

A Work Project presented as part of the requirements for the Award of a Master Degree in Finance from the NOVA – School of Business and Economics.

**DELTA AIR LINES, INC.
FLYING HIGH IN A COMPETITIVE INDUSTRY**

an Equity Research Report on Delta Air Lines, Inc. (DAL: NYSE)

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Abstract

This equity research report will first be focusing on the North American Arline industry, analyzing its current form, as well as looking at industry's opportunities and threats ahead. On top of this, an outlook over the airline industry will also be presented in order to give the investors an accurate view of the present and the future. A further analysis will then be conducted with regards do Delta Air Lines Inc. (DAL:NYSE), applying the previous research to provide a fair valuation for the group, resulting in an sustained recommendation of whether an investor should consider invest in DAL, or not.

Keywords

Delta Air Lines, Inc.; Airline; Equity Research; Valuation

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DELTA AIR LINES, INC.

AIR TRANSPORTATION - AIRLINES

STUDENTS: FRANCISO SILVA / PEDRO PEREIRA

COMPANY REPORT

JANUARY 3RD, 2020

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Flying High In A Competitive Industry

During the first 9-months of 2019, solid demand for air travel supported a 6.4% growth of passenger revenue for Delta Air Lines, Inc. (DAL: NYSE), a slowdown on its growth momentum compared to 2018's homologous period of 7.8%. However, several data points from Q3 earnings' suggests cautious given the decelerating RASM (-4.9% vs Q2), coupled with less than proportional decrease in CASM-Ex Fuel (only -3.8% vs Q2), introducing some uncertainty over DAL's ability to keep margins above its peers, especially due to the labor contracts' revision that took place during Q4 (an outcome to be reflected in the 2020 results). Notwithstanding, even with OPEX constraining growth, DAL improved its overall profitability versus Q2 (e.g., EBITDA Margin increased by 73 bps, to 20.18%).

On a pure stock performance perspective, 2019 was a modest year for DAL, with a 23.2% price appreciation, while in the same period the S&P500 appreciated 24.1% (though, above the 13.0% appreciation of DJUSAR). However, the company keeps rewarding its shareholders having returned until Q3 \$721 mln in dividends and \$1,802 mln via share-buybacks – in line with the commitments to return ~\$2.5 bln during 20219FY, made in the begging of the year.

Bottom-line, DAL currently is one of the best well-run airlines, with industry leading operations, consistent high pre-tax earnings, a high-quality balance sheet with a steady Debt/EBITDAR below 2.0x and the best in-class free cash flow generation. At the operational level, it is expected to keep pursuing its premium revenue growth strategy with passenger mile yield improvement and taking advantage, not only of its unique route structure and frequent flyer program/brand value, but also of a continued weak competition capacity - in part due to extended grounding of 737 MAX (at least during 2020Q1) and a ~\$1bln incremental revenue income (over 5-years) from the recent JV with LATAM. This all combined, with a global industry outlook suggesting a sustained demand growth, guides DAL's proposed fair value estimate to \$112.34 per share, for 2020.

Company Profile | Delta Air Lines, Inc.

Delta Air Lines, Inc. provides scheduled air transportation for passengers and cargo over a network of routes in the US and across the world. The Company's segments include Airline and Refinery. The Company's route network is centered around 16 major worldwide hubs with connectivity to key market airports across regions. Additionally, it includes its international JV's, its alliances with other foreign airlines, its membership in SkyTeam and agreements with multiple domestic regional carriers that operate as Delta Connection. The Company also provides aircraft MRO services; vacation packages to third-party consumers as well as aircraft charter and private jet services, management programs and services. The Refinery segment consists of jet fuel and non-jet fuel products. Headquartered in Atlanta, Georgia (GA), United States, Delta Air Lines, Inc. was founded in 1924 and listed on May 2007.

Recommendation: **STRONG BUY**

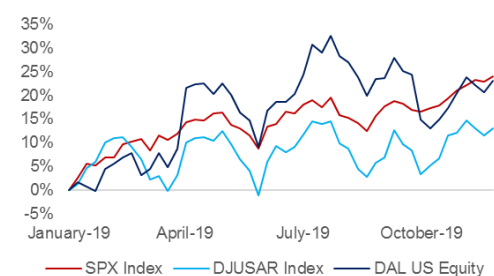
Price Target FY20: **112.34 \$**

Price, as of 1-Dec-2019 **57.31 \$**

Reuters: DAL.N, Bloomberg: DAL:US

52-week range (\$)	45.08 – 63.44
Market Cap (\$ mln)	37,064.83
Outstanding Shares (mln)	646.74
Free Float (%)	99.6%
Avg. Volume (mln)	6.19
Dividend Yield	2.71%

Source: Bloomberg



Source: Bloomberg

in \$ millions	2018	2019E	2020F
Revenues	43,890	46,965	48,185
EBITDAR	8,526	10,415	11,324
EBITDAR Margin	19.43%	22.18%	23.50%
Net Profit	3,935	4,852	5,368
Net Margin	8.86%	10.20%	11.00%
Basic EPS	5.69	7.50	8.30
Debt-to-EBITDAR	1.94x	1.83x	1.72x
D/E Ratio	1.29	1.19	1.01
Net CAPEX	4,246	7,111	4,659
ROIC	19.91%	17.63%	17.46%
EV/Sales	1.16x	1.08x	1.06x
EV/EBITDAR	5.96x	4.87x	4.49x
EV/EBITDA	6.33x	5.23x	4.81x
P/E	9.38x	7.37x	6.90x

Source: DAL SEC Filings, Analysts' Estimates

THIS REPORT WAS PREPARED EXCLUSIVELY FOR ACADEMIC PURPOSES BY FRANCISCO SILVA AND PEDRO PEREIRA, MASTER'S IN FINANCE STUDENTS OF THE NOVA SCHOOL OF BUSINESS AND ECONOMICS. THE REPORT WAS SUPERVISED BY A NOVA SBE FACULTY MEMBER, ACTING IN A MERE ACADEMIC CAPACITY, WHO REVIEWED THE VALUATION METHODOLOGY AND THE FINANCIAL MODEL. (PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

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Executive Summary: Analysts' Foreword

This equity research report will first be focusing on the North American airline industry, analysing its current form, as well as looking at industry's opportunities and threats ahead. On top of this, an outlook over the airline industry will also be presented in order to give the investors an accurate view of the present and the future. A further analysis will then be conducted with regards do Delta Air Lines Inc. (DAL:NYSE), applying the previous research to provide a fair valuation for the group, resulting in an sustained recommendation of whether an investor should consider invest in DAL, or not.

Airlines Industry Overview & Outlook

Fundamentals Of The Industry

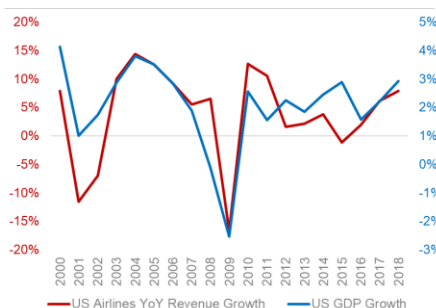
Historically the airline industry is perceived as a highly cyclical sector, predominantly tied to the macroeconomic conditions which in turn dictates the levels of demand for air travel. Additionally, the industry encompasses several complexities given that it is exposed to various factors, such as: i) commodity price fluctuations and labour unions involvement/revindication (as fuel and labour expenses make up almost half of airlines OPEX); ii) high fixed costs related to aircraft rents, given that the industry is capital-intensive (which is also vulnerable to fluctuations in interest rates, as leasing facilities make up a significant part of the fleet that airlines have at their disposal); and iii) the global and regional economic condition, as it not only impacts the wealth of consumers but also the economic activity at the trade level.

Given the industry's cyclicity, in an attempt to trace potential scenarios for the industry's health and conditions, one must look at several macroeconomic indicators that correlate with airline demand and/or revenue, such as GDP or Purchasing Managers Composite Index (PMI), to provide some insights into its outlook (at least in the short term).

Airline's dependence on macroeconomics, such as GDP growth. By computing the correlation between YoY GDP growth and the YoY airlines' revenue growth, a significant correlation is found showing that airlines revenue is dependent on the overall macroeconomic condition. In fact, considering only the US GDP and Operating YoY growths, since 2000, a positive correlation coefficient above 70% can be found.

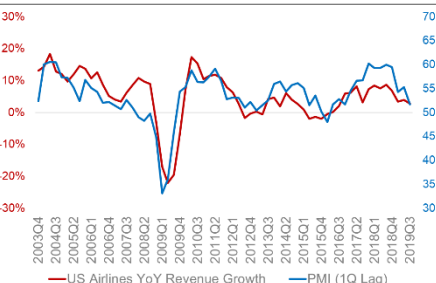
Market confidence weighs on airlines demand and revenue. By analysing the relationship with the PMI (a macro indicator that aims addresses the economic health, based on the diffusion of 5 equally weighted indexes aiming to bring insight into current business conditions and confidence), statistical evidence found shows that a positive correlation of 68% exists between ASM YoY growth and the PMI lagged by 1-quarter (considering the period's PMI, correlation coefficient is slightly lower at 65%). Translating the demand into revenues, statistical findings let one infer that an even stronger correlation exists with a positive coefficient of 73%, also with a 1-quarter lagged PMI (at this level by considering the period's PMI, the correlation coefficient is significantly lower at 53%).

Graph 1 | Long-term US Airlines YoY Revenue Growth vs US GDP Growth



Sources: Bureau of Transportation Statistics, F41 Schedule, P12 data; World Bank

Graph 2 | Long-term US Airlines YoY Revenue Growth vs PMI



Sources: Bureau of Transportation Statistics, F41 Schedule, P12 data; Quandl data

Graph 3 | US Airlines YoY ASM Growth vs PMI with 1-Quarter Lag



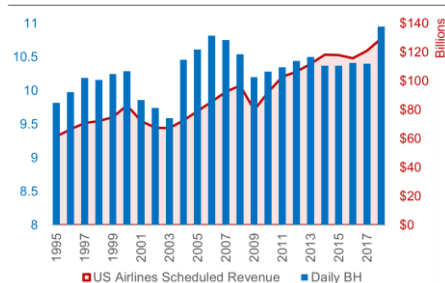
Sources: Bureau of Transportation Statistics, F41 Schedule, P12 data; Quandl data

[Note: A PMI above 50 represents an expansion when compared with the previous month. A PMI reading under 50 represents a contraction, and a reading at 50 indicates no change]

▪ Insights On Airline Supply And Demand

Available Seat Miles (ASM) is the standard industry measure of capacity and is one of the few inputs that airlines can control. Capacity can be added through various forms: by purchasing new aircraft, increasing aircraft flight frequency, increasing average seats in the aircraft and by reusing grounded aircrafts. Most commonly, when airlines want to increase capacity, they first tend to increase the number of flights with their current fleet and/or add more seats to the existing fleet, and only afterwards consider increasing their fleet size. Partnering with regional airlines and entering in code sharing agreements are also solutions that airlines use to absorb demand in market niches they want to connect and explore, but that do not show enough demand to increase the level of the fleet size. This way, typically major airlines such as DAL, UAL and AAL, use regional partners to complement their mainline network without the need to employ so much capital. Since 1995 US airlines supply capacity increased at a CAGR of 1.9%. During the same period, the number of aircrafts making up the total US airlines fleet increased just at a 0.9% CAGR, with the average daily block hour utilization of total operating fleet, growing at 0.5% CAGR to almost 11 hours per day. This increase in aircraft use shows a viable option for airlines to increase their capacity to capture incremental revenues. This suggests that the airline industry structure encourages oversupply, as an incremental flight is not only able to decrease unit costs as it can also improve unit revenues relative to competitors. The rationale for this is that by increasing the frequency of flights to a certain route or hub, an airline is growing its capacity market share. Since passengers tend to concentrate their flying habits on the airline that offers them more options to maximize frequent flyer benefits, airlines that have more flights tend to attract a higher share of passengers and, therefore, their share of revenues tend to increase more than proportionally. An interesting takeaway to bear in mind regarding airlines supply capacity concerns the relationship between the relative low barriers to entry and the tough barriers to exit. Essentially, to get started airlines need only two things: passengers to board (which by not having any switching costs are “easy” to attract) and funding capital to purchase aircrafts, which is relatively easy to achieve given the several leasing alternatives airlines have at their disposal, as well as the ability to contract debt using the aircraft as collateral. This industry deregulation and low barriers to entry tend to set an upper limit on the average fares charged (as typically new entrants focus on low fares to gain market share from the incumbents) and consequently on the potential revenue gains from the established carriers. However, an airline considering an exit strategy, or removing inefficient capacity from the system, faces barriers to do so, namely high exit costs and bankruptcy protection. To exit the industry, airlines need to retain many fixed expenses, such as their air traffic liability (*i.e.*, they would have to refund all tickets not yet flown), the leasing contract covenants violations and a several sunk costs on hangars, office spaces and other equipment. Still, even with the liquidation of the company, in terms of industry system capacity, the effect typically turns out to be null given the large economic useful life of an aircraft that usually end up being sold or leased to other carriers. Otherwise, by filing for bankruptcy, the reality is that The Chapter 11 procedure is very pro-debtor making it difficult for creditors

Graph 4 | US Airlines Average Daily Block Hour Utilization vs US Airlines Scheduled Revenue (in \$ Billions)

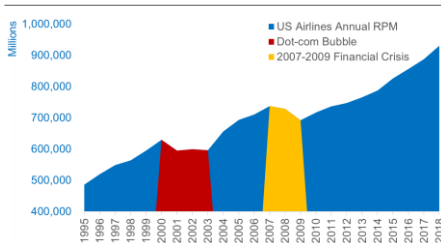


Sources: Bureau of Transportation Statistics, F41 Schedule, P12 data; US DOT Form 41 via BTS, schedule T2.

Note: Block Hour Utilization is a capacity measure given by the average number of hours each plane is on service, per day, typically determined from the time the aircraft leaves and arrives at the gate.

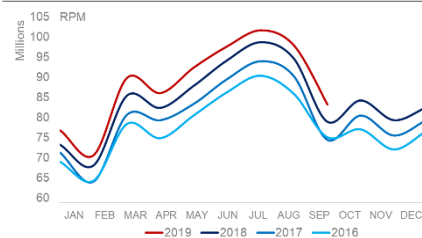
to seize assets and liquidate the company. Therefore, generally airlines keep the business under enforced operations.

Graph 5 | US Airlines Annual RPM Performance versus Historical Economic Crisis Events



Sources: US DOT Form 41 via BTS, schedule T2

Graph 6 | US Airlines RPM Monthly Seasonality, 2016-2019



Sources: Bureau of Transportation Statistics T-100 Segment data

Revenue Passenger Miles (RPM) are, on other hand, the standard industry measure for demand (often times called traffic), largely driven by macro factors, just as before. Between 1995 and 2018, while the number of passengers emplaned in the US airlines increased from 470.9 mln to 728.9 mln, growing at a CAGR of 1.9%, the RPM CAGR was 2.9% implying a greater average stage length (which, in fact, increased 320 miles between 1995 and 2018 to 1,159 miles). Despite the significant growth evolution that RPMs yielded by US airlines show, there were several periods of recession during this period, which were always coupled with global recessions at the macroeconomic level, such as the Dot-com Bubble, in the early 2000's, and the 2007-2009 Financial Crisis. However, demand for air travel quickly returned to pre crises levels, showing a sharp growth in the years following the abovementioned crises: 5.5% CAGR between 2003 and 2007 and 3.3% CAGR since 2009 until 2018, more than the growth in capacity (*i.e.* ASM) during both periods, which was 3.3% and 2.9%, respectively. At the same time, the airline is a highly cyclical industry concerning its RPM performance, with a stronger emphasis in the summer months (*i.e.* June, July and August), as can be seen in Graph 6. However, traffic tends to be modest between September and February, dipping in the begging of the year. This has a somewhat big effect on the quarterly results, as the second and third quarter tend to achieve higher PRASM and, consequently, higher profitability margins, while the first quarter tends to be underwhelming in the company's overall results.

What Do Passengers Value When Choosing An Airline? At this level the first thing to bear in mind is the current segmentation in travel passengers: business travel passengers and leisure travel passengers. This is the basis for airlines to set up their target passengers and not only develop its strategic positioning, but also developing the logistic of operations in order to be able to provide the service each type of passenger is expecting. In general terms, based on the more recent Airlines for America Air Travelers in America Ipsos Survey 1, passengers choose the airline they fly evaluating 3 core factors: price, scheduling and reliability.

¹ Air Travelers in America - Findings of a Survey Conducted by Ipsos (for further can be consulted at <https://www.airlines.org/wp-content/uploads/2018/02/A4A-AirTravelSurvey-20Feb2018-FINAL.pdf>)

	Leisure Travel	Business Travel
Price	Major driver in the decision process, as they are much more price sensitive, showing some flexibility to change booking dates or even different holidays destination if travel price is more competitive.	Flight experience, service and in-flight amenities are valued by this type of travelers. Not so much price sensitive.
Scheduling	Typically, they look for flights at the beginning or at the end of day, to avoid wasting "useful" daytime in airports when in holidays.	Important factor in the decision as the majority of the flights these individuals take are in business and, very often, during their workdays to attend meetings, or something similar. Hence, flights' scheduling and frequency are core for business travelers.
Reliability	Regardless of the type of traveler, this is an equally relevant factor, as no one likes to wait for a number of hours. Therefore, airlines with better operating standards (<i>i.e.</i> on-time performance (OTP), flight cancellations rate (FCR), baggage mishandling, etc.) tend to attract more passengers and build a broader platform of frequent flyers. [Note: Further detailed analysis on US airlines Reliability performance on Competitive Landscape section]	

Notwithstanding, the preceding segmentation is somehow “too simplistic” given the diversity that exists within the air travel demand. Business Travel and Leisure Travel, as presented above, are but two extremes that might be found in air passengers, but amongst them are several passengers segments that have a diverse set of needs and look for different products. Taking that into consideration, in the previous decades airlines have relied on the unbundling of fares, by separating the basic air transportation service fare from the additional needs a passenger may have (often called ancillary revenues, such as additional baggage, seat selection, on-board amenities, etc.). This business approach was adopted early on by low-cost carriers, allowing them to significantly increase their market share and providing sustainability to their business model. Due to this disruption, legacy carriers found themselves in need of an alternative strategy to capture-back their market share, as they could not simply replicate low-cost’s approach since it would lead to a strategic positioning misperception in the passenger perspective. Recent developments on the industry, as expressed in the Counterpoint Market Intelligence 2018 Aircraft Interiors Report, revealed significant investment in *premium economy seats cabin*, a concept that began to gain relevance and popularity around 2000 with British Airways launching this service on its long-haul routes (though they already existed, at least since the early 1990’s). Afterwards, with the increasing gap between the value proposition of business class and economy class, there was a window of opportunity for airlines to explore further segmentation of its travel classes between these two. This is where *premium economy* comes in and it, not only brings increased supply segmentation to address passenger needs in a flexible manner (from the business strategy point-of-view), but it also brings enhanced abilities to work towards the *per flight* profitability, since it allows airlines to charge 80% higher fares *versus* traditional economy seats, as reported by Financial Times¹ (in an in-house research article). In the last 4 years, *premium economy* grew at a 5% CAGR and is expected to grow at 9% until 2028.

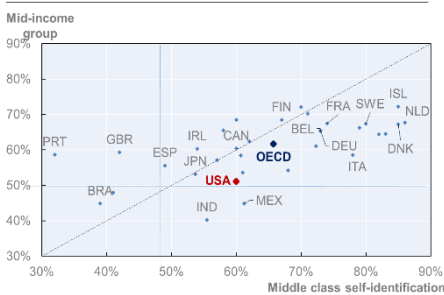
¹ ‘Why airlines are rushing to add premium economy seats?’, in FT News (for further can be consulted at <https://www.ft.com/content/41866d20-11f3-11ea-a225-db2f231cfeae?sharetype=blocked>)

Industry Overview

- A Critical Economic Engine For Global Travel & Tourism

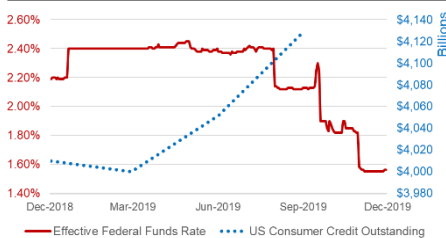
In 2018, according to World Travel & Tourism Council, global Travel & Tourism (T&T) sector grew by 3.9% and contributed to a record 10.4% of the world’s economic output, becoming the 5th biggest contributor to global GDP, behind Retail, Health, Financial Services and Construction. Still, T&T was the sector expanding the quickest, ahead of Automotive Manufacturing (3.7%) and Health (3.3%), and at higher rate than the global economy for the 8th year in a row (3.9% *versus* 3.2%). Robust growth in T&T is mainly driven by the rise in the number of middle-class households, solid growth in global consumer spending, low unemployment rates and easier credit facility for consumption, driven by low interest rates. Comparing with 2017, a growth of 7.2% in the T&T sector directly contributed to \$2.751bln (3.2%) of global GDP. The airline’s 60% weight in T&T reflects the industry’s economic importance. In terms of direct contribution to employment, in 2018, T&T supported around 3.85% of total employment. Looking at the US economy, in 2018, T&T grew 2.2% (*versus*

Graph 6 | Middle-Class Households, as of April 2019



Note: The “mid-income” group is defined by population share with household disposable income between 75% and 200% of the national median.
Sources: OECD

Graph 7 | YTD Effective Federal Funds Rate vs US Consumer Credit Outstanding (in \$ Billions)



Sources: Board of Governors of the Federal Reserve System

2.9% US GDP growth) and drove close 7.8% of US GDP. In employment terms, T&T represented 9.2% of US total jobs. According to A4A, US airlines' employees earn up to +47% higher wages than the average private sector employee.

Industry Economic Performance

In 2018, unlike the decelerating growth in traditional industries and sectors that have historically driven the global economy (such as manufacturing and mining), air transportation activity has remained constant in its growth. The increasing globalization, coupled with unprecedented flow of people and goods, provided airlines with growth opportunities across several markets. Proof of this is the growth in the number of unique city-pairs, which according to IATA increased 18.5% (from roughly from 18,000 to 21,000), between 2018 and 2014. This provided the basis for the \$812bln revenues, by system-wide global commercial airlines, in 2018, up from \$755bln in 2017, with a CAGR of 1.44% since 2014. In 2019, the Industry's Economic Performance Update, from IATA, showed weaker results than the projections advanced in the forecast dated of June this year. This *below-expectations* performance comes in line with a global GDP growth 0.2p p.p. below June forecasts (2.5% *versus* 2.7%) and world trade growth of just 0.9% (down from 2.5% forecasted in June). This global economic cool down contributed to the slowdown of passenger and cargo demand growth (3.7% *versus* 6.9% and -3.2% *versus* 2.9% in 2019 and 2018, respectively). Consequently, this led to smaller revenue growth with passenger yields decreasing 3.0% and cargo yields decreasing by 5.0% compared to last year. This led to a real decrease in revenue for the cargo segment (-8.1%) while passenger revenue still rose 1.1% to \$567bln, up from \$561bln in 2018. Likewise, OPEX growth was below expectations, with a YoY increase of just 3.8%, below the 7.4% forecasted in June and less 6 p.p. than the YoY change verified in 2018, largely driven by the lower-than-expected fuel costs. Slower economic growth verified in 2019 is largely owed to the current trade wars (US-China and the milder US-EU), geopolitical tensions and social unrest (Hong Kong, Venezuela, Chile, etc.), coupled with uncertainty over Brexit, which marked the year and created tougher business environment for airlines.

In the aerospace industry, for the US aircraft manufacturer Boeing, 2019 emerged as one of the toughest years the company has faced, with the forced grounding of its 737 MAX model, after crashes in Indonesia and Ethiopia, allowing Airbus to assume the leading position in the industry. This event, affected not only Boeing's economic performance but also the airline's that saw an unexpected disruption in its supply capacity, such as AAL, UAL and LUV, with a capacity reduction between 1 and 2% from its original +5% expectation, before the 737 MAX issues. However, 2019 was not dissatisfactory for all airlines, as is exemplified by SAVE, ALK and DAL that saw stronger 2019 Q2 demand. Still in the topic of Global Commercial Aircraft Manufacturers, it is important to mention that most recently, the industry's market share structure has verified some relevant changes with the arising of new players. Historically, Boeing and Airbus have been dominating the market, but the growing demand for new aircrafts above production capabilities from the two manufacturing giants, left a window of

opportunity for other players such as Embraer, ATR and Bombardier to try and meet the demand. At the same time, COMAC, the Chinese state-owned producer of CRJ and ARJ models, shows intentions of expanding its presence. With increased competition, a price pressure is expected benefiting airlines. However, part of COMAC aircraft models do not have the necessary certification and licensing from FAA and EASA, to operate in the US or EU, therefore a reduction in prices is only expected to be seen in the long term.

▪ Industry Financial Performance

In terms of traffic and capacity, Pacific-Asia, as well as other emerging markets are growing at a faster pace than North America (NA). However, in terms of financial performance and profitability of operations, US airlines lead with larger revenue and profits compared to their international peers. Since the end of the last decade, NA airlines have been going through a process of restructuring and consolidation, which is now paying dividends. This can be highlighted by the shift that occurred in 2013 when NA airlines obtained higher ROIC than WACC, leading the overall industry to a *green zone* of value creation for investors. This was the result from consolidation and low fuel prices. In the remaining global regions, only European airlines have a WACC below ROIC (achieved 2 years after NA), largely driven by the contribution of LCC (e.g., Ryanair, easyJet, Wizz!) focusing on cost management and ancillaries. In contrast, Pacific-Asia and Latin America (LatAm) airlines deliver below-WACC return, due to the fierce market competitiveness (namely from NA and European foreign carriers), constraining airlines from fully passthrough the increased costs to costumers leading to narrower margins. At the same time, in particularly for LatAm airlines, managing the mismatch between their revenue settlement currencies and the large component of costs denominated in USD is another issue, resulting in an adverse impact by FX fluctuations.

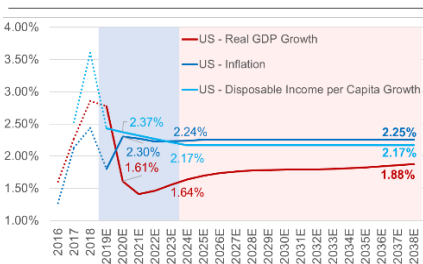
According to IATA, in 2019FY, NA airlines are expected to deliver \$16.9bln net profit representing a net margin of 6.4%, compared to 5.7% in 2018. Likewise, operating margin is also expected to improve compared to last year, up from 9.1% to 9.6%. EU airlines, despite of the 1.5 p.p. decrease on their EBIT margin, down to 4.7%, are also expected to deliver profits with a net margin of 3.0% (translating in \$6.2bln in net profit versus \$9.1bln, in 2018). Pacific-Asia airlines have an expected net profit of \$4.9bln (1.9% net margin) and an EBIT close to 3.5%. The remaining global regions are expected to deliver net losses, with the Middle Eastern region posing a net loss of -\$1.5bln, as airlines in the region are under a process of restructuring¹. Africa is struggling to achieve adequate load factors making it harder generate better operating margins (~1%) and therefore deliver profits. LatAm airlines, saw the region's economy decelerate to a growth of just 0.2%, mainly due to the Argentinian recession and the Venezuelan economic crisis, declining the country's economy by roughly 33%.

Industry Outlook

- Major Advanced Economies Weighing On Global Macro Slowdown

¹ namely at the capacity level (e.g., Fly Emirates cancelled part of its A380 backlog orders with Airbus)

Graph 8 | Real GDP Growth, Inflation And Disposable Income per Capita Forecasts for US economy until 2038



Sources: OECD (US – Real GDP Growth), IMF (US – Inflation), US Bureau of Labour Statistics and US Bureau of Economic Analysis (US – Disposable Income per Capita)

[Note: Graph 8 show macroeconomic indicators projections included in the valuation model that support this equity research report]

¹ In fact, the USA and China have agreed on a limited trade agreement in order to deescalate tensions, further signifying a possibility of a more comprehensive agreement later on, which would have a significant impact on the global trade and, more importantly for the report, a significant impact on the revenues of the major airlines

IATA forecasts a global GDP expansion of 2.7% in 2020 (above 2.5% in 2019). S&P Global Ratings, on its Transportation Industry Top Trends 2020 release, is more optimistic and expects 3.3% for 2020, in line with IMF projections (3.4%). However, major advanced economies, according to the IMF World Economic Outlook (October 2019), are set for a slowdown, with the Euro area growing 1.4%, China 5.8% and USA 2.1%, with a 33% probability of falling into a recession, according to S&P Global Ratings. IATA expects global trade to grow 3.3%, following the recent developments towards a deal to smooth effects of US-China trade war, that is seen as very likely to happen given that 2020 poses as election year in the USA meaning “increased pressure to reduced trade tensions” ¹. IATA also refers to measures led by central banks and fiscal policy easing by government as promoters for global economic growth. IMF’s long-run forecast points to a global GDP and USA growth of 3.6 and 1.6%, in 2024, respectively. In the US economy, macro indicators reveal an inflation rate of 2.3%, relatively stable from 2020 onwards, though below world’s average of 3.5% until 2024, according to the IMF. With regards to the disposable income per capita, US Bureau of Labour Statistics and the US Bureau of Economic Analysis (Department of Commerce), expect an increase of almost 2.4% in 2020 – a growth expected to remain in the long-term, though at a slower pace (2.2% in 2024). This increase in disposable income per capita will be driven significantly by record low unemployment, which is expected to increase from 3.5% to 3.9%, from 2020 to 2024 (compared to the 4.9% average in the last 5 years). Coupling this with lower interest rates (which were subject to 3 down cuts in 2019 and with no immediate prospects of an increase in the near future), it is likely that in the next years household consumption expenditure keeps the growing trend (i.e., 4.4% and 5.1% in 2017 and 2018, respectively, according to OECD). This is expected to continue in the long run at an average 4.1% CAGR, according to the same organization. With regards to T&T, WTTTC foresees the sector to grow at a 3.6% CAGR, representing 3.5% of global GDP in 2039. This will be supported by increases in emerging market’s demand and generic nourishing macro conditions on the consumer and service sectors seen as major promoters for the expected growth in passenger demand for air travel. In the US, until 2029, T&T’s contribution to GDP is expected to grow at a 2.6% CAGR, above the 2.2% growth verified in 2018.

▪ What To Expect From Airlines Industry For 2020?

Early in 2019, fears over recession were one of the top concerns for the airline industry, given the indications of a potential slowdown of the global economy and several airlines’ bankruptcy events that have occurred throughout the year. These fears were then coupled with the B-737 MAX crashes that enforced the grounding of the model, representing at the time ~1% of global fleet capacity. However, for 2020 IATA’s sentiment seems to be more bullish.

Revenue & Profitability. Revenues will keep being fueled by consumers spending around 1% of global GDP on air travel (same of 2018 and 2019); coupling this with the improvement in forecasted growth of global GDP (2.7% compared to the previous year’s 2.5%) and higher global trade growth (3.3% versus 0.9%), it is expected to yield a YoY revenue growth of 4%,

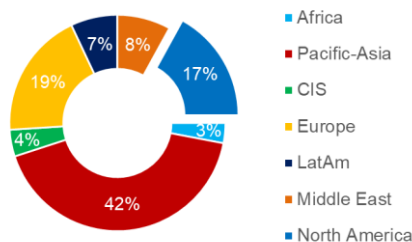
expected to close on \$872bln. For IATA, this would ultimately result in a forecasted overall \$29.3bln net profit for the industry (13.1% higher than in 2019), driven by increases in Europe, Pacific-Asia and, especially, LatAm, a region that is expected to deliver positive net results of \$0.1bln, after 2 years of losses. North American region will continue yielding twice the net profit of other markets. Though, it is expected to decrease \$0.4bln, down to \$16.5bln. In terms of operating profitability, it is expected to improve its EBIT margin set to grow 0.4 p.p., to 5.5%. North America is still the most profitable market, while the remaining markets are on track to deliver better EBIT margin performance than the previous year.

Traffic & Supply. Concerning the fundamentals for air travel sustainability, that is to say “demand”, IATA’s outlook is positive, though not that encouraging when looking at the past 5 years. The global number of passengers is expected to grow by 4% (more 0.3 p.p. than in 2019) and ASMs’ by as much as 4.7%, a significant improvement comparing to 2018’s growth of 3.5%, but far from the 6.7% average YoY growth of the last 5 years. NA market is expected to see an ASM growth of 5.1%, more 2.8 p.p. than in 2019 and the highest increase since 2014. Furthermore, Europe is predicted to be the only market growing slower than in 2019. In terms of traffic the picture is similar, with global RPMs growth expected to remain its 2019 behavior, of 4.1% YoY change, below the 7.3% average annual RPM growth that was verified in the last 5 years.

Jet Fuel & Cost Structure. Jet Fuel costs is expected to keep decreasing as the market for fuel products is over-supplied. At the same time, the long-term trend for demand of these products is also expected to decrease given the increase in refinery’s fuel stockpiles, increasing concern on environmental issues and energy alternatives. Other factors counterbalancing this might be: *i)* Fuel price volatility – the uncertainty about the US, Saudi Arabia and Iran’s relationship, for instance, might lead to some price uncertainty; and *ii)* the IMO2020 environmental regulations concerning the shipping of fuel products, set to be introduced during 2020Q1. This let traders and buyers wondering about possibility that such regulations would have on the fuel prices pushing them higher. On the other hand, in a decreasing or flat fuel prices scenario, the rising of other non-fuel costs, such as labor costs, are seen as one of the major operational challenges.

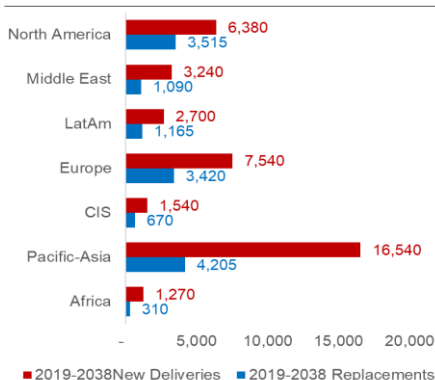
B-737 MAX Return. Another question for 2020 is when the grounded 737 MAX aircraft will return to service. The grounding of the Boeing jet model, despite having a nefarious impact for several airlines, has also promoted the improvement of load factors to record levels. After a number of postponements of regulatory approvals from the FAA for the comeback of the aircraft, at the end of 2019 both LUV and AAL announced the grounding B-737 MAX fleet until at least April 2020, 1-month more than planned, which will lead to the cancellation of close to 140 flights per day. The additional delay is likely to put pressure on LUV and AAL’s results, particularly in the first quarter of 2020, a period during which Delta is expected to yield better financial results and further improved stock performance.

Graph 9 | (Airbus) New Aircraft Deliveries 2019-2038 – Geographical Distribution



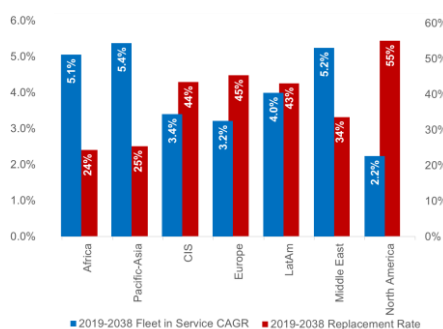
Sources: Global Market Forecast 2019-2038, by Airbus

Graph 10 | (Airbus) New Aircraft Deliveries And Aircraft Replacements 2019-2038 – Geographical Distribution



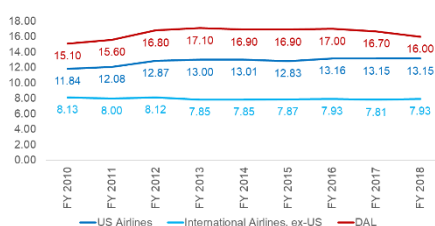
Sources: Global Market Forecast 2019-2038, by Airbus

Graph 11 | (Airbus) Fleet In Service CAGR And Aircraft Replacement Rate 2019-2038 – Geographical Distribution



Sources: Global Market Forecast 2019-2038, by Airbus

Graph 12 | Average Age Of Fleet – Comparison (US Airlines, International Airlines And DAL)



Sources: Bloomberg, DAL's SEC Filings

Fleet Sizing & Renewal To Continue. The improvements in ROIC, particularly in North America and Europe, offered airlines the confidence capital availability invested in fleet transformation. New deliveries made last year focused on replacing aircrafts that were reaching their economic useful life expectancy, especially in the US where the average age of fleet is higher than that of the rest of the world. Notwithstanding, other factors are also at hand, namely the climate impact associated with the activity, which is a hot topic for European airlines that show commitments to accelerate retirements. However, in the US, transformation is largely driven by the financial moat of marginal unit cost reduction through increased efficiency in fuel consumption. Still with regards to cost efficiency improvement, airlines are wagering on smaller to midsize aircrafts, which are more flexible to adjust for seasonality as an attempt to increase load factors and reduce unit costs. This is well illustrated by the decision Airbus disclosed in February 2019 to cease the A380 *superjumbo* programme, just after Fly Emirates reduced its outstanding orders of 53 new aircrafts to only 14. The A380 aircraft has capacity to board up to 850 passengers and will be somewhat replaced by the new A350 model, with a capacity of just 350 passengers.

According to Airbus' Global Market Forecast 2019-203, roughly 39,210 aircrafts are expected to be delivered in the next 20 years while fleet in service is forecasted to more than double. From these, around 36% are expected to replace aircrafts and the remaining 64% to increase capacity. In the same report, Airbus forecasts a larger demand for smaller aircrafts, as narrow-body segment accounts for more than 3/4 of new aircraft deliveries, while wide-body aircrafts will only comprise 10% of deliveries (largely to the Middle Eastern region). At the same time NA is expected to absorb 17% of the world's capacity increase, with smaller aircrafts models the highest in demand (82%). In other regions, Pacific-Asia is seen as the epicenter of airline industry growth for the next decades, capturing 42% of new aircraft deliveries, more than US and Europe combined (at 39%). Noteworthy is that a larger replacement rate is expected in NA airlines in comparison with its international peers. With a replacement rate of 55% in NA, only in Europe and LatAm show comparable numbers, with an expected replacement rate of 45% and 43%, respectively. In Pacific-Asia, with only 25% replacement rate, airline's focus is on scaling up activity. The higher replacement rate in NA is not only driven by the fact that the industry is consolidated, but also the average age of fleet is higher. Concerning the US airlines in the end of 2018, average fleet age was 5.22 years above its international peers. Delta Air Lines, highlighted in the Graph 12, has one of the oldest fleets amongst the group. However, the company is transforming its fleet to better adjust the demand specificities of the markets it serves by replacing the aircraft with more efficient next-generation aircrafts. During 2019Q2 Delta has committed to accelerating the retirement of its 94 MD-90 and MD-88 (average age of 22.4 and 28.7, respectively) fleet until the end of 2022, approximately 2 years earlier than initially planned.

Lastly, according to IATA the sustained fuel efficiency gains, from the fleet transformation, have offset CO2 emissions from increasing air transport services, as in a non-fleet renewal

scenario the underlying fuel efficiency gains, fuel burn and CO₂ emissions would be 1.9% higher in 2019. That amounts to savings on fuel up to \$3.2 bln. However, airlines are expected to keep facing pressure to reduce their CO₂ emissions. Therefore, improvements in fuel efficiency are expected to continue (up to -30% fuel per seat, in the case of A321XLR) given the higher portion of new-gen aircrafts in service in the next years. According to IATA's outlook, fuel consumption will increase by 2.3% in 2020, while ASMs and the number of aircrafts in service will grow 4.7% and 5.3%, respectively - in 2018, it was evident the impact of the introduction of new more-efficient planes, with fuel consumption rising by 5.2%, while ASMs and aircraft fleet grew by 6.9% and 4.4%, respectively.

Value Creation. Although there is a non-questionable need for fleet restructuring and increasing capacity, the bulk of investments made might weigh down 2020 cash flows, under a bearish scenario where traffic falls short to the expectations. This is relevant since as shown by S&P Global Ratings, on its Transportation Industry Top Trends 2020 release, aggressive growth, driven by misstep investments in capacity, has led to airline bankruptcies in the past, namely in Europe. Ultimately, given the considerable airlines' investment completed and yet to be made throughout 2020, especially in fleet transformation, as well as the financial results that are foreseen to be obtained, only NA (9.1% ROIC) and European (7.7% ROIC) airlines will create value for their shareholders, given that in LatAm (5.2% ROIC) and Pacific-Asia (4.5% ROIC), airline's WACC will remain above ROIC. In 2020, global airlines' ROIC is expected to remain at 6%, which is also below WACC (~7%).

Brexit, how relevant it is for US airlines? Results from recent elections in the UK, brought some certainty as it is now more likely that UK will effectively leave EU by the end of January 2020. With regards to the airlines industry, UK and EU repeatedly ensured that flights will continue "as normal as possible" in a post-Brexit scenario. In September 2019, they updated the temporary air services agreement until October 2020 in order to allow flights between them in a no-deal scenario. However, there are expected short-term disruptions. On top of this, the potential GBP depreciation *versus* the other major currencies would positively impact UK's inbound tourism. Coupling it all together, Brexit's effect is keen to have mixed results on the UK's airline industry. On the impacts the Brexit might have for US airlines, namely for Delta, there is a possibility for upsides as UK travelers that used to spend their holiday's in the EU, especially in southern-Europe, might choose different destinations due to increased costs and bureaucracy. This means that there is a significant chance of UK travelers searching for new regions for their holidays, namely southern-US regions (such as Miami), or South America, and for which US airlines, or their partner carries in the region, may take advantage. Delta can leverage its London-US routes and capitalize JV's and Equity Investments with LatAm partner airlines (discussed in detail further on). However, the downsides of a scenario under which the British economy collapses and, consequently, affect the wealth of consumers should not be disregarded as it would impact demand for air travel and negatively affect US airlines.

Delta Air Lines, Inc.

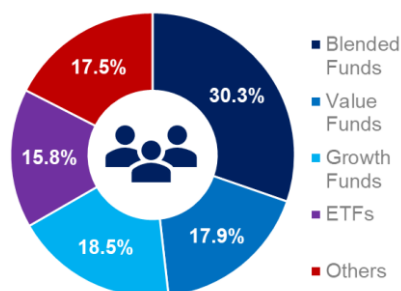
Company Profile

Headquartered in Atlanta, Georgia (GA), United States, Delta Air Lines, Inc. was founded in 1924. With over \$ 40 billion in revenues and employing over 88 thousand people, Delta Air Lines, Inc. provides scheduled air transportation for passengers and cargo over a network of routes in the US and across the world. The company's major segments include air transportation and refinery. Its route network is centered in 16 worldwide hubs with connectivity to key airports across several regions. Additionally, Delta also operates through international JV's, alliances with foreign airlines, membership in SkyTeam and agreements with multiple domestic regional carriers that operate as Delta Connection. The Company also provides aircraft MRO services; vacation packages to third-party consumers, as well as charter/private jet services, and management programs/services. The Refinery segment consists of jet fuel and other refined petroleum products.

Shareholder Structure

Delta's shareholder structure follows that of the rest of airlines trading in the United States, where major investors are Investment Advisors. According to Bloomberg as of December 1st, 2019, these held 81.5% of Delta's floating stock. The second biggest investor are Hedge fund managers, that held 8.9%, next up are several banks, that held 3.3%, pension funds held 2.9%, and lastly, insurance companies and sovereign wealth funds, both having held below 2% of Delta's available floating stock (1.1% and 0.9%, respectively). The last 1.4% were held by other investors. In terms of individual investors, the largest investors were Berkshire Hathaway Inc (11.0%), Vanguard Group Inc (7.1%), BlackRock Inc (5.3%) and PRIMECAP Management Co (4.4%). Concerning the country of origin of the holders, most of the shareholders were from the USA, where 85.2% of the stock was held, the rest is spread throughout the UK (5.7%), Canada (2.1%), Luxembourg (1.2%) and several other countries. A further analysis about the type of fund that holds Delta's stock shows that blended funds (i.e., funds that target both growth and value stocks) hold the largest part of the floating shares (30.3%). Next are the Growth funds (i.e., funds investing in stocks with low dividend pay-out, but large market capitalization growth potential) (18.5%), Value funds (i.e., funds that invest in undervalued stocks) (17.9%), Value funds (i.e., funds that invest in undervalued stocks) (17.9%), ETF's (i.e., funds that hold basket of stocks in order to simulate market performance) (15.8%). The rest are held by a diversified set of funds that include Asset allocation and Country funds. The type of funds that hold the stock implies that the largest Delta investor's base believe the market to be undervaluing the stock, as the majority of the floating shares' holders invest in undervalued or high growth potential stocks.

Graph 13 | Delta's Fund Shareholders by Type

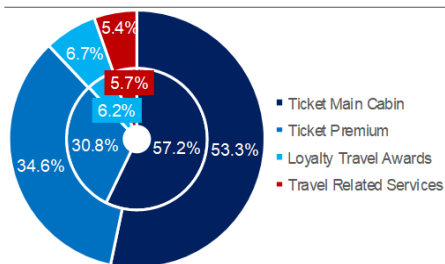


Sources: Own Development

Strategy & Business Model

Delta Air Lines is a major passenger airline, providing worldwide air transportation service for passengers and cargo in a single-route-scheduling system. With an in-service fleet of 1,353

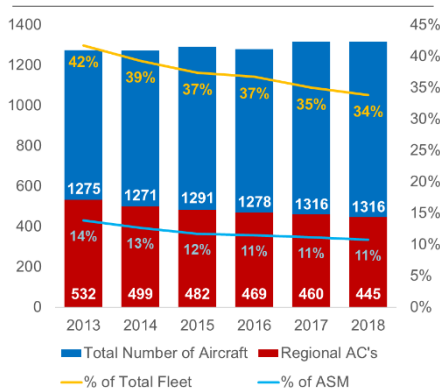
Graph 14 | Delta Revenue Segmentation By Type Of Ticket Sold, 2016 vs 2018



Note: The inner circle stands for 2016 and the outer one for 2018

Sources: Delta Air Lines, Inc. SEC Filings

Graph 15 | Delta Air Lines Fleet And Regional Carriers Contribution, as of September 2019



Sources: Delta Air Lines, Inc. SEC Filings

Figure 1 | Delta Air Lines Activity Segments

- DELTA CARGO**: Global Logistics Business
- DELTA TechOps**: Largest MRO Operator in North America
- DMS**: Spare Parts Sourcing & Sales
- DELTA VACATIONS**: Wholesale Vacation Packages Supply
- DELTA Flight Products**: Custom Interiors & Components
- DELTA SKY CLUB**: Membership Superior Lounges
- DELTA PRIVATE JETS**: Charter Flights & Aircraft Manag. Prog.
- Monroe Energy**: Jet and Non-Jet Fuel Production & Exchange

Sources: Own Development

¹ please refer to 'The Value Of Monroe Energy, LLC For Delta Air Lines, Inc. Amid A Bearish Fuel Outlook' appendix

aircrafts (910 in the mainline fleet and 443 from regional partners) and 350+ destinations, Delta has its network based in 16 hubs distributed across several key markets (9 in the US, 3 in Europe, 2 in LatAm and 2 in Pacific-Asia), however Atlanta still serves as a main hub for Delta's activity. Breaking down the destinations by geographic regions, 58% of the locations that Delta flies to are in the domestic market (comprising USA and Canada), 19% of the destinations are located in LatAm (comprising the other countries in the American continent), 18% are located in the Atlantic region (i.e., EMEA region), while the remaining 8% of destinations are located in the Pacific region. With regards to passenger revenue Delta breaks down in two ways, by geography and by type of ticket sold. Looking at the geographic division, domestic passenger revenues comprise most of Delta's revenues (70.8%), followed by the Atlantic (15.5%), LatAm (7.3%) and, finally, Pacific (6.4%). Further detail on each regional market performance can be found in the next section. Analyzing by type of ticket sold, 53% of is derived from tickets sold to the main cabin, 35% from premium tickets, loyalty travel awards comprise a further 7% and travel related services the remaining 5%. Delta shows exceptional commitment to deliver its passenger a distinct travelling experience, not only on board, but also through all the *touchpoints* with its customers, using a retail-oriented, merchandised approach to distribution with well-defined and diversified products to its passengers.

To support its activity and enhance its network connections (namely in the Domestic market) Delta uses regional partner carriers, operating on its behalf: Endeavor Air (Delta's subsidiary), SkyWest Airlines, Compass Airlines, Republic Airways and GoJet Airlines. However, previous years' numbers suggest that Delta is reducing its dependence on regional partners, as their contribution for system capacity has shrunk by 3 p.p., down from 13.8% in 2013 to 10.8% in 2018. Likewise, regional partners contribution for total passenger revenue has diminished, representing only 16.6% in 2018FY, down from 18.8% in 2016. Representing about 33% of total fleet in service, as of the end of September this year, regional partner carriers provided 9.9% of additional capacity accounting for 15.6% of Domestic capacity. This traduces to 14.3% of total passenger revenue, or 19.9% when considering the Domestic market's passenger revenue. Throughout the 2020'sFY, this trend is expected to stabilize in line with the number figures of 2019FY. DAL also has some *codesharing* agreements with third-parties allowing the company to extend its operations without further investment. These agreements are comprised in the Delta's Connection program and/or in long-term strategic alliance with SkyTeam (despite Delta's management talking about lack of value of the alliance).

Delta's other revenue can be grouped in 3 subsets: Ancillary Business, Loyalty and Miscellaneous (e.g., lounge access fees and codeshare). From these activities, Ancillary Business deserves particular attention, it includes: *i*) Refinery Activity, performed by Monroe Energy, LLC., supplying almost 80% of Delta's jet fuel needs, effectively a hedge tool for fuel prices exposure, which has significantly impacted the fuel price per gallon that Delta ultimately supports (to be discussed in deeper detail on *Final Valuation Considerations* appendix 1); and *ii*) the MRO Operations by Delta TechOps, (in-house services and third-parties) for which may

exist a good runway of opportunity, due to the expansion in commercial aviation industry reflecting on the MRO market. In fact, according to Global Fleet & MRO Market Forecast Commentary 2019–2029, by Oliver Wyman, in the US, MRO market is expected to grow at 1.1% CAGR, until 2024, and 2.5% CAGR between 2024 and 2029, with the slower initial growth driven by the rising number of new-generation aircraft. Lastly, in December 2018, Delta sold DGS, LLC (DAL Global Services) that provides aviation-related services, to Argenbright Holdings, LLC. The transaction yielded \$40 million in cash and a 49% non-controlling interest. Still, DGS’s operations are expected to remain unchanged, as well as the services the company used to provide under Delta’s ownership. A later event to highlight is its partnership with Wheels Up to launch one of the world’s largest private jet fleets, in a deal to be settled in early 2020 (the financial terms undisclosed). Still, following Ed Bastian’s (DAL’s CEO) mid-December speech, where he said that “Delta Private Jets was somewhat shadowed under Delta’s umbrella and was never able to attract the type of sales and marketing dollars needed to create a separate platform”, suggests a further equity-stake sale of Delta’s private jet branch.

Geographic Segmentation Analysis

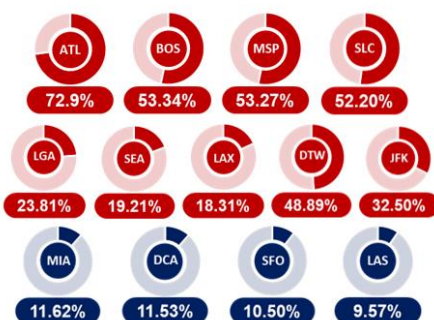
A further in-depth analysis was conducted with regards to the regions Delta operates in, as well as comparing several common industry metrics. The metrics analyzed are the region’s total revenues, the region’s passenger revenues (that include both mainline and regional revenues), RPM¹, ASM², PRASM³, RASM⁴, Passenger Mile Yield⁵ and Load Factor⁶.

- *Domestic (North America)*

Delta’s capacity metrics in the domestic market have been improving considerably, achieving higher growths when compared to the whole of Delta’s airline segment. In fact, it has improved its total revenues at a CAGR of 6.9% in the last two years, while its passenger revenues have grown at a 6.1% CAGR in the same period. This was the result of an increase in RPM of 4.0% and ASM 3.9% annually. Delta has also been able to slightly increase its high load factor from 85.3% in 2016 to 85.5% in 2018, comparable to the industry average, according to FAA, of 85.3% in 2016 and 2018. When analyzing the global domestic market, its ASM grew 3.0% in the last 2 years, lower than the 7.8% between 2013 and 2016. This was the result of two large improvements in 2015 (where the market grew 11.9%) and 2016 (growing by 8.7%). While the capacity and traffic meters have allowed Delta to consolidate its growth, PRASM has only grown on average 2.1% and RASM 2.9%, which is only slightly higher than the cumulative inflation of 2.3% in the last two years. In fact, looking at Delta’s mile yield, it has not been able to increase more than the real rate of inflation, as the CAGR was only 2.0%. By analyzing the market share, a probable answer can be found to why these operational metrics have not been growing at a healthy rate, in fact Delta’s market share has been squeezed by other competitors, after achieving a market share in 2014 of 21.2%, in 2016 Delta’s market share was just 20.3% and in 2018 19.8%. In this region, Southwest is the undisputed leader with more than 27.3% market share in the domestic market. Even with the decrease in recent

¹RPM: Revenue passenger miles, a metric of traffic; calculated as the number of passengers considering distance travelled; ²ASM: Available Seat Miles, a metric of capacity calculated as the total number of seats considering distance travelled; ³PRASM: Airline’s passenger revenue per ASM; ⁴RASM: Airline’s total revenue per ASM; ⁵Passenger Mile Yield: Airline’s revenue transporting one passenger one mile; ⁶Load Factor: calculated dividing RPM’s by ASM, a metric to determine how much at capacity each aircraft is on average when performing a flight.

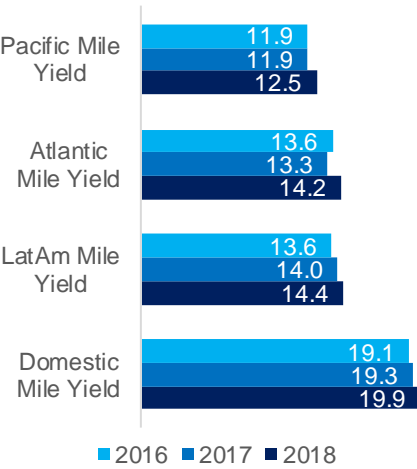
Figure 2 | Delta Air Lines’ Market Share of Passenger by US Hub, as of September 2019



Hubs Legend: Atlanta, GA: Hartsfield-Jackson Atlanta International (ATL); Boston, MA: Logan International (BOS); Minneapolis, MN: Minneapolis-St Paul International (MSP); Salt Lake City, UT: Salt Lake City International (SLC); Detroit, MI: Detroit Metro Wayne County (DTW); New York, NY: John F. Kennedy International (JFK); New York, NY: LaGuardia (LGA); Seattle, WA: Seattle/Tacoma International (SEA); Los Angeles, CA: Los Angeles International (LAX); Miami, FL: Miami International (MIA); Washington, DC: Ronald Reagan Washington National (DCA); San Francisco, CA: San Francisco International (SFO); Las Vegas, NV: McCarran International (LAS)

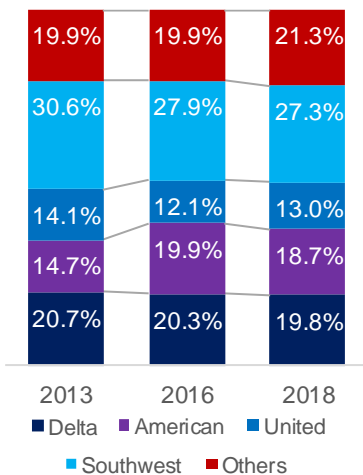
Note: Hubs in red stand for Delta’s US Domestic Hubs, while hubs in blue are other relevant US airports in which Delta also have a significant share
Sources: Bureau of Transportation Statistics (Airport Data)

Graph 16 | Delta's Operational Metrics Performance (in cents)



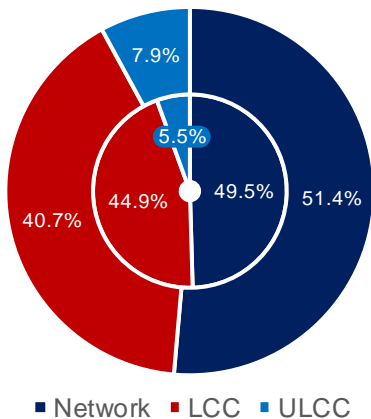
Sources: Delta Air Lines, Inc. SEC Filings

Graph 17 | Major Player's Domestic Market Evolution



Sources: Delta Air Lines, Inc. SEC Filings

Graph 18 | Domestic Market Share by Type of Carrier in 2013 and 2018



Note: The inner circle stands for 2013 and the outer one for 2018

Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

years, Delta remains in second place, ahead of American with 18.7% of the capacity of the flights performed in the domestic market, while United is currently fourth place (13%). The biggest winner in this market in the past two years has been Alaska, having grown from 3.9% in 2016 to 5.2% in 2018. At the same time, American has performed the worst with a market share decrease of 1.2% since 2016. However, this decrease has been recent, as by considering the period between 2013 and 2018, it was the biggest winner increasing its market share by almost 4%. Southwest has also lost more than 3% over the past 5 years in market share. Analyzing by type of airline, LCC are, yet again, the ones suffering the most, losing 4.2% of market share in the last 5 years, down from 44.9% in 2013 to 40.7% in 2018. Both Network Carriers and ULCC have capitalized on this lost, with the first gaining 1.8% market share to 51.4% in 2018 and the latter rising by 2.4% in the last 5 years to 7.9% in 2018.

▪ *International*

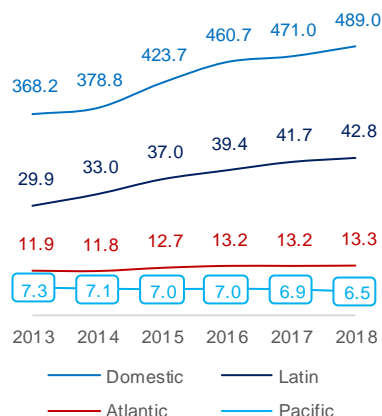
Delta's international flights have followed an inverse path from that of the Domestic flights. While its international revenues grew by 4.3% from 2016 to 2018 and its passenger revenues 3.6%, its RPM has only grown 0.8% and its ASM has decreased at a -0.4% CAGR. Coupling with Delta's PRASM growth of 4.0% and RASM 4.7%, while mile yield has grown only 2.7% (however, larger than the inflation rate, opposite of the Domestic market) implying a focus in "quality rather than quantity" of destinations provided. In fact, this can also be observed in the load factor, up from 83.5% in 2016 to 85.6% in 2018, 4 p.p. higher compared to the industry average of 80.7% in 2016 and 81.5% in 2018, according to the FAA. The overall market has performed well in the past years growing at a CAGR of 5.0% between 2013 and 2018, however a lower CAGR of just 2.4% since 2016.

The focus in higher revenue per flight has impacted the company's market share, decreasing from 23.0% in 2016 to 22.0% in 2018. Delta is currently trailing American with a market share of 29.5% and United with a market share of 24.5%, however it is ahead of such players as JetBlue (10.8%) and Southwest (6.2%). In the last 2 years both leading players have been suffering, with American and United losing both between 1.4 and 1.5%, while Southwest has gained almost 2% in the last couple years. At the same time, looking at the market share since 2014, Southwest has been the biggest winner since it did not have international flights in 2013, only having started to fly them in 2014. JetBlue was the second-best performing player in this market accumulating an extra 2.2% of market share in the last 5 years. In the international market, Network Carriers have suffered, losing 8.4% of the market share from 2013 to 2018, this was the result of LCC's growth outside the domestic market (with Southwest leading this expansion). In fact, these gained 7.9% of market share in the international market, reaching 20.2%, behind Network Carriers' market share of 76.0%. At the same time ULCC gained 0.6% of the market, reaching 3.8% market share, up from 3.2% in 2013.

Atlantic

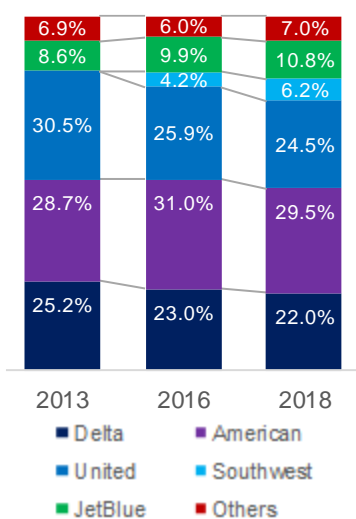
The Atlantic segment of Delta's network has been a boost for growth in the last couple of years, being Delta's strongest international segment. Its total revenues have grown with a

Graph 19 | Total Market Capacity in 10,000 ASM



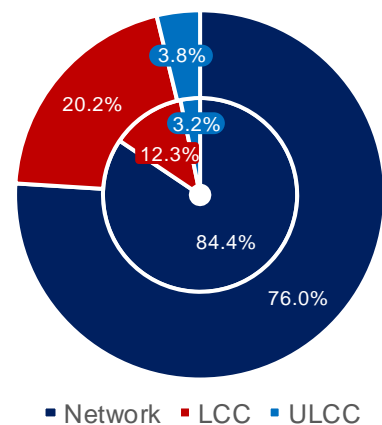
Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

Graph 20 | Major Player's International Market Evolution



Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

Graph 21 | International Market Share by Type of Carrier, in 2013 and 2018



Note: The inner circle stands for 2013 and the outer one for 2018

Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

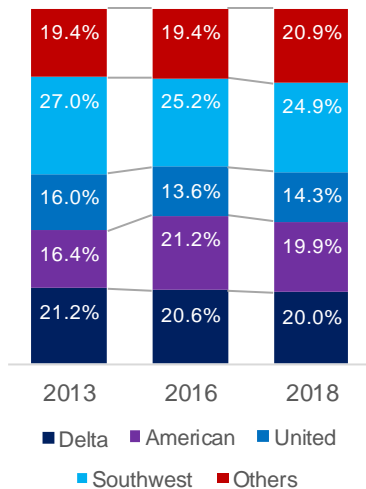
CAGR of 7.3% in the last two years, while its passenger revenues grew 6.7%. At the same time, while its capacity of flights did not have a very strong growth when compared with Domestic, for instance (a CAGR of 1.5%, which is however still the only non-negative international segment), its RPM have grown by 4.3% in the last couple of years, representing a strong focus on better management of routes. At the same time, Delta's PRASM and RASM have grown well above the global average of 3.0% and 3.8%, by growing at 5.1 and 5.7%. Also load factors expanded to 85.3% in 2018, up from 80.7% in 2016, well above the Atlantic's global average of 81.0%. It should be noted that the global Atlantic market has been unable to expand since 2016 with an ASM CAGR of just 0.3% between 2016 and 2018.

When it comes to the market conditions, this is a market where only three players offer destinations. Delta is the current market leader with 36.5% market share, followed by United at 35.4% and American with 28.0%. During the past 2 years, Delta has expanded to become the leader of this market surpassing United in 2017. In fact, while in 2013 United was the leader with more than 42.4% of market share, Delta only had 37.8%. However, the biggest winner in the last 5 years has been American, which has 'stolen' most of United's market share increasing from 19.8% in 2013. Since the network carriers are the only one present in this market, a further analysis by the type of carrier is not possible for this market.

LatAm

Delta's revenues in the LatAm market have followed the trend of the international flights in the past 2 years, having grown only 4% when considering the total revenues and 3.7% when taking into account passenger revenues. At the same time, Delta's RPM have grown 0.7% in the past 2 years, while its ASM grew 0.2%. Coupling this small growth with the fact that its PRASM has grown 3.5% and RASM 3.8% shows a focus in the most profitable destinations. In the past two years, Delta's passenger mile yield for this market has grown 3.0% and its load factor 0.5%, further substantiating the previous hypothesis. At the same time, the region has presented itself with strong growth, with its ASM expanding with a CAGR of 7.5% between 2013 and 2018, 4.2% between 2016 and 2018, well above Delta's ASM increase of just 0.2%. The biggest player in this market, leading by a wide margin, is American with 32.0% of the capacity of flights performed to this region. Afterwards is United, with 17.4%, Delta 16.9% (down from 17.1% in 2016 and 17.2% in 2013), JetBlue, with 15.9% and Southwest with 9.0%. Yet again, the biggest winner in this market was Southwest gaining more than 2.6% in market share in the last two years (and all of its 9.0% of market share in the previous 5 years). American, while still in first place by a wide margin, has lost more than 3% in market share in the past 2 years (5.3% when considering the 5-year range) and United lost 1.2% in the last couple of years (4.3% in the last 5 years). Network carrier airlines in the LatAm have suffered heavily from the expansion of LCC. In fact, while they controlled 76.2% of the market in 2013, in 2018 they only controlled 66.3%; at the same time LCC carrier increased their market share from 18.4% to 28.2%. Lastly, Ultra Low-Cost carriers have been unable to make strong gains in this market, increasing its market share from 5.3% (2013) to 5.5% (2018).

Graph 22 | Major Player's International Market Evolution



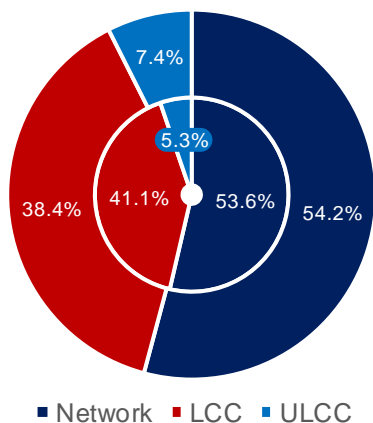
Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

Pacific-Asia

Delta's performance in the pacific region has been poor in the past years. It has seen its total revenues decrease by 1.7% and its passenger revenues decrease by 3.1%. At the same time its RPM has decreased by 5.5% and its ASM 4.6%. Delta's PRASM has grown 1.6%, less than the inflation over the same period. Delta's RASM has also increased 3.0%, lower than the average increase of 3.8% and its load factor has decreased from 87.7% to 86.2%, the only region where this happened. The only component of the pacific region that did not decrease or grew less than the average was the passenger mile yield, which grew an average of 2.5%. The low performance was probably the cause of the trade war between the Trump administration and China. In fact, when analyzing the market as a whole, it has contracted 3.7% in the last 2 years. On top of this, in the last 5 years only in 2016 did it grow, a growth of just 1.1%, compared with a negative CAGR in the last 5 years of 2.1%. In August, 2019, Delta has announced the transfer of its US-Tokyo routes from Narita to Haneda airport, following its plans to reshape its business in the region, which comprises replacement of B-747-400 aircraft with the new A350-900 with increased premium seat capacity. It is, therefore, expected improvements in yields and consequently profitability in Pacific-Asia routes.

In the market, Delta faces limited competition of 3 American players. The largest of these is United that captures 48.7% of the market share, followed by Delta (25.7%), American (16.1%) and Hawaiian (9.1%). Delta's performance in this market over the past years has also suffered heavily, boasted 37.2% market share in 2013 and 31.6% in 2016 which shows a steady decline over the years. At the same time, United's has remained relatively stable (registering a market share of 47.1% and 48.1% in 2013 and 2016, respectively) and American has been making strong gains in this market, up from 8.3% market share in 2013 (13.6% in 2016) to the current 16.5%. Hawaiian has been largely unable to capitalize its position in the central of the region only improving its market share of 6.7% in 2016 to the current 9.1%. In this market, the LCC (through Hawaiian) have been able to gain some market share, though limited, increasing just 1.8% between 2013 and 2018, currently just 9.1%. Which means that, like the Atlantic market, Network carriers dominate this market (with a market share of 90.9%).

Graph 23 | Global ASMs Market Share by Type of Carrier, in 2013 and 2018



Sources: Bureau of Transportation Statistics - Air Carrier Traffic Statistics (Green Book)

Geographic Segmentation Analysis Bottom Line

While Delta has been able to increase all its operational metrics, it has been unable to expand greatly than the market, representing lower market share and a resulting loss to the competitors. At the same time, while nationally, network carriers have been able to withstand the increasing pressure from LCC, in the LatAm market, Delta, American and United have suffered heavily from the investment made by airlines offering services guided towards a value-based offering. Continuing with the analysis, Ultra Low-Cost carriers have been unable to make the significant gains made by its peers in the European market, due to the different type of passengers as well as a different history in the American market. In fact, while they have achieved a stronger presence in all markets they operate in, ULCC have only gained 2.1% of market share between 2013 and 2018, most of these gains being from the domestic

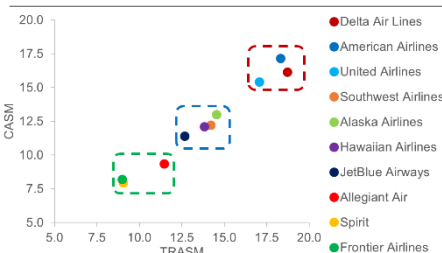
market however. While none of these Ultra Low-Cost airlines have been able to stand out, all of them have increased their market presence in the last two years, though by small margins.

Figure 3 | US Airlines Segmentation



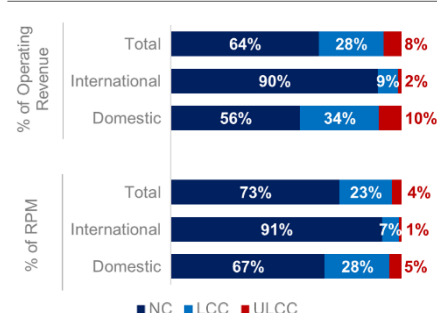
Sources: Airline Economic Analysis 2018-2019, by Oliver Wyman

Graph 24 | CASM-TRASM Relationship, by NC, LCC and ULCC, as of September 2019



Sources: Bureau of Transportation Statistics (F41 Schedule P12 data, T-100 Segment data)

Graph 25 | Distribution of Operating Revenue and RPMs by NC, LCC and ULCC, as of September 2019



Sources: Bureau of Transportation Statistics (F41 Schedule P12 data, T-100 Segment data)

Figure 4 | Airlines 50 2019 Ranking Report (Top 5)



Sources: Brand Finance (Brandiretory)

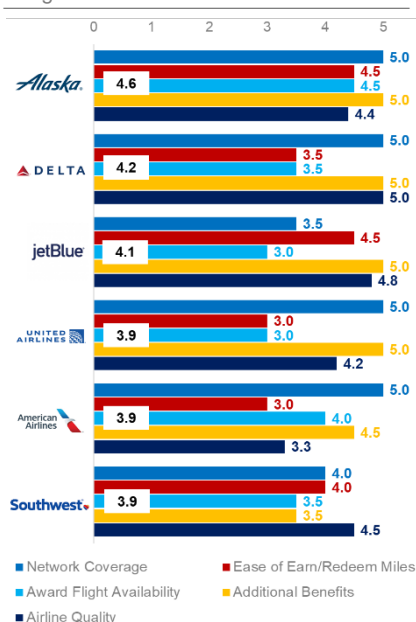
Competitive Landscape

The Airline's Industry is one of the most competitive industries around the world. Various strategic approaches are adopted by companies in an attempt to differentiate themselves among one another. The Industry can therefore be segmented in 3 strategic positioning concepts (*vide* Figure 3): Network Carriers (NC, or Legacy Carriers), Low-Cost Carriers (LCC) and Ultra Low-Cost Carriers (ULCC). This segmentation aims to group airline carriers reflecting their business model similarities and their operational and financial features. NC typically generate above-average unit revenues coupled with a higher cost structure (*i.e.*, higher TRASM and CASM), as they support their value proposition by providing superior travel experience to the customer in a full-service basis. From an operational point-of-view NC tend to show significant international presence across major global regions. On the other hand, LCC and ULCC are more value-for-the-money oriented, presenting lower TRASM and CASM. In terms of marginal operating profits per ASM (MASM), what can be seen is that NC yield higher MASM (*i.e.*, group average of \$1.68/ASM, with Delta outperforming the whole industry with \$2.56/ASM), followed by LCC and ULCC (\$1.62/ASM and \$1.31/ASM, respectively). Considering the TTM as of September 2109 (*vide* Graph 25), 73% of the US airlines' Total Operating Revenue was generated by NC, and 22.7% and 4.2% were delivered by LLC and ULCC, respectively. In terms of Domestic Revenue, the picture is more level-headed, with Network Carriers controlling more than 66% of Revenues stake, LLC delivering 28% of revenue and ULCC a residual 5.3% stake. Internationally, NC have more than 90% of the Revenue, with LCC and ULCC yielded less than 8.5% combined.

Flying High With The World's Most Valuable Airline

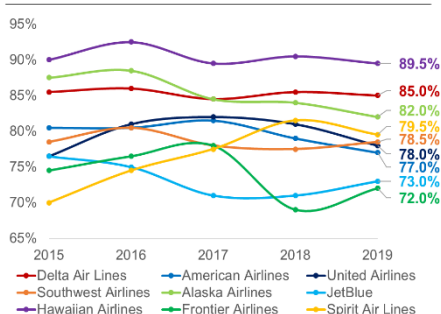
Based on the 2019 Brand Finance Airlines 50, Delta Air Lines, Inc. increased its brand value 16% compared and is now the world's most valuable airline, with \$10.1bn of brand valuation. Furthermore, it should be noted the fact that the top 4 brands are US based, and that one of them (Southwest) recorded the highest value increase (*i.e.*, 24.5%). Contributing to brand value record is Delta's value proposition offering a distinct experience enabling passengers to choose among its travel classes, namely Delta One™, Delta Premium Select, First Class and Delta Comfort+™. All include varying premium amenities and services – while Main Cabin and Basic Economy allow varying levels of pre-travel flexibility and some on-board service. However, what seems to contribute to the superior brand value of Delta is the SkyMiles® loyalty program. In its partnership with AMEX it provides greater incentives for its members to fly with Delta and its regional partners, earning mileage credit for travel awards that can also be earned in certain services offered by program participants, such as hotels and rent-a-car agencies. Its SkyMiles loyalty program was, in fact, considered the #2 Best Airline Rewards Programs in 2019-20, by the U.S. News & World Report, with an overall score of 4.18 out of 5, only behind Alaska's 4.62. This recognition was largely driven by superior network

Figure 5 | 2019-20 Best Airline Rewards Programs



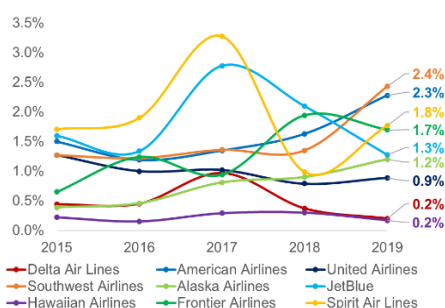
Sources: U.S. News & World Report

Graph 26 | Major US Airlines On-Time-Performance (OTP), 2015-2019 (as of November)



Sources: Bureau of Transportation Statistics Carriers Snapshot

Graph 27 | Major US Airlines Flight Cancellation Rate (FCR), 2015-2019 (as of November)



Sources: Bureau of Transportation Statistics Carriers Snapshot

coverage, additional benefits, airline quality (based on service provided, on-time performance, consumer complaint rate, mishandled baggage rate, etc.) and frequency of daily flights (+3,000, only exceeded by Southwest). Additionally, Delta was also recognized for the 9th consecutive time as the Best Corporate Travel Airline in US (by BTN's Airline Survey), with an overall score of 4.39 out 5, demonstrating the superior service that Delta aims to provide its customers. Ultimately, it supports one of the greatest competitive advantages: the capacity to attract frequent flyer passengers, such as corporate travellers that make up a significant portion of the revenue by paying higher fares and flying more frequently, reducing the revenue's seasonality. Resiliency and a reliability of operations is also a striving factor for many airlines in order to achieve profitability, especially in an increasing complexity and segmented demand. Contributing to the Delta's brand recognition is its operating reliability performance. This is assessed by through 2 indicators: On-time Performance (OTP) (flights that arrived or departed no more than 15 minutes later than scheduled) and Flight Cancellation Rate (FCR). US airlines' OTP averaged 80.3% over the last 5 years. Hawaiian is consistently the top performer, followed by Delta that has been consolidating its OTP performance (85.3%, on average), while Alaska has been continuously worsening its performance. With regards to FCR, US airlines historical performance shows that 2017 was the worst year with, on average, 1.4 in 100 flights cancelled. Contributing to this weak performance were JetBlue and Spirit, with FCRs of 2.8% and 3.3%, respectively. Delta shows performance improvement consistency, with a ratio equal to that of Hawaiian's 0.2% in 2019 (down from 1% in 2017).

In 2018, 8.2% of revenue miles flown on Delta were from award travel, as program members redeemed more than 17.2 million, 9% of these derived from SkyMiles. Total cash sales from marketing agreements related to the loyalty program increased more than 19% from the 9 months ended September 30 in 2019, reaching \$3.1bn. In spite of this, loyalty program revenue, recorded in "Other Revenue", only accounts for \$1,4bn and \$1,1bn in the 3Q 2019 and 2018, respectively. In the future, Delta's SkyMiles Loyalty Program revenue is expected to grow more than 30% in 2020, compared to the level in 2018.

■ JV's And Equity Investments, A Global Airlines Chess Match

In the last decade, legacy carriers, such as Delta Air Lines, United, Qatar Airways and Etihad Airways, have been acquiring minority interest acquisition in other airlines, in order to enhance their global presence. Beyond traditional regional and codeshare partners, Delta has been building a number of Joint-Ventures (JV) and Equity Investment Participations across the globe. In fact, by the end of 2019Q3, Delta held more than \$2,5bn in equity participations in other companies. In North America, these include West Jet (joint business agreement), Republic Airways (17% equity interest reported at \$176m), Alclear Holdings LLC (7% equity interest reported at \$29m) and AirCo (formerly DGS, 49% equity interest reported at \$123m). In Europe, these encompass Virgin Atlantic (~\$3bn JV, 49% equity interest reported at \$393m), Air France-KLM (~\$11bn JV, 9% equity interest reported at \$393m) and Alitalia (JV with shared frequent flyer benefits) ¹. In Pacific-Asia these incorporate China

¹ With the ongoing industry consolidation in Europe, a number of sizeable airlines ceasing operations and/or going bankrupt during the last years (such as Thomas Cook, Aigle Azur, XL Airways...), Alitalia went into financial distress. The Italian government has been continuously extending the investment timeframe for contender airlines to present their bid and take over the flag carrier. Delta, having a JBA in course with Alitalia (a former partnership through SkyTeam) made a bid of \$112mln for 10% equity interest. However, a few months ago Lufthansa bid doubled Delta's amount, and is now on track to win the deal. This can dictate the end of the relationship between Delta and Alitalia, as well as for SkyTeam that would see Alitalia migrate to Star Alliance (Lufthansa's membership strategic alliance).

² As result of its announced strategic alliance with LATAM, Delta will exit its partnership with GOL. It is expected to sell its stake, as well as the shutdown of the existing joint commercial agreements.

Eastern (3% equity interest recorded at \$226mln), Korean Air (~3bln JV, 10% equity interest recorded at \$134mln) and Virgin Australia (JV). Lastly, in LatAm these comprise Aeroméxico (~\$1bln JV, 51% non-controlling equity interest recorded at \$843mln), GOL (9% equity interest recorded at \$256mln)² and, lastly, LATAM (not yet concluded, but an agreement has been reached in September 2019 pending approval for a JV and code sharing agreement). Despite Delta's long list of investments, LATAM can be considered the "game changer". It could be the biggest airline acquisition in the US market since the notorious consolidation period, during the last decade, which began with Delta merging with Northwest (2008) and "ended" with the Virgin America merger into Alaska this past year. The advantages derived from the deal for both airlines are Delta's expectations of an additional \$1bln revenue over the next 5 years, which seems to be achievable given: *i*) the existing synergies and the complementarity of operations and routes, which will make Delta and LATAM hold a combined leading position in 5 out of the top 6 LatAm markets, with departures from US (*i.e.*, Chile, Brazil, Peru, Argentina and Ecuador); *ii*) the sharing of frequent flyer and miles program; *iii*) the current stake Delta has in Aeroméxico which is planned to be operationally leveraged with the increased presence in the LatAm market; and *iv*) the fact that US-LatAm routes generate \$8bln in revenues each year, out of which \$1.6bln is captured by LATAM. Furthermore, this deal may have some implications across a considerable part of the industry. In fact, there might be a significant level of losers. These are, but not exclusive to, American Airlines (JV between LATAM and American is expected to be terminated), OneWorld Alliance (by LATAM exiting this alliance), SkyTeam (Delta's alliance, through Delta's concerted effort of investment in other airlines, side-lining the alliance; at the same time, there is no indication of LATAM joining), GOL (through Delta's sale of its participation), Alaska Airlines (an end to the current partnership with LATAM is predictable), IAG (a possible partnership with LATAM was studied, though it is no longer expected with Delta's anticipation) and Qatar (which currently has a 10% stake in LATAM, but will lose influence to Delta that will acquire a participation double that of the Qatari airline). However, at the time of announcement of the deal, due to the disclosed deal's financial conditions, Delta's investor base seemed concerned with the large premium (>80%), and with the high transaction multiples, EV/Revenue (1.00x vs 0.57x) and EV/EBITDA (5.13x vs 6.46x). However, as the deal will be financed with available FCF and debt (a \$900mln Sr Secured Bond due in 2024 with no material impact on its leverage ratios by credit rating agencies) and because Delta is outmaneuvering its competitors, investors are expected to be more bullish (despite short-term detriment of FCF).

Values Drivers Boosting Performance

Diversity of "in" and "out-borders" JVs and Equity Investments, allowing the company to improve and consolidate its leadership position, especially in the growing markets.

Ancillary Business and value stream provided by the vertical integrated business model allowing the reduction of costs and increase profitability. Refinery has a relevant role by offsetting the fuel prices risk exposure and reduce the average costs per gallon, as reviewed in more detail in *Final Valuation Considerations* appendix 1. **Operational Excellence**

¹ please refer to 'The Value Of Monroe Energy, LLC For Delta Air Lines, Inc. Amid A Bearish Fuel Outlook' appendix

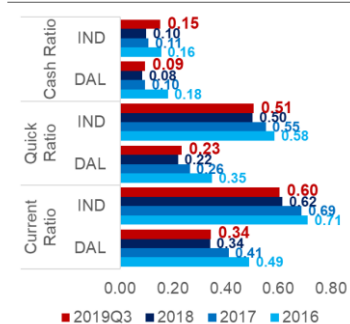
Standards established by Delta provides a competitive advantage in the sense that customers recognize the reliability of Delta's services and its underlying superior value added, allowing it to explore this customer value perception, increasing revenues and consolidating its position in Premium Products. **Delta's balanced capital allocation strategy** must also be mentioned. It includes the strong cash flow generation capacity and above-average Financial Results (cumulatively, revenue growth and margin improvement). Additionally, high discipline on business reinvestment, namely in fleet renewal (by 2023, ~35% of mainline fleet).

Risk Drivers Ahead

By investing in Delta's stock, one should be aware that there are several risks associated with the airline industry. One of the biggest risks is the fuel price, since airlines are highly dependent on fuel prices, which is the most volatile cost present in their operations. While these have been low as of lately, compared with historical levels, there is no guarantee that the associated costs will remain at this level in the long term. A sensitivity analysis was made with regards to this risk, and more information can be found further. It should be noted, however, that Delta controls Monroe Energy LLC, its wholly owned refinery subsidiary that provides the company most of its fuel needs. The refinery segment is used by Delta as a hedge against this risk. At the same time, the company still makes use of hedging financial instruments to mitigate some of the volatility associated with the oil commodity. Another risk is the possibility that some of the companies with which Delta currently has a joint venture or an investment goes into financial distress. Delta has begun investing more and more in these agreements and has started to move away from global alliances and is therefore more exposed to this type of risk. Another risk associated with investing in the airline industry is the risk that governments impose stricter regulations concerning air pollution. Currently transportation along with resource extraction are some of the biggest sources of pollution, and therefore there is a risk that governments restrict in some unforeseen way the normal operations of the company or its source of fuel. Another risk facing, not only the company, but also the industry is the increasing possibility of a recession. Historically, in a recession, airlines tend to be one of the most affected industries (though more so in Europe when compared to the USA due to the type of passenger and consolidation of the industry). A further analysis on the impact of recessions in airlines can be found in *Final Valuation Considerations* appendix ¹. Other prevalent risks with investing in Delta are exchange risks as the stock is traded in US Dollars (though that can be mitigated by hedging). There is also a risk with the exchange rate risk associated with Delta, as some of their expenses are denominated in currencies other than the US Dollar. A risk of terrorist attacks, similar to the one perpetrated in September 2001, where, for example, the DJUSAR Index (an US airline index) lost 46% of its value in a single week, between 14 and 21 of September of 2001. However, the governments have imposed stricter measures so that this can be avoided, and therefore the risk is reduced at the moment. Other possible risks that are inherent of the airline industry are the possibility of stronger presence by low and ultra-low cost carriers, which are already present in the American market, but have been unable to make the same gains as others have made in Europe. Possible reputational

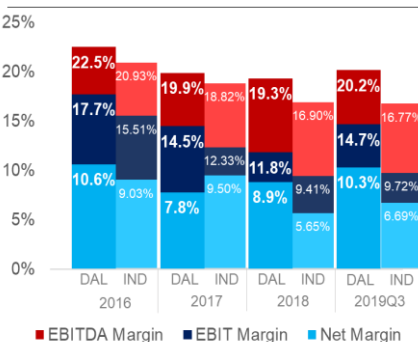
¹ please refer to 'Returns And Betas: Status Of The Airline Industry' appendix

Graph 28 | Liquidity Ratios



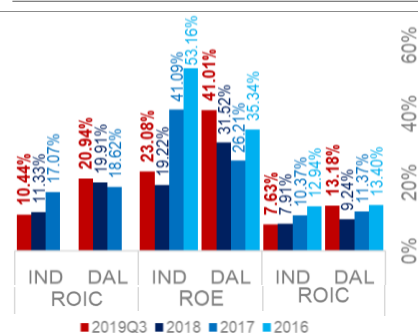
Sources: Delta Air Lines, Inc. And Industry Peers' SEC Filings

Graph 29 | Profitability Ratios



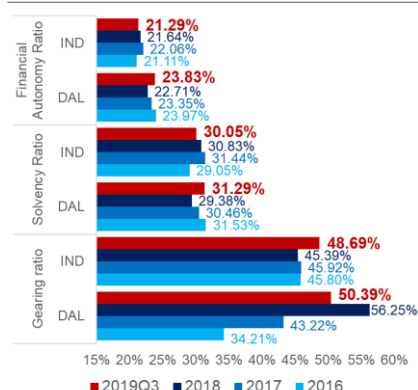
Sources: Delta Air Lines, Inc. And Industry Peers' SEC Filings

Graph 30 | Profitability From Investments Ratios



Sources: Delta Air Lines, Inc. And Industry Peers' SEC Filings

Graph 31 | Capital Structure Ratios



Sources: Delta Air Lines, Inc. And Industry Peers' SEC Filings

damage because of an improper action by one of Delta's employees; a possible rise in insurance costs; an increase in union power; a possible increase in the tax rate and a risk of rising interest rates are also prevalent when investing in the airline's stock.

Financial Analysis

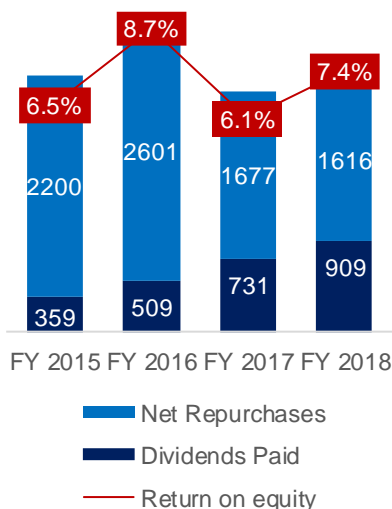
Past Performance: Financial Ratios Analysis

Activity Ratios: Increase in Average Collection Period (ACP) outpaced by significant increase in Average Payable Period (APP) yielded ~4 days improvement in Cash Conversion Cycle (CCC), from 2016 to 2019Q3. Overall CCC is better than industry average, as of 2019Q3 (-26.5 vs -19.1 days). Since 2016, CCC was negative, suggesting low risk and low pressure on liquidity. **Liquidity Ratio:** These have decreased since 2016, especially the cash ratio that is half that of 2016's level (0.18 vs 0.09 in 2019Q3). This means that Delta is more dependent on its ability to liquidate its current assets to fulfil its current liabilities, presenting a higher executional risk. Despite possible "red flags", the company's current assets are the most homogeneous in terms of liquidity amongst the group. While the Industry averaged a differential of 0.53 between the Current and the Cash ratios, DAL's stood at 0.28. DAL's liquidity condition has deteriorated during the analysis. However, one should bear in mind the strong CAPEX level and its above average FCF. **Profitability Ratios:** Since 2016, profitability from operations showed a downward trend, both for EBITDA and EBIT margins, due to significant increase in expenses related to Profit Sharing, Labor, Fuel and accelerated depreciations (more so in 2019). Net margin has increased since 2017, supported by gains on its equity investments. Nonetheless, even with the declining trend at the operational profitability level, DAL still yields profit margins above its peers' average. **Profitability From Investments Ratios:** With a ROA above the overall industry peers average, DAL poses as one of the most asset efficient airlines amongst the comps group. ROE has been relatively stable, increasing since 2017 and averaging below its peers'. Ultimately, at the ROIC level, DAL outperforms the group, with an upward trend that fixed ROIC at the 20.9% high, in 2018, 2x higher than its comps, enhancing the above-average ability that DAL has towards value creation. **Capital Structure Ratios:** DAL's capital structure ratios are in line with the industry peers' average. Still, the increasing gearing ratio should be highlighted, given that DAL is relying more on long-term debt as a way of financing, reflecting on D/E behavior in the last years, culminating in a 1.32 D/E. Likewise, Debt/EBITDA has also been increasing, meaning that debt level increase is outpacing earnings. Ultimately, DAL's solvency condition and financial autonomy is slightly better peers' group, and is only outperformed by its low-cost peers, which have significantly less debt on their capital structure than DAL.

Investor's Relations: Strong Stockholder's Return

During 2018, Delta distributed over \$900 million to shareholders through dividends and \$1,600 billion by buying back shares. Delta has a policy of distributing 70% of its FCF to shareholders, according to the 2018 Investor's day presentation, where close to one third is

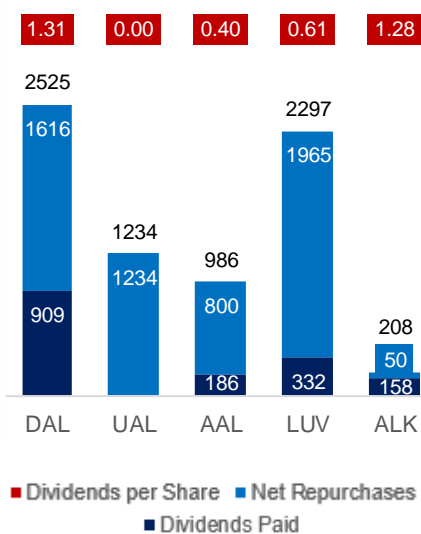
Graph 32 | DAL's Historical Free Cash Flow to Equity



[Note: Return on equity presented as the total Dividends paid + Net repurchases divided by the market cap at the end of the year]

Sources: Bloomberg

Graph 33 | Delta and peers' Cash Flow to Equity



Sources: Bloomberg

distributed through dividends, and the remaining through a share repurchase program. At the same time, as part of Delta's plan, it has been able to achieve a CAGR of total dividends in excess of 33% since 2013, according to data collected from Bloomberg. The strong focus from the management group in buying back shares implies a market undervaluation of the company in their view. When comparing Delta to its peers, it has had a larger FCF to Equity than any of its competitors, when accounting for both total dividends and share repurchases. At the same time Delta pays more dividends per share than its US peers. This is in part due to different strategies followed by its competitors. For example, United has a policy of not distributing dividends, opting instead to buy available floating shares in order to increase shareholder's returns. To conclude, Delta shows a great commitment with stockholder's return and welfare. In fact, to achieve this, since 2013 it has reduced its share count by more than 24% while keeping its Debt-to-EBITDAR ratio within the self-defined target range 1.5-2.25. For future periods, stockholders' return is expected to amount for 70% of the FCF.

Forecasting

BS Forecast

Property, Plant and Equipment (PP&E) was forecasted using Delta's decomposition in the financial statements, with Flight Equipment (projected based on the number of aircrafts) and Ground and Property Equipment (forecasted considering the investment made in La Guardia, LAX and expected future investment), the most relevant captions. The Operating lease right-of-use assets was forecasted with consideration to the number of leased aircraft. Cash Restricted for Airport Construction was projected with the spending in the construction of the La Guardia Terminals as well as new bonds issued when the previous proceeds have been consumed. Loyalty program deferred revenue was estimated having into consideration the peers and Delta's mileage credits earned and redeemed as a % of total RPM. With regards to the 'Profit Sharing' caption, its payment is only conducted in February of the next FY, therefore the value present in the Income Statement is also considered in the Balance Sheet. The last noteworthy caption to mention in Core Invested Capital are Long Term Investments, that comprise Equity Method Investments and Fair Value Investments; these have been adjusted for the participation in LATAM that will be valued at close to \$2 billion in 2020 and the disinvestment in GOL in 2020FY, currently valued close to \$250 million. Until 2029 there is no further investment estimated, but afterwards the caption has been considered to increase with passenger revenue due to Delta's focus on these partnerships. With regards to the financial aspect of the company's balance sheet, 'Total Long-term debt' was estimated with the current target of 1.5 to 2.25x EBITDAR. Note that, while Excess Cash has been forecasted to reach close to 30 billion in 2038, the authors are not expecting it to realize, as Delta would invest in other airline's participation, in aircraft to rejuvenate it, distribute to shareholders through special dividends, invest in its pension plan, among other possibilities.

IS Forecast

Below is a representation of the division of the revenues (note that the division subsequent to 'Mainline, By Geography' have all been subdivided for each region, for example a different Load Factor, Miles Flown, Market Share, etc. was calculated for each region).

Figure 6 | Delta's Revenue Forecast Model Breakdown

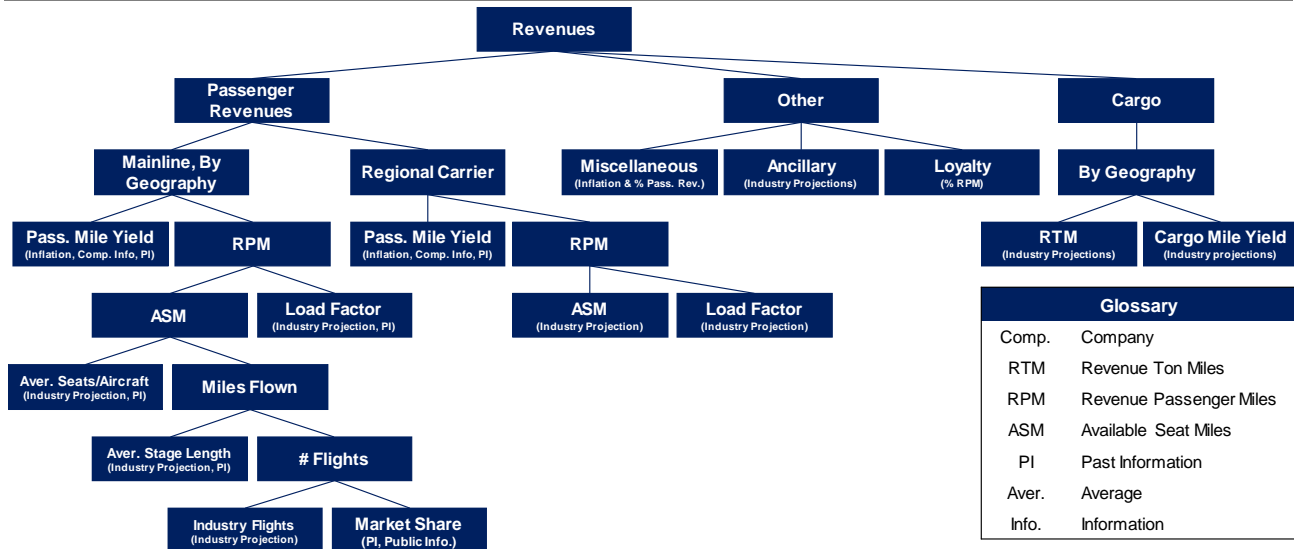
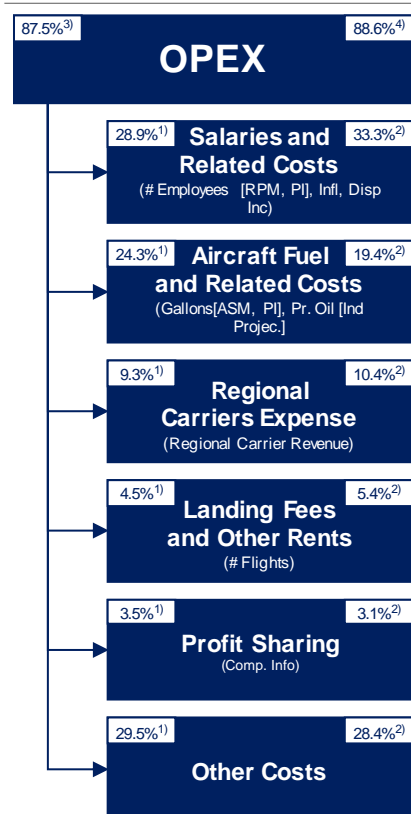


Figure 7 | DAL's Historical And Forecasted (Major) Operational Expenses



1) % of 2018 total costs
2) % of 2038 total forecasted costs
3) % of 2018 total revenues
4) % of 2038 total forecasted revenues

Sources: Delta Air Lines, Inc. SEC Filings

The industry projections used are based on an annual report performed by the Federal Aviation Authority ¹ (FAA), and the information with regards to the industry flights, market share, and other information related to the Cargo revenues, derived from reports compiled by the Bureau of Transportation Statistics ² (BTS), the rest of the information was provided by Delta's annual reports and Traffic releases. Apart from the forecasted market share, that accompanied the trend until 2024 and remained constant thereafter, the projected Passenger and Cargo revenues are based on the reports previously mentioned. With regards to Other Revenues, the loyalty program tended to the industry average as a % of RPM's, the Ancillary revenue through a report compiled by Oliver Wyman ³ and, lastly, the Miscellaneous revenues (related with access to Delta Sky Club) grew at the inflation rate until 2024, and afterwards considered to grow at the same rate as the Passenger Revenues.

Most of the operating costs forecast were based on Delta's operations (be it through ASM, RPM or total Revenue). However, a closer look on Delta's biggest costs and the analysis for their projection can be seen on the left. Some noteworthy mentions are the Salaries and Related Costs as an adjustment was made to consider the sale of DGS by Delta in the end of 2018FY, considering the 350 million in costs that will be moved to the 'Contracted Services' caption. With regards to Aircraft Fuel and Related Costs, while until 2023, projections were based on analysts' projections of the fuel price, from 2023 onwards, due to lack of liquidity in the market, a % of revenues was considered. The caption 'Contracted Services', was projected to have a larger than normal increase in 2019 since, as mentioned previously, DGS costs that were encompassed in Salaries and Related Costs have been assigned to this caption. Lastly, the Profit Sharing has been projected based on Delta's Pre-tax profit (which

includes not only the Core, but also the Non-core and Financing expenses, adjusted for some unmentioned costs in the annual report totaling close to \$ 1.3 billion), with the costs related to the caption being 10% of the Pre-tax profit below 2.5 billion and 20% above it. Salaries and Related Costs are projected to have their weight on the overall costs increase due to the increasing power present in unions, resulting in them being able to negotiate better contracts for its members. 'Aircraft Fuel and Related Costs' have there are projected to decrease in total operating costs due to low oil prices and low market forecasts.

Monroe Energy LLC

Monroe Energy LLC ('Monroe') was acquired by Delta to hedge against rises in fuel prices, and due to its attempt at selling this part of the business in the past, it was considered as a non-core asset. With regards to the assets related to this enterprise, as information was only available for the total amount, the totality of the airline's fuel inventory has been considered as part of the subsidiary (since this caption does not exist in other airline's BS) and has been projected using the current production capacity of 200.000 barrels per day and the estimated fuel price. At the same time, using the information from Monroe's peers ¹, a gross PP&E has been estimated based on the ratio of gross fixed assets turnover that resulted in an amount for ground property and equipment, deducted from the value present in the Core Invested Capital's PP&E, of close to \$2 billion. The hedge position in fuel derivatives was also considered as it is conducted through its subsidiary. Lastly, another caption was considered with the missing values that oscillated between \$180 and \$250 mln between 2016 and 2018. These have been deducted from the captions 'Other non-current Assets' and 'Other non-current Liabilities' and estimated to be constant throughout the forecasted years.

With regards to the Monroe's Income Statement, the revenue associated with sales to Delta have been considered in Delta's core income statement as well, present at cost, as Delta would incur in these costs, if it were to sell the subsidiary. At the same time an agreement would likely be made, in case of the sale of Monroe, whereby it would continue to supply Delta at cost. With regards to total sales, that include third party sales and sales to the airline segment, these have been considered using a projection projected fuel cost. Furthermore, Delta mentions the Operating Income with regards to Monroe and using this margin and the sales performed in the past an operating margin of 2.18% and 1.06% has been reached, in 2017 and 2018 respectively, a margin forecasted to remain constant until 2038.

Valuation

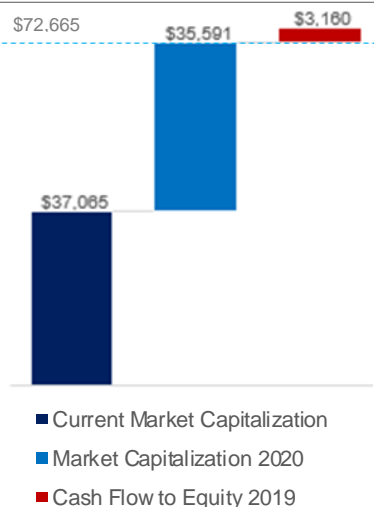
DCF Method & WACC Calculation

The WACC was computed with the unlevered betas of Delta's peers using the log returns from the last three years and the cost of debt of the most liquid long-term bond to unlever each peer's beta, resulting in an unlevered beta of 0.81. Furthermore, the Market Risk Premium (MRP) was computed using the monthly historical total excess returns from the companies

¹ For this analysis, the peers considered were: Calumet Specialty Products Partners LP, CVR Refinery LP, HollyFrontier Corp and Delek US Holdings Inc

WACC, or Weighted Average Cost of Capital, represents the average cost an enterprise has when financing its operations. It encompasses the company cost of equity, cost of debt, the company's tax rate and its leverage ratio.

Graph 34 | Expected Returns



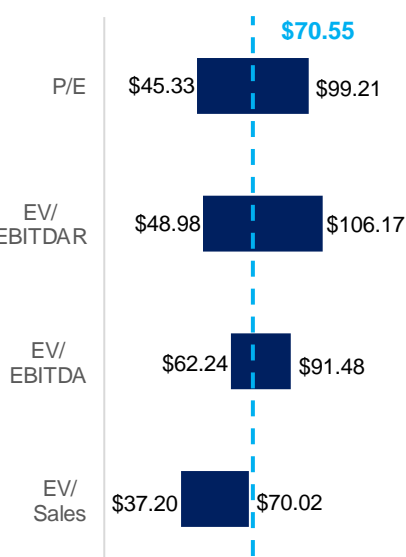
Sources: Own Development

present in the S&P Index (SPTR500N ticker in Bloomberg), with the 10 year yield from US government bonds trading at the time used as a proxy for risk free, which resulted in a MRP of 6.1%. Using the CAPM model, the resulting cost of equity of Delta's stock is 7.4%, (risk free used was 1.8%, US 10Y government bond's yield in December 1st, 2019). This originated a WACC of 6.6% in 2020 and a 6.8% in 2038; the change is due to Delta's different capital structure in 2020 and 2038. Using this WACC and a long-term growth of 1.8%, the resulting fair value for Delta's share was **\$112.34** and an enterprise value of \$90,054 (and a market capitalization of \$72,655). It should be noted that as Monroe Energy LLC is considered non-core, a different method was used than for the rest of Delta's non-core assets. An EV/EBITDA multiple valuation was computed using Monroe's currently traded comparable companies that resulted in an EV for Monroe of \$1,011 million.

Multiples Valuation

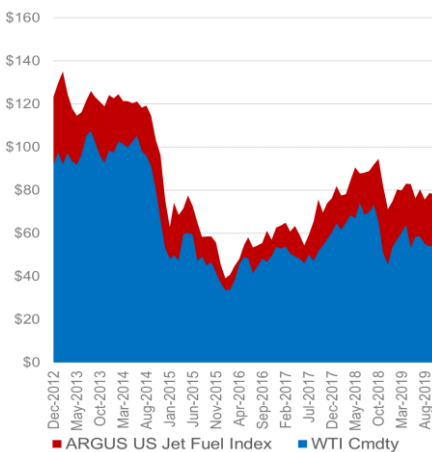
Several different types of multiple' ratios were used to compute the fair market value of Delta's EV. They were calculated using the forward multiples computed from Delta's peers (of which Air Canada is excluded due to it being traded in the Toronto stock exchange, a less liquid market than the S&P 500). Note that for the forward multiple, the general investor base's expectation, present in the Bloomberg, for the projections in the FY2020 were used, including the investor's projections for Delta to assess the forward multiples that Delta was trading. However, to compute the fair EV using the multiples, the forecasted projections were used. The multiples used were EV/Sales, EV/EBITDA, EV/EBITDAR and P/E (a summary table can be found in the annex). It should be noted that for the EV/EBITDAR, the Trailing Twelve Months ('TTM') was used due to lack of information in Bloomberg concerning analysts' expectation. According to this analysis Delta is currently trading at lower multiples compared to its peers, apart from EV/Sales (where Delta is overvalued in the market by over 7%). Through this analysis, a fair market price of \$ 70.55 was reached, that represents a premium currently to the current market price of 20%. Note that in this valuation, as the operations of Monroe Energy LLC are already included in the metrics used to compute the multiples, unlike in the DCF valuation, a separate valuation was not computed for this segment. This analysis further substantiates the hypothesis that Delta's stock is currently undervalued in the market as the current stock's market value is lower compared to its peers.

Graph 35 | Multiples Valuation Output



Sources: Own Development

Graph 36 | Historical (2012-2019) Fuel Prices Performance



Sources: Bloomberg

Sensitivity Analysis

In order to assess the risks inherent in the projections, two sensitivity analysis were performed with regards to two metrics, that could heavily impact the share's fair value: oil price and the Delta's mainline market share – the output of this analysis can be found in the Appendix. Historically, the fuel prices have been very volatile, as can be seen in the Graph 36, and therefore a sensitivity analysis was made in order to estimate what impact it would have in the Delta's final valuation. The scenarios chosen concern a possible flat price increase and decrease in the oil commodity price of 20%. The same analysis was conducted for the domestic market share. Through this analysis an impact of an increase in oil prices of 20%

Note, for the sensitivity analysis the upper fuel cost range (varying from roughly 67 and 71 dollars per barrel) is similar to values transacted in the market historically. In fact, in September 2018, the commodity was trading at close to the upper fuel cost range. At the same time, the lower range (which ranged between 44 and 47 dollars per barrel) is close to the 3Y minimum price. With regards to Delta's market share sensitivity analysis, its upper range of ~22% is close to DAL's market share in 2013 of 21%, while its lower range of ~15% would follow the opposite path of AAL's past 4Y trend.

would decrease Delta's market cap in more than 32%, which shows the consequences this caption has on Delta's value. At the same time a decrease of 20% in fuel price cost would increase Delta's market value by over 32% as well. By looking at Delta's market share, a decrease in 20% would impact Delta's value in excess of 11%. The impact is not as large as expected since while Delta's revenues would decrease, so would many of the costs associated with the decrease in the number of flights, as well as a decrease in the CAPEX, among other captions. Another analysis was made if Delta was impacted by both captions at the same time, and it resulted in a decrease of market capitalization in excess of 40% (for a 20% increase in fuel cost and 20% decrease in market share), which would result in a fair share price \$ 66.38, greater still than the current share price. If the opposite were true, this would result in a market capitalization in excess of 46%, which would result in a fair share price of \$164.75. Further analysis were made with connection to changes in the long-term growth (standalone), unlevered beta and cost of debt. The long-term growth had a final range of doubt of 1.3% to 2.5%. This resulted in a final share price between \$105.75 and \$122.00. By analyzing the unlevered beta, the range of doubt used was related with the standard deviation of the betas calculated, while for the cost of debt current weighted average cost of debt was used (i.e. including the cost associated with financial and operating leases) and the current cost of financial debt (i.e., % of interest expense with regards to financial debt). This resulted in a final price between \$223.98 and \$61.39. All these analyses were made in a ceteris paribus world. More information can be found in Figure 8.

Figure 8 | Sensitivity Analysis

Long term growth rate		Reinvestment Rate				
		10.30%	9.30%	8.30%	7.30%	6.30%
RONIC	20.17%			1.7%	1.5%	1.3%
	21.17%			1.8%	1.5%	1.3%
	22.17%	2.3%	2.1%	1.8%	1.6%	1.4%
	23.17%	2.4%	2.2%	1.9%		
	24.17%	2.5%	2.2%	2.0%		

Price per share		Reinvestment Rate				
		10.30%	9.30%	8.30%	7.30%	6.30%
RONIC	20.17%			\$110.27	\$107.92	\$105.75
	21.17%			\$111.29	\$108.75	\$106.41
	22.17%	\$118.63	\$115.34	\$112.34	\$109.60	\$107.09
	23.17%	\$120.27	\$116.68	\$113.43		
	24.17%	\$122.00	\$118.08	\$114.56		

Cost of Equity 2019		Cost of Debt				
		2.57%	3.16%	3.75%	4.32%	4.88%
Unlevered Beta	0.46	5.42%	5.19%	4.96%	4.74%	4.52%
	0.64	6.92%	6.68%	6.45%	6.23%	6.01%
	0.81	8.41%	8.18%	7.95%	7.72%	7.50%
	1.02	10.19%	9.96%	9.73%	9.50%	9.28%
	1.23	11.97%	11.74%	11.51%	11.29%	11.06%

Share Price		Cost of Debt				
		2.57%	3.16%	3.75%	4.32%	4.88%
Unlevered Beta	0.46	\$223.83	\$223.87	\$223.91	\$223.94	\$223.98
	0.64	\$152.61	\$152.73	\$152.85	\$152.96	\$153.07
	0.81	\$112.04	\$112.19	\$112.34	\$112.48	\$112.63
	1.02	\$ 81.63	\$ 81.80	\$ 81.97	\$ 82.13	\$ 82.30
	1.23	\$ 61.39	\$ 61.57	\$ 61.74	\$ 61.91	\$ 62.08

Note, when RONIC is lower than expected, management would be expected to reinvest a lower amount in the operations, opting to distribute more to the company's shareholders, and therefore this scenario was not considered. At the same time, a higher RONIC was not considered with lower RR as the management group would likely opt to invest more in the company as higher returns would be observed.

It should be noted that as RONIC and Reinvestment Rate pertain to 2038, the analysis performed considered only small variations to assess the impact on the company's fair value such a small variation would have.

Investment Recommendation

The US airline industry is capital and labour intensive and has systematic components of risk tied to economic conditions being highly exposed to other exogenous factors like the volatility in oil prices leading to a high volatility of returns. It was found that US airline stocks tend to trade on revenue momentum in the near term, and changes in unit revenues play a big part in investor sentiment and valuations. In recent years, NA airlines, in particular, have shown a fundamentally more stable and less cyclicity than in the past, largely due to consolidation of the industry. By investing in DAL, one should be aware of the risks associated with the industry, among them being the aforementioned fuel prices, global economic downturns, and regulation of the industry due to increasing concerns regarding pollution. On top of this and supporting the investment recommendation being advised in the report, it should be highlighted DAL's management excellence under Ed Bastian, which has consistently performed above expectations driving higher returns to shareholders. Taking this into consideration, the upsides from the JV with LATAM are expected to be achieved. Additionally, the strong cash flow generation should be emphasized and its commitment to return value to shareholders. Ultimately, a strong buy is recommended due to a company's undervaluation, both in relative terms, i.e., through the DCF analysis (\$112.34) and compared to its American peers (\$69.92). It should be noted that the price in December 1st, 2019, of \$57.31 representing a minimum expected return of 20%.

Appendix (1/3)

Forward Looking Financial Statements: Income Statement

(in millions)	2016	2017	2018	2019E	2020F	2021F	2022F	2023F	2024F	2029F	2034F
Core Business											
Operating Revenue											
Passenger	\$ 35,814	\$ 36,947	\$ 39,755	\$ 42,261	\$ 43,353	\$ 44,504	\$ 45,712	\$ 47,002	\$ 48,380	\$ 57,802	\$ 65,590
Cargo	\$ 684	\$ 744	\$ 865	\$ 967	\$ 1,068	\$ 1,161	\$ 1,239	\$ 1,300	\$ 1,340	\$ 1,584	\$ 1,953
Other	\$ 2,719	\$ 2,945	\$ 3,270	\$ 3,738	\$ 3,764	\$ 3,794	\$ 3,826	\$ 3,861	\$ 3,900	\$ 4,386	\$ 4,871
Total Operating Revenue	\$ 39,217	\$ 40,636	\$ 43,890	\$ 46,965	\$ 48,185	\$ 49,459	\$ 50,777	\$ 52,163	\$ 53,620	\$ 63,772	\$ 72,414
			3.5%								3.1%
Operating Expense	\$ (30,981)	\$ (33,715)	\$ (37,120)	\$ (38,410)	\$ (38,745)	\$ (40,025)	\$ (41,506)	\$ (42,903)	\$ (44,424)	\$ (53,462)	\$ (62,263)
Salaries and related costs	\$ (9,394)	\$ (10,058)	\$ (10,743)	\$ (11,118)	\$ (11,466)	\$ (12,000)	\$ (12,565)	\$ (13,168)	\$ (13,814)	\$ (16,880)	\$ (20,716)
Aircraft fuel and related taxes	\$ (5,985)	\$ (6,756)	\$ (9,020)	\$ (8,562)	\$ (7,957)	\$ (8,112)	\$ (8,454)	\$ (8,685)	\$ (8,928)	\$ (10,618)	\$ (12,057)
Regional carriers expense, excluding fuel	\$ (3,447)	\$ (3,466)	\$ (3,438)	\$ (3,663)	\$ (3,814)	\$ (3,971)	\$ (4,131)	\$ (4,299)	\$ (4,474)	\$ (5,482)	\$ (6,475)
Depreciation and amortization	\$ (1,886)	\$ (2,205)	\$ (2,312)	\$ (2,718)	\$ (2,896)	\$ (3,039)	\$ (3,148)	\$ (3,223)	\$ (3,239)	\$ (3,705)	\$ (3,723)
Amortization of Identifiable intangibles, net of accumulated amortization		\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)	\$ (17)
Contracted services	\$ (1,918)	\$ (2,108)	\$ (2,175)	\$ (2,611)	\$ (2,693)	\$ (2,818)	\$ (2,950)	\$ (3,091)	\$ (3,240)	\$ (3,854)	\$ (4,376)
Passenger commissions and other selling expenses	\$ (1,484)	\$ (1,554)	\$ (1,674)	\$ (1,779)	\$ (1,824)	\$ (1,873)	\$ (1,924)	\$ (1,978)	\$ (2,036)	\$ (2,433)	\$ (2,760)
Advertising Costs	\$ (267)	\$ (273)	\$ (267)	\$ (304)	\$ (312)	\$ (320)	\$ (329)	\$ (338)	\$ (348)	\$ (415)	\$ (471)
Ancillary businesses and refinery	\$ (1,182)	\$ (1,495)	\$ (1,695)	\$ (1,533)	\$ (1,541)	\$ (1,536)	\$ (1,578)	\$ (1,608)	\$ (1,639)	\$ (1,909)	\$ (2,133)
Aircraft maintenance materials and outside repairs	\$ (1,434)	\$ (1,591)	\$ (1,575)	\$ (1,609)	\$ (1,575)	\$ (1,517)	\$ (1,458)	\$ (1,397)	\$ (1,432)	\$ (1,744)	\$ (2,130)
Passenger service	\$ (964)	\$ (1,123)	\$ (1,178)	\$ (1,233)	\$ (1,243)	\$ (1,255)	\$ (1,268)	\$ (1,284)	\$ (1,302)	\$ (1,418)	\$ (1,550)
Landing fees and other rents	\$ (1,472)	\$ (1,501)	\$ (1,662)	\$ (1,773)	\$ (1,848)	\$ (1,926)	\$ (2,006)	\$ (2,091)	\$ (2,180)	\$ (2,851)	\$ (3,348)
Aircraft rent	\$ (285)	\$ (351)	\$ (394)	\$ (415)	\$ (439)	\$ (459)	\$ (478)	\$ (493)	\$ (506)	\$ (616)	\$ (753)
Other	\$ (1,621)	\$ (1,609)	\$ (1,723)	\$ (1,882)	\$ (1,930)	\$ (1,981)	\$ (2,034)	\$ (2,090)	\$ (2,148)	\$ (2,555)	\$ (2,901)
Operating Lease Expense Adjustment for interest cost	NA	NA	\$ 249	\$ 248	\$ 253	\$ 258	\$ 264	\$ 270	\$ 271	\$ 295	\$ 323
Unrealized gain/(loss) on investments, net	\$ -	\$ -	\$ 14	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Monroe Energy LLC third-parties sales related costs, adjustment	\$ 358	\$ 392	\$ 490	\$ 557	\$ 555	\$ 540	\$ 570	\$ 588	\$ 608	\$ 739	\$ 826
Core Result before Taxes, net of Profit Sharing	\$ 8,236	\$ 6,921	\$ 6,770	\$ 8,555	\$ 9,440	\$ 9,433	\$ 9,271	\$ 9,260	\$ 9,196	\$ 10,310	\$ 10,151
Profit sharing	\$ (1,115)	\$ (1,065)	\$ (1,301)	\$ (1,598)	\$ (1,766)	\$ (1,772)	\$ (1,748)	\$ (1,746)	\$ (1,744)	\$ (1,945)	\$ (1,914)
Core Result before Taxes	\$ 7,121	\$ 5,856	\$ 5,469	\$ 6,957	\$ 7,673	\$ 7,661	\$ 7,523	\$ 7,514	\$ 7,462	\$ 8,365	\$ 8,238
Adjusted Taxes	\$ (2,427)	\$ (2,420)	\$ (1,283)	\$ (1,632)	\$ (1,800)	\$ (1,797)	\$ (1,764)	\$ (1,762)	\$ (1,750)	\$ (1,962)	\$ (1,932)
Core Result, net of Other Comprehensive Income	\$ 4,694	\$ 3,436	\$ 4,186	\$ 5,325	\$ 5,873	\$ 5,864	\$ 5,758	\$ 5,752	\$ 5,712	\$ 6,403	\$ 6,305
Net Change in derivative Contracts	\$ 3	\$ (6)	\$ (4)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net change in investments	\$ 36	\$ 142	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Core Result	\$ 4,734	\$ 3,572	\$ 4,182	\$ 5,325	\$ 5,873	\$ 5,864	\$ 5,758	\$ 5,752	\$ 5,712	\$ 6,403	\$ 6,305
Non Core Business											
Monroe Energy LLC	\$ (125)	\$ 110	\$ 58	\$ 101	\$ 101	\$ 98	\$ 103	\$ 107	\$ 110	\$ 134	\$ 150
Miscellaneous, net	\$ (255)	\$ (70)	\$ 184	\$ (82)	\$ (109)	\$ (100)	\$ (100)	\$ (100)	\$ (101)	\$ (108)	\$ (116)
Non Core Result before Taxes	\$ (380)	\$ 40	\$ 242	\$ 19	\$ (8)	\$ (2)	\$ 3	\$ 7	\$ 10	\$ 27	\$ 34
Taxes	\$ 133	\$ (14)	\$ (51)	\$ (4)	\$ 2	\$ 0	\$ (1)	\$ (2)	\$ (2)	\$ (6)	\$ (8)
Net Change in derivative Contracts	\$ (40)	\$ (23)	\$ 20	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net change in pension and other benefits	\$ (360)	\$ (98)	\$ -	\$ 177	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Non Core Result	\$ (647)	\$ (95)	\$ 212	\$ 192	\$ (6)	\$ (1)	\$ 3	\$ 5	\$ 8	\$ 20	\$ 26
Financing											
Interest Expense	\$ (388)	\$ (396)	\$ (311)	\$ (390)	\$ (400)	\$ (365)	\$ (321)	\$ (321)	\$ (319)	\$ (368)	\$ (347)
Finance Lease: Interest Expense			\$ (22)	\$ (30)	\$ (33)	\$ (36)	\$ (37)	\$ (39)	\$ (39)	\$ (48)	\$ (59)
Interest Expense, net			\$ (289)	\$ (360)	\$ (367)	\$ (329)	\$ (284)	\$ (282)	\$ (279)	\$ (320)	\$ (288)
Operating Lease Expense			\$ (249)	\$ (248)	\$ (253)	\$ (258)	\$ (264)	\$ (270)	\$ (271)	\$ (295)	\$ (323)
Financial Result before Taxes	\$ (388)	\$ (396)	\$ (560)	\$ (638)	\$ (652)	\$ (623)	\$ (585)	\$ (591)	\$ (589)	\$ (663)	\$ (669)
Tax Shields	\$ 136	\$ 139	\$ 118	\$ 150	\$ 153	\$ 146	\$ 137	\$ 139	\$ 138	\$ 155	\$ 157
Net Change in derivative Contracts	\$ -	\$ -	\$ (1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Financial Result	\$ (252)	\$ (257)	\$ (444)	\$ (488)	\$ (499)	\$ (477)	\$ (448)	\$ (452)	\$ (451)	\$ (507)	\$ (512)
Comprehensive Result	3,834	3,220	3,950	5,029	5,368	5,386	5,313	5,305	5,268	5,916	5,819

Passenger Revenue - Breakdown by Geographic Region											
	2016	2017	2018	2019E	2020F	2021F	2022F	2023F	2024F	2029F	2034F
Global	\$ 35,814	\$ 36,947	\$ 39,755	\$ 42,261	\$ 43,353	\$ 44,504	\$ 45,712	\$ 47,002	\$ 48,380	\$ 57,802	\$ 65,590
RPM (in millions)	213,097	217,712	225,241	233,451	233,185	233,231	233,583	234,246	235,229	256,444	280,838
Passenger Load Factor	84.61%	85.60%	85.52%	86.82%	86.56%	86.30%	86.04%	85.79%	85.54%	85.55%	85.55%
ASM (in millions)	251,867	254,325	263,365	268,891	269,401	270,268	271,485	273,056	274,991	299,755	328,287
Passenger Mile Yield	\$ 0.1681	\$ 0.1697	\$ 0.1765	\$ 0.1810	\$ 0.1859	\$ 0.1908	\$ 0.1957	\$ 0.2007	\$ 0.2057	\$ 0.2254	\$ 0.2336
Domestic	\$ 25,002	\$ 26,079	\$ 28,159	\$ 30,332	\$ 30,986	\$ 31,646	\$ 32,309	\$ 32,990	\$ 33,689	\$ 39,898	\$ 44,830
RPM (in millions)	130,788	134,922	141,551	149,269	148,245	147,237	146,244	145,266	144,305	152,501	161,399
Passenger Load Factor	85.29%	85.71%	85.48%	87.54%	87.15%	86.76%	86.37%	85.99%	85.61%	85.64%	85.64%
ASM (in millions)	153,349	157,416	165,590	170,511	170,105	169,707	169,317	168,936	168,563	178,067	188,469
Passenger Mile Yield	\$ 0.1912	\$ 0.1933	\$ 0.1989	\$ 0.2032	\$ 0.2090	\$ 0.2149	\$ 0.2209	\$ 0.2271	\$ 0.2335	\$ 0.2616	\$ 0.2778
Latin America	\$ 2,686	\$ 2,862	\$ 2,888	\$ 2,944	\$ 3,017	\$ 3,090	\$ 3,163	\$ 3,238	\$ 3,315	\$ 4,015	\$ 5,135
RPM (in millions)	19,790	20,408	20,058	20,088	20,118	20,147	20,177	20,206	20,235	22,413	27,714
Passenger Load Factor	84.9%	86.7%	85.7%	85.7%	85.7%	85.7%	85.7%	85.8%	85.8%	85.8%	85.8%
ASM (in millions)	23,308	23,535	23,410	23,441	23,472	23,503	23,533	23,563	23,593	26,133	32,314
Passenger Mile Yield	\$ 0.1357	\$ 0.1402	\$ 0.1440	\$ 0.1466	\$ 0.1499	\$ 0.1534	\$ 0.1568	\$ 0.1603	\$ 0.1638	\$ 0.1791	\$ 0.1853
Atlantic	\$ 5,419	\$ 5,537	\$ 6,165	\$ 6,469	\$ 6,822	\$ 7,200	\$ 7,604	\$ 8,041	\$ 8,512	\$ 10,495	\$ 11,805
RPM (in millions)	39,738	41,641	43,270	44,395	45,556	46,799	48,131	49,556	51,080	59,557	66,995
Passenger Load Factor	80.7%	84.3%	85.3%	85.2%	85.1%	85.0%	84.9%	84.9%	84.8%	84.8%	84.8%
ASM (in millions)	49,240	49,398	50,739	52,108	53,522	55,036	56,657	58,390	60,244	70,242	79,015
Passenger Mile Yield	\$ 0.1364	\$ 0.1330	\$ 0.1425	\$ 0.1457	\$ 0.1497	\$ 0.1538	\$ 0.1580	\$ 0.1623	\$ 0.1666	\$ 0.1762	\$ 0.1762
Pacific	\$ 2,707	\$ 2,469	\$ 2,543	\$ 2,516	\$ 2,529	\$ 2,569	\$ 2,636	\$ 2,733	\$ 2,864	\$ 3,394	\$ 3,820
RPM (in millions)	22,781	20,741	20,362	19,699	19,266	19,047	19,032	19,218	19,610	21,973	24,730
Passenger Load Factor	87.7%	86.5%	86.2%	86.3%	86.4%	86.5%	86.5%	86.7%	86.8%	86.8%	86.8%
ASM (in millions)	25,970	23,976	23,626	22,830	22,302	22,021	21,977	22,166	22,591	25,313	28,489
Passenger Mile Yield	\$ 0.1188	\$ 0.1190	\$ 0.1249	\$ 0.1277	\$ 0.1313	\$ 0.1349	\$ 0.1385	\$ 0.1422	\$ 0.1461	\$ 0.1545	\$ 0.1545

Appendix (2/3)

Forward Looking Financial Statements: Balance Sheet

(in millions)	Year Ended December 31,										
	2016	2017	2018	2019E	2020F	2021F	2022F	2023F	2024F	2029F	2034F
INVESTED CAPITAL											
Core Invested Capital											
Property and equipment, net of accumulated depreciation and amortization	\$ 22,978	\$ 25,054	\$ 26,987	\$ 31,380	\$ 33,144	\$ 34,703	\$ 35,921	\$ 36,806	\$ 37,059	\$ 42,210	\$ 42,249
Operating lease right-of-use assets	\$ -	\$ -	\$ 5,994	\$ 6,058	\$ 6,180	\$ 6,311	\$ 6,451	\$ 6,604	\$ 6,624	\$ 7,217	\$ 7,886
Goodwill	\$ 9,794	\$ 9,794	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781	\$ 9,781
Identifiable intangibles, net of accumulated amortization	\$ 4,844	\$ 4,847	\$ 4,830	\$ 4,813	\$ 4,796	\$ 4,779	\$ 5,586	\$ 5,569	\$ 5,552	\$ 5,716	\$ 5,631
Cash restricted for airport construction	\$ -	\$ -	\$ 1,136	\$ 606	\$ 252	\$ 1,322	\$ 968	\$ 613	\$ 259	\$ -	\$ -
Deferred income taxes, net	\$ 3,064	\$ 1,354	\$ 242	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loyalty program deferred revenue	\$ (2,278)	\$ (3,559)	\$ (3,652)	\$ (3,835)	\$ (3,941)	\$ (4,027)	\$ (4,109)	\$ (4,203)	\$ (4,329)	\$ (5,300)	\$ (6,482)
Net Deferred Tax Asset	\$ -	\$ -	\$ (163)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other noncurrent assets and liabilities, net of amount allocated to Monroe Energy LLC	\$ (406)	\$ (458)	\$ 425	\$ 425	\$ 425	\$ 425	\$ 425	\$ 425	\$ 425	\$ 425	\$ 425
Other noncurrent assets	\$ 1,208	\$ 1,507	\$ 1,127	\$ 1,649	\$ 1,649	\$ 1,649	\$ 1,649	\$ 1,649	\$ 1,649	\$ 1,649	\$ 1,649
Other noncurrent liabilities	\$ (1,875)	\$ (2,197)	\$ (952)	\$ (1,378)	\$ (1,378)	\$ (1,378)	\$ (1,378)	\$ (1,378)	\$ (1,378)	\$ (1,378)	\$ (1,378)
Allocated to Monroe Energy LLC	\$ 261	\$ 232	\$ 250	\$ 154	\$ 154	\$ 154	\$ 154	\$ 154	\$ 154	\$ 154	\$ 154
Profit Sharing	\$ (1,115)	\$ (1,065)	\$ (1,301)	\$ (1,598)	\$ (1,766)	\$ (1,772)	\$ (1,748)	\$ (1,746)	\$ (1,734)	\$ (1,945)	\$ (1,914)
Restricted Cash	\$ 64	\$ 39	\$ 47	\$ 107	\$ 145	\$ 97	\$ 66	\$ 107	\$ 161	\$ 387	\$ 717
Long Term Investments	\$ 522	\$ 1,793	\$ 2,473	\$ 2,573	\$ 4,258	\$ 4,258	\$ 4,258	\$ 4,258	\$ 4,258	\$ 4,258	\$ 4,831
Hedge Position (Foreign Currency)	\$ 27	\$ (17)	\$ (3)	\$ 8	\$ 3	\$ 21	\$ -	\$ -	\$ -	\$ -	\$ -
Net Working Capital	\$ (7,257)	\$ (8,858)	\$ (8,253)	\$ (10,258)	\$ (10,665)	\$ (11,023)	\$ (11,407)	\$ (11,810)	\$ (12,259)	\$ (14,351)	\$ (17,018)
Operating Cash	\$ 1,389	\$ 1,449	\$ 1,565	\$ 1,654	\$ 1,697	\$ 1,742	\$ 1,788	\$ 1,837	\$ 1,888	\$ 2,246	\$ 2,550
Accounts receivable, net of an allowance for uncollectible accounts	\$ 2,064	\$ 2,377	\$ 2,314	\$ 2,515	\$ 2,580	\$ 2,648	\$ 2,719	\$ 2,793	\$ 2,871	\$ 3,415	\$ 3,878
Expendable parts and supplies inventories, net of na allowance for obsolescence	\$ 372	\$ 413	\$ 463	\$ 437	\$ 434	\$ 425	\$ 423	\$ 418	\$ 428	\$ 508	\$ 594
Air traffic liability	\$ (4,626)	\$ (4,364)	\$ (4,661)	\$ (4,973)	\$ (5,102)	\$ (5,237)	\$ (5,379)	\$ (5,531)	\$ (5,693)	\$ (6,802)	\$ (7,719)
Accounts payable	\$ (2,572)	\$ (3,634)	\$ (2,976)	\$ (4,028)	\$ (4,046)	\$ (4,174)	\$ (4,329)	\$ (4,478)	\$ (4,648)	\$ (5,120)	\$ (5,908)
Accrued salaries and related benefits	\$ (1,809)	\$ (1,957)	\$ (1,986)	\$ (2,120)	\$ (2,186)	\$ (2,288)	\$ (2,396)	\$ (2,511)	\$ (2,634)	\$ (3,218)	\$ (3,950)
Loyalty program deferred revenue	\$ (1,648)	\$ (2,762)	\$ (2,989)	\$ (3,057)	\$ (3,141)	\$ (3,210)	\$ (3,275)	\$ (3,350)	\$ (3,451)	\$ (4,224)	\$ (5,166)
Prepaid expenses and other	\$ 792	\$ 781	\$ 1,112	\$ 976	\$ 1,002	\$ 1,026	\$ 1,050	\$ 1,076	\$ 1,108	\$ 1,343	\$ 1,593
Other accrued liabilities	\$ (1,219)	\$ (1,161)	\$ (1,095)	\$ (1,662)	\$ (1,904)	\$ (1,955)	\$ (2,007)	\$ (2,065)	\$ (2,128)	\$ (2,498)	\$ (2,890)
Total Core Invested Capital	\$ 30,237	\$ 28,924	\$ 38,543	\$ 40,060	\$ 42,610	\$ 44,874	\$ 46,191	\$ 46,403	\$ 45,795	\$ 48,396	\$ 46,105
Non Core Invested Capital											
Short-term investments	\$ 487	\$ 825	\$ 203	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Pension, postretirement and related benefits	\$ (13,378)	\$ (9,810)	\$ (9,163)	\$ (8,342)	\$ (9,912)	\$ (9,886)	\$ (9,874)	\$ (9,873)	\$ (9,796)	\$ (10,479)	\$ (11,626)
Monroe Energy LLC	\$ 1,331	\$ 2,127	\$ 1,705	\$ 1,887	\$ 1,844	\$ 1,872	\$ 1,876	\$ 1,904	\$ 1,933	\$ 2,115	\$ 2,281
Total Non Core Invested Capital	\$ (11,560)	\$ (6,858)	\$ (7,255)	\$ (6,455)	\$ (8,068)	\$ (8,014)	\$ (7,998)	\$ (7,970)	\$ (7,863)	\$ (8,363)	\$ (9,345)
Total Invested Capital	\$ 18,677	\$ 22,066	\$ 31,288	\$ 33,606	\$ 34,542	\$ 36,860	\$ 38,193	\$ 38,434	\$ 37,932	\$ 40,032	\$ 36,760
FINANCIAL & EQUITY											
Financial											
Long-Term Debt and Finance Leases, including current maturities	\$ 7,332	\$ 8,834	\$ 9,771	\$ 12,333	\$ 12,618	\$ 11,469	\$ 10,037	\$ 9,996	\$ 9,924	\$ 11,429	\$ 10,646
Total Long-Term Debt	\$ 7,008	\$ 8,440	\$ 9,368	\$ 11,668	\$ 11,882	\$ 10,678	\$ 9,204	\$ 9,135	\$ 9,048	\$ 10,358	\$ 9,337
Finance Leases	\$ 324	\$ 394	\$ 403	\$ 665	\$ 737	\$ 792	\$ 833	\$ 861	\$ 877	\$ 1,071	\$ 1,309
Excess Cash	\$ (1,373)	\$ (365)	\$ -	\$ (1,896)	\$ (3,144)	\$ (1,485)	\$ (409)	\$ (1,722)	\$ (3,484)	\$ (10,652)	\$ (21,335)
Operating Leases	\$ -	\$ -	\$ 6,756	\$ 6,715	\$ 6,849	\$ 6,995	\$ 7,150	\$ 7,320	\$ 7,341	\$ 7,998	\$ 8,740
Hedge Position - Interest Rate	\$ -	\$ -	\$ (1)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Fuel card obligation	\$ 431	\$ 1,067	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075	\$ 1,075
Net Debt	\$ 6,390	\$ 9,536	\$ 17,601	\$ 18,227	\$ 17,398	\$ 18,054	\$ 17,853	\$ 16,668	\$ 14,857	\$ 9,850	\$ (874)
Equity											
Total stockholders' equity	\$ 12,287	\$ 12,530	\$ 13,687	\$ 15,379	\$ 17,144	\$ 18,806	\$ 20,340	\$ 21,765	\$ 23,075	\$ 30,182	\$ 37,634
Total Net Debt & Stockholders' Equity	\$ 18,677	\$ 22,066	\$ 31,288	\$ 33,606	\$ 34,542	\$ 36,860	\$ 38,193	\$ 38,434	\$ 37,932	\$ 40,032	\$ 36,760

Observation:

Instead of presenting the financial statements as the company presents them, a reformulation of these was conducted. This was done in order to better understand the assets and liabilities and how they impact the operations of the company. In fact, the three divisions Core, Non-Core and Financial are to this point. The assets and liabilities present in the Core Invested Capital are assets that the company needs in order to operate "normally". This means that if the company were to lose access to these, its operations would be otherwise disrupted. With relation to the Non-Core Invested Capital, these are the assets that the company has beyond its core operations. For this category are included, the Short-term investments as the company is not a financial one, and therefore could do without these type of investments, Pension, postretirement and related benefits and the assets related to Monroe Energy LLC since Delta has tried to sell the refinery in the past, and is therefore considered as non-core (or non-essential to the operations of the firm). Lastly, the financial side of the company is the way that it finances its operations, through outside support or through its own shareholders.

Note:

Operating leases only started being reported in 2018, therefore before are they were valued as 0 in the company's financial statements.

Valuation: Multiples Approach

	Curr Market Cap	Current EV	2020E Sales	EV/SALES	2020E EBITDA	EV/EBITDA	EBITDAR TTM	EV/EBITDAR	Net Income 2020E	Multiple
Delta Air Lines Inc	\$ 37,065	\$ 51,570	\$ 48,578	1.06	\$ 9,111	5.66	\$ 8,838	5.84	\$ 4,550	8.15
American Airlines Group Inc	\$ 12,590	\$ 41,862	\$ 47,878	0.87	\$ 6,277	6.67	\$ 5,136	8.15	\$ 2,325	5.42
United Airlines Holdings Inc	\$ 23,482	\$ 38,496	\$ 45,304	0.85	\$ 7,062	5.45	\$ 9,023	4.27	\$ 3,121	7.53
Southwest Airlines Co	\$ 30,335	\$ 30,700	\$ 23,838	1.29	\$ 4,654	6.60	\$ 5,342	4.97	\$ 2,559	11.85
Alaska Air Group Inc	\$ 8,500	\$ 10,234	\$ 9,148	1.12	\$ 1,676	6.11	\$ 1,870	5.47	\$ 858	9.91
Multiple				1.06 x		6.11 x		5.65 x		8.15 x
Delta Air Lines Inc Metric *				\$ 48,185		\$ 10,434		\$ 11,324		\$ 5,368
Implied EV				\$ 51,153		\$ 63,716		\$ 64,023		-
Fair Value of Debt				\$ 17,398		\$ 17,398		\$ 17,398		-
MV Equity				\$ 33,755		\$ 46,318		\$ 46,625		\$ 43,728
Implied Price per Share				\$ 52.19		\$ 71.62		\$ 72.09		\$ 67.61

* Note:

While values used to assess each peers' multiple were based on the analysts' consensus (i.e., according to Bloomberg), including the ones referring to DAL, the values presented as "Delta Air Lines Metric" are derived from the estimates from the model supporting this Equity Research (i.e., own estimates).

Appendix (3/3)

Valuation: Discounted Cash Flows (DCF)

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Terminal Value	
Total Core FCFF	\$ 3,324	\$ 3,600	\$ 4,441	\$ 5,539	\$ 6,320	\$ 5,832	\$ 5,791	\$ 5,620	\$ 5,893	\$ 6,593	\$ 7,097	\$ 7,032	\$ 6,901	\$ 6,894	\$ 5,899	\$ 5,999	\$ 6,104	\$ 6,104	\$ 6,213	\$ 6,213	\$ 127,344	
EV	\$ 98,965	\$ 101,897	\$ 104,190	\$ 105,543	\$ 106,217	\$ 108,033	\$ 109,395	\$ 110,881	\$ 112,659	\$ 114,322	\$ 114,978	\$ 116,590	\$ 116,329	\$ 117,268	\$ 118,497	\$ 120,625	\$ 122,811	\$ 125,051	\$ 127,344	\$ 129,633	\$ 131,923	\$ 1,273,444
Debt	\$ 17,398	\$ 18,054	\$ 17,863	\$ 16,868	\$ 14,857	\$ 14,213	\$ 12,932	\$ 11,800	\$ 10,920	\$ 9,860	\$ 7,733	\$ 5,540	\$ 3,396	\$ (874)	\$ (2,856)	\$ (4,021)	\$ (5,205)	\$ (6,409)	\$ (7,593)	\$ (8,777)	\$ (9,961)	\$ (10,145)
Equity	\$ 81,567	\$ 83,843	\$ 86,327	\$ 88,675	\$ 91,360	\$ 93,820	\$ 96,454	\$ 99,081	\$ 101,739	\$ 104,472	\$ 107,244	\$ 110,050	\$ 112,934	\$ 115,959	\$ 119,371	\$ 123,481	\$ 126,833	\$ 130,256	\$ 133,753	\$ 137,250	\$ 140,747	\$ 1,262,299
Debt/Equity	17.562%	17.718%	17.135%	15.793%	13.387%	11.822%	10.642%	9.893%	8.616%	6.726%	4.793%	2.919%	1.116%	-0.735%	-2.366%	-3.274%	-4.182%	-5.032%	-5.882%	-6.732%	-7.582%	-8.432%
Equity/Value	82.418%	82.282%	82.865%	84.207%	86.013%	88.178%	89.358%	90.307%	91.384%	93.274%	95.207%	97.081%	98.884%	100.735%	102.565%	103.274%	104.162%	105.032%	105.918%	106.804%	107.690%	108.576%
Debt/Value	21.333%	21.533%	20.678%	18.755%	16.262%	15.149%	13.407%	11.909%	10.733%	9.429%	7.210%	5.034%	3.007%	1.129%	-0.732%	-2.313%	-3.171%	-3.996%	-4.791%	-5.588%	-6.385%	-7.182%
WACC	7.41%	7.41%	7.39%	7.33%	7.28%	7.22%	7.17%	7.12%	7.09%	7.05%	6.98%	6.92%	6.86%	6.80%	6.74%	6.70%	6.67%	6.64%	6.62%	6.60%	6.58%	6.56%
WACC	6.611%	6.610%	6.615%	6.620%	6.624%	6.628%	6.631%	6.634%	6.637%	6.640%	6.642%	6.644%	6.646%	6.648%	6.650%	6.651%	6.652%	6.653%	6.654%	6.655%	6.656%	6.657%

Inputs:	
Long term G	1.8%
Non-Core Invested Capital	\$ (9,912)
Monroe Energy/LLC	\$ 1,011
Net Debt	\$ 17,398
Number of Shares	645,714
Enterprise Value	\$ 90,054
Enterprise Value/Share	\$ 140.10
Share Price	\$ 112.34

Other Inputs:	
Risk-free rate	1.78%
MRP	6.12%
Taxrate	23%
rd	3.75%
Bu	0.81
Bc	0.32

Sensitivity Analysis – Fuel Costs and Domestic Market Share

	MS	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	Terminal Value	Price
20%	20.0%	\$ 2,963	\$ 3,309	\$ 4,092	\$ 5,181	\$ 5,983	\$ 4,737	\$ 5,303	\$ 5,231	\$ 5,026	\$ 5,234	\$ 6,474	\$ 6,556	\$ 6,448	\$ 6,267	\$ 6,001	\$ 5,013	\$ 5,096	\$ 5,180	\$ 5,268	\$ 5,356	\$ 106,911	\$ 86.37
20%	10.0%	\$ 2,627	\$ 2,955	\$ 3,740	\$ 4,817	\$ 5,595	\$ 4,413	\$ 4,974	\$ 4,896	\$ 4,687	\$ 4,892	\$ 6,057	\$ 6,133	\$ 6,029	\$ 5,857	\$ 5,606	\$ 4,695	\$ 4,775	\$ 4,855	\$ 4,939	\$ 5,027	\$ 101,141	\$ 81.35
20%	0.0%	\$ 2,302	\$ 2,602	\$ 3,390	\$ 4,454	\$ 5,208	\$ 4,089	\$ 4,644	\$ 4,562	\$ 4,348	\$ 4,550	\$ 5,641	\$ 5,711	\$ 5,611	\$ 5,447	\$ 5,210	\$ 4,379	\$ 4,454	\$ 4,531	\$ 4,614	\$ 4,701	\$ 95,363	\$ 76.34
20%	-10.0%	\$ 1,977	\$ 2,243	\$ 3,039	\$ 4,091	\$ 4,822	\$ 3,766	\$ 4,315	\$ 4,228	\$ 4,011	\$ 4,210	\$ 5,225	\$ 5,290	\$ 5,194	\$ 5,039	\$ 4,816	\$ 4,063	\$ 4,135	\$ 4,208	\$ 4,284	\$ 4,366	\$ 89,576	\$ 71.35
20%	-20.0%	\$ 1,644	\$ 1,884	\$ 2,689	\$ 3,728	\$ 4,436	\$ 3,443	\$ 3,987	\$ 3,894	\$ 3,674	\$ 3,870	\$ 4,809	\$ 4,869	\$ 4,777	\$ 4,631	\$ 4,422	\$ 3,748	\$ 3,816	\$ 3,885	\$ 3,957	\$ 4,030	\$ 83,780	\$ 66.38
10%	20.0%	\$ 3,520	\$ 3,869	\$ 4,677	\$ 5,779	\$ 6,600	\$ 5,376	\$ 5,957	\$ 5,907	\$ 5,725	\$ 5,956	\$ 7,218	\$ 7,318	\$ 7,229	\$ 7,065	\$ 6,816	\$ 5,845	\$ 5,943	\$ 6,042	\$ 6,144	\$ 6,244	\$ 124,114	\$ 105.98
10%	10.0%	\$ 3,169	\$ 3,484	\$ 4,299	\$ 5,388	\$ 6,185	\$ 5,021	\$ 5,597	\$ 5,542	\$ 5,354	\$ 5,581	\$ 6,767	\$ 6,861	\$ 6,775	\$ 6,619	\$ 6,384	\$ 5,491	\$ 5,584	\$ 5,679	\$ 5,778	\$ 5,878	\$ 117,738	\$ 100.16
10%	0.0%	\$ 2,816	\$ 3,099	\$ 3,920	\$ 4,996	\$ 5,770	\$ 4,666	\$ 5,238	\$ 5,176	\$ 4,984	\$ 5,207	\$ 6,317	\$ 6,404	\$ 6,322	\$ 6,174	\$ 5,952	\$ 5,137	\$ 5,227	\$ 5,318	\$ 5,412	\$ 5,507	\$ 111,356	\$ 94.35
10%	-10.0%	\$ 2,457	\$ 2,715	\$ 3,539	\$ 4,606	\$ 5,354	\$ 4,312	\$ 4,879	\$ 4,811	\$ 4,614	\$ 4,833	\$ 5,867	\$ 5,948	\$ 5,869	\$ 5,730	\$ 5,522	\$ 4,785	\$ 4,870	\$ 4,957	\$ 5,047	\$ 5,142	\$ 104,969	\$ 88.56
10%	-20.0%	\$ 2,099	\$ 2,332	\$ 3,157	\$ 4,216	\$ 4,938	\$ 3,958	\$ 4,521	\$ 4,447	\$ 4,245	\$ 4,460	\$ 5,418	\$ 5,493	\$ 5,417	\$ 5,286	\$ 5,092	\$ 4,433	\$ 4,515	\$ 4,597	\$ 4,683	\$ 4,770	\$ 98,575	\$ 82.78
0%	20.0%	\$ 4,091	\$ 4,420	\$ 5,261	\$ 6,380	\$ 7,212	\$ 6,007	\$ 6,611	\$ 6,584	\$ 6,424	\$ 6,678	\$ 7,962	\$ 8,080	\$ 7,962	\$ 7,864	\$ 7,630	\$ 6,678	\$ 6,789	\$ 6,903	\$ 7,021	\$ 7,141	\$ 141,313	\$ 125.58
0%	10.0%	\$ 3,710	\$ 4,010	\$ 4,850	\$ 5,961	\$ 6,766	\$ 5,623	\$ 6,221	\$ 6,187	\$ 6,022	\$ 6,270	\$ 7,477	\$ 7,588	\$ 7,521	\$ 7,382	\$ 7,162	\$ 6,287	\$ 6,394	\$ 6,503	\$ 6,616	\$ 6,734	\$ 134,330	\$ 118.95
0%	0.0%	\$ 3,324	\$ 3,600	\$ 4,441	\$ 5,539	\$ 6,320	\$ 5,239	\$ 5,832	\$ 5,791	\$ 5,620	\$ 5,863	\$ 6,993	\$ 7,097	\$ 7,032	\$ 6,901	\$ 6,694	\$ 5,896	\$ 5,999	\$ 6,104	\$ 6,213	\$ 6,324	\$ 127,344	\$ 112.34
0%	-10.0%	\$ 2,938	\$ 3,190	\$ 4,033	\$ 5,118	\$ 5,875	\$ 4,856	\$ 5,443	\$ 5,395	\$ 5,218	\$ 5,456	\$ 6,510	\$ 6,606	\$ 6,544	\$ 6,421	\$ 6,227	\$ 5,507	\$ 5,606	\$ 5,706	\$ 5,810	\$ 5,917	\$ 120,357	\$ 105.74
0%	-20.0%	\$ 2,563	\$ 2,780	\$ 3,625	\$ 4,697	\$ 5,418	\$ 4,473	\$ 5,055	\$ 5,000	\$ 4,817	\$ 5,051	\$ 6,027	\$ 6,117	\$ 6,057	\$ 5,942	\$ 5,761	\$ 5,119	\$ 5,213	\$ 5,309	\$ 5,408	\$ 5,507	\$ 99,116	\$ 99.16
-10%	20.0%	\$ 4,656	\$ 4,973	\$ 5,837	\$ 6,973	\$ 7,817	\$ 6,637	\$ 7,264	\$ 7,260	\$ 7,124	\$ 7,400	\$ 8,706	\$ 8,842	\$ 8,791	\$ 8,662	\$ 8,444	\$ 7,510	\$ 7,636	\$ 7,762	\$ 7,887	\$ 8,014	\$ 158,506	\$ 145.16
-10%	10.0%	\$ 4,244	\$ 4,537	\$ 5,400	\$ 6,523	\$ 7,343	\$ 6,224	\$ 6,845	\$ 6,833	\$ 6,689	\$ 6,959	\$ 8,188	\$ 8,315	\$ 8,267	\$ 8,145	\$ 7,940	\$ 7,082	\$ 7,204	\$ 7,327	\$ 7,455	\$ 7,583	\$ 150,918	\$ 137.73
-10%	0.0%	\$ 3,831	\$ 4,100	\$ 4,964	\$ 6,073	\$ 6,870	\$ 5,812	\$ 6,425	\$ 6,406	\$ 6,255	\$ 6,519	\$ 7,670	\$ 7,790	\$ 7,743	\$ 7,628	\$ 7,436	\$ 6,655	\$ 6,772	\$ 6,891	\$ 7,014	\$ 7,138	\$ 143,330	\$ 130.32
-10%	-10.0%	\$ 3,420	\$ 3,664	\$ 4,528	\$ 5,624	\$ 6,397	\$ 5,399	\$ 6,007	\$ 5,979	\$ 5,822	\$ 6,080	\$ 7,152	\$ 7,265	\$ 7,220	\$ 7,112	\$ 6,936	\$ 6,229	\$ 6,341	\$ 6,455	\$ 6,574	\$ 6,694	\$ 135,744	\$ 122.92
-10%	-20.0%	\$ 3,008	\$ 3,228	\$ 4,093	\$ 5,176	\$ 5,925	\$ 4,988	\$ 5,589	\$ 5,553	\$ 5,389	\$ 5,641	\$ 6,636	\$ 6,741	\$ 6,698	\$ 6,597	\$ 6,431	\$ 5,804	\$ 5,911	\$ 6,021	\$ 6,134	\$ 6,248	\$ 128,160	\$ 115.54
-20%	20.0%	\$ 5,216	\$ 5,527	\$ 6,414	\$ 7,562	\$ 8,422	\$ 7,268	\$ 7,918	\$ 7,937	\$ 7,823	\$ 8,122	\$ 9,450	\$ 9,604	\$ 9,572	\$ 9,461	\$ 9,258	\$ 8,342	\$ 8,483	\$ 8,626	\$ 8,774	\$ 8,922	\$ 175,699	\$ 164.75
-20%	10.0%	\$ 4,778	\$ 5,064	\$ 5,951	\$ 7,084	\$ 7,920	\$ 6,826	\$ 7,468	\$ 7,478	\$ 7,357	\$ 7,648	\$ 8,898	\$ 9,043	\$ 8,912	\$ 8,718	\$ 8,483	\$ 7,878	\$ 8,013	\$ 8,151	\$ 8,294	\$ 8,437	\$ 167,506	\$ 156.51
-20%	0.0%	\$ 4,339	\$ 4,601	\$ 5,487	\$ 6,608	\$ 7,419	\$ 6,384	\$ 7,019	\$ 7,020	\$ 6,891	\$ 7,175	\$ 8,346	\$ 8,483	\$ 8,453	\$ 8,355	\$ 8,178	\$ 7,414	\$ 7,544	\$ 7,678	\$ 7,815	\$ 7,953	\$ 159,316	\$ 148.30
-20%	-10.0%	\$ 3,901	\$ 4,139	\$ 5,024	\$ 6,131	\$ 6,918	\$ 5,843	\$ 6,571	\$ 6,563	\$ 6,425	\$ 6,703	\$ 7,795	\$ 7,923	\$ 7,895	\$ 7,703	\$ 7,468	\$ 6,951	\$ 7,077	\$ 7,205	\$ 7,337	\$ 7,470	\$ 151,131	\$ 140.10
-20%	-20.0%	\$ 3,463	\$ 3,676	\$ 4,562	\$ 5,655	\$ 6,418	\$ 5,502	\$ 6,123	\$ 6,106	\$ 5,961	\$ 6,232	\$ 7,244	\$ 7,366	\$ 7,338	\$ 7,253	\$ 7,100	\$ 6,489	\$ 6,610	\$ 6,733	\$ 6,860	\$ 7,000	\$ 142,953	\$ 131.92

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Buy	Expected total return (including expected capital gains and expected dividend yield) of more than 10% over a 12-month period.
Hold	Expected total return (including expected capital gains and expected dividend yield) between 0% and 10% over a 12-month period.
Sell	Expected negative total return (including expected capital gains and expected dividend yield) over a 12-month period.

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**THE VALUE OF MONROE ENERGY, LLC FOR
DELTA AIR LINES, INC. AMID A BEARISH FUEL
OUTLOOK**

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STUDENT NUMBER 33968

A Project carried out on the Master's in Finance Program, under the supervision of:

Professor Rosário André

January 3rd, 2020

Abstract

Back in early 2019, speculations on Delta intentions to sell-off its refinery plant arise. Though, 2019 shown to be a tough year for oil markets, with major producers founding the industry in an oversupply situation and with prices dipping. Hedging activity, for those airlines adopting that policy, yielded significant losses, given the unexpected decline in fuel prices. Delta, *via* Monroe Energy (under normal activity conditions), has historically managed to obtain average costs per gallon below its peers' cost, therefore intentions to unload a partial stake of the refinery are interpreted as being more a strategic rather than a financial matter.

Keywords

Jet Fuel, Monroe Energy LLC, Airlines, Hedging

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The Attempt To Sell Monroe Energy LLC

During 2018, near the end of September quarter, Delta Air Lines, through some investment banks, namely Barclays and Jefferies, tried to organize the auction (at least partial) of its refinery plant, acquired in 2012 (for \$150 mln), i.e., Monroe Energy LLC. Though, Delta was not able to find an investment partner. At the time, Paul Jacobson, Delta's CFO, stated that "after several years of ownership it was natural for Delta to seek other opportunities to optimize the benefits to Delta and maximize the value of other aspects of the refinery for a potential joint venture partner", suggesting that the airline's intentions were more strategic-oriented rather than purely financial, especially given the fact that in the previous FY (i.e., 2017) the Trainer refinery has yielded positive operating income, which ultimately contributed for the reduction of the average cost per fuel gallon. Though, during 2018, refinery's operations were disrupted for a 60 days period, due to a planned maintenance intervention. This negatively impacted Monroe's margins and, consequently, Delta's fuel costs supported. Taking into consideration both Monroe's financial condition (which suggests to positively affect Delta's results under normal activity conditions) and its business specificities, gives enough evidence to understand Delta's move as an attempt to find a strategic specialized-partner with whom the airline could share the risks associated with running an energy business. Given the increasing concerns around oil markets, namely price unpredictability, trade-wars, environmental and regulatory matters, such as IMO 2020, or the legal requirements to purchase credits for allowance to operate, i.e., Renewable Identification Numbers ("RINs")), seems that the refinery segment of the company is becoming more complex and requiring more oversight from Delta's management, which would imply more focus in detriment of its core airline's business. That coupled with a required and continuous CAPEX investments (as oil refinery is a capital-intensive industry) poses the trigger seen behind Delta's decision to divest on Monroe.

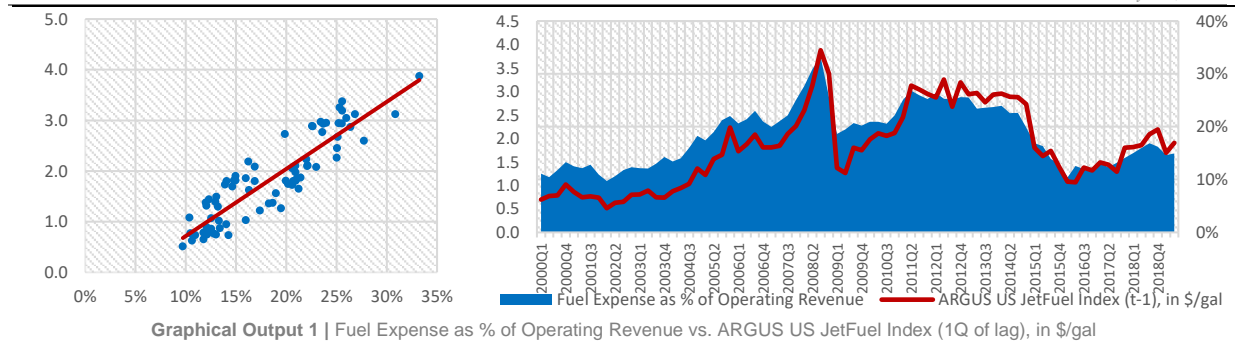
Impact Of Fuel Prices On Airlines' Profitability

Before moving into a more detailed analysis it matters to understand the magnitude of airlines' exposure to fuel prices volatility and how does it impact their profitability. Considering the weekly returns of airlines' stocks against the market price of oil (WTI Cndty) performance, it is possible to assess that it exists a moderate negative correlation between the two variables, *i.e.* between -0.50399 and -0.39900 (depending on the Industry Index considered). However, looking for each peer, American Airlines (AAL) somehow detaches from the pattern here being traced, given its low correlation coefficient, suggesting that, its stock

performance is not so much adversely affected by positive fluctuations in the fuel price, as other peers demonstrate to be – a topic to develop further. Though, these numbers only provide a broad picture of the adverse impact that increases in the fuel prices have in the airlines’ stock performance. To better realize the nature of that impact on airlines’ profitability a correlation analysis between the fuel prices variation and the US airlines’ operating margin was performed, considering data from 2000 until 2018 (or 2019Q3, when available). This exercise has shown correlation coefficients below -0.30 (comparing with both WTI Cmdty and ARGUS US Jet Fuel Index, -0.28320 and -0.29593, respectively). Looking at an “even deeper” level of profitability (*i.e.*, net margin) the correlation found is much less evident as well, yielding coefficients around -0.14. This is largely explained by 3 factors: *i)* airlines’ typically passthrough fluctuations in fuel costs to passengers in order to mitigate part of the inherent adverse effect of it (reducing so the volatility of their profit margins); *ii)* even being that much volatile, fuel expenses historically make up to ~20.5% of OPEX and ~21.3% of revenues, on average, and do not exceed 31.6% and 32.8%, respectively; *iii)* airlines do typically hedge against fuel price risk, which distorts the impact fuel price fluctuations would have otherwise (this particularly explains the poor correlation with the net margin, as a significant part of hedge activity income/losses comes reflected after the operating income). However, if performing the same correlation test considering the fuel expense as % of operating revenues and as % of OPEX, it might be found evidence of strong negative correlation (around -0.90). For this analysis, quarterly data until 2019Q3 were used, and that allowed to verify that the stronger correlation between fuel prices and fuel expense as % of operating revenue is obtained when considering the fuel prices with 1-quarter of lag (*i.e.*, the prices from the historical quarter before the reference period). This somehow traduces the common practice amongst airlines to cover their fuel needs upfront, typically by entering in forward and/or swap contracts with 1-3 months of antecedence. Overall analysis output with statistical evidence to support these findings can be found just after.

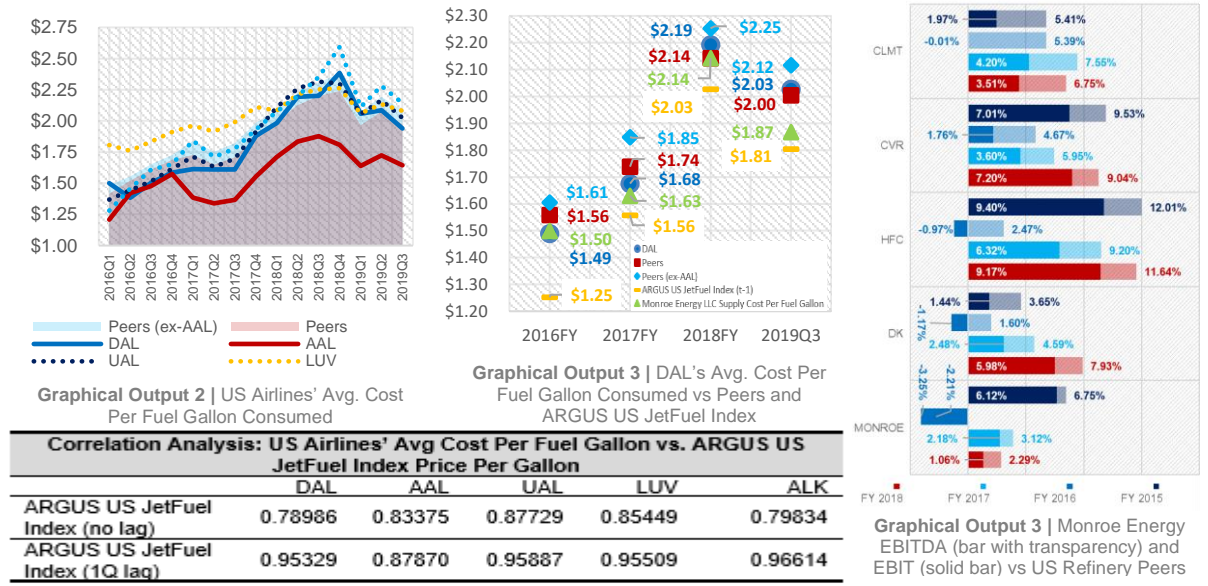
Correlation Analysis: US Airlines’ Stock Performance vs. WTI Cmdty Performance							
Stock	DJUSAR Ind	AXGAL Ind	DAL US Eq	AAL US Eq	UAL US Eq	LUV US Eq	ALK US Eq
Correl Coeff	-0.50399	-0.39900	-0.38311	-0.20998	-0.30356	-0.48951	-0.75521
Correlation Analysis: US Airlines Profit Margins and Fuel Expense vs. Oil/Fuel Prices					Other Statistical Info		
	WTI Cmdty		ARGUS US JetFuel Index		Max	Min	Avg.
Operating Margin (%) ¹	-0.28320		-0.29593		16.6%	-11.3%	3.3%
Net Margin (%) ¹	-0.13906		-0.14199		14.7%	-24.1%	-0.3%
Fuel Exp as % of OPEX ¹	-0.97242		-0.96013		31.6%	11.7%	21.3%
Fuel Exp as % of Operating Revenue (Fuel without lag) ²	-0.88323		-0.89741				
Fuel Exp as % of Operating Revenue (Fuel with 1Q of lag) ²	-0.91237		-0.90096		33.24%	9.71%	18.31%

¹ based on yearly data (2000-2018); ² based on quarterly data (2000-2019Q3)



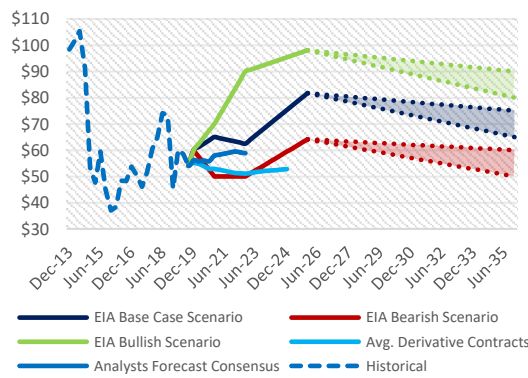
Monroe Energy LLC, Is Delta Taking The Upsides Of It?

Monroe Energy has an installed capacity to fulfil around 75% of DAL’s fuel needs, though only in 2017 and during 2019 it was in full scale activity. Thus, to assess the magnitude the refinery’s operations impact on DAL’s fuel cost supported, one may compare its average cost per fuel gallon with the one supported by its peers throughout the time. For this purpose, quarterly financial data from 2016Q1 to 2019Q3 was considered. The findings of this analysis show that under Monroe’s normal activity conditions, DAL is able to obtain an average cost per fuel gallon below its peers’ combined average. In fact, only in 2018FY DAL has supported higher fuel costs than its peers (\$ 2.19/gal vs. \$ 2.14/gal), and that might be partly explained by the 60 days of disruption in Monroe’s production due to a planned technical maintenance event that occurred during the year. On average terms, during the analysis period, with exception of 2018FY, the average cost per fuel gallon supported by DAL was \$ 0.04/gal lower than its peers. That was somewhat backed by the Monroe’s average supply cost per fuel gallon below the average price DAL’s peers support. Even though, one should be cautious when looking at these numbers and not trace direct links to Monroe’s profitability, because despite 2018FY has been the only year when DAL’s fuel costs per gallon were higher than its peers, in fact that year Monroe reported a operating income of \$58mln. In opposite, in 2016FY, Monroe had an operating loss of \$125mln, which was traduced in an average supply cost per fuel gallon of \$1.50, above DAL’s reported average cost per fuel gallon consumed of \$1.49. Notwithstanding, this well poses the direct linkage existing between the refinery’s profitability and the magnitude of its contribution to DAL’s overall fuel cost. Regarding profitability of operations, it precisely where major concerns might arise for Delta (and that might pose the financial motivation to sell-off Monroe) given that, despite the positive contribution for the airline’s fuel cost supported, Monroe has been showing a deterioration of its profit margins – in 2018FY, EBITDA margin was 2.3% and the operating margin was 1.1%, 2.95x and 5.76x lower than in 2015FY, respectively. This concerns gain even more relevance when comparing to other refinery peers in the US, which during the same period managed to boost these margins.



Hedging And Fuel Prices Outlook

Lastly, in line with analysis conducted so far, it matters to enhance the below-average costs of fuel supported by AAL. Through the performed correlation analysis between US airlines' average cost per fuel gallon consumed and the ARGUS US JetFuel Index price per gallon, it was possible to infer that AAL was the airline with lower correlation when considering it with 1Q of lag, suggesting that the company does not rely that much on fuel price risk hedging instruments. In fact, since AAL merged with US Airways, in 2013, a non-hedging policy was implemented (instead, the airline passthrough the fluctuations in fuel prices to passengers' fares). This seems to be paying-off the risk and is one of the major explanations for AAL's lower cost with fuel, particularly comparing to DAL, that since 2015 has accumulated ~\$1.2bln in fuel hedge losses (only during the 2 last years achieved some gains). United Airlines (UAL), that followed a hedging policy until so far, stopped to do so in 2018. Explanations for that philosophy shift, that starts to be seen amongst US airlines, rely on 2 major factors: *i*) in fact, when entering in hedging contracts, regardless of the derivative instrument, companies bear some additional transaction costs, hence in order to gain on hedge, they not only need fuel prices to go above the price they lock, as they "need" even higher fuel prices to reward the extra transaction cost they support; *ii*) latter years, US airlines' hedging contracts have locked prices way above what they actually become, largely because market has gradually became oversupplied driving fuel prices to a weak growth, or even to decrease. Concerning this, in fact, in the explicit horizon until 2022, projections for fuel price does not go beyond \$62.5/bbl (and \$65/bbl, in 2020) and the uncertainty around it shows a wider bearish sentiment rather than a bullish (as it used to be) and that seems keen to remain - further detail on fuel prices forecast just below.



Graphical Output 4 | WTI Comdty (Oil/Fuel) Prices Forecast
[Sources: see signalled references(F) in the end of this paper]

Events That Could Disrupt EIA's Base Case Scenario

- ▼ Global economy stagnates and dampens oil demand growth;
- ▼ OPEC fails on its supply cuts strategy and/or abandons price control mechanisms aiming to defend its market share and keep absorbing benefits of scale production;
- ▼ US shale oil keeps growing, offsetting OPEC's throughput cuts;
- ▲ Venezuelan production drops deeper below 1MMb/d and tougher sanctions reduce Iranian output by +0.5MMb/d, leading to further disruption in OPEC's supply capacity to absorb demand;
- ▲ MARPOL finds shipping industry unready to comply with IMO2020 sulphur cap and fulfil end-user demand;
- US-China Trade War: Impact on oil prices is dependent on whether both economies achieve an agreement to soften tensions and rebound world economy (▲) or they intensify sanctions on each other's trade agreements, leading to further slowdown in China's economy, hence further slowdown in oil demand (▼);
- ▼ Commitments to reduce businesses' environmental impacts, such as carbon-neutrality, or the introduction of new more efficient aircraft engines in airlines industry, dictates a sooner than anticipated turnaround in energy sources, promoting a slash in oil demand.

Final Thoughts

With demand growing less than expected, during 2019, OPEC shown some flexibility by cutting outputs in order to put a floor under oil prices. Though, if demand growth keeps decelerating, it is not predictable until when this OPEC's strategy will be economically efficient, as it will constraint scale production and refineries' production break-even might be questioned, so as their profitability. Moreover, by now only IMO 2020 and some progresses towards a deal in US-China tension is driving the base case and bullish sentiment on fuel. On the other hand, nowadays, behavioural concerns are progressively weighing more on demand rather than the pure economic perspective, particularly given the insurgence of new more sustainable energy sources and efforts towards fuel consumption efficiency, driving the industry to an oversupply condition. The evidence found prove that Monroe positively contribute to reduce Delta's fuel cost, but, having it all, until which fuel price level is it worthy for Delta to keep the refinery's supply? This question arises because the upsides that Delta capture from Monroe are mainly driven by the lower crack spreads (*i.e.*, the cost to refine oil into jet fuel) it can generate and associated fuel transportation costs. Though, if the pure cost of Brent falls lower than a certain level, Monroe's ability to supply refined jet fuel at an economically competitive prices, *i.e.* below its comps with larger production capacity (hence lower crack spread), is limited (particularly given its trend of profit margins deterioration) and, in such scenario, Delta would be better-off without Monroe's supply. To have a clear picture and robust evidence of this rationale, one should perform a break-even analysis, however Delta lacks on providing the proper segregation between Monroe's fixed and variable costs that is required to do so.

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