

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 Airlines: “Connecting the World”

Frane Kostelic 33885

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Rosário André

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Abstract

We conducted a thorough equity research on major American legacy carrier Delta Airlines. By doing an analysis of general macroeconomic conditions in different regions of the world, analysis of the main competitors of the company, finally followed by a fundamental analysis of Delta Airlines, we concluded that the before mentioned company is heavily undervalued by the markets. Based on the outcome of our research, we gave a strong buy recommendation of the company stock.

Keywords

Airline

Share

Valuation

Revenues

DELTA AIRLINES

AIRLINE/AVIATION

STUDENT: FRANE KOSTELIC

COMPANY REPORT

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33885@novasbe.pt

- The targeted price was calculated using DCF method, it amounted to 71.48\$ for 2020 fiscal year. Since the currently listed price on NYSE is 57.07\$, positive difference in calculated price and current price led us to give you a strong BUY recommendation.
- Delta wants to establish its position as the leading airline in the United States where the competition is fierce, but also exploit the growth opportunities in currently fastest developing aviation market, the APAC region.
- We have a positive view on the equity market as a whole, as the general macroeconomic factors don't indicate that there should be a recession in the upcoming year.
- There is also a positive view on the entire airline industry, as we believe that the sector as a whole is currently undervalued by the markets. The major United States airlines are those that are suffering the most, as they are currently way cheaper in comparison to their European and Asian peers.
- Delta Airlines is currently the most profitable airline in the United States. It has competitive advantage over its competitors in terms of global network of connections, customer loyalty, but also in operational terms. It has better margins than most of its peers, but also healthier balance sheet than any of them. Based on that, we are certain that its fair stock price should be much higher than the current market price.

Recommendation: BUY

Price Target FY20: 71.48 \$

Price (as of 3-Jan-20) 59.04 \$

Source: Bloomberg Mid Price

52-week range (\$)	45.61-63.16
Market Cap (\$m)	37,096
Outstanding Shares (m)	650
Total Shareholder Return	30,34%

Source: Bloomberg

**Cumulative Returns
(Factor 100)
FY 2008 – FY2018**



White line: Delta Airlines Stock

Purple line: S&P 500 Index

Green line: Dow Jones Transportation Average Index

Source: Bloomberg

(Values in \$ Billions)	2018	2019E	2020F
Revenues	44,38	46,31	45,33
EBITDA	9,68	8,6	8,10
Net Income	3,83	4,69	2,96
EPS	5,69	7,07	4,46
P/E	11.5	8,35	16,03

Source: Annual Report, Analyst Estimates and FS Forecast

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(PLEASE REFER TO THE DISCLOSURES AND DISCLAIMERS AT END OF THE DOCUMENT)

Table of Content:

1. Company Overview

1.1. Company Description

1.2. Shareholder Structure

2. The Sector

2.1. North America

2.1.1. Macroeconomic Scenario

2.1.2. Aviation Industry

2.2. Europe

2.2.1. Macroeconomic Scenario

2.2.2. Aviation Industry

2.3. Asia – Pacific

2.3.1. Macroeconomic Scenario

2.3.2. Aviation Industry

3. Valuation

3.1. Revenues

3.2. Costs

3.3. Net Working Capital and CAPEX

3.4. Capital Structure

3.5. Cost of Debt

3.6. Cost of Equity

3.7. DCF Analysis

3.8. Relative Valuation

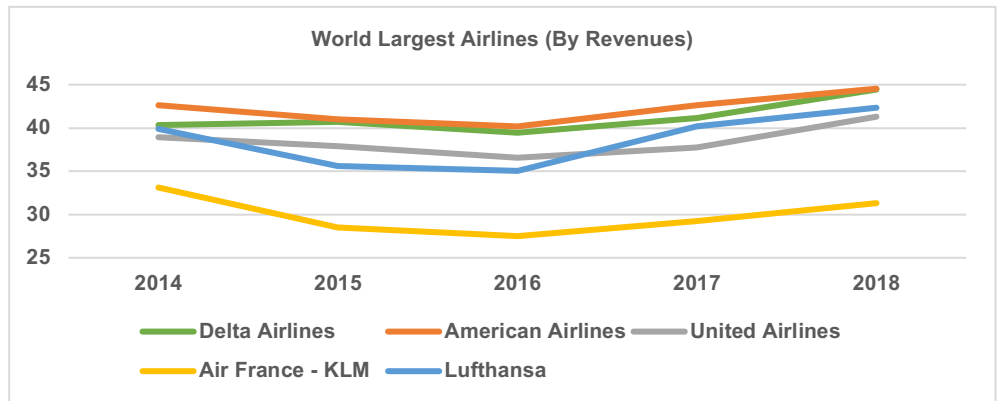
Company overview

Company description



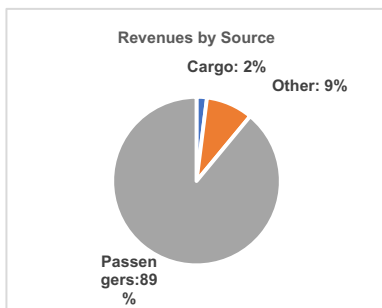
Delta Airlines is a major passenger airline that provides scheduled air transportation for passengers, as well as for cargo, throughout the United States and around the world. The company was founded in 1928 in Monroe, LA, USA. Today, it is one of the world largest airlines measured by revenues and fleet size.

Exhibit 1: World largest airlines by revenues (In USD Billions)



Source: Bloomberg

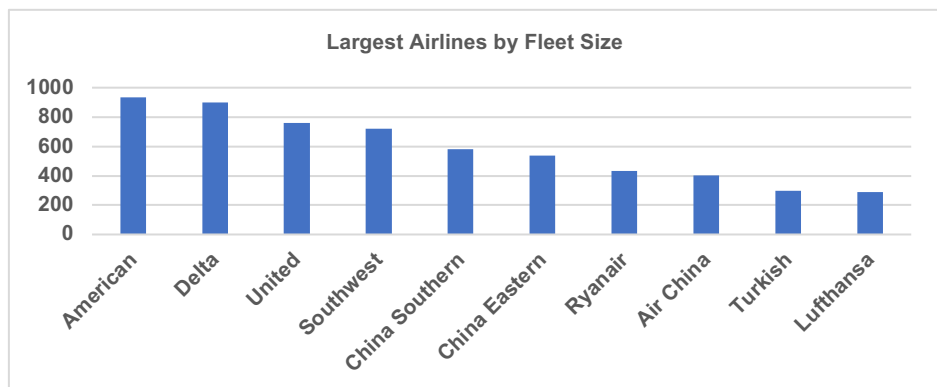
Exhibit 3: Revenues by Source



Source: Company Data

Delta Airlines serves more than 200 million people annually, taking its customers to more than 300 destinations in over 50 countries. The company employs more than 80,000 people worldwide and its mainline fleet consists of more than 800 aircrafts. Nowadays, the firm is incorporated under the laws of State of Delaware, while having its main executive offices located at Hartsfield – Jackson Atlanta International Airport in Atlanta, Georgia.¹

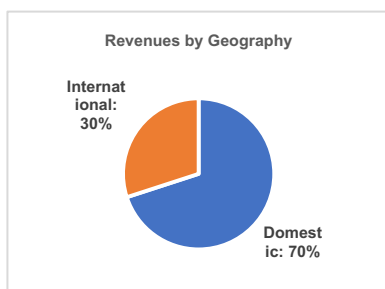
Exhibit 2: World largest airlines by fleet size



Source: Company Annual Reports

¹ Corporate Stats and Facts. (2019). Retrieved 11 November 2019, from <https://news.delta.com/corporate-stats-and-facts>

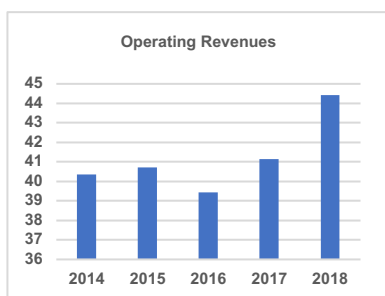
Exhibit 4: Revenues by Geography



Source: Company Data

Delta Airlines derives its revenues primarily from providing services to its customers. Passenger segment comprises of main cabin tickets, business cabin and premium products tickets, loyalty travel awards and travel related services. Aforementioned services combined accounted for 90% of the company revenues in 2018 (USD 39,56 billion). Main cabin tickets are by far the most important source of revenues accounting for 53% of passenger revenues or USD 21,2 billion. Other revenues of the company include ancillary business and refinery, loyalty programme and miscellaneous. These services jointly amounted to USD 3,80 billion in revenues in 2018. Finally, last source of revenues for Delta Airlines are cargo services provided for third parties, these services hold a share of 2% in total revenues of the company (USD 0,87 billion in 2018).

Exhibit 5: Operating Revenues (USD B)

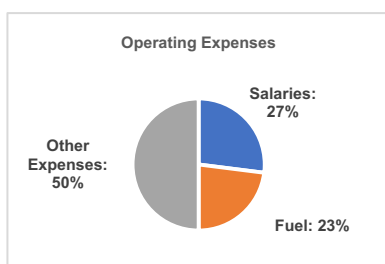


Source: Company Data

Delta Airlines provides transportation services on a daily basis to all major hubs around the world. However, majority of its passenger revenues can be derived from services provided to passengers within the United States, more precisely, 70%. When it comes to international revenues, they can be split up between Atlantic, Latin America and Pacific regions. International revenues account for 30% of passenger revenue segment. Although it looks like Delta is overexposed to the domestic market, all of its peers except United Airlines have larger amount of revenues being attributable to domestic operations.

Total operating revenues of the company amounted to USD 44,44 billion in 2018, which is a significant growth (+8,0%) in comparison to 2017, when operating revenues of the company were equal to USD 41,14 billion. The growth was mainly driven by strong demand for company's premium products and increase in revenues from non – ticket sources, as well as by increase for demand in air travel.

Exhibit 6: Operating Expenses



Source: Company Data

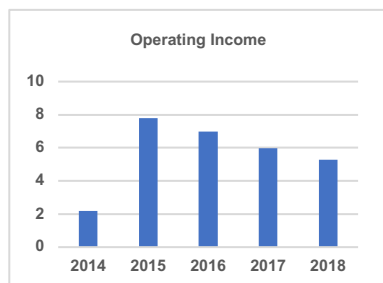
Costs related to salaries/wages contributed to 27% of total operating expenses of the company in 2018. This was the largest single cost caption in 2018, and it amounted to USD 10,7 billion. This number is very similar to the salary costs incurred by its peers (On average, one quarter of airline expenses is spent on salaries). In the same calendar year, fuel expenses amounted to USD 9,0 billion accounting for 23% of total operating expenses. Important fact to be mentioned related to the costs is that on average, Delta spends less on fuel than its competitors. The reason behind is that the company is the only US airline that has its own refinery, which makes it less vulnerable on volatility of oil prices. This is a very important competitive advantage that Delta Airlines have over its competitors. Overall operating expenses in 2018 amounted to USD 39,2 billion, marking a 11,4% year over year increase. Higher operating expense primarily

comes as a consequence of 31% increase in fuel prices and increase in pay rate for eligible employees implemented during 2018.

Net income in 2018 amounted to USD 3,9 billion, representing a significant increase of 22,8% year over year (USD 3,2 billion in 2017). The increase can be attributable to large decrease in income tax provisions. The decrease of U.S. federal statutory income tax rate from 35% in 2017 to 21% in 2018, ultimately decreased the company effective income tax rate, further decreasing income tax provision.

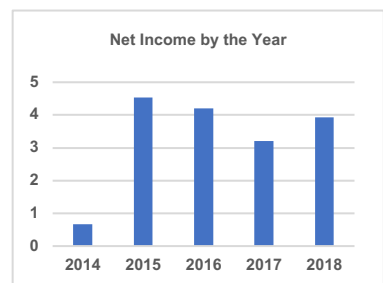
Historically, the company has been paying dividends to its shareholders on quarterly basis. In March 2019, the board of directors declared to pay a 23rd consecutive quarterly dividend (USD 0,35 per share) to its shareholders.² It is important to mention that cash dividends declared per share have been growing for five consecutive years. The growth does not come as a consequence of increasing payout ratio, but rather as a result of better financial performance (higher earnings per share). The company is aiming to maintain its payout ratio at around 20%.

Exhibit 7: Operating Income (USD B)



Source: Company Data

Exhibit 8: Net Income (USD B)



Source: Company Data

Exhibit 9: EPS and dividends

	2014	2015	2016	2017	2018
Basic Earnings Per Share	0,79	5,68	5,59	4,45	5,69
Diluted Earnings Per Share	0,78	5,63	5,55	4,43	5,67
Cash Dividends Declared Per Share	0,30	0,45	0,68	1,02	1,31

Source: Company Data

As it can be concluded from previous paragraphs as well as from table above, the company does take care about their shareholders. The dividends per share have been growing and are being paid regularly.

The Delta Airlines is currently listed on 7 different stock exchanges around the world. Most of them are located in the United States, but there is also listing in London as well as in Brazil. However, the main listing occurred on 1st of May 2007 at New York Stock Exchange (Symbol: DAL), just days after company exited bankruptcy after 19 months of restructuring.³

² Delta Air Lines declares 23rd consecutive quarterly dividend. (2019). Retrieved 11 November 2019, from <https://news.delta.com/delta-air-lines-declares-23rd-consecutive-quarterly-dividend-0>

³ Delta exits bankruptcy after 19-month restructuring. (2019). Retrieved 11 November 2019, from <https://www.reuters.com/article/us-delta-bankruptcy/delta-exits-bankruptcy-after-19-month-restructuring-idUSWNAS850820070430>

The company filed for bankruptcy in September 2005, after it was hit by rising fuel costs and decreasing fares caused by low – cost competitors. However, these were obviously not the only problems faced by the company, as it has not reported a profitable quarter since 2000. In following 19 months Delta cut USD 1 billion in labour costs as it restructured the union contracts and eliminated 6,000 jobs. It also cut plenty of unprofitable routes and added 60 international routes. Finally, the company rejected a hostile takeover bid from another major US airline, successfully persuading the creditors to stick to its go – it – alone strategy.

Important fact to mentioned is that during a restructuring, new shares were issued in order to finance the restructuring plan. On the other hand, the holders of old shares ended up receiving nothing as these shares became worthless.

Nowadays, the Delta Airlines stock is part of 107 different equity indices including Dow Jones U.S., S&P 500, Russel 3000, Nasdaq US 500, Bloomberg World Airlines Index, US Global Jets Index, Dow Jones transportation average, dozens of MSCI indices and many more.

Shareholder Structure

Delta Airlines has 1153 institutional holders that jointly hold around 568 million of common shares or 87,95% of 647 million shares outstanding. The single largest shareholder is Berkshire Hathaway Inc having in possession 10,96% or 70,9 million of Delta Airlines stocks. Other institutional investors holding significant positions in the company stock are large asset managers such as Vanguard Group and BlackRock as well as large banks such as Bank of America, JP Morgan and UBS. In 2019, 524 of institutional shareholders increased their position in company stock, 486 of them decreased their positions, while 143 of institutional shareholders held their position.⁴ Not insignificant fact is that Warren Buffett company Berkshire Hathaway increased its position in the company last year.

Exhibit 10: Largest Institutional shareholders

Holder Name	Position	% Holding
Berkshire Hathaway Inc	70.910.456,00	10,96
Vanguard Group Inc/The	45.799.957,00	7,08
BlackRock Inc	34.180.783,00	5,29
PRIMECAP Management Co	28.374.171,00	4,39
State Street Corp	20.663.203,00	3,19

⁴ About See All About Our People Careers Press Center Contact Quick Links Nasdaq Marketsite Investor Relations Diversity, I., Quick Links Nasdaq Marketsite Investor Relations Diversity, I., & Diversity, I. (2019). Delta Air Lines, Inc. Common Stock (DAL) Institutional Holdings. Retrieved 11 November 2019, from <https://www.nasdaq.com/market-activity/stocks/dal/institutional-holdings>

Lansdowne Partners UK LLP	17.970.402,00	2,78
Newport Trust Co	12.607.871,00	1,95
Bank of America Corp	11.590.314,00	1,79
PAR Capital Management Inc	9.891.190,00	1,53
JPMorgan Chase & Co	9.718.036,00	1,50

Source: Bloomberg Terminal

Furthermore, The Board of Directors of Delta airlines believes that delta executive officers should own and hold Delta common stock to further align their interests with the interests of Delta's stockholders. Therefore, the Board has adopted Stock Ownership Guidelines for executive officers.⁵ Currently, there is 23 executive officers and managers holding company shares. These account for minor part of total ownership structure, more precisely, 0,30% of company common stock. Mr. Paul Jacobson holds 0,07% of company common stock in his possession, followed by the current CEO of the company Mr. Edward Bastian who has 0,05% of the company common stock. Mr. Glen Hauenstein, who serves as president of the board, follows them with 0,04% of company stock. All other executive officers and managers have significantly smaller holding percentage.

Exhibit 11: Executive officers and managers holdings

Holder Name	Position	% Holding	Role
Jacobson Paul A	437.977,00	0,07	Exec. VP and CFO
Bastian Edward H	354.191,00	0,05	CEO
Hauenstein Glen W	267.526,00	0,04	President of the Board
Mattson George N	103.660,00	0,02	Independent Director
Smith Joanne D	93.600,00	0,01	Exec. VP and CHR

Source: Bloomberg Terminal

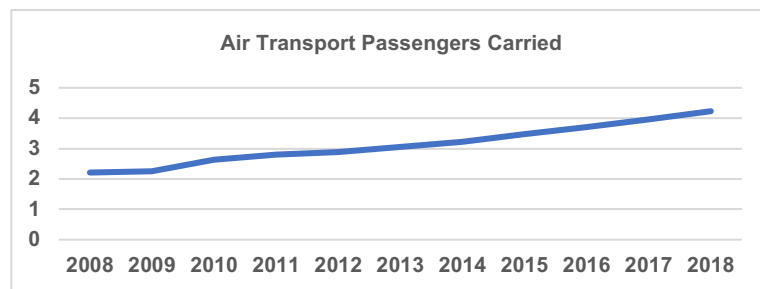
The Sector

Air travel has become an ongoing trend. People have historically travelled for various reasons, but more often chose other means of transportation rather than air travel. Nowadays, flying has become affordable to wider population as fare prices went down. Time is more valuable than it was before, so more and more people decide to cover even shorter distances by using air transport rather than road travelling. Besides these, the aviation sector growth has been driven by

⁵ (2019). Retrieved 11 November 2019, from https://s2.q4cdn.com/181345880/files/doc_downloads/governance/STOCK-OWNERSHIP-GUIDELINES.PDF

continuous robust economic growth, improvements in household income and favourable population and demographic profiles. In 2018, there were around 4 billion passengers carried worldwide and it doesn't stop there. The international Air Transportation Association (IATA) expects that number to double in next 20 years and reach a number of 8 billion in 2037. The major driver of this growth will be the APAC region, accounting for more than half of new passengers over the next 20 years.⁶

Exhibit 12: Air transport, passengers carried (in billions)



Source: World Bank

Delta Airlines operates in different geographic areas, so in order to precisely analyse the aviation industry, it is important to consider the industry trends in the different regions around the world. The differences between the regions are primarily related to macroeconomic factors such as GDP, unemployment and real wages. Besides usual macroeconomic factors that affect more or less every industry, there are other, sector specific factors, that heavily influence the performance of the company. As an airline, Delta is heavily dependent on aircraft fuel prices, employee strikes, terrorist attacks, tourism sector growth, air travel demand, etc. North America is by far the most important region for Delta Airlines, as majority of revenues are attributable to North America, however, we don't expect that the company will find many organic growth opportunities there. What we do expect from the management of the company is to seek these growth opportunities in APAC region. The reason behind is that we don't believe there is much space left to grow organically in fully developed regions like North America, but the company should rather look for hot markets that are currently being developed.

Besides being Delta's largest hub by far (more than 1000 daily departures to 220 destinations a day), Atlanta is the busiest airport in the world. However, Delta uses several other hubs within the United States: Cincinnati, Detroit, Los

⁶ IATA Forecast Predicts 8.2 billion Air Travelers in 2037. (2019). Retrieved 13 November 2019, from <https://www.iata.org/pressroom/pr/Pages/2018-10-24-02.aspx>

Angeles, Minneapolis – St. Paul, Salt Lake City, Boston, Seattle – Tacoma and LaGuardia as well as John F. Kennedy airports in New York City. Delta also has international hubs in Paris, London, Amsterdam and Tokyo.⁷

North America

Macroeconomic Scenario

Revenues generated by the operations conducted on home soil are of vital importance for Delta Airlines. In order to properly determine the future prospects of the region, one has to observe various macroeconomic factors. North America has been leading global economy for ages, but as all other world economies, it had its ups and downs. Since the 2008/09 financial crisis, the real GDP in USA has been constantly growing (In 2009, it declined by 2,5%).⁸ However, the growth is expected to slow down in next couple of years, due to the trade tensions between the USA and China. Also, these expectations might change in the future based on the outcome of negotiations between these two leading economies. In case of more favourable agreement between two countries is reached, the real GDP growth expectation for upcoming years is going to increase.

Exhibit 13: Real GDP growth in USA



Source: Statista

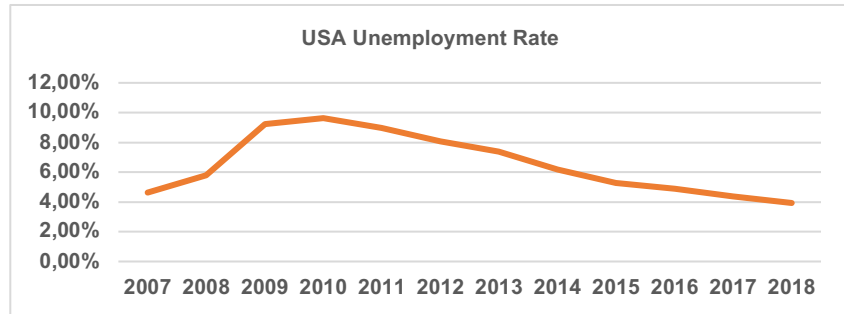
Another important macroeconomic factor that influences demand for air travel is unemployment rate. It reached its peak of 9,63% in 2010, as a consequence of the 2008/2009 financial crisis. Since then, it has been constantly decreasing to reach all time low of 3,93% in 2018.⁹ When observing the unemployment rate curve, one can be optimistic about the future prospects of the country.

⁷ <https://www.travelandleisure.com>. (2019). Retrieved 12 November 2019, from <https://www.travelandleisure.com/airlines-airports/delta/delta-uncensored-unedited-versions-booksmart-rocketman-lgbt-in-flight-movies>

⁸ U.S. - GDP growth by year 1990-2018 | Statista. (2019). Retrieved 12 November 2019, from <https://www.statista.com/statistics/188165/annual-gdp-growth-of-the-united-states-since-1990/>

⁹ United States - unemployment rate 2018 | Statista. (2019). Retrieved 12 November 2019, from <https://www.statista.com/statistics/263710/unemployment-rate-in-the-united-states/>

Exhibit 14: Unemployment rate in USA



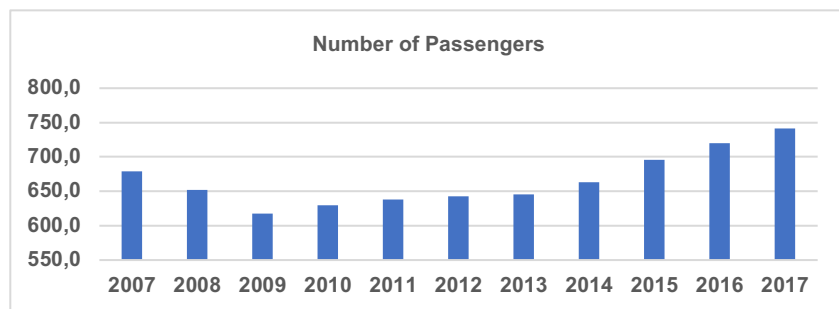
Source: Statista

Finally, third extremely important macroeconomic factor that will further boost demand for air travel are real wages. Average hourly wage is expected to be USD 24,15 by the end of 2019. This is a significant increase on annual basis, as at the end of 2018, average hourly wage amounted to USD 22,99.¹⁰ The growing trend is expected to continue in 2020.

Aviation Industry

Air transport supports more than 7 million jobs and USD 844 billion in economic activity in North America. That accounts for roughly 4,3% of all employment and 4,2% of GDP in the United States and Canada. Furthermore, every single person employed in the aviation sector and in aviation enabled tourism supports another three jobs elsewhere in North America.¹¹

Exhibit 15: Domestic U.S. scheduled airlines annual air traffic (In USD millions)



Source: Bureau of Transportation Statistics

As one can conclude from observing the graph above, the annual number of passengers on scheduled domestic flights in the United States, has been growing since the financial crisis. In 2018, the number of passengers on scheduled domestic flights amounted to roughly 800 million. It is expected to further

¹⁰ United States Average Hourly Wages | 2019 | Data | Chart | Calendar. (2019). Retrieved 12 November 2019, from <https://tradingeconomics.com/united-states/wages>

¹¹ North America. (2019). Retrieved 13 November 2019, from <https://aviationbenefits.org/around-the-world/north-america/>

increase in the upcoming year, what will boost revenues of the companies operating on the various United States airlines.

Another important factor affecting the aviation industry are the demand movements in tourism industry. Domestic travel spending has contributed to around 80% of total contribution of travel and tourism to GDP for the past five year. Also, domestic travellers spent roughly USD 900 billion in 2018, compared to USD 200 billion spent by international visitors.¹² As macroeconomic factors in United States seem to be favourable in the upcoming years, one can also expect that the demand for domestic tourism will keep increasing in the upcoming periods. This is expected to further boost revenues from domestic passenger transport, that as already mentioned, account for 70% of Delta's revenues. Growth in domestic tourism demand in United States is another factor that can make a person optimistic about the future prospects of the aviation industry in the United States.

Europe

Macroeconomic Scenario

The macroeconomic outlook for Europe is quite similar to one for North America. When talking about Europe, we commonly refer to countries of European Union, as Delta's European operations outside of EU are of very minor importance for the company. The GDP in EU has been growing for 6 consecutive years and is expected to continue to do so in the future. However, the growth is expected to slow down, just like in the United States. The growth will further increase the consumer purchasing power and therefore boost the spending.

Exhibit 16: Real GDP growth in the EU



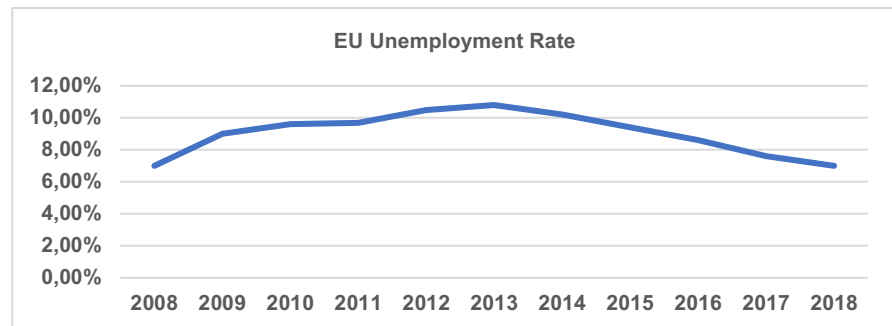
Source: Statista

The unemployment rate has reached its peak of 10,8% in 2013. and has been declining since then. It reached it 10 year minimum of 7% in 2018. and number is

¹² Topic: Travel and tourism industry in the U.S. (2019). Retrieved 13 November 2019, from <https://www.statista.com/topics/1987/travel-and-tourism-industry-in-the-us/>

expected to dive even deeper in 2019, reaching value of around 6,7% at the year end.¹³ Improvement of employment rate will further boost the individual consumer spending and therefore will positively affect the air travel demand.

Exhibit 17: Unemployment rate in the EU



Source: Statista

Real wages have been in growing trend in the EU for the past decade. Average real wage growth in the EU member states in 2018. amounted to 2,55%. This has been the largest average real wage increase in the past decade. Furthermore, the wages are expected to continue with even stronger growth in the next couple of years.¹⁴

By observing the current macroeconomic indicators in the EU, one can conclude that the expectations about the economic well – being are favourable. The main factors have been moving in the same direction as those in the United States. There is no reason to think otherwise but that overall economic growth will have positive impact on the company growth.

Aviation Industry

Air transport supports around 12.2 million jobs in the European economic activity. It accounts for 3,3% of all employment and 4,1% (USD 823 billion) of all GDP. Every worker in the aviation sector and in aviation enabled tourism supports another 4,7 jobs elsewhere in Europe.¹⁵

European destinations accounted for around 12% of total passenger revenues earned by Delta in 2018. Europe is the second most important region for Delta operations after North America. The most important Delta route to Europe is New York (JFK) – London (LHR). There are 6 direct flights a day on this route, operated by Delta Airlines. The passenger traffic between the United Kingdom

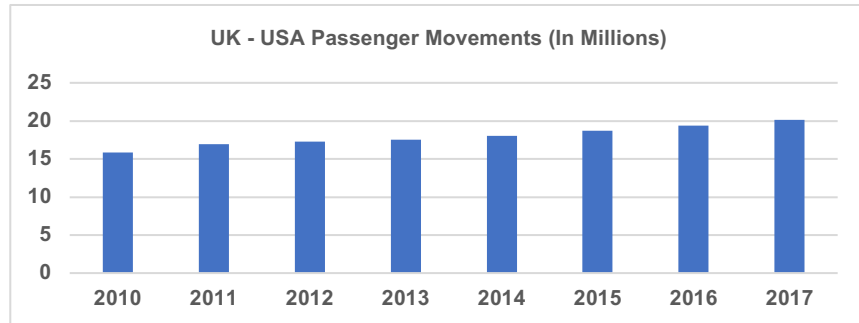
¹³ Unemployment statistics - Statistics Explained. (2019). Retrieved 13 November 2019, from https://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics#Longer-term_unemployment_trends

¹⁴ European Union Wage Growth | 2019 | Data | Chart | Calendar | Forecast. (2019). Retrieved 13 November 2019, from <https://tradingeconomics.com/european-union/wage-growth>

¹⁵ Europe. (2019). Retrieved 13 November 2019, from <https://aviationbenefits.org/around-the-world/europe/>

and the United States has been growing since 2009 and will continue to do so. The United Kingdom is the most important European market for Delta Airlines and it will continue to be so even after the Brexit.

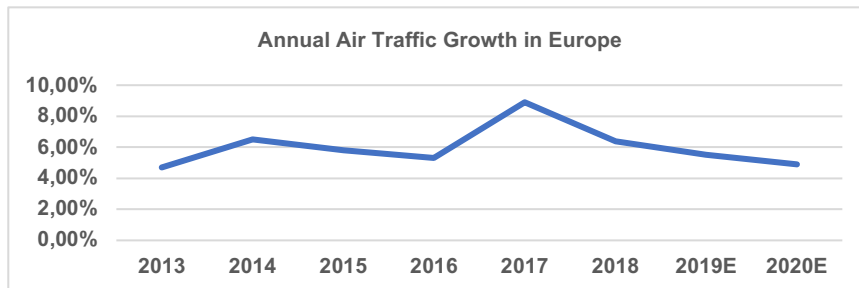
Exhibit 18: Passenger movements between airports in the UK and USA



Source: Civil Aviation Authority (UK)

Besides the United Kingdom, Delta operates direct flights to many other European destinations on daily basis. These include Amsterdam, Paris, Madrid, Barcelona, Brussels, Rome, Milano, Venice, Munich, Frankfurt, Berlin, Lisbon, etc. It also shares profits from intercontinental flights booked via Delta Airlines web page, but operated by one of the members of SkyTeam. For this reason, growth in commercial air travel within Europe has direct influence on Delta financial results. However, growth has been constant since 2013 and as we currently live in an era of favourable macroeconomic conditions, we believe in continuous growth in commercial air travel in the upcoming years. Furthermore, the growth will be slower due to certain political tensions (Brexit) and economic development slowdown in the European leading economy (Germany), but there won't be downturns / negative growth.

Exhibit 19: Annual air traffic growth in Europe



Source: IATA

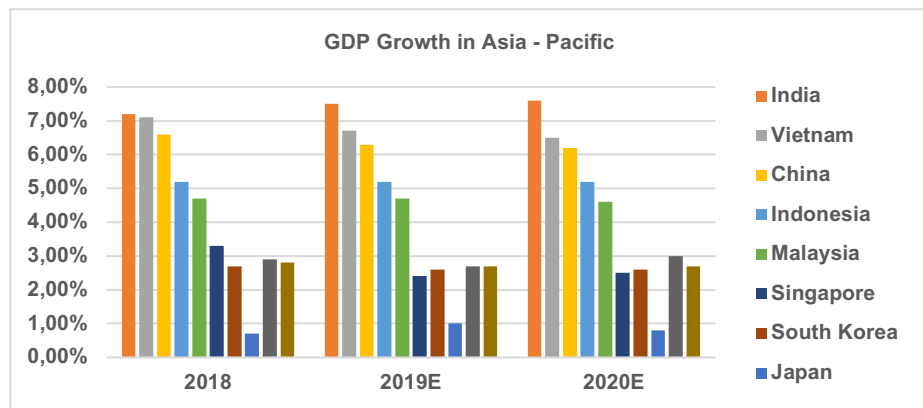
Based on the historical data, current trends and expected future macroeconomic environment, we expect that Delta Airlines revenues attributable to European operations will be growing in the upcoming years.

Asia – Pacific

Macroeconomic scenario

Asia – Pacific has been the fastest growing region in the world for past 20 years. Some of the countries in the region have been growing extremely fast and their growth is about to slow down in the near future (China, Japan, South Korea), while some other started rapid growth not so long time ago (Vietnam, Indonesia, Malaysia). In the upcoming years, Asia – Pacific region will be the fastest growing market after Africa, which just started its rapid development and is not expected to play a crucial role Delta revenue in foreseeable future.¹⁶

Exhibit 20: GDP growth in Asia – Pacific countries



Source: UNESCAP

Half of the graphed countries belong to emerging markets while other half are considered as developed markets. What all of them have in common is plenty of room for further development, as one can conclude from the expected GDP growth. When it comes to other macroeconomic factors, the unemployment rates in Asian countries have been historically lower than in the Europe and United States.¹⁷ However, it varies from country to country. While for instance Singapore had the unemployment rate of less than 2% in 2018, in China it amounted to almost 5%. Important fact to extract from the unemployment data statistics in Asian countries is that in most of them, the rate is either stagnating or is decreasing.

Real wages in Asian countries grow nearly 10 times faster than in world's richest nations such as USA or EU member states. For instance, in South Korea, wages grew by 15% annually since 2008 and it put the country in front of Germany as

¹⁶ FocusEconomics. "The Fastest Growing Economies in the World (2019-2023)." *FocusEconomics | Economic Forecasts from the World's Leading Economists*, www.focus-economics.com/blog/fastest-growing-economies-in-the-world.

¹⁷ Ventura, Luca, and Pham. "Unemployment Rates Around the World 2018." *Global Finance Magazine*, www.gfmag.com/global-data/economic-data/worlds-unemployment-ratescom.

the developed country with the fastest growing wages in last decade.¹⁸ However, despite the growing economies and real wages development in Asia, workers in developed countries earn much higher amounts of money. Important fact is that this gap is getting smaller and smaller, but it might take some time for emerging markets to catch up with developed ones.

Exhibit 21: Real wages growth comparison



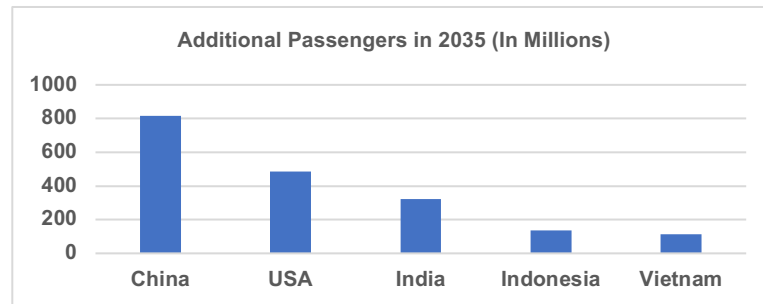
Source: International Labour Organisation

Aviation Industry

Rapid economic expansion of certain Asian countries in the beginning of 21st century resulted in development of the APAC aviation market. Before, the North America was the biggest demand driver for air travel. Today, this title belongs to APAC region with more than half of new passengers arriving from one of the region countries. It is expected that it will keep being the main demand driver at least until 2035. Furthermore, China is going to replace the United States as the world’s largest aviation market somewhere around 2024. In the meantime, India will replace the UK at the third place, while Japan and Indonesia will be ranked 7th and 5th respectively.¹⁹

¹⁸ Writer, Staff. “Asia Wages Grow Nearly 10 Times Faster than in World’s Richest Nations.” *Nikkei Asian Review*, Nikkei Asian Review, 28 Nov. 2018, asia.nikkei.com/Economy/Asia-wages-grow-nearly-10-times-faster-than-in-world-s-richest-nations.
¹⁹ Asia Pacific Leads 20-Year Passenger Demand Forecast. (2019). Retrieved 16 November 2019, from https://www.iata.org/about/worldwide/asia_pacific/Pages/Asia-Pacific-20-Year-Forecast.aspx

Exhibit 22: Fastest growing aviation markets in the world



Source: IATA

As once can see from the graph above, four out of five fastest growing aviation markets in the upcoming year will be from APAC region. During that period, a region is expected to register CAGR of roughly 4%, where the growth in region will be primarily driven by these four countries from the graph. In the entire region, the main growth factors will be the investment in new airports/infrastructure, introduction of new routes and the expansion of airline fleets. Nevertheless, the tourism growth in countries such as Thailand, Malaysia, Singapore, Indonesia, Vietnam, Philippines and other is attracting travellers from all around the globe. Due to just reasons just mentioned, the region is expected to have the highest average annual aircraft fleet growth rate in the next decade, amounting to 4,2%.²⁰ All the statistics and facts referred to in this paragraph relates to the commercial aviation exclusively.

Competition

The competition in airline industry has never been as intense as nowadays. As a result of globalisation, barriers to entry are low and markets are easily accessible. According to International Air Transport Association (IATA), around 1,300 airlines were established in the past 40 years.²¹

Existing airlines expand their businesses to new markets, there are new airlines entering the markets as well, in both cases the competition increases. Every year, more and more people decide to use the air travel for their business trips as

²⁰ Asia-Pacific Aviation Market | Growth, Trends, and Forecast (2019 - 2024). (2019). Retrieved 16 November 2019, from <https://www.mordorintelligence.com/industry-reports/asia-pacific-aviation-market>

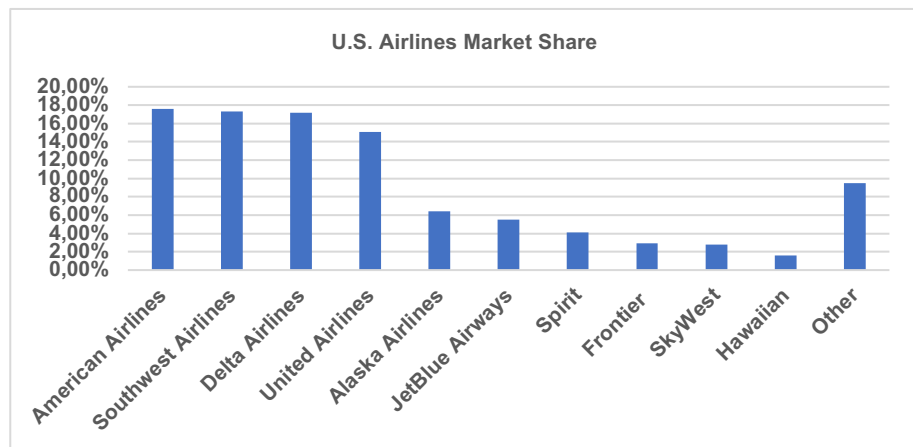
²¹ Competition in airline industry. (2019). Retrieved 16 November 2019, from <https://articles2.marketrealist.com/2014/12/low-entry-barriers-intensify-competition-airline-industry/>

well as when heading off on vacations. There is nothing weird in it as all of them know that there has never been a better time to fly.²²

The crucial reason for that are historically cheap airplane tickets that have become affordable to wider population in the past couple of years. Due to the development of low – cost airlines, the regular carriers had to adapt on new market conditions and start figuring out how to decrease their ticket prices but still stay profitable. In order to solve that issue, many of the major world carriers developed their own low – cost companies to be able to compete on this highly competitive market. This very competitive environment is primarily benefiting the final consumers. They are the ones enjoying technological improvements and new amenities constantly being introduced by the companies, as well as these record low prices.

Delta’s largest competitors are other major US Airlines including American Airlines, United Airlines, Southwest Airlines, Alaska Airlines and JetBlue Airways. These five companies, combined with Delta, had roughly 80% of market shares in the United States from July 2018 to August 2019.

Exhibit 23: Domestic market share of leading U.S. Airlines in 2018



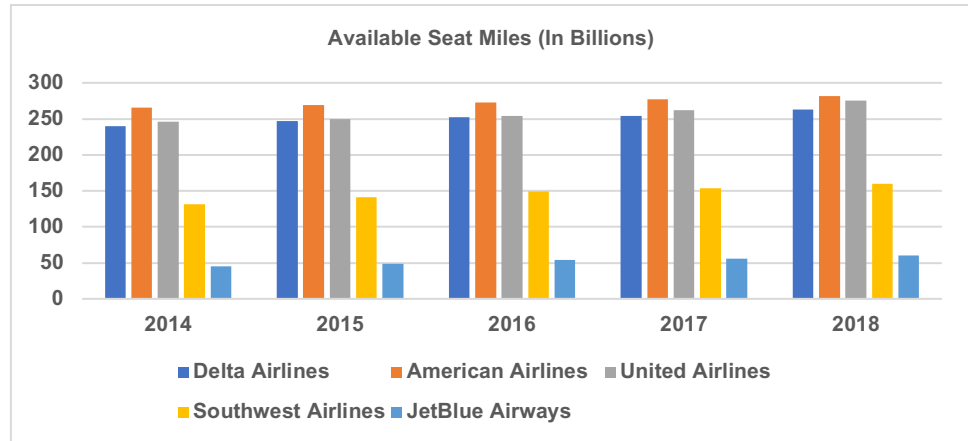
Source: Bureau of Transportation Statistics

The three biggest legacy carriers (American Airlines, Delta Airlines and United Airlines) are very similar in most of the parameters. Southwest Airlines on the other hand, as a low – cost carrier is very different from other three companies. The first parameter that will be shown is the most common measure of airline capacity which is Available Seat Miles (ASM). American Airlines has been at the

²² Driven by Competition, The Airline Industry is Taking Off. (2019). Retrieved 16 November 2019, from <https://www.aviationpros.com/airlines/article/12419680/driven-by-competition-the-airline-industry-is-taking-off>

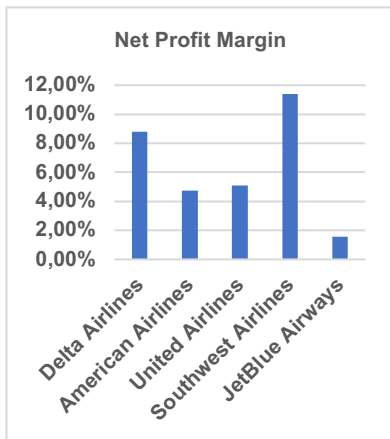
top of this ladder for past five years, while Delta and United have been trying to catch up and are slowly closing the gap.

Exhibit 24: Available seat miles (In Billions)



Source: Annual Reports

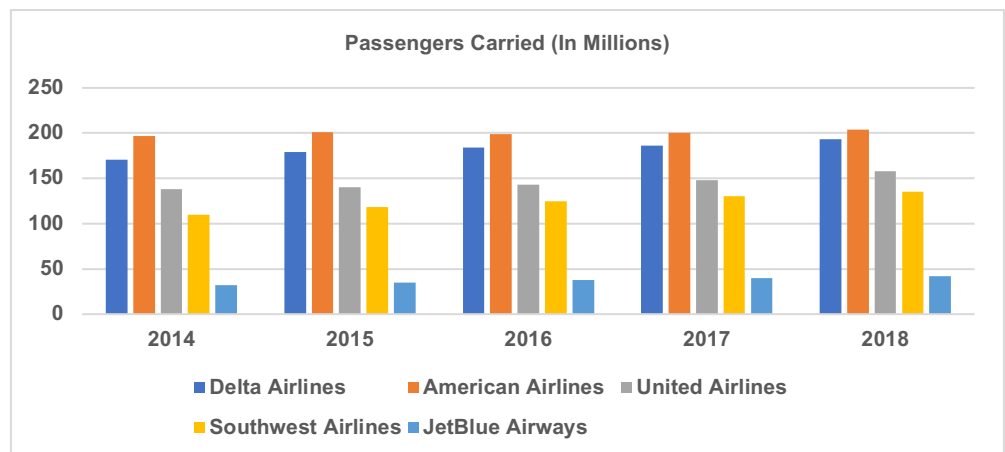
Exhibit 26: Net Profit Margin



Source: Annual Reports

When it comes to number of carried passengers on annual basis, American has been a leader for five consecutive years, but Delta customer base has been growing at a faster rate and 30 million passenger difference between these two in 2014 became a difference of just 10 million in 2018. United and Southwest are still far away from these two in this segment.

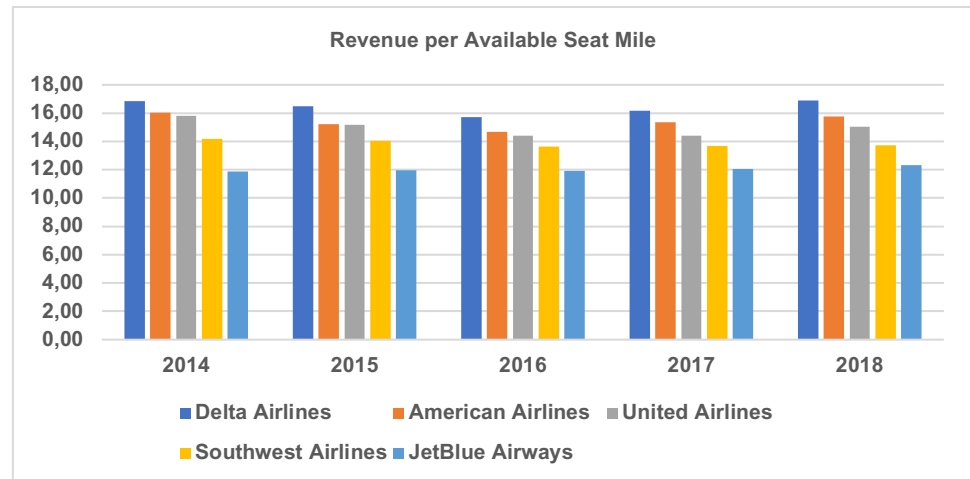
Exhibit 25: Passengers carried (In Millions)



Source: Annual Reports

However, when it comes to profitability of the companies, it looks a bit different than when just observing the absolute size of the companies. In terms of revenues per available seat mile (most common profitability measure among airlines), Delta has been absolute winner in past five years.

Exhibit 27: Revenue per Available Seat Mile (In USD Cents)



Source: Annual Reports

Finally, in terms of net profit margin, Southwest is the absolute winner and there is nothing strange about it as it is the low – cost carrier. What is more important is that according to this parameter, Delta is almost two times more efficient than its main legacy competitors American and United. More profitable companies are ultimately more competitive and because we believe that currently, Delta has an edge over its competitors.

Valuation

In order to complete Valuation of the company, Weighted Average Cost of Capital had to be found, and implemented into DCF valuation which we used for final valuation. Relative valuation was also used, which helped us to obtain share prices using different ratios of competitor companies.

For forecasting future cash flows, to be more precise cash flows till 2025 which was our perpetuity year, we selected set of different inputs which were the key for our DCF components. We reformulated income statement and balance sheet in order to divide our business into core, non – core and financial which later helped us in calculation of NOPLAT, FCF, operational income and costs, non – operational income and costs and other.

Revenues

Revenues were our most important factor in forecasting FCF. Three main categories of revenue are constituting business of Delta - Passenger Revenue (Which includes cabin, business cabin and premium products, and loyalty travel

awards), Cargo (Through Delta global network, cargo operations are able to connect major freight gateways, and are generated in both domestic and international markets by using cargo space on regularly scheduled passenger aircraft.) and Other Revenues (Which are divided into Ancillary Business and Refinery (Includes staffing and maintenance services provided to third parties), Loyalty Program (Which relates to brand usage by third parties, and performance obligations embedded in mileage credits sold) and Miscellaneous (Lounge access and code share revenues)). Passenger revenue, cargo and part of other revenues are making core part of our operational revenues. Further, we broke down each of those segments so they could be properly forecasted. We began with passenger revenue, since in 2018. It accounted for 89% (39,755 \$) of our total operational revenues, which made it main revenue generator for the company. Our forecast revenue generators for passenger segment were Available Seat Mile and revenue per ASM. Available Seat Mile as it is measure of capacity was broken down into seats flown and miles flown. ASM shows how many passengers were flying and how much. We assumed that seats flown can be evaluated through load factor (which shows how much on average aircrafts were full), seats per aircraft and miles flown. For Load Factor values, we took average amount of previous years reported on the financial statements. We took average amount, but not growing since more and more aircraft companies are emerging on the market making it harder for Delta to capture larger number of customers. For seats per aircraft, since there is no further news about capacity change, we assumed they will remain constant in the future. Regarding sectors flown, as parameters we took number of aircrafts, which is growing over years based on annual report information, and sectors per aircraft, which is simply average of previous years.

Exhibit 28: Income Statement Revenue Value Drivers

Reformulated Income Statement in \$ Millions	Fiscal Year Ended December 31.											
	2014	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Core Business												
Passenger Revenue	34,954.00	34,782.00	35,814.00	36,947.00	39,755.00	39,904.99	42,376.65	43,638.07	43,877.77	43,726.83	43,623.93	43,623.93
Growth		0%	3%	3%	8%	0%	6%	3%	1%	0%	0%	0%
Available Seat Mile	239,676	246,764	251,867	254,325	263,365	275,127.08	292,168.12	300,865.01	302,517.64	301,477.01	300,767.52	300,767.52
Growth		3%	2%	1%	4%	4%	6%	3%	1%	0%	0%	0%
Passenger Revenue per ASM	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
Growth		-3%	1%	2%	4%	-4%	0%	0%	0%	0%	0%	0%
Seats Flown	218	225	233	240	252	262	275	283	287	289	291	291
Growth		3%	4%	3%	5%	4%	5%	3%	1%	1%	1%	0%
Miles Flown	1,070	1,047	1,059	1,050	1,046	1,050	1,063	1,063	1,053	1,041	1,033	1,033
Growth		-2%	1%	-1%	0%	0%	1%	0%	-1%	-1%	-1%	0%
Load Factor	84.70%	84.90%	84.60%	85.60%	85.50%	85.06%	85.06%	85.06%	85.06%	85.06%	85.06%	85.06%
Seats Per Aircraft	180	180	180	180	180	180	180	180	180	180	180	180
Sectors Flown	1.43	1.47	1.53	1.56	1.64	1.71	1.79	1.85	1.88	1.89	1.90	1.90
Number of Aircrafts	772	809	832	856	871	929	974	1003	1018	1026	1032	1032
Sectors per Aircraft	0.00185	0.00182	0.00184	0.00182	0.00188	0.00184	0.00184	0.00184	0.00184	0.00184	0.00184	0.00184
Average Sector Length	748	712	692	673	638	613	592	575	561	551	543	543
Growth		-5%	-3%	-3%	-5%	-4%	-3%	-3%	-2%	-2%	-1%	-1%
Other Revenues	5,408	5,922	3,636	4,191	4,683	2,684	2,958	3,098	3,125	3,108	3,097	3,097
% of Total Revenues	15%	17%	10%	11%	12%	11%	11%	11%	11%	11%	11%	11%
Total Operating Revenues	40,362.00	40,704.00	39,450.00	41,138.00	44,438.00	42,589.16	45,334.98	46,736.31	47,002.60	46,834.92	46,720.60	46,720.60

Gathering all those parameters together, we found that passenger revenues will grow in the future, by 1.39% on average each year, which presents slow and steady growth. Making sales, core part of revenue, main backbone of the company.

Part of Other Revenues, such as Ancillary Business and Refinery and Miscellaneous are included in non – core and therefore were deducted (since they have negative value) from other operating revenues in forecasting years.

Summing it up, our revenues are expected to grow by 0.76% on average each year. Such growing pattern, besides factors mentioned above, is expected due to Delta expansion of global network, where international revenues are growing significantly, and there is significant progress in expanding their global reach, by implementing joint venture with Korean Air Lines, West Jet and reaching agreement with Air France.

Exhibit 29: Delta Opening and Closing Fleet

Fleet	2019	2020	2021	2022	2023	2024	2025	2026
Opening Fleet	871	929	974	1003	1018	1026	1032	1033
Deliveries (Purchase Commitments)	87	75	60	47	40	38	33	0
Opening Fleet + Deliveries	958	1004	1034	1050	1058	1064	1065	1033
Average Annual Disposal Rate	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3%
Number of Disposals	28.74	30.12	31.02	31.50	31.74	31.92	31.95	30.99
Rounded Number of Disposals	29	30	31	32	32	32	32.00	31.00
Closing Fleet	929	974	1003	1018	1026	1032	1033	1002

Costs

From the original Income Statement presented in annual report, we considered all costs as operating except Ancillary Business and Refinery, which we assumed is non – core and Aircraft Rent which we included in financial part of the company. Most meaningful costs remaining in operating part, which are also the highest, are Salaries and Related Costs, Aircraft Fuel and Related Costs and Regional Carrier expenses which together make around 70% (23,201 \$) of total operating costs.

Exhibit 30: Operating Costs

Salaries and Related Costs	8.120	8.776	9.394	10.058	10.743	11.477	12.262	13.100	13.995	14.952	15.974	17.066
<i>Pay Rate</i>						4%	4%	4%	4%	4%	4%	4%
Aircraft Fuel and Related Taxes	11.668	6.544	5.985	6.756	9.020	7.959	8.061	8.061	7.986	7.842	7.688	7.582
<i>Fuel Cost per Mile Flown</i>	10.91	6.17	5.38	6.33	8.47	7.50	7.50	7.50	7.50	7.50	7.50	7.50
Regional Carriers Expense, Exc. Fuel	5.237	4.241	3.447	3.466	3.438	7.525	6.720	4.755	4.360	3.845	3.475	3.285
<i>Contract Carrier Agreements</i>						1505	1344	951	872	769	695	657

Salaries and Related Costs were projected based on the number of employees and pay rate. Salaries and related Costs are expected to grow each year, since company announced that pay rate will increase by 4% for each eligible employee. Furthermore, number of employees is expected to increase each year.

Exhibit 31: Number of Employees

Employees	2014	2015	2016	2017	2018
Number of employees	79.655	82.949	83.756	86.564	88.680
<i>Growth</i>		<i>4%</i>	<i>1%</i>	<i>3%</i>	<i>2%</i>
<i>Average employee growth</i>	<i>2,73%</i>				

Fuel costs are estimated based on the fuel cost per mile flown and total miles flown in that year. Since fuel prices are generally not easy to predict we took average of previous years prices and implemented it in years that are coming. With such estimation we are using constant average of previous years.

In estimation of contract carrier agreements costs, we pulled data from the Delta annual report, which shows minimum fixed obligations under their existing capacity purchase agreements with third-party regional carriers. The obligations represent minimum levels of flying by contract carriers under the respective agreements and they reflect assumptions regarding certain costs associated with the minimum levels of flying such as fuel, labour, insurance and maintenance costs. Actual payments could be different from minimum fixed obligations set in the table.

Regional carriers are used so they can transfer passengers between regions, with aircrafts that have fewer seats and are smaller in general since fewer consumers are traveling between regions compared to longer flights. Also, Delta is in that way sharing risk with other smaller regional carriers which operate in their name. In our forecast years, number is increasing in significant amount (especially in 2019) since Delta business is expanding, outside of America borders, and it is easier for them to share regional risk with other carriers, while they are focusing on expansion of international business. Such belief is supported by forecast numbers in annual report. To get actual numbers, we multiplied number of contract carrier agreements from the table with number of carriers operating under Delta. For number of carriers, which is equal to 5, we assumed that it will remain constant over years, since no other data could be found.

Exhibit 32: Regional Contract Carriers

Regional Carriers	2019	2020	2021	2022	2023	2024	2025
Contract Carrier Agreements	1505	1344	951	872	769	695	657
Number of carriers operating	5						

Net working capital and CAPEX

In estimation of CAPEX, we included tangible assets (Property, Plant & Equipment), Intangible assets (software, licences, trademarks) and operating lease right of used assets.

Property, Plant & Equipment include aircrafts and flight equipment, ground property and equipment, flight and ground equipment under financial leases and advance payments for equipment. During forecasted years, values of PP&E are relatively constant, with no significant increases or decreases. Our base for forecast was combining number of aircrafts estimated for future years together with weighted price of current aircrafts company has. We found types of aircrafts Delta operates with and their respective prices, and by multiplying those two we obtained weighted price of aircrafts.

Intangible Assets we calculated as a percentage of revenue adjusted for depreciation, since more revenues company earns, more resources will be available to invest in intangible property. Since PP&E was already adjusted from the annual report, we calculated percentage of depreciation belonging to intangible assets and simply took the average of previous years. Values of Intangible Assets during forecasted period are shown as relatively stable.

Since NWC is measure of liquidity, naturally with higher revenues, NWC is therefore also higher. We calculated different ratios, in order to calculate account receivables and payables, inventories etc. After gathering calculated values, in forecasted period values are changing proportionally with revenues.

Exhibit 33: WACC Calculation

Debt	25.583
Market Cap	37.096
Statutory Tax Rate	21%
Cost of Debt	3,70%
Cost of Equity	8,58%
WACC	6,32%

Exhibit 34: NWC Ratios

Item Analysis Balance Sheet	Fiscal Year Ended December 31st				
	2014	2015	2016	2017	2018
Operating Cash	2%	2%	2%	2%	2%
Account Receivables	20,77	18,11	19,10	21,09	19,01
Accounts Payable	23,71	24,60	23,80	32,24	24,44
Inventory	35,99	54,70	64,63	92,76	61,34

WACC

Weighted average cost of capital (WACC) had to be found in order to discount future cash flows of the company. Since Delta financial structure consist both debt and equity, which are influencing cost of firm's capital and therefore WACC, both of those parameters had to be included in calculations.

Capital Structure

Since final value of WACC depends on capital structure of the company, and is influenced by the D/E Ratio, we had to analyse amount of financial Debt and Equity company has. According to our calculation, taking into account Maturities of long – term Debt and Leases, Pension, Postretirement and Related Benefits and Noncurrent Liabilities we obtained debt ratio of 0.66. We found that industry average, observing the competitor companies, is somewhere around 0.75. In our research, we found that such number is close to our own prediction, since in airline industry, companies have lot of PP&E including lot of aircrafts, giving them high collateral in property and fleets they own, making it easier for them to raise debt. Since Delta aircraft fleet is increasing in our forecast, and business is expanding and growing, meaning more financial resources will have to be used, we decided to use average industry average D/E ratio, since we believe Delta will slowly approach that number.

Exhibit 36: Cost of Debt

Probability of Default	0.36%
Recovery Rate	49,50%
LGD	50,50%
Yield	3,87%
Cost of Debt	3.70%

Cost of debt

For the cost of debt, which characterizes potential return to debt holders of the company, $R_d = YTM - (\text{Probability of default} \times \text{loss given default})$, following inputs were used: For yield to maturity, we used ten years coupon bond issued by the company, with YTM of 3.874%.

Exhibit 35: Delta 10Y callable coupon bond

Issuer Name	Ticker	Cpn	Maturity	Rating	Maturity Type	Curr	Yield	Nominal	Int. Exp.
Delta Air Lines Inc	DAL	3,75%	28.10.2029.	BB+	CALLABLE	USD	3,873999	600,00	22,5

Exhibit 37: Cost of Equity

D/E	0,75
Unlevered Beta	0,64
Ru	6,48%
Relevered Beta	0,96
Cost of Equity	8,58%

Probability of default and loss given default (LGD) were calculated based on Moody's annual default study and credit rating of Delta, which is BBB. Since credit rating is in investment grade, cost of debt is equal to 3.70%. The mentioned value is in range with other competitors within the same industry.

Cost of equity

For cost of equity estimation, Capital Asset Pricing Model (CAPM) was used, for which we had to use following inputs: Risk-Free Rate, Market Risk Premium and Delta levered Beta.

Since Delta was founded in United States, and its cash flows are denominated in US Dollars (\$) we used 10y US Government Bond as a proxy for risk-free rate out of which returns, ranging from 2016.-2019, we calculated risk-free rate equal to 2.32%.

Exhibit 38: DCF Share Price

Terminal Value	69.845,96
PV of Terminal Value	51.409,39
Operational Value	72.034,79
Non Core Value	-9.163,00
Enterprise Value	62.871,79
Financial Value	-16.409,01
Equity Value	46.462,78
Number of Shares	650
Share Price	\$ 71,48

For market risk premium (MRP), we pulled data from Bloomberg terminal, and it equalled to 6.53% (21st November 2019.). For Beta calculation, we used linear regression analysis to test relationship between Delta and main competitors with the market. Test gave us Beta values for all market participants, which helped us reaching final cost of equity. After putting values into CAPM formula, we found that cost of equity for Delta is equal to 8.58%.

DCF analysis

Since we obtained all inputs needed for valuation, we could implement it in DCF analysis.

After we discounted future cash flows, we calculated terminal and operational value of the company. Terminal value formula could be applied only after we reached period of stable growth (indicated by stable core invested capital values), for which we predicted a five years period. (2020. – 2025.). We used nominal growth rate of 0.12% from last FCF period, which we obtained by multiplying return on new investments (RONIC) and investment rate (IR), to be our perpetuity growth rate. Such growth rate implies stable and steady company growth, characterized by low-inflation currency, allowing stable growth rate possible. To reach final equity value, we had to add non-core operational value and subtract financial obligation value.

With all finished, we reached final share price of 71.48\$. Delta is currently trading at New York Stock Exchange at a price of 57.07\$. This leads to total shareholder return of 26,48%, made out of 21,07% capital gain and 5,41% cash gain. According to these results, we give you a strong buy recommendation.

RELATIVE VALUATION

In order to estimate share price according to the industry competitors of Delta, relative valuation was performed.

We gathered as what we thought are most relevant competitors of Delta, and took their respective ratios such as EV/EBITDA, EV/SALES and P/E. By taking out their averages and medians, while simultaneously excluding extreme values, we were able to calculate different share prices based on different ratio methods. In our case, the medians and the averages of all ratios were almost equal, and according to that, there were almost no differences in using one or another.

By taking medians of all methods used, we calculated average share price of Delta of 53,04\$.

Exhibit 39: Expected Shareholder Gain

Current Share Price	\$ 59,04
Expected Capital Gain	21,07%
Shareholder Cash In/Out per share	3,19
Expected Cash Gain	5%
Total Shareholder Return	26,48%

Exhibit 40: EV/EBITDA

EBITDA	8.098,47
EV	45.999,67
Net Debt	-9.320,33
Value of Equity	36.679,33
Price Per Share	56,43

Exhibit 41: EV/SALES

Sales	45.334,98
EV	44.280,00
Net Debt	-9.320,33
Value of Equity	34.959,66
Price per Share	53,78

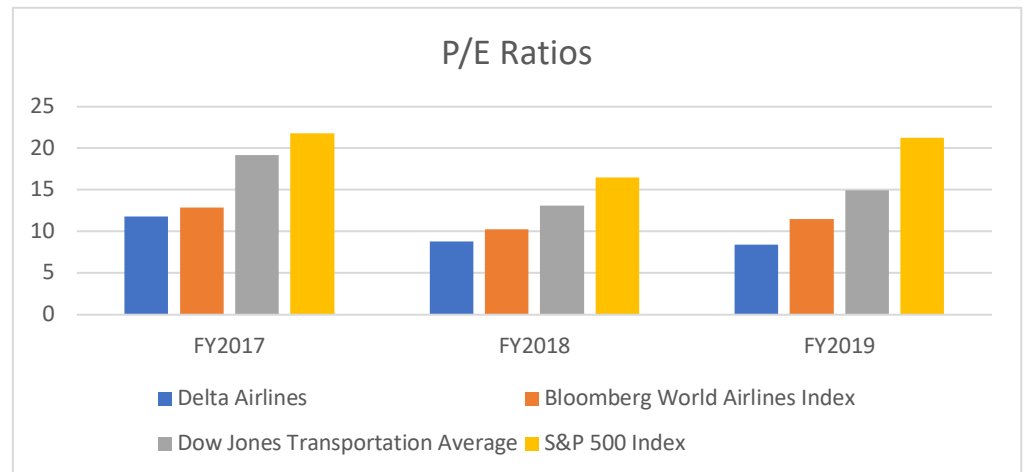
Exhibit 42: P/E

Net income	2.961,86
Value of Equity	31.797,60
Price per Share	48,92

Conclusion

As one could have already concluded by reading this report, we believe that Delta Airlines is heavily undervalued. However, we also believe that the entire airline industry is trading below the fair price.

Exhibit 43: P/E ratios



Source: Bloomberg

In last couple of years, the airlines have been trading at lower P/E ratio than other transportation companies, which tells us that the markets feel sceptical about them. Among all the world airlines, ones originating from the United States are trading at the much lower P/E ratios than their peers from other parts of the world. We believe the reason behind is that all major United States airlines have filed for bankruptcy at some point in their history. Many investors lost their money when these major airlines were entering restructurings, so they became afraid investing in airlines and lost confidence in these companies. That is why today, the markets undervalue airlines. We are certain that the bankruptcies were happening due to misleading and mistakes done by the management of these companies, but we also believe that today, managers in airlines know much more about the industry and possible risks than leaders of the same companies knew 10 or 20 years ago. The industry is much more developed now than it was back then and people learn from other people mistakes so they don't repeat them. This is why we are confident that many companies in this industry are worth more than markets believe. Delta Airlines seems to be even more undervalued than most of its competitors, which is shame for the company that has so strong brand, competent management, healthy balance sheet, stable cash flows and much more. This is why we don't doubt that the company is worth much more and once again recommend a strong buy.

Appendix

Income Statement

Reformulated Income Statement in \$ Millions												
Fiscal Year Ended December 31.												
	2014	2015	2016	2017	2018	2019F	2020F	2021F	2022F	2023F	2024F	2025F
Core Business												
Passenger Revenue	34,954.00	34,782.00	35,814.00	36,947.00	39,755.00	42,592.25	45,230.36	46,576.73	46,832.57	46,036.80	44,862.94	43,631.46
<i>Growth</i>		0%	3%	3%	8%	7%	6%	3%	1%	-2%	-3%	-3%
Available Seat Mile	239,676	246,764	251,867	254,325	263,365	293,654.57	311,843.18	321,125.74	322,889.66	317,403.18	309,309.93	300,819.47
<i>Growth</i>		3%	2%	1%	4%	12%	6%	3%	1%	-2%	-3%	-3%
Passenger Revenue per ASM	0.15	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
<i>Growth</i>		-3%	1%	2%	4%	-4%	0%	0%	0%	0%	0%	0%
Seats Flown	221	232	241	248	262	272	285	293	298	298	296	292
<i>Growth</i>		5%	4%	3%	5%	4%	5%	3%	1%	0%	-1%	-1%
Miles Flown	1,085	1,082	1,093	1,084	1,085	1,081	1,095	1,095	1,085	1,065	1,044	1,030
<i>Growth</i>		0%	1%	-1%	0%	0%	1%	0%	-1%	-2%	-2%	-1%
Load Factor	84.70%	84.90%	84.60%	85.60%	85.50%	85.60%	85.60%	85.60%	85.60%	85.60%	85.60%	85.60%
Seats Per Aircraft	180	180	180	180	180	180	180	180	180	180	180	180
Sectors Flown	1.45	1.52	1.58	1.61	1.70	1.76	1.85	1.90	1.93	1.93	1.92	1.90
Number of Aircrafts	772	809	832	856	871	929	974	1003	1018	1019	1013	999
Sectors per Aircraft	0.00188	0.00188	0.00190	0.00188	0.00195	0.00190	0.00190	0.00190	0.00190	0.00190	0.00190	0.00190
Average Sector Length	748	712	692	673	638	613	592	575	561	551	543	543
<i>Growth</i>		-5%	-3%	-3%	-5%	-4%	-3%	-3%	-2%	-2%	-1%	-1%
Other Revenues	5,408	5,922	3,636	4,191	4,683	2,982	3,275	3,424	3,453	3,364	3,234	3,098
<i>% of Total Revenues</i>	15%	17%	10%	11%	12%	11%	11%	11%	11%	11%	11%	11%
Total Operating Revenues	40,362.00	40,704.00	39,450.00	41,138.00	44,438.00	45,574.50	48,505.22	50,000.92	50,285.14	49,401.10	48,097.04	46,728.97
Salaries and Related Costs	8,120	8,776	9,394	10,058	10,743	11,477	12,262	13,100	13,995	14,952	15,974	17,066
<i>Pay Rate</i>						4%	4%	4%	4%	4%	4%	4%
Aircraft Fuel and Related Taxes	11,668	6,544	5,985	6,756	9,020	7,963	7,989	7,989	7,989	7,989	7,989	7,989
<i>Fuel Cost per Mile Flown</i>	10.76	6.05	5.47	6.24	8.32	7.37	7.37	7.37	7.37	7.37	7.37	7.37
Regional Carriers Expense, Exc. Fuel	5,237	4,241	3,447	3,466	3,438	7,525	6,720	4,755	4,360	3,845	3,475	3,285
<i>Contract Carrier Agreements</i>						1505	1344	951	872	769	695	657
Passenger Service	810	872	964	1,123	1,178	925	937	937	929	912	894	882
<i>Miles Flown</i>	1085	1082	1093	1084	1085	1081	1095	1095	1085	1065	1044	1030
Restructuring and Other	716	35	0	0	0	0	0	0	0	0	0	0
Aircraft Maintenance Materials	1,828	1,848	1,434	1,591	1,575	1,638	1,800	1,909	1,967	1,971	1,947	1,894
<i>Number of Aircrafts</i>	772	809	832	856	871	929	974	1003	1018	1019	1013	999
Landing Fees and Other Rents	1,442	1,493	1,472	1,501	1,662	1,402	1,428	1,444	1,453	1,453	1,450	1,442
<i>Sectors Flown</i>	1.45	1.52	1.58	1.61	1.70	1.76	1.85	1.90	1.93	1.93	1.92	1.90
Contracted Services	1,749	1,848	1,918	2,108	2,175	2,165	2,304	2,375	2,389	2,347	2,285	2,220
<i>% of Invested Capital</i>	4%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Passenger Commissions and OSE	1,700	1,672	1,751	1,827	1,941	2,013	2,138	2,199	2,216	2,176	2,118	2,058
<i>% of revenue</i>	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Profit Sharing	1,085	1,490	1,115	1,065	1,301	1,181	709	1,341	1,724	1,562	1,323	987
<i>% of Profit</i>	165%	33%	27%	33%	33%	30%	30%	30%	30%	30%	30%	30%
Other	1,797	1,998	1,621	1,609	1,723	1,807	1,924	1,983	1,994	1,959	1,907	1,853
<i>% of revenue</i>	4%	5%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Total Operating Costs	36,152	30,817	29,101	31,104	34,756	38,096	38,212	38,033	39,015	39,166	39,363	39,676
EBITDA	4,210	9,887	10,349	10,034	9,682	7,478	10,293	11,968	11,270	10,235	8,734	7,053
Depreciation	1,771	1,835	1,886	2,222	2,329	2,039	2,137	2,201	2,234	2,236	2,223	2,192
<i>% of PPE</i>	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%
EBIT	2,439	8,052	8,463	7,812	7,353	5,440	8,156	9,767	9,036	7,999	6,512	4,861
Taxes	-891	-2,944	-2,897	-3,104	-1,678	-1,142	-1,713	-2,051	-1,898	-1,680	-1,367	-1,021
NOPLAT	1,548	5,108	5,567	4,708	5,675	4,297	6,443	7,716	7,138	6,319	5,144	3,840
Non Core Business												
Ancillary Business and Refinery	0	0	-1,182	-1,495	-1,695	-1,695	-1,695	-1,695	-1,695	-1,695	-1,695	-1,695
Miscellaneous	-484	-164	-255	-70	184	-47	-47	-47	-47	-47	-47	-47
Unrealized Gain/Loss on Investments	0	0	0	0	14	0	0	0	0	0	0	0
Result Before Taxes and OCI	-484	-164	-1,437	-1,565	-1,497	-1,742	-1,742	-1,742	-1,742	-1,742	-1,742	-1,742
Taxes	169	57	503	548	314	366	366	366	366	366	366	366
Other Comprehensive Income	10	-45	36	142	0	0	0	0	0	0	0	0
Non Core Result	-305	-152	-898	-875	-1,183	-1,376	-1,376	-1,376	-1,376	-1,376	-1,376	-1,376
Financial												
Interest Expense	-650	-481	-388	-396	-311	-286	-286	-245	-173	-136	-71	-71
Aircraft Rent	-233	-250	-285	-351	-394	-420	-470	-507	-530	-539	-536	-526
<i>Rent per Aircraft</i>	0.30	0.31	0.34	0.41	0.45	0.48	0.51	0.52	0.53	0.53	0.53	0.52
Result Before Taxes and OCI	-883	-731	-673	-747	-705	-706	-756	-753	-703	-675	-607	-596
Taxes (Tax Shield)	309	256	236	261	148	148	159	158	148	142	127	125
Other Comprehensive Income	-2,191	81	-397	-127	-98	-558	-597	-595	-555	-533	-479	-471
Financial Result	-2,765	-394	-834	-613	-655	-558	-597	-595	-555	-533	-479	-471
Check	TRUE	TRUE	TRUE	TRUE	TRUE							
Total Comprehensive Income	-1,522	4,562	3,834	3,220	3,837	2,363	4,470	5,745	5,207	4,410	3,289	1,993

Balance Sheet

Reformulated Balance Sheet in \$ Millions												
	Fiscal Year Ended December 31.											
	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Core Business												
Operating Cash	807	814	789	823	889	911	970	1,000	1,006	988	962	935
<i>Operating Cash as a % of Revenue</i>	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Accounts Receivable	2,297	2,020	2,064	2,377	2,314	2,464	2,622	2,703	2,718	2,671	2,600	2,526
<i>Collection Period</i>	21	18	19	21	19	20	20	20	20	20	20	20
Fuel Inventory and Supplies Inventories	852	697	891	1,329	1,055	2,383	2,428	2,453	2,464	2,462	2,453	2,438
<i>Inventory Days</i>	36	55	65	93	61	73	73	73	73	73	73	73
Prepaid Expenses and Other	701	915	854	1,459	1,203	1,279	1,361	1,403	1,411	1,386	1,350	1,311
<i>% of Revenue</i>	2%	2%	2%	4%	3%	3%	3%	3%	3%	3%	3%	3%
Operating Current Assets	4,657	4,446	4,598	5,988	5,461	7,037	7,381	7,559	7,599	7,507	7,365	7,210
Accounts Payable	2,622	2,743	2,572	3,634	2,976	877	893	903	907	906	903	897
<i>Payable period</i>	24	25	24	32	24	27	27	27	27	27	27	27
Air Traffic Liability	4,296	4,503	4,626	4,364	4,661	4,986	5,307	5,471	5,502	5,405	5,262	5,113
<i>% of revenue</i>	11%	11%	12%	11%	10%	11%	11%	11%	11%	11%	11%	11%
Accrued Salaries and Related Benefits	2,266	3,195	2,924	3,022	3,287	3,511	3,751	4,007	4,281	4,574	4,886	5,220
<i>% of salaries and related costs</i>	28%	36%	31%	30%	31%	31%	31%	31%	31%	31%	31%	31%
Loyalty Program Deferred Revenue (Current)	1,580	1,635	1,648	2,762	2,989	2,676	2,848	2,936	2,953	2,901	2,825	2,744
<i>% of revenue</i>	4%	4%	4%	7%	7%	6%	6%	6%	6%	6%	6%	6%
Other Accrued Liabilities	2,127	1,306	1,650	1,868	1,117	1,707	1,817	1,873	1,884	1,850	1,802	1,750
<i>% of revenue</i>	5%	3%	4%	5%	3%	4%	4%	4%	4%	4%	4%	4%
Current Maturities of Operating Leases	0	0	0	0	955	0	0	0	0	0	0	0
Operating Current Liabilities	12,891	13,382	13,420	15,650	15,985	13,757	14,617	15,190	15,526	15,636	15,677	15,725
PP&E	21,929	23,039	24,375	26,563	28,335	25,145	26,363	27,148	27,554	27,581	27,419	27,040
<i>Number of Aircrafts</i>	772.00	809.00	832.00	856.00	871.00	929.00	974.00	1003.00	1018.00	1019.00	1013.00	999.00
Intangible Assets	14,397	14,655	14,638	14,641	14,611	15,207	16,239	16,765	16,865	16,554	16,095	15,614
<i>% of revenue (adjusted for depreciation)</i>	36%	36%	37%	36%	33%	35%	35%	35%	35%	35%	35%	35%
Deferred Income Taxes	7,595	4,956	3,064	1,354	242	0	0	0	0	0	0	0
Other Noncurrent Assets	926	1,428	1,733	3,309	3,608	3,123	3,324	3,426	3,445	3,385	3,296	3,202
<i>% of revenue</i>	2%	4%	4%	8%	8%	7%	7%	7%	7%	7%	7%	7%
Operating Lease Right of Use Assets	0	0	0	0	5,994	0	0	0	0	0	0	0
Operating Noncurrent Assets	44,847	44,078	43,810	45,867	52,790	43,475	45,925	47,339	47,865	47,520	46,809	45,855
Loyalty Program Deferred Revenue (Noncurrent)	2,602	2,246	2,278	3,559	3,652	3,440	3,661	3,774	3,796	3,729	3,630	3,527
<i>% of revenue</i>	6%	6%	6%	9%	8%	8%	8%	8%	8%	8%	8%	8%
Other Noncurrent Liabilities	2,128	1,891	1,878	2,221	1,132	1,930	2,054	2,118	2,130	2,092	2,037	1,979
<i>% of revenue</i>	5%	5%	5%	5%	3%	4%	4%	4%	4%	4%	4%	4%
Operating Noncurrent Liabilities	4,730	4,137	4,156	5,780	4,784	5,370	5,716	5,892	5,925	5,821	5,668	5,506
CORE INVESTED CAPITAL	31,883	31,005	30,832	30,425	37,482	31,384	32,975	33,817	34,013	33,570	32,829	31,835
Non Core Business												
Cash Restricted for Airport Construction	0	0	0	0	1,136	0	0	0	0	0	0	0
Pension, Postretirement and Related Benefits	15,138	13,855	13,378	9,810	9,163	9,163	9,163	9,163	9,163	9,163	9,163	9,163
NON CORE INVESTED CAPITAL	-15,138	-13,855	-13,378	-9,810	-8,027	-9,163	-9,163	-9,163	-9,163	-9,163	-9,163	-9,163
Financial												
Excess Cash	1,281	1,158	1,973	991	676	0	0	0	0	0	0	0
Hedge Margin Receivable	925	0	0	0	0	0	0	0	0	0	0	0
Hedge Derivatives Asset	1,078	1,987	393	0	0	0	0	0	0	0	0	0
Hedge Derivatives Liability	2,772	2,581	688	0	0	0	0	0	0	0	0	0
Maturities of Long Term Debt and Capital Leases	9,661	8,329	7,332	8,834	9,771	11,516	12,587	13,964	15,212	16,269	17,057	17,535
Fuel Card Obligation	0	0	0	1,067	1,075	1,075	1,075	1,075	1,075	1,075	1,075	1,075
Noncurrent Operating Leases	0	0	0	0	5,801	0	0	0	0	0	0	0
Short - Term Investments	1,217	1,465	487	825	203	380	405	417	420	412	401	390
<i>% of Cash</i>	58%	74%	18%	45%	13%	42%	42%	42%	42%	42%	42%	42%
NET FINANCIAL ASSETS	-7,932	-6,300	-5,167	-8,085	-15,768	-7,826.30	-8,077.35	-7,198.46	-5,834.56	-4,070.35	-2,344.78	-753.01
TOTAL SHAREHOLDER'S EQUITY	8,813	10,850	12,287	12,530	13,687	14,395	15,734	17,455	19,015	20,336	21,321	21,919
Transaction with Shareholders		-2,525	-2,397	-2,977	-2,680	-1,655	-3,131	-4,024	-3,647	-3,089	-2,303	-1,396
Payout Ratio		55%	63%	92%	70%	70%	70%	70%	70%	70%	70%	70%
Check	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Cash Flow

FCF in \$ Millions	Fiscal Year Ended December 31.											
	2014	2015	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2024E	2025E
Core												
NOPLAT	1,548	5,108	5,567	4,708	5,675	4,297	6,443	7,716	7,138	6,319	5,144	3,840
		<i>230%</i>	<i>9%</i>	<i>-15%</i>	<i>21%</i>	<i>-24%</i>	<i>50%</i>	<i>20%</i>	<i>-7%</i>	<i>-11%</i>	<i>-19%</i>	<i>-25%</i>
		<i>Growth Rate NOPLAT</i>										
Depreciation	1,771	1,835	1,886	2,222	2,329	2,039	2,137	2,201	2,234	2,236	2,223	2,192
Operating Cash Flow	3,319	6,943	7,453	6,930	8,004	6,336	8,581	9,917	9,372	8,555	7,367	6,032
		<i>109%</i>	<i>7%</i>	<i>-7%</i>	<i>15%</i>	<i>-21%</i>	<i>35%</i>	<i>16%</i>	<i>-5%</i>	<i>-9%</i>	<i>-14%</i>	<i>-18%</i>
		<i>Growth Rate CF</i>										
Invested Capital-Fixed Assets	36,326	37,694	39,013	41,204	49,895	40,353	42,602	43,913	44,419	44,135	43,514	42,654
Gross CAPEX		-1,368	-1,319	-2,191	-8,691	9,542	-2,249	-1,311	-506	284	621	860
Net CAPEX	-3,203	-3,203	-3,205	-4,413	-11,020	7,504	-4,387	-3,512	-2,740	-1,952	-1,602	-1,332
Invested Capital - NWC and Others	-4,443	-6,689	-8,181	-10,779	-12,413	-8,968	-9,627	-10,096	-10,407	-10,566	-10,685	-10,819
Investment in NWC and Others	2,246	1,492	2,598	1,634	-3,445	659	469	310	159	119	134	
Investment Cash Flow	-957	-1,713	-1,815	-9,386	4,059	-3,728	-3,043	-2,430	-1,793	-1,483	-1,198	
Core Business Free Cash Flow	5,986	5,740	5,115	-1,382	10,395	4,853	6,874	6,942	6,762	5,884	4,835	
Non Core												
Non Core Result	-305	-152	-898	-875	-1,183	-1,376	-1,376	-1,376	-1,376	-1,376	-1,376	-1,376
Invested Capital	-15,138	-13,855	-13,378	-9,810	-8,027	-9,163	-9,163	-9,163	-9,163	-9,163	-9,163	-9,163
Investment Cash Flow	-1,283	-477	-3,568	-1,783	1,136	0	0	0	0	0	0	
Non Core Business Free Cash Flow	-1,435	-1,375	-4,443	-2,966	-240	-1,376	-1,376	-1,376	-1,376	-1,376	-1,376	
Operational Free Cash Flow	4,551	4,365	672	-4,348	10,155	3,477	5,497	5,566	5,386	4,508	3,459	
Financing												
Financial Result	-2,765	-394	-834	-613	-655	-558	-597	-595	-555	-533	-479	-471
Net Financial Assets	-7,932	-6,300	-5,167	-8,085	-15,768	-7,826	-8,077	-7,198	-5,835	-4,070	-2,345	-753
Change in NFA	-1,632	-1,133	2,918	7,683	-7,941	251	-879	-1,364	-1,764	-1,726	-1,592	
Net Cash Transactions with Shareholders	-2,525	-2,397	-2,977	-2,680	-1,655	-3,131	-4,024	-3,647	-3,089	-2,303	-1,396	
Financing Free Cash Flow	-4,551	-4,365	-672	4,348	-10,155	-3,477	-5,497	-5,566	-5,386	-4,508	-3,459	
Check	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

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Report Recommendations

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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Impact of Fuel Prices on Value of the Company

Frane Kostelic 33885

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

Rosário André

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Abstract

For my individual report related to our already conducted research on Delta Airlines, I decided to analyse the impact of fuel prices on value of the companies. The finding is that as a second largest expense of an airline, oil price fluctuation does influence value of the company, but not all the companies are affected the same. This exposure depends on their internal policies mostly related to hedging activities.

Keywords (up to four)

Oil

Fluctuation

Hedge

Prices

IMPACT OF FUEL PRICES ON VALUE OF THE COMPANY

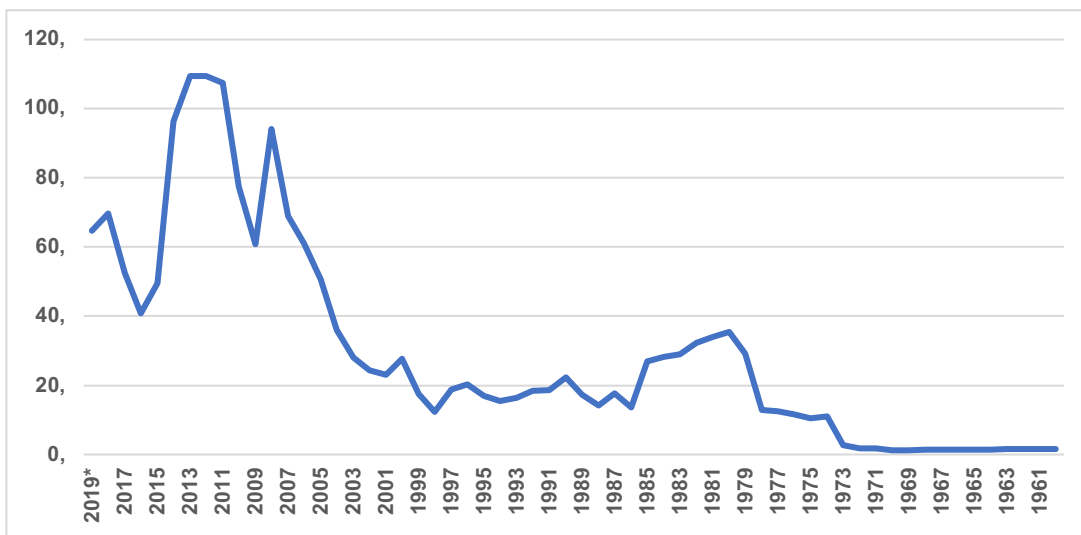
INDIVIDUAL REPORT

STUDENT: FRANE KOSTELIĆ

33885@novasbe.pt

Today, if one looks at the income statement of vast majority of airlines, the salaries and similar costs will be the single largest expense caption. Historically, it has been the other way around as fuel has been the largest expense at majority of airlines. Crude oil prices have been very volatile throughout the history, ranging from USD 1,63 per barrel on average in OPEC countries in 1960, to USD 109,45 per barrel in 2012. As crude oil is one of the major sources of energy, an oil shock (sudden increase in the oil prices) might endanger political and economic stability around the world.¹

Exhibit 1: Average Annual Crude Oil Price in OPEC Countries (In USD Per Barrel)



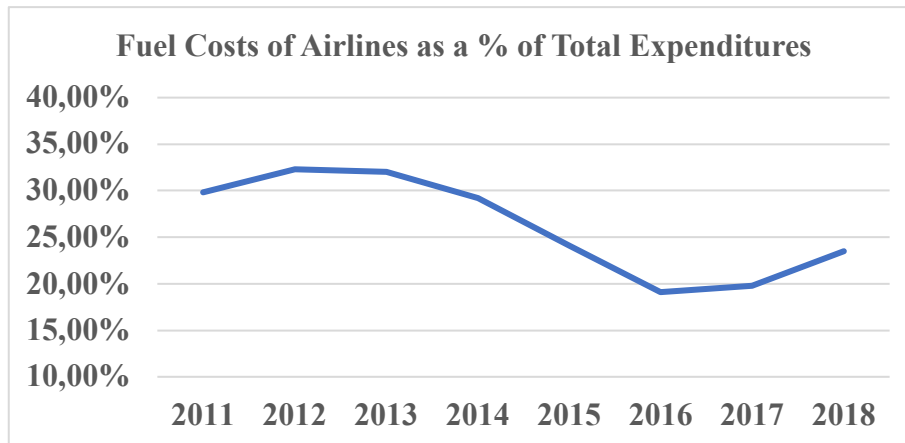
Source: OPEC

Extremely volatile price of crude oil represents risk for the companies worldwide, as its increase puts a pressure on total operating costs of the companies, which has direct impact on final result of the companies. Companies operating in transportation industries are specifically sensitive to volatility in crude oil prices, as fuel expense represents a significant portion of their operating expenses. For instance, the fuel cost on average represented 23,5% of total expenditures of an airline in 2018.

¹ oil crisis | Definition, History, & Facts. (2019). Retrieved 19 November 2019, from <https://www.britannica.com/topic/oil-crisis>

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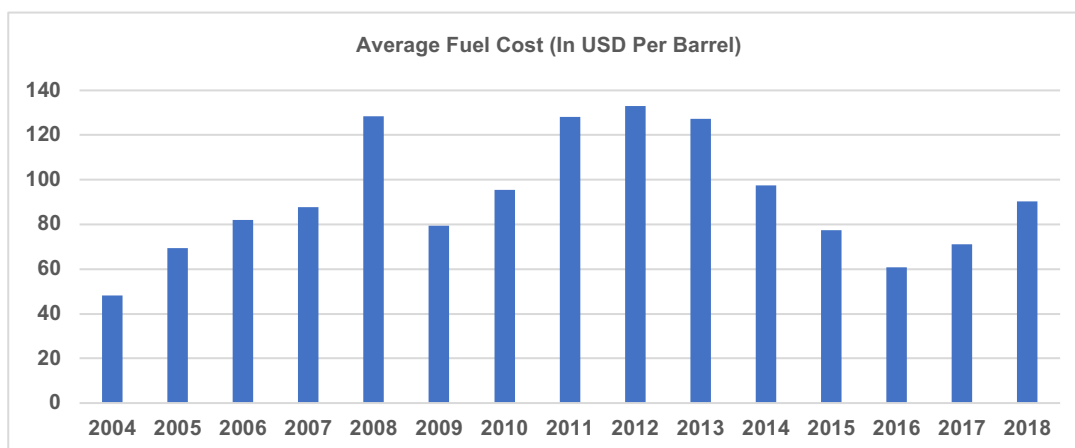
Exhibit 2: Fuel costs of an airline as a % of total expenditures



Source: IATA

Because the airline operations heavily depend on crude oil, they might witness large increases in their profit in case the fuel prices go down.² In order to reduce the risk of exposure to oil prices volatility, the airlines are constantly supporting the initiatives and actions that intent to improve fuel efficiency and reduce fuel consumption. These are investments into new aircrafts that are more fuel efficient, but also the fuel hedging activities that help companies reduce the exposure to volatility in fuel prices. The US airlines have been paying on average as much as USD 133,14 per barrel in 2012 and as low as USD 48,3 per barrel in 2014. The prices have soared in the beginning of this decade, but they finally cooled down in 2015. The following two years were a relief for income statements of the airlines, but sudden increase in 2018 was reflected in final results of majority of these companies.

Exhibit 3: Average fuel cost of US airlines (in USD per Barrel)



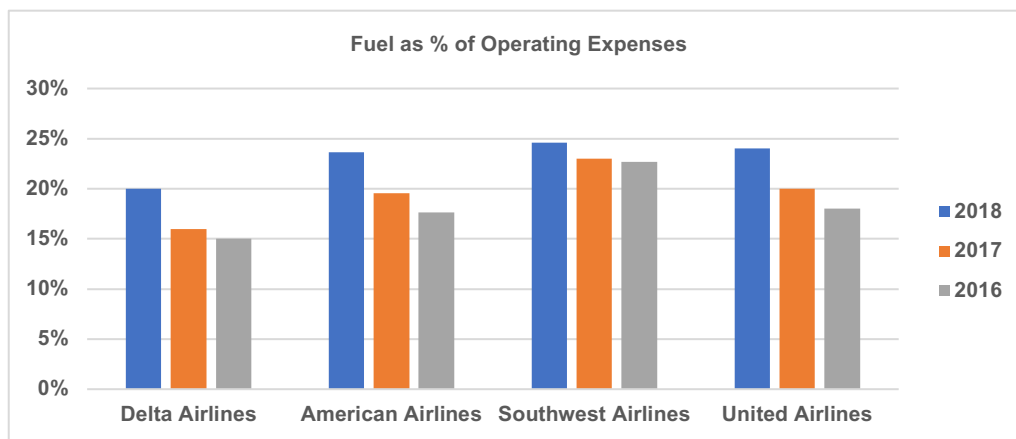
Source: Bureau of Transportation & Statistics

² (2019). Retrieved 17 November 2019, from <https://pdfs.semanticscholar.org/3057/757ac89ef820acae8fb27a9150888a430b31.pdf>

For instance, two months ago, there was a drone attack on oil processing facilities and on fields of Saudi Aramco in Saudi Arabia. The attack destroyed half of the Saudi Arabia's daily crude oil production. The consequence of 5,7 million missing barrels of daily crude oil production was seen the next day when the prices soared. The industry that was hit particularly hard by 10% increase in crude oil price were the airlines. Delta and United stocks were down more than 3% in a single day, while American Airlines dropped 6,5%.³

Delta Airlines, American Airlines, United Airlines and Southwest Airlines are so called big four of commercial aviation industry in North America. Their financial statements consist of more or less similar captions. For each one of them these similar captions carry different weights. Although the fuel cost on average represented 23,5% of total operating expenses of an airline, each of the mentioned companies spends smaller or larger portion of cash on fuel, relative to their operating expenses.

Exhibit 4: Fuel as a % of Operating Expense in Big 4



Source: Company Annual Reports

Excluding 2018, the few previous years have been very favourable for the airlines in terms of cost savings generated by decreasing oil prices. However, it hasn't been the same for all the airlines. For example, Delta and United spent billions on expensive fuel hedging derivatives. As the prices went down, the companies did not have any benefits from these contracts, just the expense. In the other hand American Airlines implemented no fuel hedge policy in 2014. It had worked great for couple of years, the company had significant cost savings as they avoided the costly fuel hedging contracts. In October 2018, the share price of American Airlines dropped to

³ Locker, Melissa. "Airline Stocks Nosedive after Drone Attacks in Saudi Arabia Drive up Oil Prices." *Fast Company*, Fast Company, 16 Sept. 2019, www.fastcompany.com/90404520/delta-united-american-airlines-stocks-battered-by-saudi-oil-attack.

a two year low based on the reaction of the airline third quarter profits. The results release was particularly bad due to increasing fuel expenses that as a consequence have decrease in company margins. As a result of being the only major US airline that doesn't hedge its exposure to volatility in fuel prices, the shares of American Airlines faced a decline of 36% in 2018. It was the largest stock price drop among major US airlines in 2018.⁴

In case of income statement forecast for Delta Airlines, the expected future fuel cost was calculated by multiplying the expected mile flown for respective year by average fuel cost per mile flown in last five years. We believe that average is good proxy in this case because future expected oil prices in USD per barrel in next five years are similar to average price of the past five years. The average fuel cost per mile flown in our case amounts to 7,37. If we increase this value by 10% (happens in case that crude oil prices rise by 10%), we arrive to value of 8,107 of fuel cost per mile flown. This 10% change has a huge impact on company income statement, cash flow statement and finally, the valuation model.

According to our DCF model, the expected fair share price in December 2020 will be roughly USD 70. However, if average fuel cost per mile flown is increased by 10% as mentioned above, the share price decreases to around USD 60. This represents a decrease of about USD 10 or 14%. As one can conclude from difference in these values, the impact of fuel prices on company value is high. Furthermore, the majority of companies hedge part of exposure to this risk or even entire exposure by buying hedge derivatives.

To hedge or not to hedge is very difficult question. The management of the company that brings such a decision will always be under pressure when doing so. There are four possible outcomes in total, out of which two are positive for the company. If company hedges and prices go up or if company doesn't hedge and prices remain the same or go down, the management will be rewarded for bringing "good" decisions. On the other hand, if company hedges and prices go down or if company doesn't hedge and prices go up, financial performance will be below the expectations and management will probably be fired for bringing "bad" decisions.

What I believe is that not to hedge is as bad as to hedge the entire exposure to that particular risk. First one is to risky as if company has to much more than expected for the entire year fuel

⁴ Boon, Tom. "American Airlines Two Year Low Due To High Fuel Prices." *Simple Flying*, 20 Jan. 2019, simpleflying.com/american-airlines-high-fuel-prices/.

requirements, it might end up being financially distressed. On the other hand, if the company hedges its entire year fuel requirements with expensive hedge derivative contracts, the company results and its growth will be too conservative, as too much money will be spent on same agreements every year (large fixed cost). Moreover, the companies should hedge part of the exposure so that they don't have to pay that much for costly hedge derivative contracts, but in case of sudden increase of oil prices, they are still able to endure the couple of periods without incurring costs of financial distress. Finally, although being hardly predictable, oil prices are expected to hold still in next couple of years and we based our projections accordingly.

Exhibit 5: Expected crude oil prices (In USD per barrel)

Oil Prices	2019E	2020E	2021E	2022E	2023E	2023E
Crude Oil \$/bbl	66,00	65,00	65,48	65,97	66,46	66,96

Source: World Bank