delta Private Jets; Flight Operations; In-Flight Service; Information Technology etc.

CFO – Paul Jacobson: Jacobson joined Delta in 1997 as a Financial Analyst and has held several positions on his way to CFO. He is responsible for Delta’s global finance organization. He has played a part in several projects of Delta including balance sheet restructuring that led to \$10BN in debt reduction and the airlines current capital allocation strategy. He took his current role in March of 2012.

Appendix C4: Regression and ANOVA Tables

Summary Output for US GDP to Delta Mainline Revenue

Regression Statistics	
Multiple R	0.588882362
R Square	0.346782436
Adjusted R Squa	0.310492571
Standard Error	644.7617187
Observations	20

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	3972557.87	3972557.87	9.555903246	0.006298529
Residual	18	7482918.13	415717.6739		
Total	19	11455476			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	-7722.757019	4707.973877	-1.640356812	0.118289055	-17613.8431	2168.329063
Gross Domestic	0.913752787	0.295592113	3.091262403	0.006298529	0.292736801	1.534768773

Summary Output for US Consumer Confidence to Delta Mainline Revenue

Regression Statistics	
Multiple R	0.630468089
R Square	0.397490011
Adjusted R Squa	0.364017234
Standard Error	619.230648
Observations	20

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	4553437.283	4553437.283	11.87502337	0.002882096
Residual	18	6902038.717	383446.5954		
Total	19	11455476			

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	3984.098684	835.6627387	4.767591636	0.000153916	2228.436418	5739.76095
Consumer Confi	33.74453038	9.792332509	3.446015579	0.002882096	13.17160319	54.31745758

Summary Output for US Disposable Income to Delta Mainline Revenue

<i>Regression Statistics</i>	
Multiple R	0.500780872
R Square	0.250781482
Adjusted R Squa	0.209158231
Standard Error	690.5173083
Observations	20

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	2872821.245	2872821.245	6.0250335	0.024509657
Residual	18	8582654.755	476814.153		
Total	19	11455476			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	-3780.968994	4323.215	-0.874573435	0.393326018	-12863.70667	5301.768684
Disposable Pers	0.886500734	0.361159769	2.454594366	0.024509657	0.127732215	1.645269253

The above data and regressions demonstrate the correlations between the main revenue stream for Delta, Mainline, and the top economic drivers. The data spans the previous 20 quarters for Delta and economic indicators. This period was chosen to show the recent performance of the company. This period has the greatest relevance to reflect forward looking projections. The economic data is taken from the United States which accounts for the lion's share of the company's revenue.

From the ANOVA tables and regression, it is given that GDP for the United States has a high statistical likelihood to be correlated with Delta's Mainline Revenue. The significance F is 0.0063. As the overall economy of the United States performs well, Delta's revenue stream will perform well.

From the information, it is given that United States consumer confidence also has a high statistical likelihood of being correlated with Delta's Mainline revenue. The significance F is 0.0029. While consumers have a high confidence in the United States' economy, they are more likely to purchase plane tickets with Delta.

From the information, it is given that United States disposable income is likely to correlate with the Mainline revenue. The significance F is 0.0245. The greater the disposable income of the United States, the more plane tickets will be purchased with Delta.

This information shows a positive prediction that it is likely Delta's revenue will increase as the United States' economy continues performing well.

Data for regression sourced from FACTSET.

Appendix D: Corporate Strategy

Appendix D1: Recent Developments in International Partnerships

The US Department of Transportation granted Delta and Aeroméxico antitrust immunity to complete a joint venture agreement to create the first and largest cross-border alliance between the US and Mexico. Delta's partnerships with international airlines Aeroméxico, WestJet, Gol, Air France-KLM, China Southern, China Eastern, Korean Air, Virgin Atlanta and Virgin Australia allow Delta to maintain a presence in markets which encompass 98% of US-international passenger demand.

Appendix D2: Regional Carrier Program

Delta's regional carrier program, Delta Connection, the company has contractual agreements with ExpressJet Airlines (check appendix DAL 10k), SkyWest Airlines, Shuttle America Corporation, Compass Airlines, GoJet Airlines, and Endeavor Air (a wholly-owned subsidiary of Delta). Regional partnerships allow Delta to better serve customers in small and medium-sized cities. Through regional partnerships, Delta pays regional carriers an amount defined in the respective contracts in exchange for all ticket, cargo, mail, in-flight, and ancillary revenues associated with the flights. In 2015, Delta Connection comprised approximately 17% of Delta's total passenger revenue.

Appendix D3: Other Partnerships

Since 1996, Delta and American Express have offered a variety of co-branded credit cards which allow card holders to accumulate SkyMiles and receive other travel benefits such as Delta Sky Club lounge access or priority boarding. The companies announced a multiyear extension of the alliance in December of 2014, and project the partnership to bring long-term value to customers as well as the companies.

Appendix D4: Pension Funding

Equity	Funding Gap	Expected Return	% in Growth Assets	Discount Rate
DAL	11.2B	8.94%	62%	4.57%
UAL	1.5B	7%	56%	4.58%
AAL	6.7B	8%	69%	4.70%

Appendix E: Shareholder Summary

Appendix E1: Top Institutional Holders

Top Institutions		
Holder	# of Shares	% Outstanding
Vanguard	4,558,400	6.09%
J.P. Morgan	3,300,800	4.41%
BlackRock	2,760,400	0.69%
Lansdowne	2,675,700	3.57%
SSgA	2,178,300	2.91%
PRIMECAP	1,991,900	2.66%
Fidelity	1,453,200	1.94%
T. Rowe Price	1,404,500	1.88%
AllianceBernstein	1,250,600	1.67%
PAR Capital Management	1,146,600	1.53%

Source: Bloomberg

Appendix E2: Top Insiders

Top Insiders		
Holder	# of Shares	% Outstanding
Paul A. Jacobson	35,400	0.05%
Edward H. Bastion	23,800	0.03%
Richard H. Anderson	19,500	0.03%
Glen W. Hauenstein	16,600	0.02%
Wayne Gilbert West	9,500	0.01%

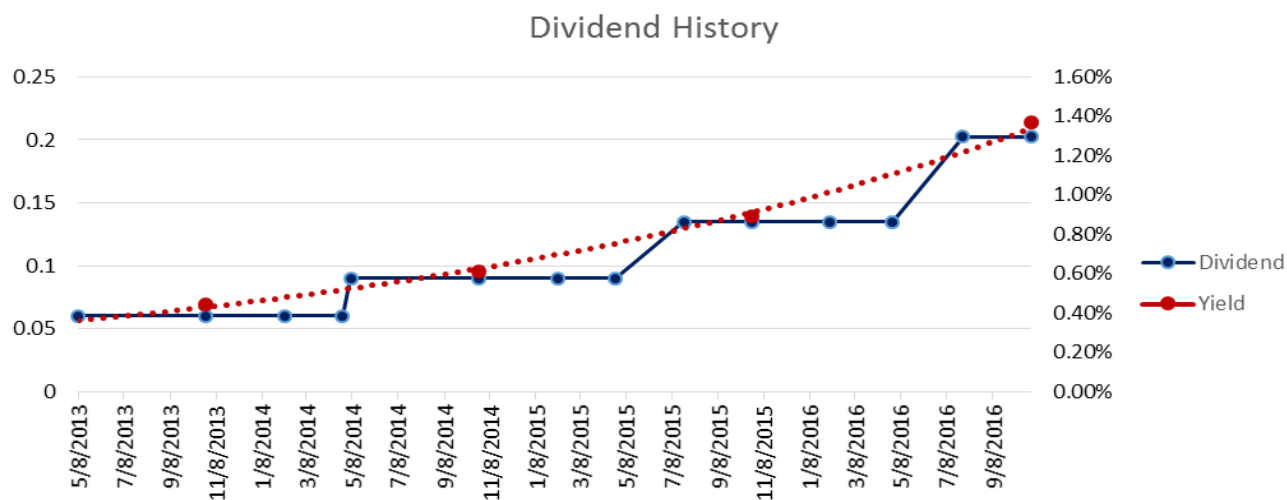
Source: Factset

Appendix E3: Share Repurchases

Through the first nine months of 2016, Delta paid \$2.3 billion to repurchase 54 million of its shares. Of these, \$350 million were contributed towards Delta's pension plan.

Appendix F: Financial Analysis

Appendix F1: Dividend Analysis



In our eight member comparable companies group, five paid a dividend to their shareholders. This has been a fairly new trend in the airline industry with the oldest dividend in our group starting in 2012. Delta began its dividend in 3Q13 with an initial dividend per share (DPS) of \$0.06 at a yield of 0.44%. Moving forward into 2016, Delta has tripled its DPS and yield to \$0.2025 and 1.37% respectively with YoY growth of 50%. Several other important metrics come into analyzing Delta's dividend paying ability and its potential for further sustainable growth in the future.

Appendix F2: Dividend Growth & Coverage

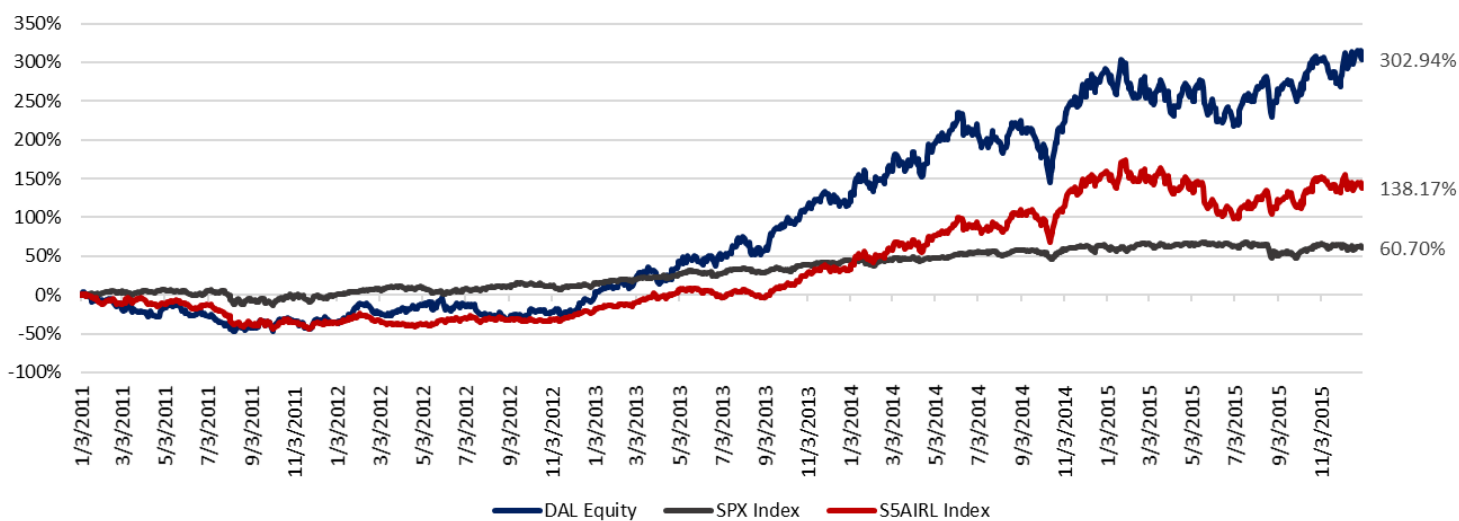
2015 Competitor Dividend Analysis					Delta Dividend Analysis			
2015	Dividend Yield	Payout Ratio	Coverage Ratio	FCF Margin	Ratio	Delta Airlines	Competitor Avg	
DAL	0.89%	9.63%	10.47	12.24	Dividend Yield	1.37%	1.06%	
LUV	0.66%	2.13%	12.16	6.04	Div % 3yr CAGR	26.67%	12.17%	
UAL	0.00%	0.00%	0.00	9.99	Payout Ratio	12.69%	5.32%	
JBLU	0.00%	0.00%	0.00	10.24	Coverage Ratio	7.92	10.46	
SAVE	0.00%	0.00%	0.00	-3.54	FCF Margin	10.29	6.48	
AAL	0.94%	1.10%	20.52	0.24				<i>Source: Bloomberg</i>
ALGT	1.64%	14.97%	1.75	8.91				
ALK	0.99%	3.07%	7.39	13.45				

As mentioned in Appendix F1, Delta has had YoY growth of 50% to its dividend since 2013. The Company's 2016 yield is 1.37% which is up 0.48% from 2015. Delta's 2015 yield was under its competitor average of 1.06% but has much stronger growth over a 3-year period. Comparatively, Delta's 3yr CAGR of 26.67% is more than double than the average of its peers which is 12.17%. While yield is an added benefit to any investment, it is not guaranteed. If the decision between two companies comes down to the extra yield from dividends, the amount the company pays out relative to its EPS (payout ratio), how well the company can cover the dividend with its net income, and the free cash flow strength of the company in case unforeseen expenses harm the business, are all critically important.

In 2015 Delta had a payout ratio of 9.63% which was second highest in its peer group behind Allegiant Airlines. Unlike Allegiant, Delta has never had a decrease in its dividend yield which is a sign of stability on the part of Delta. It also shows that Delta is willing to return more of its profits back to shareholders than other competitors. Dividend coverage is another important metric as it looks at dividends paid to net income. This shows how easily a company can use its profits to adequately pay off its dividends. Delta is currently the third highest of its peer group at 10.47 behind Southwest at 12.16 and American Airlines at 20.52. While Delta is not in first place, its total dividend paid is roughly 10 times the amount of both American and Southwest Airlines. Since the airlines industry very capital intensive, a company's free cash flow shows how well it generates cash to handle additional expenditures outside of its capital investments. Higher FCF Margins show how well a company can generate the cash to cover dividends and other non-capital expenses. The better the number the greater the company's ability to both cover its current dividend and expand it in the future. Excess cash could also be used to entice shareholders with special dividends, though none have been issued by Delta in the past.

Appendix F3: Debt Ratio Analysis

Delta vs. SP500 Airlines Sector & SP500



	Price Change			BETA		
	2015	2Yr	5Yr	2015	2Yr	5Yr
DAL	3%	83%	303%	1.07	1.26	1.21
S5AIRL	-8%	79%	138%	1.06	1.22	1.05
SPX	-1%	12%	61%	1.00	1.00	1.00

Two consistencies across the airline sector are capital intensive business and sensitivity to economic factors. While the previous two years have been hard on companies whose margins are heavily influenced by oil prices and interest rate fluctuations, the airlines sector of the S&P 500 has grown at over twice the rate of the S&P 500 since 2015. The growth, along with price variances, produced a 2-year beta of 1.26 for Delta and a 1.22 for the S5AIRL Index. While the higher beta indicates greater risk, the reward has been 303% growth between 2011 and 2015. 2015 was a poor year for Delta and airlines as a whole. The S&P 500 was flat on a total return basis; less dividends was down 1%. Delta was able to overcome but only by 2%.

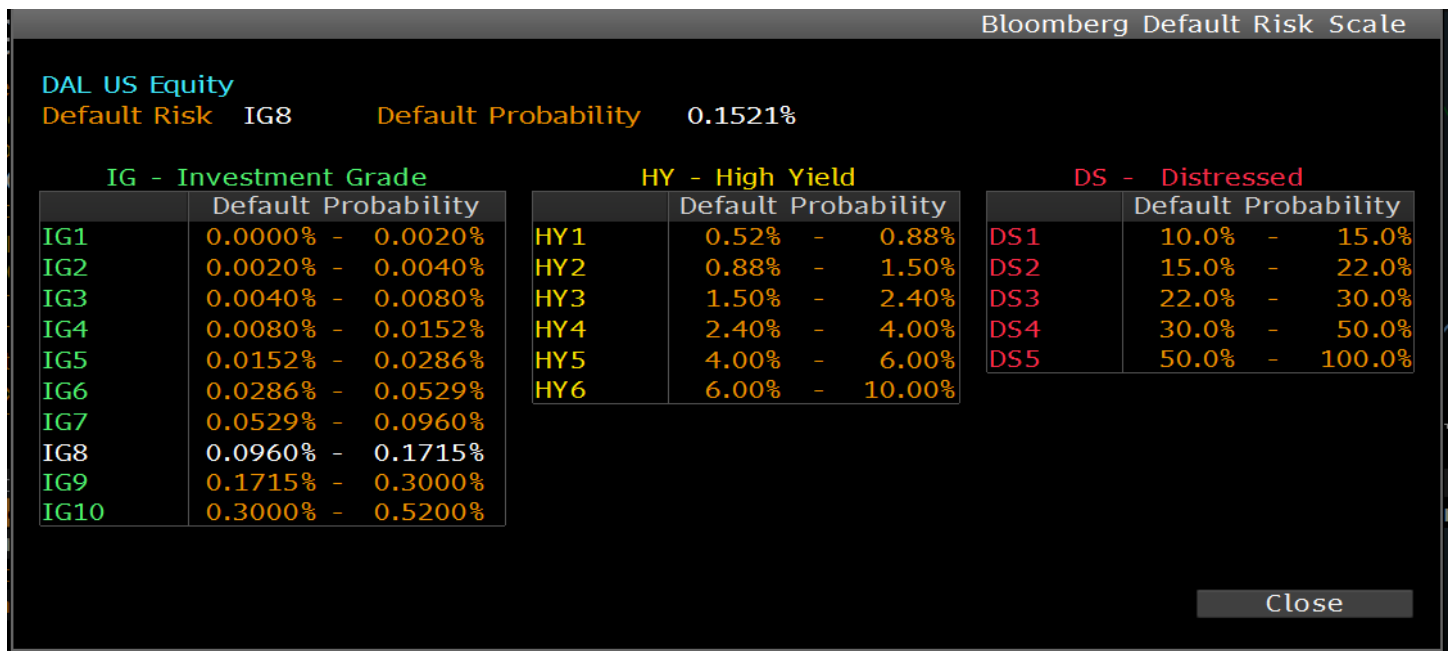
Appendix F4: Sharpe & Sortino Ratios

Sharpe Ratio		Sortino Ratio	
Equity	As of 2015	Equity	As of 2015
JBLU	-0.04	JBLU	-0.05
ALK	-0.06	ALK	-0.09
ALGT	-0.08	ALGT	-0.11
LUV	-0.11	LUV	-0.15
DAL	-0.11	DAL	-0.18
UAL	-0.12	AAL	-0.20
AAL	-0.13	UAL	-0.20
SAVE	-0.17	SAVE	-0.25

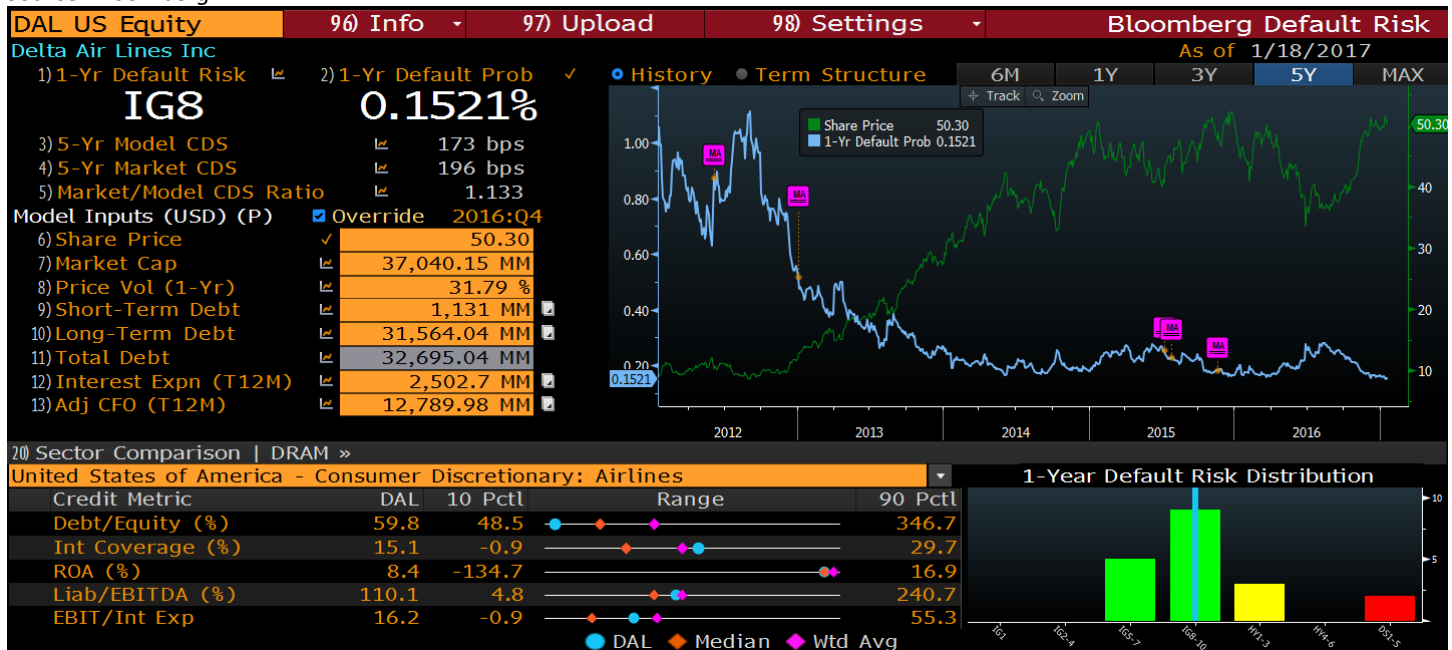
According to Delta’s Sharpe and Sortino Ratios, the price volatility of Delta is in line with that of its competitors. The ratios were calculated for the years 2011 to 2015, in comparison with a 1-year treasury bond at the start of each period. Delta provides an average Sharpe ratio for this period of -0.012 and an average Sortino ratio of -0.024. These values have been shown to be standard within Delta’s peer group. On an individual basis, the risk ratios do not show much favorability on an individual basis. On a short term basis, Delta, and its competitors, have fairly poor risk ratios. While this shows that the one-year opportunity cost of a fixed treasury bond is a safer play than the singular equities, Delta has shown that its return has been more than justifiable even if

the beta or Sharpe indicate a risk premium

Appendix F5: Default Risk



Source: Bloomberg



Source: Bloomberg

Another way to look at an equities financial health is through its default risk. This is calculated as a 1-year default probability. Bloomberg uses three scales to show the quality of a company's likelihood of default. Investment grade is rated from IG1 being the lowest to IG10 being the highest of the acceptable investment grade securities based on debt, stock price, CFO, and interest expense. In the short-term, the default probability is almost perfectly negatively correlated to the share price. Expanded over a period of 5 years and the negative correlation is still apparent but, relative to price, the probability curve flattens. Delta is currently rated in the IG8 category at a 1-yr default probability of 0.1521%. They are fairly average relative to the airlines sub-sector in Debt to Equity, Interest Coverage, Liabilities to EBITDA, and EBIT to Interest Expense while excelling in Return on Assets.

Appendix G: Valuation Schedules

Appendix G1: Discounted Cash Flow Analysis

Base Case DCF							Terminal Value Assumptions	
numbers in millions	2015 Act.	2016 Act.	2017E	2018E	2019E	2020E		
Revenue	\$40,704.00	\$39,639.00	\$39,837.20	\$40,235.57	\$40,738.51	\$41,349.59	2020E FCF to Firm	\$3,821
Revenue Growth %	0.9%	(2.6%)	0.5%	1.0%	1.3%	1.5%	Terminal Growth Rate	1.00%
EBIT	\$7,802.00	\$6,952.00	\$7,170.70	\$7,322.87	\$7,495.89	\$7,649.67	WACC	7.28%
EBIT Margin %	19.2%	17.5%	18.0%	18.2%	18.4%	18.5%	Terminal Value Projection	\$61,483
Less: Taxes @ 36%	2,808.72	2,502.72	2,581.45	2,636.23	2,698.52	2,753.88	Present Value Factor	0.76
Unlevered Earnings	\$4,993.28	\$4,449.28	\$4,589.24	\$4,686.64	\$4,797.37	\$4,895.79	Terminal Present Value	\$46,424
Less: Capital Expenditures	2,945.00	3,238.00	3,254.19	3,286.73	3,327.82	3,377.73	Sum of Present Value FCF to Firm	\$12,232
Less: Change in Working Capital	-781	-682	-250	-250	-250	-250	Sum of PVs of Projected FCF to Delta	\$58,656
Add: Depreciation and Amortization	1,835.00	1,902.00	1,911.51	1,930.63	1,954.76	2,052.50	Less: Debt, Other Liabilities	\$13,989
Free Cash Flow to Firm	\$4,664.28	\$3,795.28	\$3,496.56	\$3,580.53	\$3,674.31	\$3,820.55	Estimate of Total Value of Equity	\$44,667
Present Value Factors	--	--	0.93	0.87	0.81	0.76		
Present Value FCF to Firm	--	--	\$3,259.41	\$3,111.29	\$2,976.23	\$2,884.79	Per-Share Value	\$60.61

Bear Case DCF							Terminal Value Assumptions	
numbers in millions	2015 Act.	2016 Act.	2017E	2018E	2019E	2020E		
Revenue	\$40,704.00	\$39,639.00	\$39,639.00	\$39,837.20	\$40,135.97	\$40,537.33	2020E FCF to Firm	\$3,631
Revenue Growth %	0.9%	(2.6%)	0.0%	0.5%	0.8%	1.0%	Terminal Growth Rate	0.75%
EBIT	\$7,802.00	\$6,952.00	\$6,936.83	\$7,051.18	\$7,184.34	\$7,296.72	WACC	7.28%
EBIT Margin %	19.2%	17.5%	17.5%	17.7%	17.9%	18.0%	Terminal Value Projection	\$56,050
Less: Taxes @ 0%	2,808.72	2,502.72	2,497.26	2,538.43	2,586.36	2,626.82	Present Value Factor	0.76
Unlevered Earnings	\$4,993.28	\$4,449.28	\$4,439.57	\$4,512.76	\$4,597.98	\$4,669.90	Terminal Present Value	\$42,321
Less: Capital Expenditures	2,945.00	3,238.00	3,238.00	3,254.19	3,278.60	3,311.38	Sum of Present Value FCF to Firm	\$11,671
Less: Change in Working Capital	-781	-682	-250	-250	-250	-250	Sum of PVs of Projected FCF to Delta	\$53,992
Add: Depreciation and Amortization	1,835.00	1,902.00	1,902.00	1,911.51	1,925.85	2,022.14	Less: Debt, Other Liabilities	\$13,989
Free Cash Flow to Firm	\$4,664.28	\$3,795.28	\$3,353.57	\$3,420.08	\$3,495.23	\$3,630.66	Estimate of Total Value of Equity	\$40,003
Present Value Factors	--	--	0.93	0.87	0.81	0.76		
Present Value FCF to Firm	--	--	\$3,126.11	\$2,971.87	\$2,831.17	\$2,741.40	Per-Share Value	\$54.28

Bull Case DCF							Terminal Value Assumptions	
numbers in millions	2015 Act.	2016 Act.	2017E	2018E	2019E	2020E		
Revenue	\$40,704.00	\$39,639.00	\$40,035.39	\$40,635.92	\$41,347.05	\$42,173.99	2020E FCF to Firm	\$4,016
Revenue Growth %	0.9%	(2.6%)	1.0%	1.5%	1.8%	2.0%	Terminal Growth Rate	1.25%
EBIT	\$7,802.00	\$6,952.00	\$7,406.55	\$7,598.92	\$7,814.59	\$8,013.06	WACC	7.28%
EBIT Margin %	19.2%	17.5%	18.5%	18.7%	18.9%	19.0%	Terminal Value Projection	\$67,483
Less: Taxes @ 0%	2,808.72	2,502.72	2,666.36	2,735.61	2,813.25	2,884.70	Present Value Factor	0.76
Unlevered Earnings	\$4,993.28	\$4,449.28	\$4,740.19	\$4,863.31	\$5,001.34	\$5,128.36	Terminal Present Value	\$50,954
Less: Capital Expenditures	2,945.00	3,238.00	3,270.38	3,319.44	3,377.53	3,445.08	Sum of Present Value FCF to Firm	\$12,804
Less: Change in Working Capital	-781	-682	-250	-250	-250	-250	Sum of PVs of Projected FCF to Delta	\$63,759
Add: Depreciation and Amortization	1,835.00	1,902.00	1,921.02	1,949.84	1,983.96	2,083.16	Less: Debt, Other Liabilities	\$13,989
Free Cash Flow to Firm	\$4,664.28	\$3,795.28	\$3,640.83	\$3,743.71	\$3,857.77	\$4,016.44	Estimate of Total Value of Equity	\$49,770
Present Value Factors	--	--	0.93	0.87	0.81	0.76		
Present Value FCF to Firm	--	--	\$3,393.89	\$3,253.08	\$3,124.83	\$3,032.69	Per-Share Value	\$67.53

Terminal Growth Rate = (2020E FCF to Firm * (1 + Terminal Growth Rate)) / (WACC - Terminal Growth Rate)

Terminal Present Value = Terminal Value Projection * Present Value Factor

Sum of PVs of Projected FCF to Delta = Sum of Present Value FCF to Firm + Terminal Present Value

Estimate of Total Value of Equity = Sum of PVs of Projected FCF to Delta - Debt, Other Liabilities

Per-Share Value = Estimate of Total Value of Equity / Shares Outstanding

Appendix G2: WACC Calculation

WACC	
Market Cap Weight	82.4%
Debt Weight	17.6%
Taxes	36%
Cost of Equity	8.0%
Cost of Debt	6.0%
WACC	7.3%

CAPM	
Risk Free Rate	2.36%
Levered Beta	1.11
Expected MKt Return	7.41%
Cost of Equity	7.98%

Corporate BBB Effective Yield (%)

11/1/2001 to 11/30/2007
Pre-Great Recession

Low	4.43
High	7.69
Mean	5.86
Median	5.84

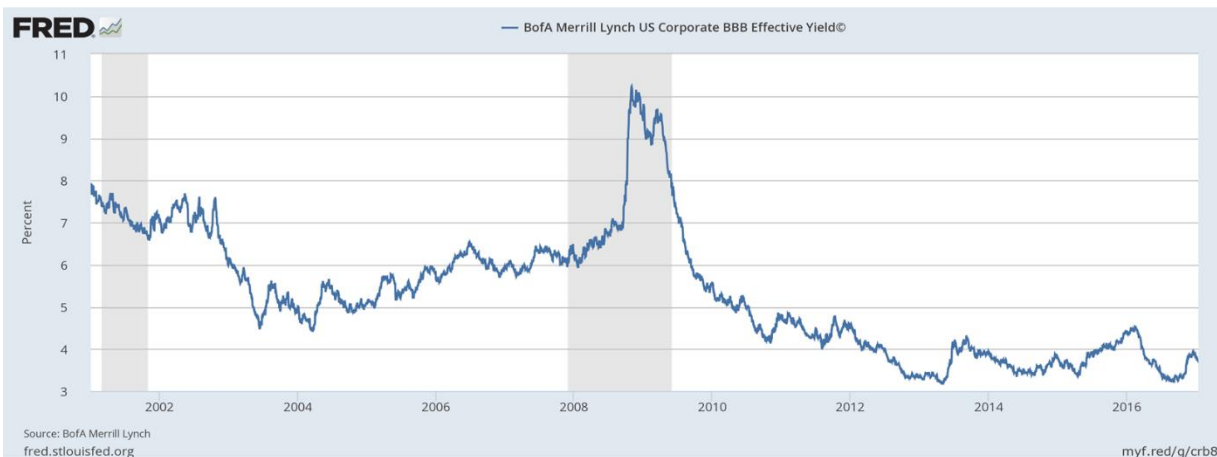
9/14/2005 to 5/2/2007
Bankruptcy to '07 IPO

Low	5.35
High	6.55
Mean	5.96
Median	5.92

6/1/2009 to 1/13/2016
Post-Great Recession

Low	3.16
High	7.96
Mean	4.17
Median	4.00

Source: BofA Merrill Lynch,
St. Louis Fed



Corporate BBB Effective Yield (%)

11/1/2001 to 11/30/2007 9/14/2005 to 5/2/2007 6/1/2009 to 1/13/2016
Pre-Great Recession Bankruptcy to '07 IPO Post-Great Recession

Low	4.43	5.35	3.16
High	7.69	6.55	7.96
Mean	5.86	5.96	4.17
Median	5.84	5.92	4.00

Source: BofA Merrill Lynch, Federal Reserve Bank of St. Louis

Appendix G3: P/E Valuation

P E - annual	S&P500	DELTA	
2016	20.9	9.4	
2015	19.0	14.3	
2014	18.6	4.3	
2013	18.6	11.4	
2012	15.0	10.0	
AVG PE	18.4	9.9	DAL PE to SP500
STD DEV	2.12		0.536

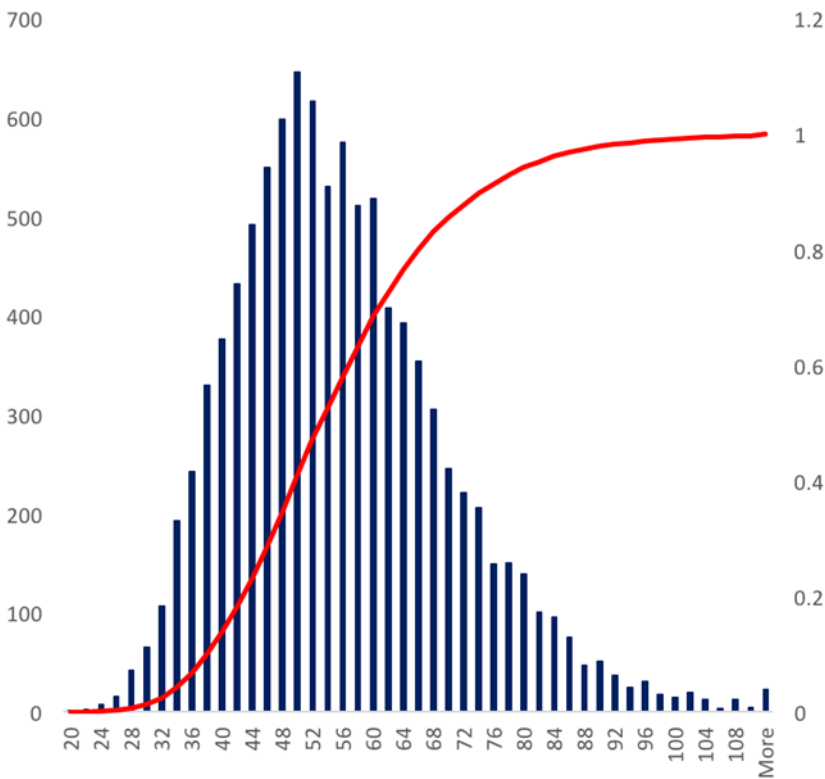
FORECAST	S&P500	DAL 2017 Est'd PE
2017 Baseline	19.5	10.4
OPTIM (+ 1 Std Dev)	21.6	11.6
PESSIM (-1 Std Dev)	17.4	9.31

DELTA	EPS Forecast *	2017 DAL Price
2017 Baseline	5.12	\$ 53.49
OPTIM (+ 1 Std Dev)		\$ 59.33
PESSIM (-1 Std Dev)		\$ 47.66

* Consensus EPS, Zacks Investment Research

Appendix G4: Monte Carlo Simulation

A Monte Carlo simulation was performed incorporating Brownian Geometric Motion (BGM.) Drift, or expected return, was calculated using CAPM. We calculated a market cap weighted levered industry beta, unlevered this industry beta, then re-levered it using Delta’s debt to equity ratio. We used this number within our CAPM equation to calculate drift (7.97%). 10,000 simulations were run, taking into account Delta’s historical volatility.



Drift (Annual)	7.97%
Volatility (Annual)	26.04%
Drift (Daily)	0.0316%
Volatility (Daily)	1.64%
Drift (Mean)	0.0182%
Initial Stock	50.89
Maximum	133.3800827
Minimum	17.72812748
Mean	54.90474851
Median	53.05129338
% Positive	56.25%
5%	34.56431163
95%	81.38425504
25%	44.67923085
75%	63.16408439
Std. Dev.	\$14.45
Mean+1 SD	\$69.35
Mean-1 SD	\$40.46
Mean+2 SD	\$83.80
Mean-2 SD	\$26.01



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