A Work Project, presented as part of the requirements for the Award of a master's degree in Finance from the Nova School of Business and Economics

A JOURNEY INTO BOEING'S TURBULENT ROUTE

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13/01/2025

Abstract:

The Case Study chronicles Boeing's rise to become a shareholder-focused giant. It explores a renewed focus on operational efficiency and all financial decisions that culminated in a historic stock price peak of $440.62 on March 1st, 2019.

Keywords: The Boeing Company, Payout Policy, Return on Net Assets, Shareholder Value, Corporate Governance

This work used infrastructure and resources funded by Fundação para a Ciência e a Tecnologia (UID/ECO/00124/2013, UID/ECO/00124/2019 and Social Sciences DataLab, Project 22209), POR Lisboa (LISBOA-01-0145-FEDER-007722 and Social Sciences DataLab, Project 22209) and POR Norte (Social Sciences DataLab, Project 22209)

CASE STUDY

Flying above the clouds

On March 1, 2019, Boeing reached unprecedented heights, with its stock closing at an all-time high of $440.62 and a market capitalization surpassing $250 billion. This remarkable achievement was the result of a long and transformative journey, marked by bold leadership decisions, strategic growth, and a relentless pursuit of profitability. Boeing's legacy, built over a century, had evolved from its roots as a renowned engineering firm into a shareholder-focused manufacturer.

The 1997 merger with McDonnell Douglas marked a turning point for Boeing. Besides solidifying its status as the American aerospace giant, Boeing's leadership focused on increasing returns to investors, that prioritized operational efficiency above all other factors. Under leaders such as Philip Condit and Harry Stonecipher, Boeing made the decision to relocate its headquarters to Chicago and undertook significant moves, including asset divestitures and the implementation of a share repurchase program.

Later, with Jim McNerney, Boeing doubled down on cost-reduction efforts and kept pushing for operational efficiency. Despite facing supply chain issues and the global financial crisis, it remained committed to maximizing shareholder value, spending billions on dividends and share buybacks, and maintaining a strong operating cash flow. The company's rise trajectory continued under Dennis Muilenburg. Under his leadership, Boeing ramped up production, with a focus on increasing the efficiency of operations while maintaining the drive for profitability.

As Boeing reached the peak of its financial success, there is a critical question left: After all these years flying above the clouds, what can the future hold for the aerospace giant?

In **Exhibit 1,** there is a list of all the key events since 1997.

Boeing History

In 1916, the Boeing Company was founded by a partnership between William E. Boeing and George Conrad Westervelt. The company started its life producing small seaplanes in Seattle, Washington. Boeing's early years were mainly devoted to military aviation after securing important military contracts with the U.S Government during World War I. By the 20's, Boeing turned its focus to lucrative airmail contracts, marking the start of its venture into commercial aircraft. In 1927, Boeing launched Boeing Air Transport, an airline business to carry mail and passengers that would later become United Airlines.

During World War II, Boeing's military business was booming as it became one of the leading suppliers to the U.S Military. The company produced 98,965 aircraft over the war period. In the years following World War II, based on stolen German military research papers, Boeing introduced a major technological leap: the jet engine. In 1958, Boeing introduced the 707, its first ever jetliner. During a demonstration flight, a 707 crashed and killed 4 people. Though the fault was attributed to the pilot, the Boeing team believed the design of the plane could be improved to prevent further incidents. When the problem was brought to the lead engineer's attention, the solution was to simply fix it. No matter at what cost, at Boeing safety was always first.

The jet age had begun, and the 707 established Boeing's dominance in the commercial aircraft market. By the 1960s Boeing's workforce surpassed 142,000 workers. In 1964, Boeing launched the 727, a smaller, narrow-body tri-jet, suitable for shorter haul flights than the 707.

However, competition was heating up and there was a growing demand for smaller, more economical aircraft that could cater to smaller airlines on regional routes. A few miles south from Boeing's home in Seattle, competitor plane maker Douglas introduced the DC-9, a smaller, bi-motor jet. Boeing needed a true short-haul airplane so, in 1967, the Seattle based plane maker debuted the 737. Boeing was already behind competition at that time, and with

most resources being employed in the development of 747, the 737 was designed with the goal of building it as cheaply as possible. The design of the 737 was full of compromises, with 60% of the parts being reused from the 727. Despite these challenges, the 737 proved to be an immense success. Part of it was due to the design choices of the Boeing team. Unlike the DC-9, the 737 had its two engines mounted under the wings, which allowed for wider fuselage and easier access to repairs, and it was also lower to the ground which facilitated loading and unloading of the plane.

Continuing its tradition of innovation, in 1969, Boeing debuted its most iconic aircraft to date, the 747. Despite almost bringing the manufacturer to the brink of bankruptcy, the 747 revolutionized air travel. With its range of 8,000 miles and capacity for more than 360 passengers, it significantly reduced the cost per seat mile and made international travel accessible to the masses.

The following decades, saw the introduction of three new airplanes to the Boeing line up, the 757, the 767 and the incredibly successful 777. The market also saw an increase in competition, namely with the insurgence of Airbus, and deregulation in the aviation industry, which lowered the fares and created new routes, creating pressure on airlines to become more cost conscious.

By the end of the 20th century, Boeing was synonymous with engineering excellence and innovation, had an unbreakable commitment to safety, where costs and the bottom line played a secondary role. It was an engineering-first company where its executives had a technical background. It bet on long-term innovation projects rather than financial returns and won its place as one of the most respected companies in America. It promoted communication between employees where concerns about projects could be voiced. Boeing employees saw their colleagues as a family and everyone at the company was under the "*Working Together*" motto.

Merger with McDonnell Douglas

McDonnell Douglas was a prominent American aerospace and defense company formed in 1967 through the merger of McDonnell Aircraft Corporation and Douglas Aircraft Company. The company gained recognition for producing notable aircraft, including the DC-9, DC-10, and the F-15 Eagle, which played vital roles in both commercial aviation and military operations.

By the time the Soviet Union collapsed, the company's military division was struggling, forcing it to be highly cost-conscious. As competition intensified from rivals, such as Airbus and Boeing, McDonnell Douglas began to experience significant challenges. An internal study revealed that it would require over a decade and an investment of $15 billion for the company to remain competitive in the evolving market landscape. Adding to these difficulties, McDonnell Douglas was excluded from the only foreseeable U.S. military contract for fighter jets, worth $200 billion.

CEO Harry Stonecipher, confronted with the company's reality, recognized that, to ensure the company's survival, a merger was necessary. In 1997, under the leadership of Philip Condit, Boeing merged with McDonnell Douglas, where each McDonnell Douglas shareholder would receive 1.3 shares of Boeing common stock for each share of McDonnell Douglas common stock. The transaction was valued at $16.3 billion, and solidified Boeing's position as the global leader in aerospace. However, to finalize the deal, the European Commission mandated that Boeing terminated its exclusivity agreements with 3 U.S. carriers.

As a result of the merger, John McDonnell and Harry Stonecipher became Boeing's largest individual shareholders, with the later becoming the company's new COO and President. They, along with two other McDonnell Douglas executives, joined the new Board of Directors, occupying four of the twelve seats. Although Boeing was the acquiring company, the merger led to significant cultural changes. The two companies had different approaches to the business:

McDonnell Douglas prioritized financial performance, whereas Boeing focused on engineering excellence. With former McDonnell Douglas executives stepping into major leadership roles, Boeing's focus shifted. The newly formed company would be run through a more rigorous financial discipline.

Who piloted Boeing through its take-off on Wall Street?

Philip Condit

Philip Condit, who held over 20 leadership roles before becoming Boeing's CEO, led the company through its merger with McDonnell Douglas. This move positioned the "new" Boeing as the market leader. However, by that time, Airbus was emerging as a strong competitor, producing aircraft that were 13 to 15% cheaper. To enhance production efficiency, Condit sent executives to Japan to learn lean practices from companies like Toyota and Hitachi, that would later be implemented in Boeing's factories. Simultaneously, Boeing's commercial division, striving to compete with Airbus offered significant discounts to airlines, which in turn created immense pressure to double production rates while the lean practices were still being implemented. Factories were unable to meet the soaring demand, leading to a record backlog[1] valued at $94 billion by the end of 1997. Faced with the challenge of ramping up production while absorbing the recent merger, Boeing found itself overstretched, culminating in a $178 million loss for 1997, the company's first loss in 50 years. See **Exhibit 2.1 to 2.3** for Boeing's Financial information over Condit's Tenure.

By the end of the 2nd quarter of 1998, a $4.5 billion share repurchase program[2] was created. Boeing executives believed they had cash in excess of their operating requirements, and as they expected to generate solid cashflows in the following years, the program would be an effective way to return value to our shareholders. A few months after, Deborah Hopkins from General Motors (GM) was hired for the CFO position, with the goal to keep Boeing on track to become

[1] Confirmed, unfilled customer orders under contract.
[2] To buy back up to 15% of Boeing's shares

a shareholder-friendly company. The company would post yearly net earnings of $1.1 billion in 1998. Although seen as progress from the loss in 1997, the Board was dissatisfied because Boeing was in the bottom quartile of S&P 500 companies in standard measures of profitability. In **Exhibit 3,** there is the message for shareholders presented in the same report, where it was made clear that the Board envisioned returning Boeing to the top, both in profitability and in total return to shareholders. To do so, the company would need to raise operating margins in each of its principal business streams to double-digit levels. Going forward, the company would start measuring the Return on Net Assets[3], to incentivize efficient use of assets and evaluate which businesses were being value destroyers. They planned to do it based on "value scorecards[4]". Also, Boeing planned to get all the parts needed to build a plane from smaller and more vulnerable suppliers, whose prices would be squeezed and union benefits reduced or negotiated. CFO Hopkins emphasized in several interviews that engineers needed to broaden their perspective on the business. She mentioned that they were too focused on the box, the plane itself, which clients already expected to be of high quality. Her goal was that engineers, for whom the product was everything, to place greater emphasis on profitability. Financial metrics were now the primary measure of success, outweighing the past significance of innovation and product quality.

In 1999, Boeing's operating margin would improve to 5.5% from 2.8% in the previous year. However, engineers started to become unsatisfied with how Boeing was being managed, and SPEA[5], planned a strike for the morning of February 9th in 2000. The strike would become the largest white-collar union strike in the United States with over 23,000 participants over 6

[3] Return on net assets is used to measure the ratio of income generated to the capital employed
[4] A set of measures that gives managers a fast but comprehensive view of the business. Boeing four public metrics were inventory turns, facility consolidation, overhead cost management and supplier base consolidation
[5] Society of Professional Engineering Employees in Aerospace (SPEA) is Boeing's largest labour Union representing engineers, technical workers and other professionals in the aerospace industry

different states. By the end of September, Boeing's stock had fallen by over 10%. See **Exhibit 4** for Boeing's stock evolution compared to S&P 500 index.

Shortly thereafter, Boeing's leadership decided that it was time to put some distance between themselves and the people making the planes. Boeing's CEO, Condit explained:

"When the headquarters is in proximity to a principal business, as ours was in Seattle, the corporate center is inevitably drawn into day-to-day business operations."

Boeing's headquarters were moved from its original home in Seattle to Chicago, the city offering the highest tax incentives. The State of Illinois offered Boeing up to $41 million in tax and other incentives over 20 years, and Chicago's Mayor offered millions more in property tax abatement and other benefits over that period. With none of its businesses based in Chicago, the move separated Boeing's corporate executives from its engineering and product decisions. The nearest Boeing commercial-airplane assembly facility would be 1,700 miles away.

Just a week after the new headquarters opened, the September 11 attacks took place. When the markets reopened on the 17th, Boeing's stock dropped by 18%, ushering in a period of reduced air travel demand in the following years.

By 2003, Boeing deliveries had declined 47% when compared to 2001 deliveries. Contrarily to Boeing's direction, the European consortium manufacturer Airbus was by then a rising star and in 2003 surpassed Boeing for the first time delivering 305 planes compared to Boeing's 281. By then, Boeing announced its plan to build its first new aircraft in a decade, the 787 Dreamliner. See **Exhibit 5** for Boeing *vs.* Airbus historic deliveries comparisons.

In mid-2003, Boeing's CFO at the time, Michael Sears[6], was caught violating government procurement laws. Sears was sentenced to 4 months in jail as Boeing's rocket division was found to be in possession of 25,000 pages of stolen Lockheed Martin documents. Consequently, the event marked the end of the line for Condit.

[6] Ex McDonnell Douglas executive, replaced Deborah Hopkins due to her change to Lucent Technologies

By the end of his period, despite the ethical controversies surrounding Boeing, the company experienced significant financial growth. Between 1996 and 2003, Boeing's revenues surged by 42% and $9 billion were generated in Net Earnings. Also, Condit oversaw a consistent increase in shareholder returns, distributing $3.9 billion in dividends and investing over $9 billion to repurchase shares, demonstrating a clear commitment to the new focus on shareholder value.

Harry Stonecipher

Harry Stonecipher, ex-COO and President, returned from retirement to become Boeing's CEO in 2003 after the resignation of Philip Condit. Stonecipher, having served as McDonnell Douglas's CEO before its merger with Boeing, brought with him the same cost-centric strategies that had shaped McDonnell Douglas's financial philosophy. From the start, his approach was clear: prioritize maximizing profits through tight control of capital, cost efficiency, and asset divestiture, following the model that was deployed at McDonnell Douglas. Stonecipher saw an opportunity to change Boeing's direction. His mantra, "Less family, more team", reflected the cultural shift he wanted, moving Boeing away from its tradition of engineering excellence and close-knit teamwork to a more corporate, profit-driven mindset. As he emphasized:

"*When people say I changed the culture of Boeing, that was the intent, so that it's run like a business rather than a great engineering firm. It is a great engineering firm, but people invest in a company because they want to make money.*"

Investing in the production of the 787 Dreamliner, following a significant order from All Nippon Airways, was one of his first decisions. The new CEO's approach to its development was defined by financial discipline. An internal analysis projected that the cost of developing the Dreamliner would be half of what Boeing had spent on the 777, largely due to Stonecipher's aggressive outsourcing strategy. Key elements, such as the wing, traditionally produced in-

house, would now be outsourced to Mitsubishi Heavy Industries in Japan. See **Exhibit 6** for 787 Manufacturing Map.

This outsourcing model, copied from Stonecipher's days at McDonnell Douglas, aimed to reduce costs by leveraging cheaper labour markets and minimizing capital expenditures on in-house manufacturing capabilities. This "capital light" approach boosted short-term financial metrics, such as the Return on Net Assets. During his tenure, Stonecipher sold off major Boeing assets. This included the sale of factories in Wichita, Kansas, as well as in Tulsa and McAlester, Oklahoma, under an asset purchase agreement, which later formed Spirit Aerosystems. The value of the transaction included approximately $900 million in cash and the transfer of certain liabilities and long-term supply agreements that provided ongoing savings to Boeing. The divesture of such assets underscored Stonecipher's commitment to decrease the assets under Boeing's balance sheet and consequently improve the company's return on net assets (RONA).

Stonecipher's time as CEO was cut short due to a personal scandal. In March 2005, he was forced to resign, after it was revealed that he had engaged in an affair with an executive from Boeing's Washington lobbying office, a clear violation of the company's strict code of conduct. On his resignation day, Boeing's stock was valued at $58.3.

During 2004 and 2005, under Stonecipher leadership, Boeing posted net earnings of $1.9 billion and $2.6 billion, respectively. Moreover, the company spent over $3.5 billion on share repurchases and stock swaps and distributed $1.5 billion in dividends. See **Exhibit 7.1 to 7.3** for Boeing's Financial Statements over Stonecipher's Tenure.

Walter James "Jim" McNerney

When Jim McNerney took over as Boeing's CEO in 2005, the company was seeking stability after the series of leadership challenges and internal scandals. McNerney's leadership was welcomed by Wall Street from the start. Upon the announcement of his appointment on June 30th, Boeing's shares surged by 7%. Although he was an outsider[7] and wasn't an engineer as it was common in Boeing early days, McNerney was "created" in the operational and managerial philosophies of General Electric's (G.E.) CEO, Jack Welch. Welch's obsession with delivering shareholder value, had turned G.E. into the most valuable company in the world[8].

Under McNerney leadership, Boeing saw significant restructuring. He moved some of the 787 production away from the Seattle area's unionized workforce to the non-unionized state of South Carolina. On the 787 production, McNerney continued the hands-off approach in outsourcing crucial components to outside suppliers, believing that this would drive cost savings. Boeing itself would only be responsible for about 10%[9] of the production. By the end of 2007, Boeing had already over 800 orders of the Dreamliner, making it the fastest selling airplane in history, and was able to achieve an 8.8% operating margin. However, as suppliers were failing to meet Boeing's quality standards, the company was forced to buy back Vought Aircraft Industries' interest in Global Aeronautica[10] for $590 million and reintegrate production at a greater cost. Besides Boeing's internal setbacks, the economic environment also deteriorated as the 2008 financial crisis started and affected air travel demand. During the first 3 years of McNerney's guidance, Boeing's revenue was around $60-65 billion. Still, during the same period, Boeing had net earnings of over $8.9 billion and spent over $10.7 billion in

[7] McNerney already sat on Boeing's Board of Directors but had no executive role. He worked at major companies such as McKinsey, General Electric (GE) and 3M.
[8] In 1999, during the dot-com bubble was worth over $451 billion
[9] by value
[10] South Carolina fuselage sub-assembly facility

dividends and share buybacks, more financial information on McNerney's tenure can be seen in **Exhibit 8.1 to 8.3**.

Amid the Dreamliner woes, McNerney also had to navigate Boeing's response to competition from Airbus, particularly in the short-haul market, where Airbus's A320 was rapidly gaining ground. In 2010, Airbus announced the A320neo with more fuel-efficient engines[11]. Attracted by the cost-saving opportunity, American Airlines, historically an exclusive Boeing client[12], was then considering purchasing the new model. American's CEO called Boeing's Commercial Airplanes Chief to inform him of American's interest in Airbus's new model, which prompted an immediate response that Boeing would provide a counteroffer. Boeing found itself at a crossroads, the 737 generated roughly $12 million in profit per aircraft, but it was becoming outdated. Within a week of the call, Boeing proposed a hypothetical new generation of 737, with more powerful engines, leading American Airlines to ultimately split the order between both companies.

In August 2011, McNerney's announced the decision to develop the 737 MAX, a revamped version of the 737. Instead of pouring billions into developing an entirely new plane, subject to cost overruns as in the 787, Boeing's investment in the revamped MAX was only $2.5 billion, a fraction of what it would have cost to build a new model from scratch. Analysts viewed the MAX as a win for Boeing, delivering exactly what customers wanted, an upgrade at a lower cost.[13] Until the end of 2011, Boeing had already had 150 orders of the MAX.

The year 2012 proved to be a landmark year for the company, driven by record-breaking orders, particularly for the Boeing 737 MAX, as the company guaranteed 914 orders. See historical 737 MAX orders in **Exhibit 9**. This surge in sales resulted in a historic backlog, representing

[11] Expected to be 15 percent more fuel efficient than previous comparable models
[12] One of the airlines affected by the exclusivity contract disrupted by the EU in the McDonnell Douglas merger
[13] The fact 737 MAX was just a model upgrade, involved lower aircraft switching costs from previous 737 models

over five years' worth of sales, and a 19% revenue increase – See **Exhibit 10** for Historical Backlog. Notably, for the first time since 2003, Boeing delivered more planes than Airbus.

By 2013, Boeing started the "*Partnering for Success*" program, asking suppliers to cut costs by 15% while keeping up or increasing production rates. By the end of the year, the share repurchase program had resumed, after being canceled in 2010 due to the financial crisis, with the company allocating $8.8 billion to buybacks over 2013 and 2014. Revenue reached a record $90.8 billion in 2014, propelled by strong global demand for commercial aircraft. The company emerged from the 2008 financial crisis in a stronger position. Operating Cash flow proved to be strong during the following years, and investors praised short-term metrics like these. Boeing's stock rose from $86.62 in the beginning of 2008 to $136.49 by the end of 2013.

McNerney's departure in 2015, prompted by retirement age, left behind a leaner and more profitable Boeing. Under McNerney, revenue rose 73% [14] while earnings per share more than doubled over the period. During his tenure, over $16 billion were spent on the share repurchase program, even with the program stopping from 2010 to 2013, and distributed $12 billion in dividends. Between 2010 and 2014, shareholder returns more than doubled, surpassing the S&P 500's and S&P 500's Aerospace & Defense performance over the same period as seen in **Exhibit 11.1** and **11.2**.

On the day prior to his successor announcement, Boeing's stock closed at $145.70, a 125% increase on the $64.68 of the day he was first appointed. During his tenure, McNerney made himself $231 million, plus at least $58.5 million from a retirement package.

Denis Muilenburg

Dennis Muilenburg became Boeing's CEO in 2015, following in the footsteps of his predecessor Jim McNerney. A Boeing "lifer", Muilenburg had joined the company in 1985 as an aeronautical engineer and had steadily climbed the ranks, serving as McNerney's apprentice

[14] From 2004 to 2014

before taking the helm. In contrast with McNerney, Muilenburg was seen as a more approachable and technically minded leader. He spent time talking to workers and had a deep connection to Boeing's engineering roots. Despite this difference in style, Muilenburg's strategy largely followed McNerney's focus on efficiency and maximizing shareholder value.

Muilenburg inherited a company riding high on the success of orders of the 737 MAX. Sales were booming with more than 2660 MAXs sold by the end of 2014, and the plane was central to Boeing's efforts to compete with Airbus. Muilenburg's early years as CEO were marked by continued emphasis on driving down costs and ramping up production.

The 737 MAX program was seen as a key driver of the company's growth, and the pressure to deliver on time and within budget was immense. Boeing's leadership faced tight deadlines, cost constraints, and an expectation to meet growing aircraft demand. Muilenburg's team worked to ramp up production while keeping costs in check, pushing for an additional 10% cost reduction on top of McNerney's previous demand for a 15% cut on the "*Partnering for Success*" program.

The year 2016, marked Boeing's 100th anniversary. The company celebrated its long history of innovation while also looking forward to a new century of dominance in the aerospace industry. In January 2016, the first 737 MAX took to the skies for a test flight, with Boeing's Commercial Airplanes Chief hailing:

"The successful flight carries us across the threshold of a new century of innovation."

By 2017, Boeing was excelling under Muilenburg's leadership. Earnings surged 67% compared to the previous year, reaching $8.2 billion, and the company achieved an impressive operating margin of 11%. Over the first 3 years of Muilenburg's tenure[15], Boeing spent around $23 billion in the share repurchase program and distributed over $8.5 billion in dividends. Wall Street was thrilled with the results, and Boeing's stock price tripled over the same period. In early 2018, the stock price surpassed $300, a sign of investors' confidence in the company's growth

[15] From 2015 to 2017

trajectory. See **Exhibit 12.1** to **12.3** for Boeing's financial information over the period from 2015 to 2018.

In the meantime, Boeing entered negotiations to acquire the Brazilian aircraft manufacturer Embraer SA, seeking to enhance its competitive edge in the regional jet market against Airbus, as the European competitor had acquired Bombardier regional jets division. This deal would broaden Boeing's portfolio to include smaller commercial aircraft with fewer than 100 seats and enhance its offerings in military and business jets.

Muilenburg's ambitions for Boeing continued to grow. He announced plans to raise production rates for the 737 MAX from 47 in 2018 to 57 planes per month by 2019, aiming to meet the soaring demand for the aircraft. Muilenburg declared that Boeing's aspiration was no longer just to be the best in aerospace, but to be a "*global industrial champion*." On October 24th, Boeing reported that third-quarter free cash flow had jumped 37% to $4.1 billion from the previous year's third quarter, more than double what analysts had estimated, sending the stock up 3% that day to $363.77. "*The cash is the cash, you can't deny it,*" said an analyst from Canaccord Genuity.

Boeing was flying high as the winds blew in its favor but on October 29th, the unexpected happened… a Boeing 737 MAX crashed on the Java Sea. The Lion Air Flight 610 took off from Jakarta airport at 6.20 am bound for Pangkal Pinang on an island off Sumatra but lost contact 13 minutes later. 189 people were on-board that day. Boeing quickly issued a statement expressing deep sadness over the loss of all passengers. That day, the company's share price fell 7%, but only 3 days later it recovered from losses, reflecting Wall Street's continued trust in Boeing's credibility and long-term potential. See **Exhibit 13**, for Boeing stock daily closing prices around the date of the accident.

Back in 2011, Lion Air had committed to order 201 Boeing 737 MAX and 29 Next-Generation 737-900ERs. The transaction was worth $21.7 billion, representing the largest single

commercial order in Boeing's history at the time by both dollar volume and total number of airplanes.

The airline was known for its controversial safety record[16], but the shocking accident involved a nearly new plane that only started operating in August of that same year. By the end of November, Indonesian authorities released a preliminary report that indicated pilots had been confused by an automatic software and highlighted maintenance errors, including a faulty sensor that had been identified but not replaced before the flight. Boeing's response emphasized these maintenance mistakes as the starting point of a chain of errors that ended up in the crash of Lion Air Flight 610.

With shareholders trust on Boeing intact, on January 30th 2019, Boeing released its 2018 annual results. Boeing reported record revenues of over $100 billion, an 11.8% operating margin, and earnings per share of $18.05, with the company deciding to distribute $4.6 billion in dividends. Even though, over the year, it had already repurchased $9 billion worth of shares. Additionally, Boeing had in its books a total order backlog of nearly 5,900 airplanes, which guaranteed about seven years of production. Since Muilenburg assumed the role of CEO, Boeing reached unprecedented heights, and his compensation reflected that success, with Muilenburg amassing $95.9 million in gross pay since the start of his tenure.

With impressive results and even better-looking outlooks, by March 1st 2019, the stock reached a record closing price of $440.62, with Boeing reaching over a $250 billion market capitalization, an over 30% jump from its market capitalization in the end of 2018. Boeing not only survived the MAX crash but continued to fly way above the clouds, raising the question: What can the future still hold for the aerospace giant?

See **Exhibit 14, 15, 16 and 17** for Capital Markets information over the period in study.

[16] Including a ban from European Union airspace due to maintenance and training concerns

Industry Note

Industry Introduction

The story of aircraft manufacturing begins in the early 20th century, when the Wright brothers made history with the first successful powered flight. Their breakthrough inspired a wave of inventors, engineers, and visionaries who saw the potential of flight to transform transportation. World War I and II would come to play crucial roles in accelerating the development of airplanes, as nations invested heavily in military aviation.

By the mid-20th century, airplanes had evolved from fragile machines to powerful marvels capable of carrying passengers and cargo across vast distances. The rise of commercial aviation in the post-war period marked a turning point in the industry. Companies like Boeing and Douglas pioneered aircraft designed specifically for civilian use, including the iconic Boeing 707, which revolutionized transcontinental and transatlantic travel.

As commercial aviation grew, so did the competition between manufacturers. In the 1970s, Boeing solidified its dominance with the introduction of the legendary 747 jumbo jet. However, Boeing was not alone in this race. Airbus, a European consortium, emerged in the 1970s with the ambition of challenging the American giant, marking the beginning of an intense rivalry that would shape the industry for decades to come.

Industry sectors and value chain

The aircraft manufacturing landscape has become a highly competitive, globalized market. Boeing and Airbus remain the dominant players, controlling much of the market for commercial aircraft. Aircraft manufacturers not only focus on commercial aviation, but also produce military aircraft, business jets, and advanced aerospace technology. The market is heavily regulated, with a focus on safety and sustainability, as environmental concerns push companies toward greener aviation solutions.

Over the next decades, global demand for new aircraft is forecasted to soar, with Airbus and Boeing estimating the delivery of over 40,000 new planes by 2043. However, both companies are facing challenges in scaling up production due to supply chain disruptions and labor shortages. There is an urgent need for industry-wide solutions to address these vulnerabilities as manufacturers strive to meet the growing global demand for airplanes. Yet, even as Boeing and Airbus dominate the skies, new competitors and technological disruptors continue to emerge, hinting at a future where the industry could be reshaped once again.

Manufacturers

The aerospace industry has a limited number of players due to significant barriers to entry, such as high capital requirements and stringent regulatory certifications. The industry is primarily divided into key segments, with Boeing and Airbus dominating the wide-body and narrow-body commercial aircraft markets, while Embraer and Bombardier lead in regional and private jets, respectively. Many of these manufacturers also produce military aircraft, where companies like Lockheed Martin are prominent, as well as cargo planes. Additionally, most operate in the aerospace sector, which includes satellites and space exploration technologies.

Suppliers

The aircraft manufacturing industry relies on a network of specialized aerospace suppliers crucial for both building and maintaining aircraft. These suppliers deliver essential components like avionics, engines, landing gear, and composite materials, playing a significant role in ensuring the quality and safety of commercial and military aircraft. Collaboration between suppliers and major manufacturers is key to effective assembly and long-term support through maintenance and spare parts. The industry features a few dominant players, such as RTX Corporation, Safran, MTU Aero Engines, General Electric, and Rolls-Royce, who often engage in joint ventures to develop advanced engines. Additionally, smaller firms contribute with specialized parts and systems. Coordination between aircraft and engine manufacturers starts

early in the design and concept phases to align requirements. Typically, only one or two engine models are suitable for each aircraft type, highlighting the sector's reliance on a limited number of engine suppliers, creating significant barriers to entry into this market.

Clients

Aircraft manufacturers cater to a wide range of clients, including commercial and charter airlines, leasing companies, cargo carriers, governments, and private and business jet operators. Large airlines, financially robust carriers, and aircraft leasing firms tend to have more bargaining power when negotiating with companies like Boeing and Airbus. Prominent global carriers, such as Emirates, Etihad, and American Airlines, which operate extensive wide-body fleets, along with low-cost carriers like Ryanair and Southwest, which maintain large narrow-body fleets, benefit from their ability to place large orders, enabling them to secure better pricing and terms. Similarly, leasing companies like AerCap and Air Lease Corporation, with significant purchasing volumes, can negotiate favorable deals because of their scale.

Competitive Positioning

From 1999 to 2021, Boeing and Airbus collectively delivered over 80% of all new airplanes added to the global aircraft fleet. In contrast, Bombardier and Embraer have a combined supply of 16% of the market during the same timeframe. The market deliveries for this period are illustrated in **Exhibit IN 1**.

Boeing *vs.* Airbus

Within the realm of iconic business rivalries like Coca-Cola vs. Pepsi, Boeing vs. Airbus stands out as one of the most influential. Boeing, as an older firm, initially dominated commercial aircraft production, securing its market leadership with pioneering designs such as the legendary 747. In contrast, Airbus, created by a consortium of European countries, entered the market with a smaller share but aggressively pursued innovation and efficiency in aircraft design. The rivalry intensified in the early 2000s when Airbus overtook Boeing in orders for

the first time in 2003 – See **Exhibit IN 2** for orders evolution. Today, the 2 giants completely dominate the market: Boeing's 737 competes with Airbus's A220 and A320 on short-haul routes, while in medium-haul, Boeing's 737-10 faces Airbus's A321LR. In the long-haul market, Boeing's 777 and 787 go head-to-head with Airbus's A330neo and A350, while the jumbo sector was defined by the Boeing 747 and Airbus A380[17].

Military aircraft also represent a critical segment for the giants. Boeing has a long history with defense contracts, in fact, in 2023, 40% of Boeing's total revenue came from U.S. government contracts. Airbus, though primarily known for its commercial planes, also plays a vital role in military production, with defense contracts comprising 18% of its revenue in 2023. Both companies rely on these contracts for long-term profitability, especially in times of fluctuating commercial aircraft demand.

Embraer

Embraer, the third-largest aircraft manufacturer, has been a major player in the regional jet market, striving for dominance in this niche sector for decades. The Brazilian company introduced its ERJ[18] series in the 1990s, focusing on commercial aircraft with under 150 seats. Embraer's ERJs are widely used by regional airlines due to their efficiency, allowing them to compete with the giant's smaller aircraft offerings.

In this market, Embraer's main competitor used to be Canada's Bombardier, which sold its commercial aviation division to Airbus in 2020. Similarly, Embraer was close to finalizing a deal with Boeing in 2019, with Boeing set to acquire an 80% stake in its commercial division, but the agreement fell through in 2020.

[17] Jumbos are not in production anymore
[18] Embraer Regional Jet

Newcomers

New manufacturers like China's COMAC and Russia's UAC are emerging as potential challengers. COMAC appears as the most significant threat to the longstanding Boeing and Airbus duopoly in the narrow and wide-body aircraft market. After over a decade of development, COMAC has made strides with its C919 narrow-body aircraft, which is already operational within China since 2022. Though its market share remains small, IBA Aero projected it to reach just over 1% globally by 2030. Its impact on Boeing and Airbus is growing, particularly in its home market. COMAC is also involved in the development of the CR929, a prominent wide-body jet initially conceived as a joint venture with Russia's UAC, though recent developments suggest China may continue the project independently. Meanwhile, Russia's UAC is making moves with the Irkut MC-21, a long promised narrow-body aircraft with orders from internal airlines like Aeroflot. However, its production is currently delayed due to overweight problems.

The role of Innovation

Innovation plays a pivotal role in advancing the aviation industry, driving improvements in safety, security, efficiency, and environmental sustainability. These advancements benefit not only traditional air transport users but also extend their advantages to society and businesses at large. Governments are encouraged to support such innovation by integrating it into their National Development Plans, while also addressing potential challenges with balanced and proportionate regulations.

The competitive advantage of manufacturers, like Boeing and Airbus, is deeply rooted in their ability to leverage vast financial resources to fuel innovation. Their heavy investments in research and development allow them to efficiently create new models, responding to evolving market needs and maintaining market leadership. Being the first to introduce new technology often results in a competitive edge, as demonstrated by Boeing with the 747, which reshaped

the market, while Airbus's A380, although innovative, arrived too late to capitalize on the same opportunity. Staying ahead with innovative designs is key to securing long-term market leadership and shaping the industry's future.

Regulation

In the aviation industry, regulation is key to ensure safety. Aircraft certification is a crucial and meticulous process overseen by aviation authorities like the U.S. Federal Aviation Administration (FAA) and the European Union Aviation Safety Agency (Aircraft Manufacturer market implies very large capital expenditures to remain in the game). These regulatory bodies ensure that every aircraft meets strict safety standards before entering service. Certification involves thorough testing and evaluation of the aircraft's design, construction, and performance. Key components such as the airframe, engines, and systems undergo detailed analysis, with special attention to how the aircraft performs under various flight conditions. This ensures that both passenger and cargo aircraft operate at the highest levels of safety.

M&A Activity

Mergers and acquisitions have been instrumental in shaping the aircraft manufacturing industry, driving consolidation of key players like Boeing and Airbus. Airbus was originally established in 1969 as a consortium of European aerospace companies, while Boeing's market dominance was significantly boosted in 1997 through its merger with McDonnell Douglas, the second largest American aircraft producer, a company already formed by the merger of McDonnell Aircraft and Douglas Aircraft. This merger solidified Boeing’s position as a market leader in commercial aviation.

A key strategic move for Airbus was its acquisition of Bombardier’s C Series in 2016, rebranded as the Airbus A220. This allowed Airbus to enter the small passenger jet market, an area Boeing had not fully capitalized on. To counter this, Boeing sought a joint venture with

Brazilian manufacturer Embraer in 2018 to strengthen its presence in the regional jet market. However, the deal collapsed in 2020, partly due to the economic impact of COVID-19.

Beyond these two giants, M&A has also reshaped the aerospace supply chain. Companies like United Technologies and Safran have consolidated to expand their technological capabilities.

However, not all idealized mergers in the industry have succeeded. GE's attempted merger with Honeywell in 2001 and BAE Systems' proposed merger with Airbus in 2012 were blocked by regulators.

The aircraft manufacturing market requires significant capital expenditures to remain competitive. For that reason, the Boeing and Airbus merge/acquire companies like McDonnell Douglas or Bombardier and consolidate their growing position in a duopoly.

Market Size

As of February 2023, the CAPA Fleet Database indicated that around 20,000 narrowbody aircraft and 7,000 widebody aircraft were in service[19]. In the same year, the global aircraft market, which includes companies that manufacture aircraft and their components, was estimated to be worth $412 billion and is projected to grow to $601 billion by 2034. The Asia Pacific is the region of the globe that has been leading the market, with a market share of 40%. This leading position has been fueled by an increase in maintenance, repair and overhaul[20] services, combined with an increase in aircraft production based in China. The commercial segment has been dominant in the market and narrow-body aircraft have been outpacing wide-body ones.

The recovery from the COVID-19 pandemic has been rampant, with combined net orders from Airbus and Boeing totaling 3,410 in 2023, up from 1,594 and 986, from 2022 and 2021. See **Exhibit IN 3** for total market orders. This increase in new aircraft orders has been fueled by a soaring airline passenger demand. In 2023, Revenue Passenger Kilometers (RPKs) reached

[19] including both active and parked units
[20] MRO

94% of 2019 pre-pandemic levels, signaling that passenger traveling is reaching pre-pandemic levels. This recovery has been led by the Asia Pacific region.

Focusing on the commercial aviation industry, Airbus is currently leading the duopoly with 735 deliveries in 2023, against Boeing's 528. Thus, Airbus currently has a 58% share in terms of airplane deliveries, compared to Boeing.

Market Trends and Drivers

In 2020, the aviation industry saw RPKs drop by 93%, bringing global aviation to a halt. Now, with the end of the pandemic, passenger traffic is reaching pre-pandemic levels and set to experience continuous growth for years to come. In its latest Global Market Forecast, Airbus estimates traffic to grow at 8.4% CAGR until 2027 and at 3.6% from 2027 until 2043. This growth will be dominated by the Asia-Pacific region, and it will contribute to more than half of the net increase in global passenger numbers. The growth in traffic in this region has been fueled by the region's economic growth, expanding middle class and increasing urbanization. As income rises in these emerging regions, more people will be able to afford air travel. In fact, in 2023 alone, Indian airlines have ordered more than 1000 planes. This growth in passenger traffic will result in a demand for 42,430 new aircraft between 2024 and 2043, of which approximately 80% are single aisle aircraft and 20% widebody. See **Exhibit IN 4**.

One of the main challenges the aviation industry is currently facing is its road to decarbonization. Accounting for circa 2.5% of global carbon emissions and with forecasted increases in passenger demand that will increase this figure, the aviation industry faces mounting pressures to reduce its environmental impact.

One area of focus is the adoption of Sustainable Aviation Fuel (SAF). SAF is a liquid fuel that can be produced by a variety of sustainable sources such as waste oils and fats, green and municipal waste and non-food crops and it can also be produced synthetically via carbon capture. According to IATA, SAF will provide the bulk of the industry's emission reductions,

and it can reduce commercial aviation's carbon emissions by 80%. Currently, the most mature technology is Hydrotreated esters and fatty acids and accounts for most SAF offtake agreements. IATA estimates that the aviation industry consumed between 450 and 500 thousand tons of SAF in 2023, and its production could rise to 0.53% of airlines' total fuel consumption in 2024.

Beyond SAF, manufacturers are also exploring new propulsion technologies. Electric aircraft and hybrid-electric propulsion systems are being designed for smaller aircraft. Hybrid systems, which have a potential of reducing CO_2 emissions by up to 40%, combine combustion and electric propulsion and are a necessary step for larger planes towards pure electric propulsion. It is expected the entry into service of both these technologies already in the 2030s for regional aircraft. Hydrogen also has the potential of replacing jet fuel, even in larger aircraft, and in fuel cells for electrical power. However, its volume is four times larger than traditional jet fuel, requiring much larger tanks, and its production in large scale is still a big challenge.

Manufacturers are also focusing on improving fuel efficiency using lightweight materials, such as composites. These composite materials offer greater strength than regular materials at a much lower weight. The Airbus A350 uses composite materials on more than 50% of its structure. This lighter structure significantly decreases fuel burning and can contribute to a 15%-20% reduction in emissions over time. Furthermore, the characteristics of the materials increase the lifetime of the airframe, with Airbus claiming the A350 requires 50% fewer maintenance tasks.

Market Outlook & Risks

Over the next two decades, global demand for new aircraft is expected to surge. In fact, Airbus estimates that the world Fleet-In-Service will be 48,230 in 2043 compared to the 24,240 in the beginning of 2024. The Asia-Pacific region is set to become the biggest market for aircraft manufacturers, accounting for approximately 36% of the world fleet in 2034 (**Exhibit IN 5)**.

Airbus is currently leading the race, with 57% of the order book, mainly driven by narrowbodies, with Airbus securing over 8,000 orders versus Boeing's approximately 6,000.

To face this surge in demand, manufacturers will have to increase production rates. In accordance with this forecast, Airbus is ramping up its production, aiming to produce 14 A220s, 75 A320 family aircraft and 10 A350 per month in 2026, along with 4 A330s in 2024. Airbus has also started building two new assembly plants for the A320s. On the other side of the Atlantic, Boeing is still amid regaining trust in the aftermath of the 737 MAX crisis. Adding to that, supply chain challenges, labor instability and problems in its other aircraft programs means Boeing is struggling to meet its demand. Supply challenges are not exclusive to Boeing, Airbus has also been dealing with disruptions in sourcing components and materials being forced to reduce its production targets for 2024.

The aviation sector is heavily reliant on a fragmented network of suppliers, each providing critical components and materials. Many of these suppliers are facing difficulties in sourcing essential parts, causing production delays. One of the main contributing factors to these supply chain disruptions has been the shortage of skilled labor. During the COVID-19 pandemic, many suppliers laid off a significant part of their experienced workforce. Aircraft manufacturing requires a certain degree of skill and craftmanship, so now suppliers are struggling to hire sufficient skilled labor. With an increase in passenger traffic, but aircraft manufacturers struggling to ramp up production to meet this demand, airlines are being forced to extend the service life of older aircraft, creating an opportunity for the market of maintenance, repairs and overhaul. Demand in this sector is expected to grow 1.8% annually on average up to 2034, reaching $124 billion in revenue. However, with aircraft staying longer in service it causes an additional strain on the parts market in an already fragile supply chain. This has resulted in aircraft spending more time in maintenance, with lengthy delays and the delivery of products with malfunctions or missing parts.

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Appendix

Case A

Exhibit 1 – Boeing Key events since 1997 to 2019

Date	Event	Closing Stock Price ($)*
August 4th 1997	New Boeing begins operations as a single company after the merger with McDonnell Douglas Corp.	58.44
May 10th 2001	Announced th HQ move from Seattle to Chicago	65.95
December 1st 2003	Condit resigned and Harry Stonecipher nominated CEO	38.02
March 7th 2005	Stoncipher Resigned	58.30
July 1st 2005	W. James McNerney Jr. became CEO	64.68
August 30th 2011	Boeing initiated the 737 Max program	66.03
June 23rd 2015	Dennis Muilenburg announced to succeed as CEO	144.43
October 29th 2018	Lion Air flight 610 crashed	335.59
March 1st 2019	Stock Closes at record high	440.62

**Closing price on Official announcement day's or next available day*

Source: Events Compiled by Casewriter from Boeing's Official news and Closing Stock Price from Bloomberg

Exhibit 2.1 – Boeing's Consolidated Statements of Operations during Condit's tenure

Years ended in December, 31	1997	1998	1999	2000	2001	2002	2003
(Dollars in millions except per share data)							
Sales and other operating revenues	45,800	56,154	57,993	51,321	58,198	54,061	50,485
Operating costs and expenses	40,644	50,546	51,320	43,712	(48,764)	(45,566)	(43,862)
Boeing Capital Corporation interest expense	-	-	-	-	(324)	(410)	(442)
Equity in income (loss) from joint ventures	-	-	4	64	-	-	-
Income/(loss) from operating investments, net	-	-	-	-	93	(49)	28
General and administrative expense	2,187	1,993	2,044	2,335	2,389	2,534	2,768
Research and development expense	1,924	1,895	1,341	1,441	1,936	1,639	1,651
In-process research and development expense	-	-	-	557	-	-	-
Gain on dispositions, net	-	-	87	34	21	44	7
Share-based plans	(99)	153	209	316	378	447	456
Goodwill Impairment	-	-	-	-	-	-	(913)
Impact of September 11, 2001, recoveries/(charges)	-	-	-	-	(935)	2	21
Special charges	1,400	-	-	-	-	-	-
Earnings (loss) from operations	(256)	1,567	3,170	3,058	3,586	3,462	449
Other income, principally interest	428	283	585	386	304	38	459
Interest and debt expense	(513)	(453)	(431)	(445)	(326)	(320)	(358)
Earnings (loss) before income taxes	(341)	1,397	3,324	2,999	3,564	3,180	550
Income taxes (benefit)	(163)	277	1,015	871	738	861	(168)
Cumulative effect of accounting change, net of tax	-	-	-	-	(1)	1,827	-
Net earnings (loss)	(178)	1,120	2,309	2,128	2,827	492	718
Basic Earnings (loss) per share	($0.18)	$1.16	$2.52	$2.48	$3.46	$0.62	$0.90
Diluted Earnings (loss) per share	($0.18)	$1.15	$2.49	$2.44	$3.41	$0.61	$0.89
Cash dividends per share	$0.56	$0.56	$0.56	$0.59	$0.68	$0.68	$0.68

Source: Compiled from Boeing Annual Reports

Exhibit 2.2 – Boeing's Consolidated Statements of Financial Position during Condit's tenure

Years ended in December, 31	1997	1998	1999	2000	2001	2002	2003
(Dollars in millions except per share data)							
Assets							
Cash and cash equivalents	4,420	2,183	3,354	1,010	633	2,333	4,633
Short-term investments	729	279	100	-	-	-	-
Accounts receivable	3,121	3,288	3,453	4,928	5,156	5,007	4,515
Current portion of customer and commercial financing	261	781	799	995	1,053	1,289	857
Deferred income taxes	1,765	1,495	1,467	2,137	2,444	2,042	1,716
Income taxes receivable	-	-	-	-	-	-	199
Inventories, net of advances and progress billings	8,967	8,349	6,539	6,794	7,559	6,184	5,338
Total current assets	19,263	16,375	15,712	15,864	16,845	16,855	17,258
Customer and commercial financing	4,339	4,930	5,205	5,964	9,345	10,922	12,094
Property, plant and equipment, net	8,391	8,589	8,245	8,814	8,459	8,765	8,432
Deferred income taxes	15	411	-	60	-	2,272	1,242
Other acquired intangibles, net	-	-	-	-	1,320	-	-
Goodwill and acquired intangibles, net	2,395	2,312	2,233	5,214	5,127	3,888	2,948
Prepaid pension expense	3,271	3,513	3,845	4,845	5,838	6,671	8,542
Other assets	350	542	907	1,267	2,044	2,969	2,519
Total Assets	38,024	36,672	36,147	42,028	48,978	52,342	53,035
Liabilities and Shareholders' Equity							
Accounts payable and other liabilities	11,548	10,733	11,269	11,979	14,237	13,739	13,563
Advances in excess of related costs	1,575	1,251	1,215	3,517	4,021	3,123	3,464
Income taxes payable	298	569	420	1,561	909	1,134	277
Short-term debt and current portion of long-term debt	731	869	752	1,232	1,399	1,814	1,144
Total current liabilities	14,152	13,422	13,656	18,289	20,566	19,810	18,448
Deferred income taxes	-	-	172	-	177	-	-
Accrued retiree health care	4,796	4,831	4,877	5,152	5,367	5,434	5,745
Accrued pension plan liability	-	-	-	-	555	6,271	6,629
Deferred lease income	-	-	-	-	622	542	775
Long-term debt	6,123	6,103	5,980	7,567	10,866	12,589	13,299
Total Liabilities	25,071	24,356	24,685	31,008	38,153	44,646	44,896
Shareholders Equity							
Common shares, par value $5.00							
Shares issued	5,000	5,059	5,059	5,059	5,059	5,059	5,059
Additional paid-in capital	-	-	1,684	2,693	1,975	2,141	2,880
Treasury shares	-	-	(4,161)	(6,221)	(8,509)	(8,397)	(8,322)
Retained earnings	-	-	10,487	12,090	14,340	14,262	14,407
Accumulated other comprehensive income	-	-	6	(2)	(485)	(4,045)	(4,145)
Unearned compensation	-	-	(12)	(7)	(3)	-	(1,740)
ShareValue Trust shares	-	-	(1,601)	(2,592)	(1,552)	(1,324)	-
Other equity accounts	7,953	7,257	-	-	-	-	-
Total shareholders' equity	12,953	12,316	11,462	11,020	10,825	7,696	8,139
Total Liabilities & Shareholder's Equity	38,024	36,672	36,147	42,028	48,978	52,342	53,035

Source: Compiled from Boeing Annual Reports

Exhibit 2.3 – Boeing's Consolidated Statements of Cashflows during Condit's tenure

Years ended in December, 31	1997	1998	1999	2000	2001	2002	2003
(Dollars in millions)							
Cash flows - operating activities:							
Net earnings (loss)	(178)	1,120	2,309	2,128	2,827	492	718
Adjustments to reconcile net earnings (loss) to net cash provided by operating activities:							
Non-cash items -							
Special charges	1,400	-	-	-	-	-	-
Share-based plans	(99)	153	209	316	378	447	456
Depreciation	1,354	1,517	1,538	1,317	1,441	1,409	1,356
Amortization of goodwill and intangibles	104	105	107	162	302	88	94
Amortization of debt discount/premium and issuance costs	-	-	-	-	9	12	18
In-process research and development	-	-	-	557	-	-	-
Customer and commercial financing valuation provision	-	-	72	13	42	219	234
Pension income	-	-	-	-	(802)	(526)	(147)
Investment/asset impairment charges, net	-	-	-	-	438	357	155
Impairment of goodwill	-	-	-	-	-	2,410	913
Other charges and credits, net	-	-	-	-	(1)	(17)	63
Gain on dispositions, net	-	-	(87)	(34)	(21)	(44)	(7)
Changes in assets and liabilities:							
Short-term investments	154	450	179	100	-	-	-
Accounts receivable	(251)	(167)	(225)	(768)	342	(155)	357
Inventories, net of advances and progress billings	(1,008)	618	2,030	1,097	(186)	1,371	351
Accounts payable and other liabilities	1,490	(806)	217	(311)	300	(823)	(147)
Advances in excess of related costs	(139)	(324)	(36)	1,387	504	(898)	341
Income taxes payable and deferred	(451)	145	462	421	(762)	322	320
Other	(272)	(479)	(597)	(712)	(412)	(75)	(10)
Deferred lease income	-	-	-	-	622	(80)	233
Prepaid pension expense	-	-	-	-	(19)	(340)	(1,728)
Other acquired intangibles, net	-	-	-	-	(1,494)	-	-
Accrued retiree health care	(4)	35	46	269	227	67	311
Net cash provided by operating activities	2,100	2,367	6,224	5,942	3,735	4,236	3,881
Cash flows - investing activities:							
Customer and commercial financing-additions	(1,889)	(2,660)	(2,398)	(2,571)	(4,900)	(2,840)	(2,189)
Customer and commercial financing-reductions	1,030	1,418	1,842	1,433	1,283	789	1,242
Property, plant and equipment, net additions	(1,391)	(1,584)	(1,236)	(932)	(1,189)	(1,001)	(741)
Acquisitions, net of cash acquired	-	-	-	(5,727)	(22)	(22)	289
Proceeds from dispositions	-	-	359	169	152	157	186
Contributions to investment in strategic and non-strategic operations	-	-	-	-	(96)	(505)	(102)
Proceeds from investment in strategic and non-strategic operations	-	-	-	-	142	140	255
Net cash used by investing activities	(2,250)	(2,826)	(1,433)	(7,628)	(4,630)	(3,282)	(1,060)
Cash flows - financing activities:							
New borrowings	232	811	437	2,687	4,567	2,814	2,042
Debt repayments	(867)	(693)	(676)	(620)	(1,129)	(1,564)	(2,024)
Common shares purchased	(141)	(1,397)	(2,937)	(2,357)	(2,417)	-	-
Common shares issued	268	-	-	-	-	-	-
Stock options exercised, other	166	65	93	136	79	67	33
Dividends paid	(557)	(564)	(537)	(504)	(582)	(571)	(572)
Net cash used by financing activities	(899)	(1,778)	(3,620)	(658)	518	746	(521)
Net increase (decrease) in cash and cash equivalents	(1,049)	(2,237)	1,171	(2,344)	(377)	1,700	2,300
Cash and cash equivalents at beginning of year	5,469	4,420	2,183	3,354	1,010	633	2,333
Cash and cash equivalents at end of year	4,420	2,183	3,354	1,010	633	2,333	4,633

Source: Compiled from Boeing Annual Reports

Exhibit 3 – Message to Shareholders Boeing's Annual Report 1998

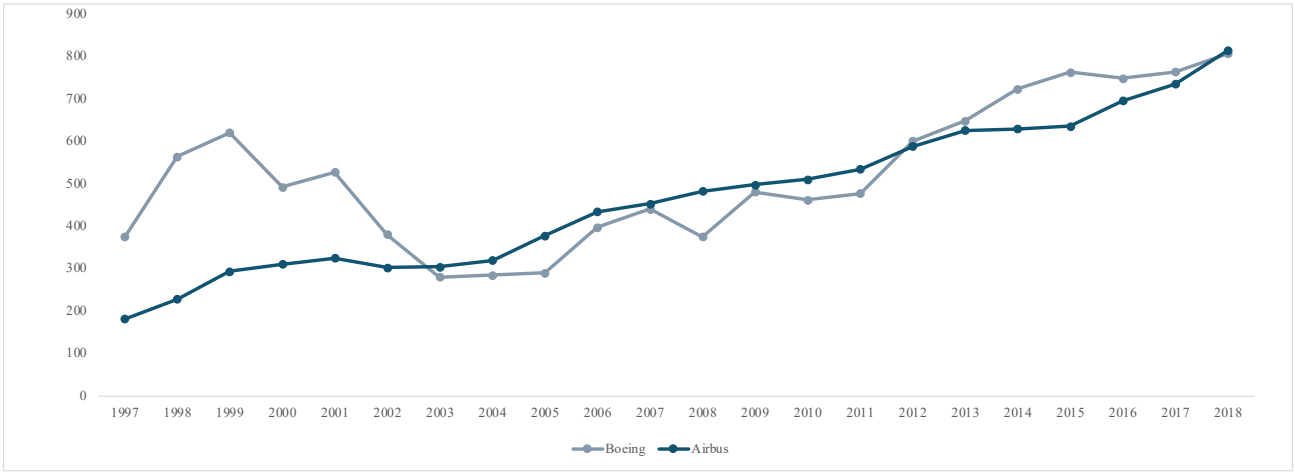
"Financially, 1998 did not turn out the way we planned. Far from it. There are three things we hope to accomplish in this letter. First is to acknowledge dissatisfaction with our 1998 results. Second is to show what we have done and are doing to improve. Third is to be clear about our primary goals and objectives and our absolute commitment to achieving them. Following a loss in 1997, Boeing posted net earnings of $1.1 billion in 1998. While that is progress, it leaves us in the bottom quartile of S&P 500 companies in standard measures of profitability. ***Our overriding goal is to return Boeing to the top quartile of companies both in profitability and in total return to shareholders****. In working toward our long-term goal of 7 percent after-tax for Boeing as a whole,* ***we will need to raise operating margins in each of our three principal businesses to double-digit levels****. That means achieving a slightly higher level of profitability in military aircraft and missiles despite static defense budgets. It means doubling our operating return on revenues in the fast-growing and highly competitive field of space and communications systems. It means returning to peak levels of profitability in our commercial aircraft business, which was about break-even in 1998. Is all that within our power? Absolutely. But only by embracing change. Around the world, the "Boeing" name is synonymous with airplanes and aerospace products in much the same way that "Coke" is with soft drinks, or that "McDonald's" is with fast food. We are proud of the extraordinary reputation of our products. And we will continue to push the boundaries of technology, inside and out of the earth's atmosphere. This is what we do best. It is, in a deep sense, who we are. But* ***a company does not exist simply to make great products – however exciting and important. It exists to serve its customers and shareholders.*** *If we have had to learn this lesson the hard way, be assured: We have learned it. Today's Boeing is a team. A team is competitive and focused****. Its objective is to win. In a business, that means beating the competition both in satisfying customers and in earning superior returns for shareholders.*** *Great teams share certain characteristics. They are passionate about achieving results. They provide plenty of room for diversity and creativity. But none for non-performance. And while they often have the best players, they always have the players who are the best at working together. The starting point in building a high-performance team is leadership. Over the past year, we put together a group of leaders at the top of this company who possess outstanding business skills as well as technical skills, and who share a common commitment to building their organizational structures around high-performance teams. (…)"*

Source: Boeing's 1998 Annual Report

Exhibit 4 – Boeing's Stock Vs. S&P 500 Evolution (Index base = 1997)

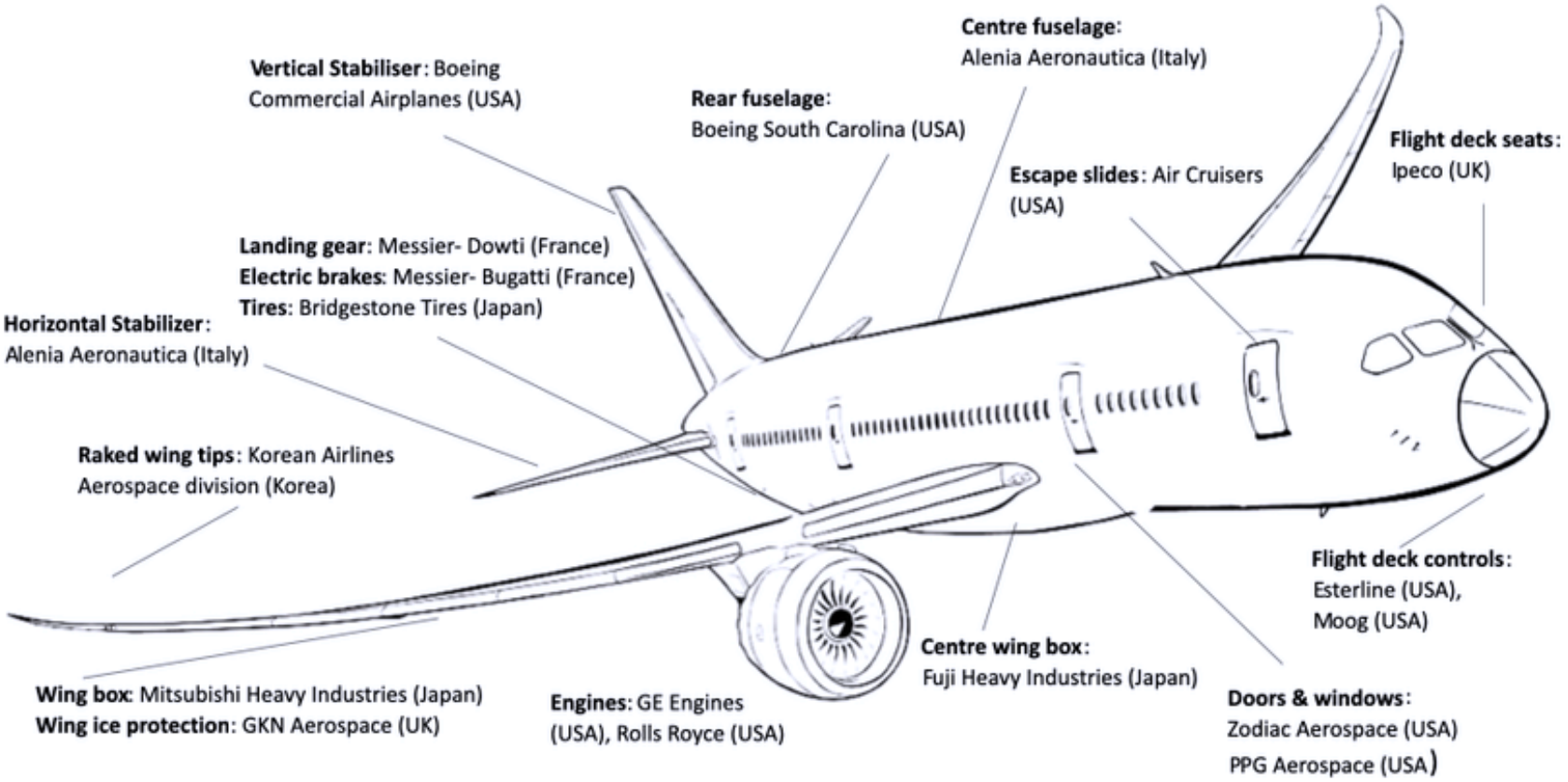
Source: Bloomberg

Exhibit 5 – Boeing *vs.* Airbus Deliveries over 1997-2018



Source: Boeing and Airbus Official Websites

Exhibit 6 – 787 Dreamliner Manufacturing Map



Source: Effectiveness of Engineering Service Organizations in Global Projects Execution by Stepin, Aleksei

Exhibit 7.1 - Boeing's Consolidated Statements of Operations during Stonecipher's tenure

Years ended in December, 31	2004	2005
(Dollars in millions, except per share data)		
Sales of products	43,979	45,398
Sales of services	8,478	9,447
Total revenues	52,457	54,845
Cost of products	(37,921)	(38,082)
Cost of services	(6,754)	(7,767)
Boeing Capital Corporation interest expense	(350)	(359)
Total costs and expenses	(45,025)	(46,208)
Income from operating investments, net	91	88
General and administrative expense	(3,657)	(4,228)
Research and development expense	(1,879)	(2,205)
Gain on dispositions, net	23	520
Goodwill impairment	(3)	-
Earnings from continuing operations	2,007	2,812
Other income, net	288	301
Interest and debt expense	(335)	(294)
Earnings before income taxes	1,960	2,819
Income tax (expense)/benefit	140	257
Net earnings from continuing operations	1,820	2,562
Income from discontinued operations, net of taxes	10	-
Net (loss) gain on disposal of discontinued operations, net of taxes	42	(7)
Cumulative effect of accounting change, net of taxes	-	17
Net earnings	1,872	2,572
Basic earnings per share from continuing operations	$2.27	$3.26
Income from discontinued operations, net of taxes	$0.01	$0.00
Net (loss) gain on disposal of discontinued operations, net of taxes	$0.05	($0.02)
Cumulative effect of accounting change, net of taxes	$0.0	$0.03
Basic earnings per share	$2.33	$3.27
Diluted earnings per share from continuing operations	$2.24	$3.19
Income from discontinued operations, net of taxes	$0.01	-
Net (loss) gain on disposal of discontinued operations, net of taxes	$0.05	($0.01)
Cumulative effect of accounting change, net of taxes	-	$0.02
Diluted earnings per share	$2.30	$3.20
Cash dividends per share	$0.85	$1.05

Source: Compiled from Boeing Annual Reports

Exhibit 7.2 - Boeing's Consolidated Statements of Financial Position during Stonecipher's tenure

Years ended in December, 31	2004	2005
(Dollars in millions except per share data)		
Assets		
Cash and cash equivalents	3,204	5,412
Short-term investments	319	554
Accounts receivable, net	4,653	5,246
Current portion of customer financing, net	616	367
Deferred income taxes	1,991	2,449
Inventories, net of advances and progress billings	6,508	7,940
Assets of discontinued operations	70	-
Total current assets	17,361	21,968
Customer financing, net	10,385	9,639
Property, plant and equipment, net	8,443	8,420
Goodwill	1,948	1,924
Other acquired intangibles, net	955	875
Prepaid pension expense	12,588	13,251
Deferred income taxes	154	140
Investments	3,050	2,852
Other assets, net of accumulated amortization of $204 and $142	1,340	989
Total Assets	56,224	60,058
Liabilities and Shareholders' Equity		
Accounts payable and other liabilities	14,869	16,513
Advances and billings in excess of related costs	6,384	9,930
Income taxes payable	522	556
Short-term debt and current portion of long-term debt	1,321	1,189
Total current liabilities	23,096	28,188
Deferred income taxes	1,090	2,067
Accrued retiree health care	5,959	5,989
Accrued pension plan liability	3,169	2,948
Deferred lease income	745	269
Long-term debt	10,879	9,538
Total Liabilities	44,938	48,999
Shareholders' equity:		
Common shares, par value $5.00		
Shares issued	5,059	5,061
Additional paid-in capital	3,420	4,371
Treasury shares	(8,810)	(11,075)
Retained earnings	15,565	17,276
Accumulated other comprehensive income/(loss)	(1,925)	(1,778)
ShareValue Trust Shares	(2,023)	(2,796)
Total Shareholders' equity	11,286	11,059
Total Liabilities & Shareholder's Equity	56,224	60,058

Source: Compiled from Boeing Annual Reports

Exhibit 7.3 - Boeing's Consolidated Statements of Cashflows during Stonecipher's tenure

Years ended in December, 31	2004	2005
(Dollars in millions)		
Cash flows - operating activities:		
Net earnings	1,872	2,572
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Non-cash items:		
Goodwill impairment	3	-
Share-based plans expense	576	852
Depreciation	1,412	1,412
Amortization of other acquired intangibles	97	91
Amortization of debt discount/premium and issuance costs	15	23
Pension expense/(income)	335	1,225
Investment/asset impairments charges, net	122	83
Customer financing valuation provision	45	73
Net loss (gain) on disposal of discontinued operations	(66)	12
Gain on dispositions, net	(23)	(520)
Other charges and credits, net	539	129
Non-cash adjustments relating to discontinued operations	15	0.00
Excess tax benefits from share-based payment arrangements	(23)	(70)
Changes in assets and liabilities:		
Accounts receivable	(241)	(592)
Inventories, net of advances, progress billings and reserves	535	(1,965)
Accounts payable and other liabilities	1,321	1,147
Advances in excess of related costs	735	3,562
Income taxes receivable, payable and deferred	1,086	628
Deferred lease income	(30)	(476)
Prepaid pension expense	(4,355)	(1,862)
Goodwill	(3)	0.00
Other acquired intangibles, net	(1)	11
Accrued retiree health care	214	30
Customer financing, net	(421)	589
Other	(255)	46
Net cash provided by operating activities	3,504	7,000
Cash flows - investing activities:		
Discontinued operations customer financing, reductions	174	2
Property, plant and equipment, additions	(1,246)	(1,547)
Property, plant and equipment, reductions	268	51
Acquisitions, net of cash acquired	(34)	(172)
Proceeds from dispositions of discontinued operations	2,017	0.00
Proceeds from dispositions	194	1,709
Contributions to investments	(4,142)	(2,866)
Proceeds from investments	1,323	2,725
Net cash (used)/provided by investing activities	(1,446)	(98)
Cash flows - financing activities:		
Debt repayments	(2,208)	(1,378)
Stock options exercised	98	348
Excess tax benefits from share-based payment arrangements	23	70
Common shares repurchased	(752)	(2,877)
Dividends paid	(648)	(820)
Net cash used by financing activities	(3,487)	(4,657)
Effect of exchange rate changes on cash and cash equivalents	-	(37)
Net increase/(decrease) in cash and cash equivalents	(1,429)	2,208
Cash and cash equivalents at beginning of year	4,633	3,204
Cash and cash equivalents at end of year	3,204	5,412

Source: Compiled from Boeing Annual Reports

Exhibit 8.1 - Boeing's Consolidated Statements of Operations during McNerney's tenure

Years ended in December, 31	2006	2007	2008	2009	2010	2011	2012	2013	2014
(Dollars in millions except per share data)									
Sales of products	52,644	57,049	50,180	57,032	52,586	57,401	71,234	76,792	80,688
Sales of services	8,886	9,338	10,729	11,249	11,720	11,334	10,464	9,831	10,074
Total revenues	61,530	66,387	60,909	68,281	64,306	68,735	81,698	86,623	90,762
Cost of products	(42,490)	(45,375)	(41,662)	(47,639)	(42,194)	(46,642)	(60,309)	(65,640)	(68,551)
Cost of services	(7,594)	(7,732)	(8,467)	(8,726)	(9,489)	(9,097)	(8,247)	(7,553)	(8,132)
Boeing Capital Corporation interest expense	(353)	(295)	(223)	(175)	(160)	(128)	(109)	(75)	(69)
Total costs and expenses	(50,437)	(53,402)	(50,352)	(56,540)	(51,843)	(55,867)	(68,665)	(73,268)	(76,752)
Income from operating investments, net	146	188	241	249	267	278	268	214	287
General and administrative expense	(4,171)	(3,531)	(3,084)	(3,364)	(3,644)	(3,408)	(3,717)	(3,956)	(3,767)
Research and development expense	(3,257)	(3,850)	(3,768)	(6,506)	(4,121)	(3,918)	(3,298)	(3,071)	(3,047)
Gain/(loss) on dispositions/business shutdown, net	(226)	38	4	(24)	6	24	4	20	(10)
Settlement with U.S. Department of Justice, net of accruals	(571)	-	-	-	-	-	-	-	-
Earnings from operations	3,014	5,830	3,950	2,096	4,971	5,844	6,290	6,562	7,473
Other income, net	420	484	247	(26)	52	47	62	56	(3)
Interest and debt expense	(240)	(196)	(202)	(339)	(516)	(498)	(442)	(386)	(333)
Earnings before income taxes	3,194	6,118	3,995	1,731	4,507	5,393	5,910	6,232	7,137
Income tax expense	(988)	(2,060)	(1,341)	(396)	(1,196)	(1,382)	(2,007)	(1,646)	(1,691)
Net earnings from continuing operations	2,206	4,058	2,654	1,335	3,311	4,011	3,903	4,586	5,446
Net gain/(loss) on disposal of discontinued operations	9	16	18	(23)	(4)	7	(3)	(1)	-
Net earnings	2,215	4,074	2,672	1,312	3,307	4,018	3,900	4,585	5,446
Basic earnings per share from continuing operations	$2.88	$5.36	$3.68	$1.89	$4.50	$5.38	$5.15	$6.03	-
Net gain/(loss) on disposal of discontinued operations, net of taxes	$0.01	$0.02	$0.02	($0.03)	($0.01)	$0.01	-	-	-
Basic earnings per share	$2.89	$5.38	$3.70	$1.86	$4.49	$5.39	$5.15	$6.03	$7.47
Diluted earnings per share from continuing operations	$2.84	$5.26	$3.65	$1.87	$4.46	$5.33	$5.11	$5.96	-
Net gain/(loss) on disposal of discontinued operations, net of taxes	$0.01	$0.02	$0.02	($0.03)	($0.01)	$0.01	-	-	-
Diluted earnings per share	$2.85	$5.28	$3.67	$1.84	$4.45	$5.34	$5.11	$5.96	$7.38
Cash dividends per share	$1.25	$1.45	$1.62	$1.68	$1.68	$1.70	$1.81	$2.19	$3.10

Source: Compiled from Boeing Annual Report

Exhibit 8.2 - Boeing's Consolidated Statements of Financial Position during McNerney's tenure

Years ended in December, 31	2006	2007	2008	2009	2010	2011	2012	2013	2014
(Dollars in millions except per share data)									
Assets									
Cash and cash equivalents	6,118	7,042	3,268	9,215	5,359	10,049	10,341	9,088	11,733
Short-term investments	268	2,266	11	2,008	5,158	1,223	3,217	6,170	1,359
Accounts receivable, net	5,285	5,740	5,602	5,785	5,422	5,793	5,608	6,546	7,729
Current portion of customer financing, net	370	328	425	368	285	476	364	344	190
Deferred income taxes	2,837	2,341	1,046	966	31	29	28	14	-
Inventories, net of advances and progress billings	8,105	9,563	15,612	16,933	24,317	32,240	37,751	42,912	46,756
Total current assets	22,983	27,280	25,964	35,275	40,572	49,810	57,309	65,074	67,767
Customer financing, net	8,520	6,777	5,857	5,466	4,395	4,296	4,056	3,627	3,371
Property, plant and equipment, net	7,675	8,265	8,762	8,784	8,931	9,313	9,660	10,224	11,007
Goodwill	3,047	3,081	3,647	4,319	4,937	4,945	5,035	5,043	5,119
Other acquired intangibles, net	1,698	2,093	2,685	2,877	2,979	3,044	3,111	3,052	2,869
Deferred income taxes	1,051	197	4,114	3,062	4,031	5,892	6,753	2,939	317
Investments	4,085	4,111	1,328	1,030	1,111	1,043	1,180	1,204	1,154
Pension plan assets, net	1,806	5,924	16	16	-	-	-	-	-
Other assets	929	1,258	1,406	1,224	1,609	1,643	1,792	1,500	1,317
Total Assets	51,794	58,986	53,779	62,053	68,565	79,986	88,896	92,663	92,921
Liabilities and Shareholders' Equity									
Accounts payable and other liabilities	16,201	16,676	5,871	7,096	7,715	8,406	9,394	9,498	10,667
Other accrued liabilities	-	-	11,564	12,822	13,802	12,239	12,995	14,131	13,462
Advances and billings in excess of related costs	11,449	13,847	12,737	12,076	12,323	15,496	16,672	20,027	23,175
Deferred income taxes and income taxes payable	670	253	41	182	607	2,780	4,485	6,267	-
Short-term debt and current portion of long-term debt	1,381	762	560	707	948	2,353	1,436	1,563	929
Total current liabilities	29,701	31,538	30,773	32,883	35,395	41,274	44,982	51,486	48,233
Accrued retiree health care	7,671	7,007	7,322	7,049	8,025	7,520	7,528	6,528	6,802
Accrued pension plan liability, net	1,135	1,155	8,383	6,315	9,800	16,537	19,651	10,474	17,182
Non-current income taxes payable	-	1,121	1,154	827	418	122	366	156	2,207
Other long-term liabilities	391	516	337	537	592	907	1,429	950	1,566
Long-term debt	8,157	7,455	6,952	12,217	11,473	10,018	8,973	8,072	8,141
Total Liabilities	47,055	48,792	54,921	59,828	65,703	76,378	82,929	77,666	84,131
Shareholder's equity									
Common shares issued, par value $5.00	5,061	5,061	5,061	5,061	5,061	5,061	5,061	5,061	5,061
Additional paid-in capital	4,655	4,757	3,456	3,724	3,866	4,033	4,122	4,415	4,625
Treasury shares, at cost	(12,459)	(14,842)	(17,758)	(15,911)	(17,187)	(16,603)	(15,937)	(17,671)	(23,298)
Retained earnings	18,453	21,376	22,675	22,746	24,784	27,524	30,037	32,964	36,180
Accumulated other comprehensive loss	(8,217)	(4,596)	(13,525)	(11,877)	(13,758)	(16,500)	(17,416)	(9,894)	(13,903)
ShareValue Trust shares	(2,754)	(2,752)	(1,203)	(1,615)	-	-	-	-	-
Total shareholders' equity	4,739	9,004	(1,294)	2,128	2,766	3,515	5,867	14,875	8,665
Noncontrolling interest	-	-	-	97	96	93	100	122	125
Total equity	4,739	9,004	(1,294)	2,225	2,862	3,608	5,967	14,997	8,790
Total Liabilities & Equity	51,794	58,986	53,779	62,053	68,565	79,986	88,896	92,663	92,921

Source: Compiled from Boeing Annual Reports

Exhibit 8.3 - Boeing's Consolidated Statements of Cashflows during McNerney's tenure

Years ended in December, 31	2006	2007	2008	2009	2010	2011	2012	2013	2014
(Dollars in millions)									
Cash flows - operating activities:									
Net earnings	2,215	4,074	2,672	1,312	3,307	4,018	3,900	4,585	5,446
Adjustments to reconcile net earnings to net cash provided by									
Non-cash items -									
Share-based plans expense	743	287	209	238	215	186	193	206	195
Depreciation	1,445	1,334	1,325	1,459	1,510	1,457	1,811	1,844	1,906
Amortization of other acquired intangibles	100	152	166	207	217	203	-	-	-
Amortization of debt discount/premium and issuance costs	14	-1	11	12	19	15	-	-	-
Pension expense	746	1,082	0.00	-	-	-	-	-	-
Investment/asset impairment charges, net	118	51	50	151	174	119	84	96	229
Customer financing valuation (benefit)/provision	32	-60	84	45	51	(269)	(10)	(11)	(28)
(Gain)/loss on disposal of discontinued operations	-14	-25	-28	36	6	(11)	5	1	
(Gain)/loss on dispositions/business shutdown, net	226	-38	-4	24	(6)	(24)	(4)	(20)	10
Other charges and credits, net	82	197	116	214	512	500	694	528	317
Excess tax benefits from share-based payment arrangements	-395	-144	-100	(5)	(19)	(36)	(45)	(128)	(114)
Changes in assets and liabilities -									
Accounts receivable	-244	-392	564	(391)	8	(292)	(27)	(879)	(1,328)
Inventories, net of advances and progress billings	444	-1,558	-6,168	(1,525)	(7,387)	(10,012)	(5,681)	(5,562)	(4,330)
Accounts payable and other liabilities	-744	928	872	2,468	981	1,164	2,000	(298)	251
Advances and billings in excess of related costs	1,739	2,369	-1,120	(680)	238	3,173	1,177	3,353	3,145
Income taxes receivable, payable and deferred	933	1,290	744	607	822	1,262	1,605	1,445	1,325
Other long-term liabilities	-62	71	-211	(12)	328	127	157	2	36
Pension contributions	-522	-580	14	1,140	1,335	2,126	1,288	1,720	1,186
Accrued retiree health care	114	-664	0.00	-	-	-	-	-	-
Customer financing, net	718	1,458	432	104	717	(6)	407	391	578
Other	-189	-247	-29	199	(76)	86	(46)	23	34
Net cash provided by operating activities	7,499	9,584	-401	5,603	2,952	4,023	7,508	8,179	8,858
Cash flows - investing activities:									
Property, plant and equipment additions	-1,681	-1,731	-1,674	(1,186)	(1,125)	(1,713)	(1,703)	(2,098)	(2,236)
Property, plant and equipment reductions	225	59	34	27	63	94	97	51	34
Acquisitions, net of cash acquired	-1,854	-75	-964	(639)	(932)	(42)	(124)	(26)	(163)
Proceeds from dispositions	123	0.00	0.00	-	-	-	-	-	-
Contributions to investments	-2,815	-5,710	-6,673	(2,629)	(15,548)	(6,796)	(12,921)	(15,394)	(8,617)
Proceeds from investments	2,850	3,817	11,343	1,041	12,425	10,757	10,901	12,453	13,416
Other	-34	-182	-178	(408)	286	69	(7)	(140)	33
Net cash used by investing activities	-3,186	-3,822	1,888	(3,794)	(4,831)	2,369	(3,757)	(5,154)	2,467
Cash flows - financing activities:									
New borrowings	1	40	13	5,961	41	799	60	571	962
Debt repayments	(1,681)	(1,406)	(738)	(551)	(689)	(930)	(2,076)	(1,434)	(1,601)
Payments to noncontrolling interests	-	-	-	(40)	-	-	-	-	-
Repayments of distribution rights financing	-	-	(357)		(137)	(451)	(228)	(280)	(185)
Stock options exercised, other	294	209	44	10	87	114	120	1,097	331
Excess tax benefits from share-based payment arrangements	395	144	100	5	19	36	45	128	114
Employee taxes on certain share-based payment arrangements	-	-	-	-	(30)	(24)	(76)	(63)	(98)
Common shares repurchased	(1,698)	(2,775)	(2,937)	(50)	-	-	-	(2,801)	(6,001)
Dividends paid	-956	-1,096	-1,192	(1,220)	(1,253)	(1,244)	(1,322)	(1,467)	(2,115)
Net cash used by financing activities	-3,645	-4,884	-5,202	4,094	(1,962)	(1,700)	(3,477)	(4,249)	(8,593)
Effect of exchange rate changes on cash and cash equivalents	38	46	-59	44	(15)	(2)	18	(29)	(87)
Net increase in cash and cash equivalents	706	924	-3,774	5,947	(3,856)	4,690	292	(1,253)	2,645
Cash and cash equivalents at beginning of year	5,412	6,118	7,042	3,268	9,215	5,359	10,049	10,341	9,088
Cash and cash equivalents at end of year	6,118	7,042	3,268	9,215	5,359	10,049	10,341	9,088	11,733

Source: Compiled from Boeing Annual Reports

Exhibit 9 - Boeing's Orders and Deliveries since 2011 to 2018

	2011	2012	2013	2014	2015	2016	2017	2018
Orders								
737 MAX	150	914	708	891	410	540	774	824
737	472	269	497	302	255	161	87	13
747	7	7	17	2	6	18	6	18
767	42	23	2	4	49	26	15	40
777	202	75	121	283	58	23	60	59
787	45	50	183	65	99	80	107	136
BBJ	3	1	3	3	1	-	4	-
Total Orders	918	1,338	1,528	1,547	877	848	1,049	1,090

	2011	2012	2013	2014	2015	2016	2017	2018
Deliveries								
737 MAX	-	-	-	-	-	-	74	256
737	365	411	434	482	491	490	455	323
747	9	31	24	19	18	9	14	6
767	20	26	21	6	16	13	10	27
777	73	83	98	99	98	99	74	48
787	3	46	65	114	135	137	136	145
BBJ	7	4	6	3	4	-	-	1
Total Deliveries	477	601	648	723	762	748	763	806

Note: *BBJ are Boeing Business Jets*

Source: Compiled from Boeing's Orders and Deliveries Platform

Exhibit 10 – Boeing's Historical Backlog from 1998 to 2018

Dollars in millions	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Contractual Backlog:	112,896	99,248	120,600	106,591	104,173	104,812	109,600	160,637	216,563	296,964	323,860
Commercial Airplanes	86,057	72,972	89,780	75,850	68,159	63,929	70,449	124,132	174,276	255,176	278,575
Defense,Space & Security	26,839	26,276	30,820	30,741	36,014	40,883	39,151	36,505	42,287	41,788	45,285

Dollars in millions	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Contractual Backlog:	296,500	303,955	339,657	372,355	422,661	487,092	489,299	473,492	474,640	490,481
Commercial Airplanes	250,476	255,591	293,303	317,287	372,980	440,118	429,346	413,036	421,345	408,140
Defense,Space & Security	46,024	48,364	46,354	55,068	49,681	46,974	59,953	60,456	53,295	82,341

Source: Compiled from Boeing Annual Reports

Exhibit 11.1 – Boeing's Shareholders Total Cumulative Returns Vs. Market 2010-2014

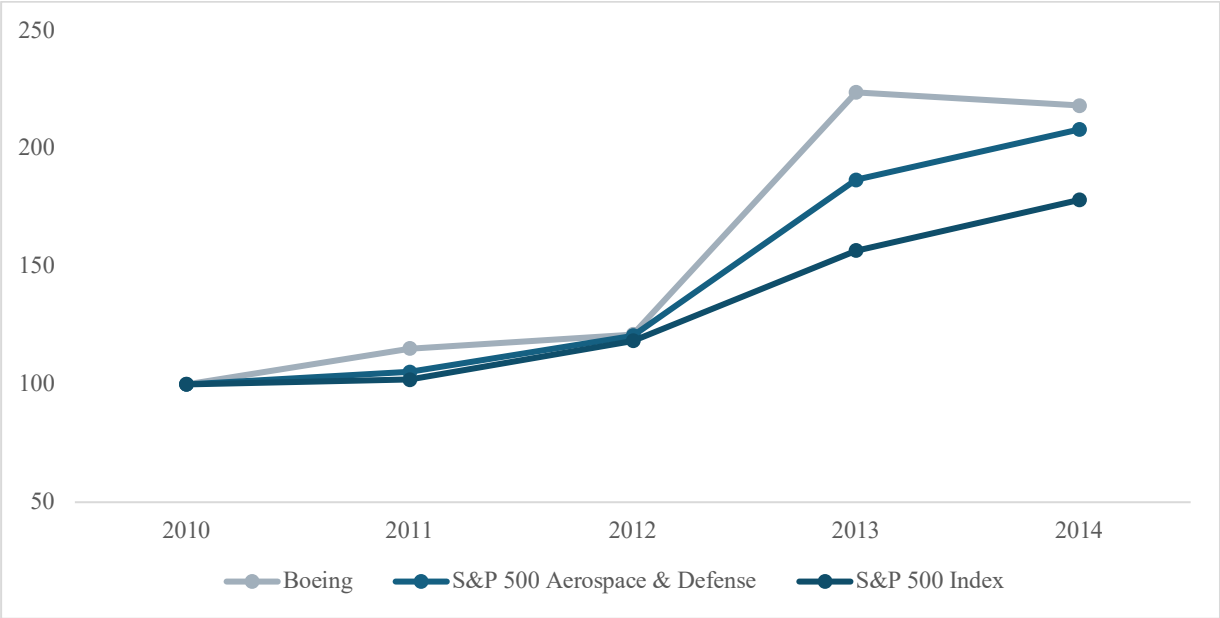


Exhibit 11.2 – Boeing's Shareholders Total Cumulative Returns 2010-2014 Vs. Market Table

	Base Period	Years Ending December			
Company/Index	2010	2011	2012	2013	2014
Boeing	100	115.20	121.23	223.96	218.30
S&P 500 Aerospace & Defense	100	105.28	120.61	186.85	208.21
S&P 500 Index	100	102.11	118.45	156.82	178.29

Note: *Cumulative return assumes $100 invested; includes reinvestment of dividends*

Source: Boeing's Annual Report 2015

Exhibit 12.1 - Boeing's Consolidated Statements of Operations during Muilenburg's tenure until 2018

Years ended in December, 31	2015	2016	2017	2018
(Dollars in millions, except per share data)				
Sales of products	85,255	84,399	83,204	90,229
Sales of services	10,859	10,172	10,188	10,898
Total revenues	96,114	94,571	93,392	101,127
Cost of products	(73,446)	(72,713)	(68,365)	(72,922)
Cost of services	(8,578)	(8,018)	(7,631)	(8,499)
Boeing Capital interest expense	(64)	(59)	(70)	(69)
Total costs and expenses	(82,088)	(80,790)	(76,066)	(81,490)
Income from operating investments, net	274	303	204	111
General and administrative expense	(3,525)	(3,616)	(4,094)	(4,567)
Research and development expense, net	(3,331)	(4,627)	(3,179)	(3,269)
(Loss)/gain on dispositions, net	(1)	(7)	21	75
Earnings from operations	7,443	5,834	10,278	11,987
Other (loss)/income, net	(13)	40	129	92
Interest and debt expense	(275)	(306)	(360)	(475)
Earnings before income taxes	7,155	5,568	10,047	11,604
Income tax expense	(1,979)	(673)	(1,850)	(1,144)
Net earnings from continuing operations	5,176	4,895	8,197	10,460
Net earnings	5,176	4,895	8,197	10,460
Basic earnings per share	$7.52	$7.70	$13.60	$18.05
Diluted earnings per share	$7.44	$7.61	$13.43	$17.85
Cash dividends per share	$3.83	$4.69	$5.97	$7.19

Source: Compiled from Boeing Annual Reports

Exhibit 12.2 - Boeing's Consolidated Statements of Financial Position during Muilenburg's tenure until 2018

Years ended in December, 31	2015	2016	2017	2018
(Dollars in millions, except per share data)				
Assets				
Cash and cash equivalents	11,302	8,801	8,813	7,637
Short-term and other investments	750	1,228	1,179	927
Accounts receivable, net	8,713	8,832	10,516	3,879
Unbilled receivables, net	-	-	-	10,025
Current portion of customer financing, net	212	428	309	460
Inventories, net of advances and progress billings	47,257	43,199	44,344	62,567
Other current assets	-	-	-	2,335
Total current assets	68,234	62,488	65161	87830
Customer financing, net	3,358	3,773	2,740	2,418
Property, plant and equipment, net	12,076	12,807	12,672	12,645
Goodwill	5,126	5,324	5,559	7,840
Acquired intangible assets, net	2,657	2,540	2,573	3,429
Deferred income taxes	265	332	341	284
Investments	1,284	1,317	1,260	1,087
Other assets	1,408	1,416	2,027	1,826
Total assets	94,408	89,997	92,333	117,359
Liabilities and equity				
Accounts payable	10,800	11,190	12,202	12,916
Accrued liabilities	14,014	14,691	15,292	14,808
Advances and billings in excess of related costs	24,364	23,869	27,440	50,676
Short-term debt and current portion of long-term debt	1,234	384	1,335	3,190
Total current liabilities	50,412	50,134	56,269	81,590
Deferred income taxes	2,392	1,338	1,839	1,736
Accrued retiree health care	6,616	5,916	5,545	4,584
Accrued pension plan liability, net	17,783	19,943	16,471	15,323
Other long-term liabilities	2,078	2,221	2,015	3,059
Long-term debt	8,730	9,568	9,782	10,657
Total Liabilities	88,011	89,120	91,921	116,949
Shareholders' equity:				
Common stock, par value $5.00	5,061	5,061	5,061	5,061
Additional paid-in capital	4,834	4,762	6,804	6,768
Treasury stock, at cost	(29,568)	(36,097)	(43,454)	(52,348)
Retained earnings	38,756	40,714	45,320	55,941
Accumulated other comprehensive loss	(12,748)	(13,623)	(13,376)	(15,083)
Total shareholders' equity	6,335	817	355	339
Noncontrolling interests	62	60	57	71
Total equity	6,397	877	412	410
Total liabilities and equity	94,408	89,997	92,333	117,359

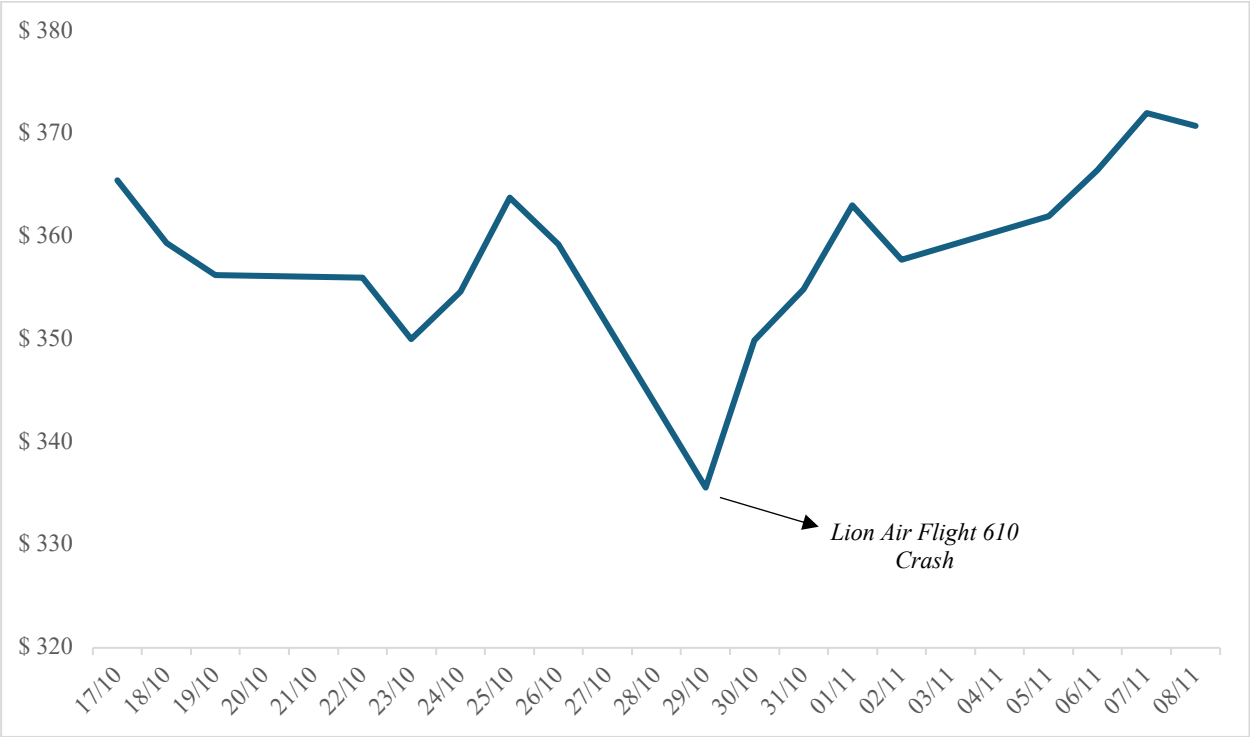
Source: Compiled from Boeing Annual Reports

Exhibit 12.3 - Boeing's Consolidated Statements of Cashflows during Muilenburg's tenure until 2018

Years ended in December, 31	2015	2016	2017	2018
(Dollars in millions, except per share data)				
Cash flows - operating activities:				
Net earnings	5,176	4,895	8,197	10,460
Adjustments to reconcile net earnings to net cash provided by				
Non-cash items -				
Share-based plans expense	189	190	202	202
Depreciation and amortization	1,833	1,910	2,069	2,114
Investment/asset impairment charges, net	167	90	113	93
Customer financing valuation benefit	(5)	(7)	2	(3)
Loss on disposal of discontinued operations	-	7	(21)	(75)
Loss/(gain) on dispositions, net	1	369	287	
Other charges and credits, net	364	-	-	247
Excess tax benefits from share-based payment arrangements	(157)	-	-	-
Changes in assets and liabilities:				
Accounts receivable	(1,069)	112	(1,821)	568
Unbilled receivables	-	-	-	(1,826)
Inventories, net of advances and progress billings	(1,110)	3,755	(1,085)	(2,068)
Other current assets	-	-	-	98
Accounts payable	(238)	622	130	2
Accrued liabilities	2	726	573	1,117
Advances and billings in excess of related costs	1,192	(493)	3,570	2,636
Income taxes receivable, payable and deferred	477	(810)	857	(180)
Other long-term liabilities	46	(68)	94	87
Pension and other postretirement plans	2,470	153	(582)	(153)
Customer financing, net	167	(696)	1,017	120
Other	(142)	(256)	(258)	610
Net cash provided by operating activities	9,363	10,499	13,344	15,322
Cash flows - investing activities:				
Property, plant and equipment additions	(2,450)	(2,613)	(1,739)	(1,722)
Property, plant and equipment reductions	42	38	92	120
Acquisitions, net of cash acquired	(31)	(297)	(324)	(3,230)
Contributions to investments	(2,036)	(1,719)	(3,601)	(2,607)
Proceeds from investments	2,590	1,209	3,639	2,898
Purchase of distribution rights	-	-	(131)	(69)
Other	39	2	2	(11)
Net cash (used)/provided by investing activities	(1,846)	(3,380)	(2,062)	(4,621)
Cash flows - financing activities:				
New borrowings	1,746	1,325	2,077	8,548
Debt repayments	(885)	(1,359)	(953)	(7,183)
Repayments of distribution rights and other asset financing	-	(24)	-	35
Stock options exercised	399	321	311	81
Excess tax benefits from share-based payment arrangements	157	-	-	-
Employee taxes on certain share-based payment arrangements	(96)	(93)	(132)	(257)
Common shares repurchased	(6,751)	(7,001)	(9,236)	(9,000)
Dividends paid	(2,490)	(2,756)	(3,417)	(3,946)
Net cash used by financing activities	(7,920)	(9,587)	(11,350)	(11,722)
Effect of exchange rate changes on cash and cash equivalents	(28)	(33)	80	(53)
Net (decrease)/increase in cash and cash equivalents	(431)	(2,501)	12	(1,074)
Cash and cash equivalents at beginning of year	11,733	11,302	8,801	8,887
Cash and cash equivalents at end of year	11,302	8,801	8,813	7,813

Source: Compiled from Boeing Annual Report

Exhibit 13 – Boeing's stock price between October 17th and November 8th



Source: Bloomberg

Exhibit 14 – Capital Markets Data in 1998, 2008 and 2018

	1998	2008	2018
Boeing's Share price at 31/12 (in dollars)[1]	32.63	42.67	322.50
Outstanding shares at 31/12 (millions)[2]	938	698	579
Boeing's Equity Beta[1]	0.86	1.06	1.10
Boeing's Bonds Average Maturity[2]	13.76	15.79	23.20
US 10y Treasury Bond Yield[3]	4.65%	2.21%	2.91%

Source: 1- Bloomberg , 2- Boeing Annual Reports, 3 - Federal Reserve Bank of St. Louis

Exhibit 15 – Boeing's Credit Ratings Evolution

Rating	Effective
A	28/01/2011
A+	09/05/2002
AA	01/01/1998

Source: Bloomberg

Exhibit 16 – Default Spread in 2018

Rating	*Default Spread*
Aaa/AAA	0.54%
Aa2/AA	0.72%
A1/A+	0.90%
A2/A	0.99%
A3/A-	1.13%
Baa2/BBB	1.27%
Ba1/BB+	1.98%
Ba2/BB	2.38%
B1/B+	2.98%
B2/B	3.57%
Caa/CCC	8.64%
Ca2/CC	10.63%
C2/C	13.95%
D2/D	18.60%

Source: "*Free Cash Flow Valuation."* by Damodaran, Aswath, *New York University, Stern School of Business*

Exhibit 17 - Estimated Market Risk Premium in 2018

	2018
Estimated Market Risk Premium	5.82%

Source: Case Writers estimation based on "Free Cash Flow Valuation." by Damodaran, Aswath, New York University, Stern School of Business and Federal Reserve Bank of ST.Louis

Appendix Teaching Note

Exhibit TN 1 – Return on Net Assets (RONA) Formula

$$RONA = \frac{NOPLAT}{FIXED\ ASSETS + NET\ WORKING\ CAPITAL\ RECQUIREMENTS}$$

Source: Applied Corporate Finance Course Nova SBE – Prof. Paulo Pinho

Exhibit TN 2 – Return on Net Assets (RONA) Calculations

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Operating Assets	11,637	9,992	11,722	12,715	11,191	9,853	11,161	13,186	13,390	15,303	21,214	22,718	29,739	38,033	43,359	49,458	54,485	56,182	52,459	55,169	76,931
Total Current Operating Liabilities	11,984	12,484	15,496	18,258	16,862	17,027	21,253	26,443	27,650	30,523	30,172	31,994	33,840	36,141	39,061	43,656	47,304	49,178	49,750	54,934	78,400
Net Working Capital Requirements	(347)	(2,492)	(3,774)	(5,543)	(5,671)	(7,174)	(10,092)	(13,257)	(14,260)	(15,220)	(8,958)	(9,276)	(4,101)	1,892	4,298	5,802	7,181	7,004	2,709	235	(1,469)
Total Fixed Assets	20,297	20,435	26,164	32,133	35,487	35,777	38,863	38,090	28,811	31,706	27,815	26,778	27,993	30,176	31,587	27,589	25,154	26,174	27,509	27,172	29,529
Net Assets	19,950	17,943	22,390	26,590	29,816	28,603	28,771	24,833	14,551	16,486	18,857	17,502	23,892	32,068	35,885	33,391	32,335	33,178	30,218	27,407	28,060
Total Net Treasury	3,300	4,548	1,349	1,822	2,716	5,984	4,357	7,037	7,542	10,962	4,149	11,668	9,278	6,644	8,029	7,786	12,353	10,818	9,645	8,657	5,374
Total Long Term Liabilities	10,934	11,029	12,719	17,587	24,836	26,448	21,842	20,811	17,354	17,254	24,148	26,945	30,308	35,104	37,947	26,180	35,898	37,599	38,986	35,652	35,359
Shareholders' Equity	12,316	11,462	11,020	10,825	7,696	8,139	11,286	11,059	4,739	9,004	(1,294)	2,225	2,862	3,608	5,967	14,997	8,790	6,397	877	412	410
Total Long term Funds	23,250	22,491	23,739	28,412	32,532	34,587	33,128	31,870	22,093	27,448	23,006	29,170	33,170	38,712	43,914	41,177	44,688	43,996	39,863	36,064	35,769
Capital Employed	19,950	17,943	22,390	26,590	29,816	28,603	28,771	24,833	14,551	16,486	18,857	17,502	23,892	32,068	35,885	33,391	32,335	33,178	30,218	27,407	30,395
Working Capital	2,953	2,056	(2,425)	(3,721)	(2,955)	(1,190)	(5,735)	(6,220)	(6,718)	(4,258)	(4,809)	2,392	5,177	8,536	12,327	13,588	19,534	17,822	12,354	8,892	6,240
Effective Tax Rate	19.83%	30.54%	29.04%	20.71%	27.08%	(30.55)%	7.14%	9.12%	30.93%	33.67%	33.57%	22.88%	26.54%	25.63%	33.96%	26.41%	23.69%	27.66%	12.09%	18.41%	9.86%
NOPLAT	1,256	2,202	2,170	2,843	2,525	586	1,864	2,556	2,082	3,867	2,624	1,616	3,652	4,346	4,154	4,829	5,702	5,384	5,129	8,385	10,805
RONA	6.30%	12.27%	9.69%	10.69%	8.47%	2.05%	6.48%	10.29%	14.31%	23.46%	13.92%	9.24%	15.28%	13.55%	11.58%	14.46%	17.64%	16.23%	16.97%	30.60%	38.51%

Source: Computations from Case Writer

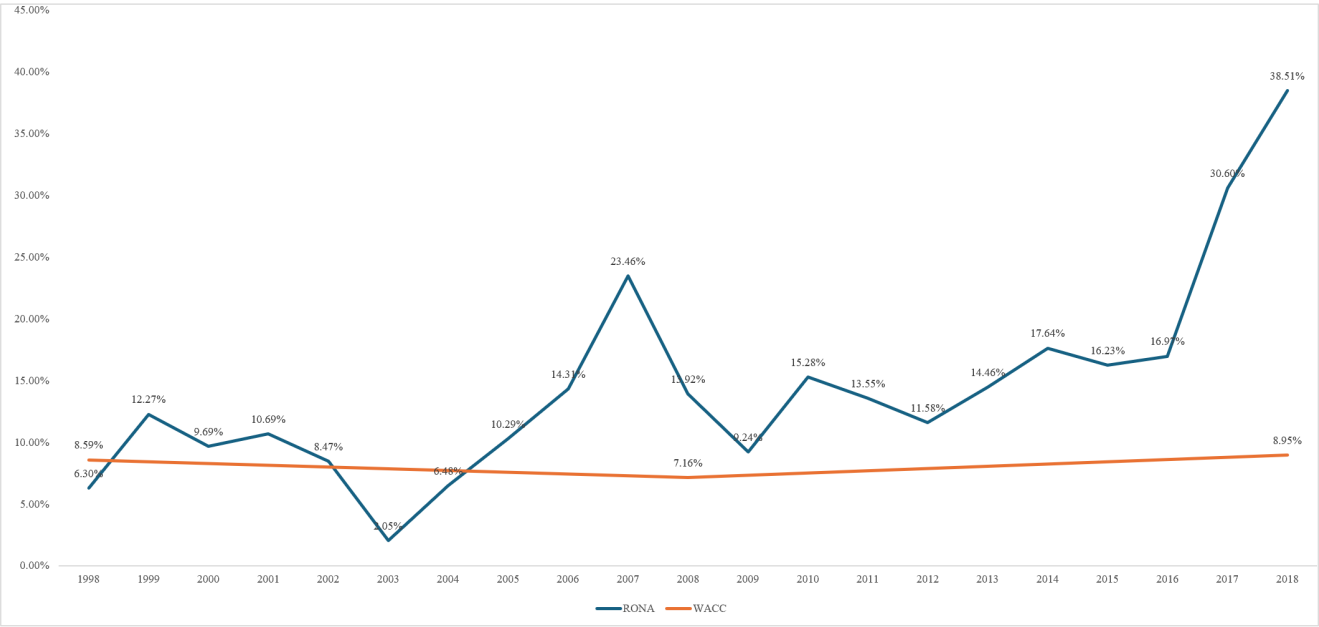
Exhibit TN 3 – WACC Calculations

	1998	2008	2018
Cost of debt after tax	4.31%	2.07%	3.52%
US 10y Treasury Bond Yield	4.65%	2.21%	2.91%
Credit Rating	AA	A+	A
Credit Spread	0.7%	0.9%	1.0%
Pre-Tax Rate	5.37%	3.11%	3.90%
Marginal Tax rate	19.83%	33.57%	9.86%
Cost of equity	9.67%	8.38%	9.33%
US 10y Treasury Bond Yield	4.65%	2.21%	2.91%
Levered Beta	0.86	1.06	1.10
Estimated Market risk premium	5.82%	5.82%	5.82%
Market Value of Equity (E)	30,599	29,788	186,792
Market Value of Debt (D)	7,723	7,122	12,866
D+E	38,322	36,910	199,658
WACC	8.59%	7.16%	8.95%

Note: *Utilized the 2018 estimated market risk premium, as a base on the 1998 and 2008 estimates, as it aligns with commonly referenced historical figures*

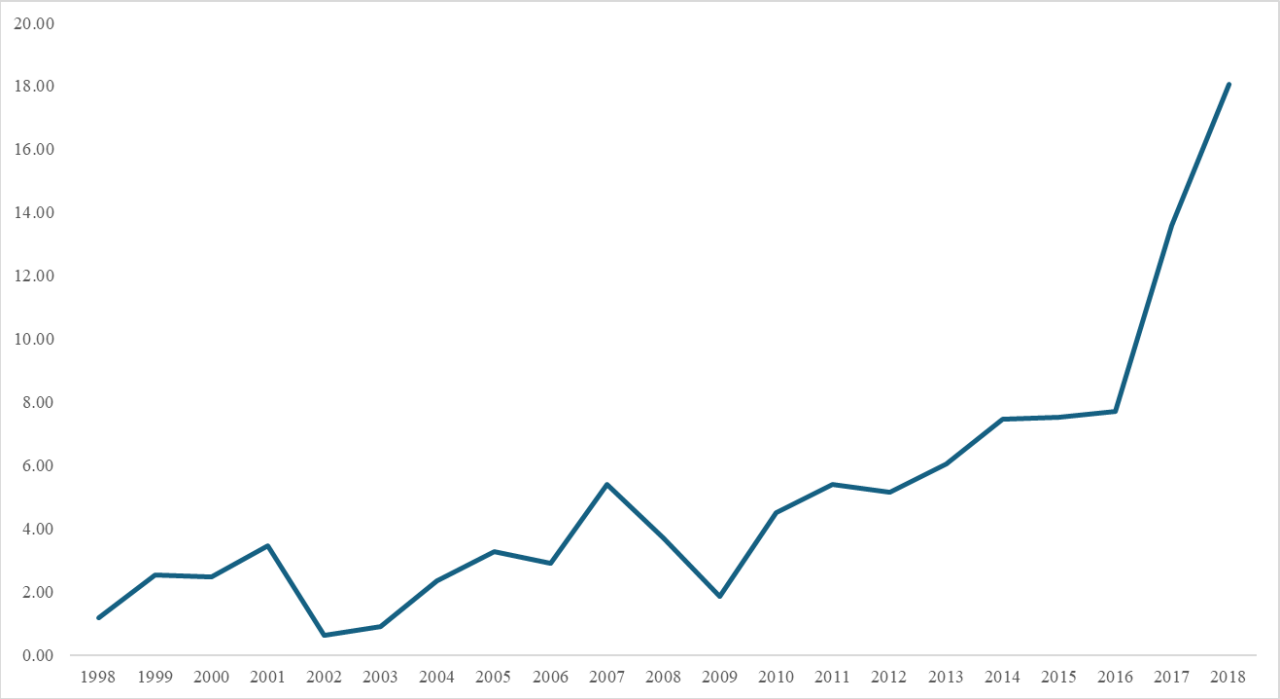
Source: Computations from Case Writer

Exhibit TN 4 – RONA Vs WACC



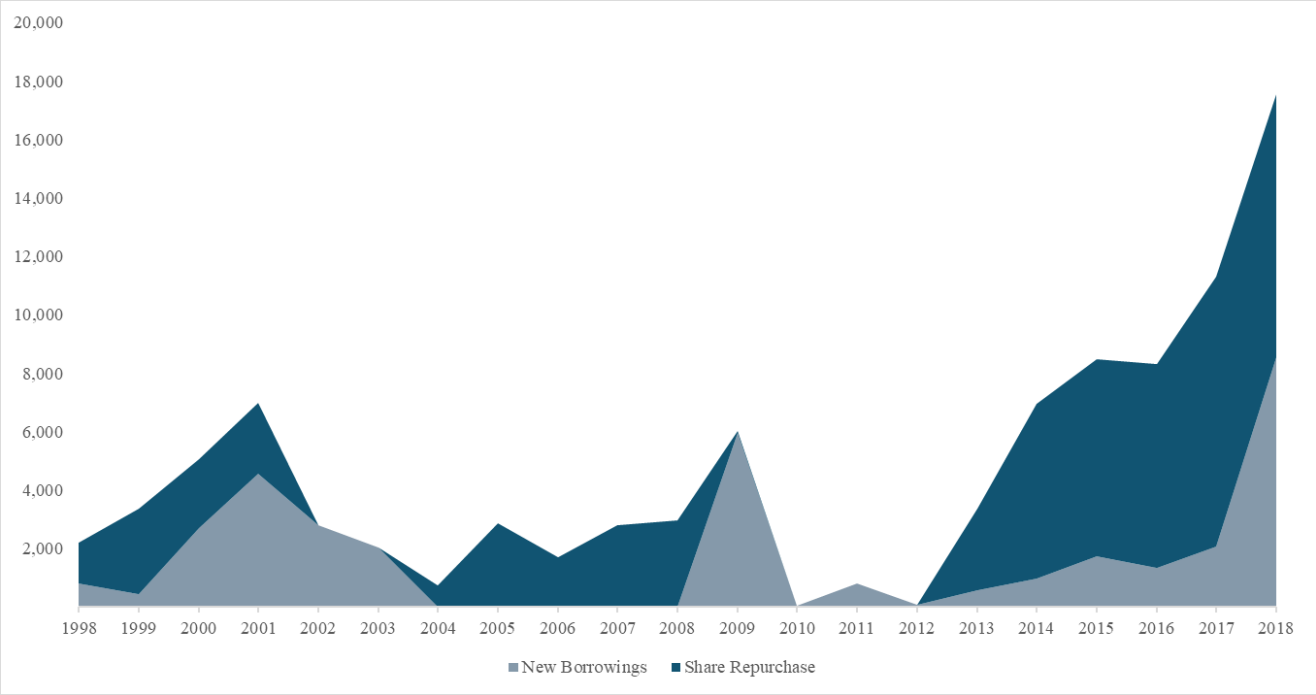
Source: Computations from Case Writer

Exhibit TN 5 – EPS evolution from 1998 to 2018



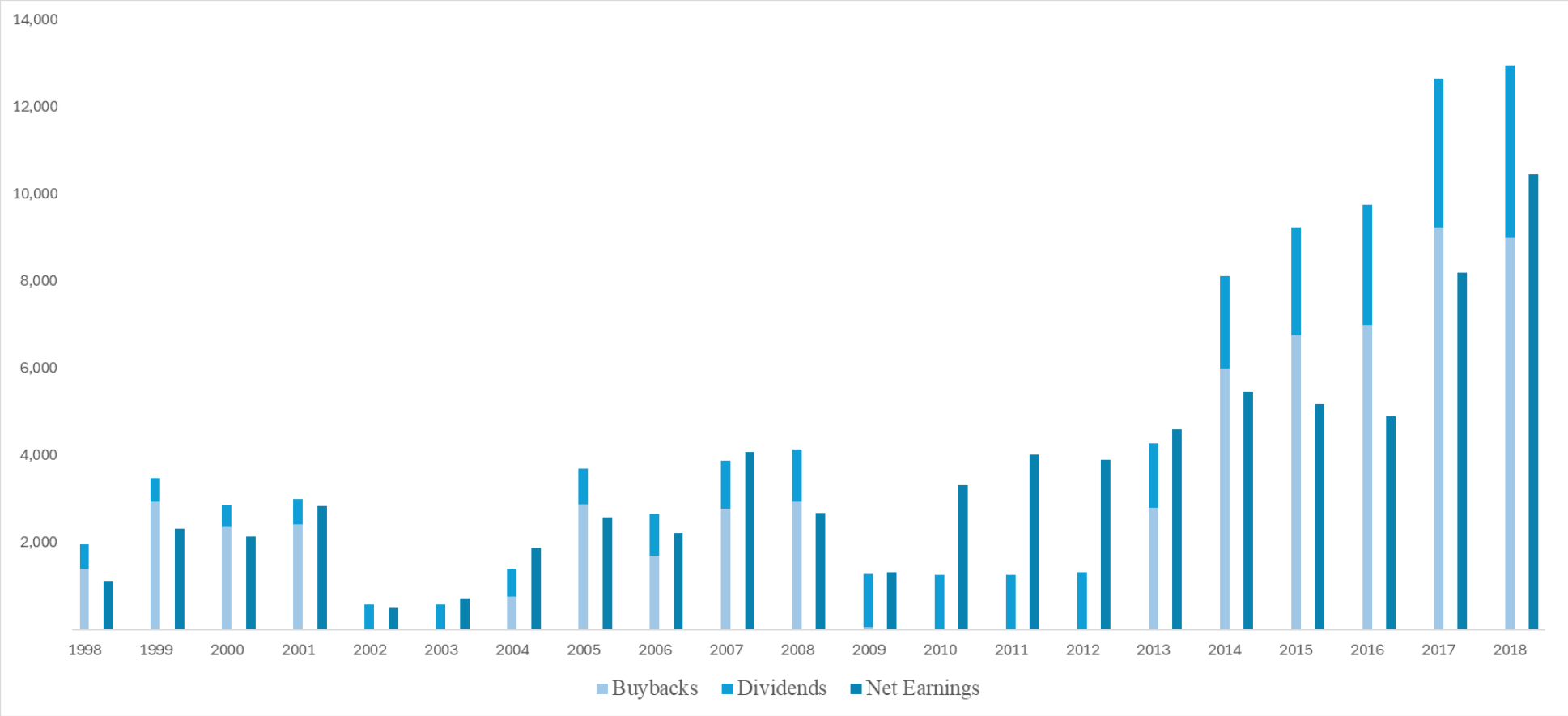
Source: Compiled from Boeing Annual Reports

Exhibit TN 6 – Shares Repurchased vs. New Borrowings from 1998 to 2018



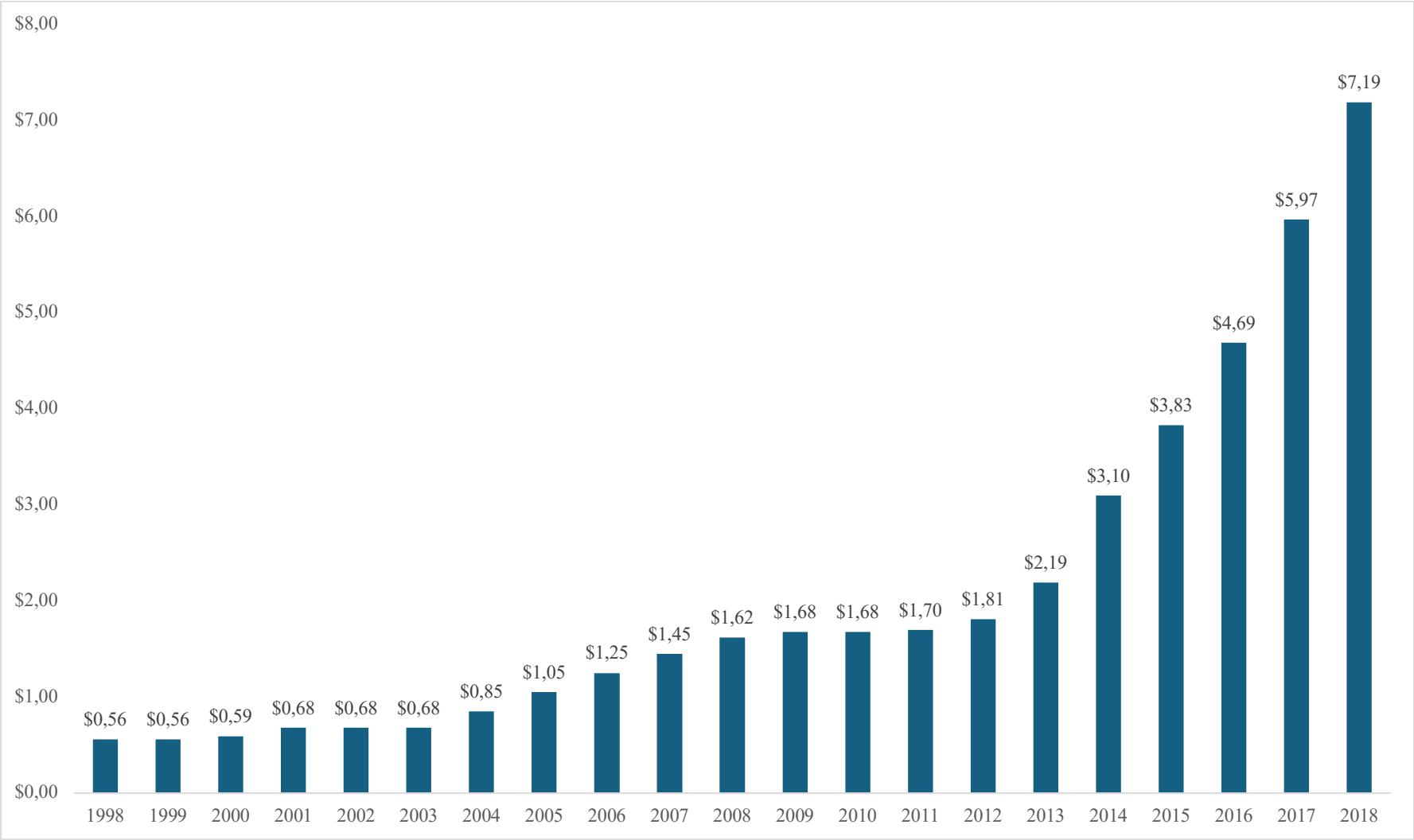
Source: Compiled from Boeing Annual Reports

Exhibit TN 7 – Total Money Spent with Shareholders vs. Net Earnings



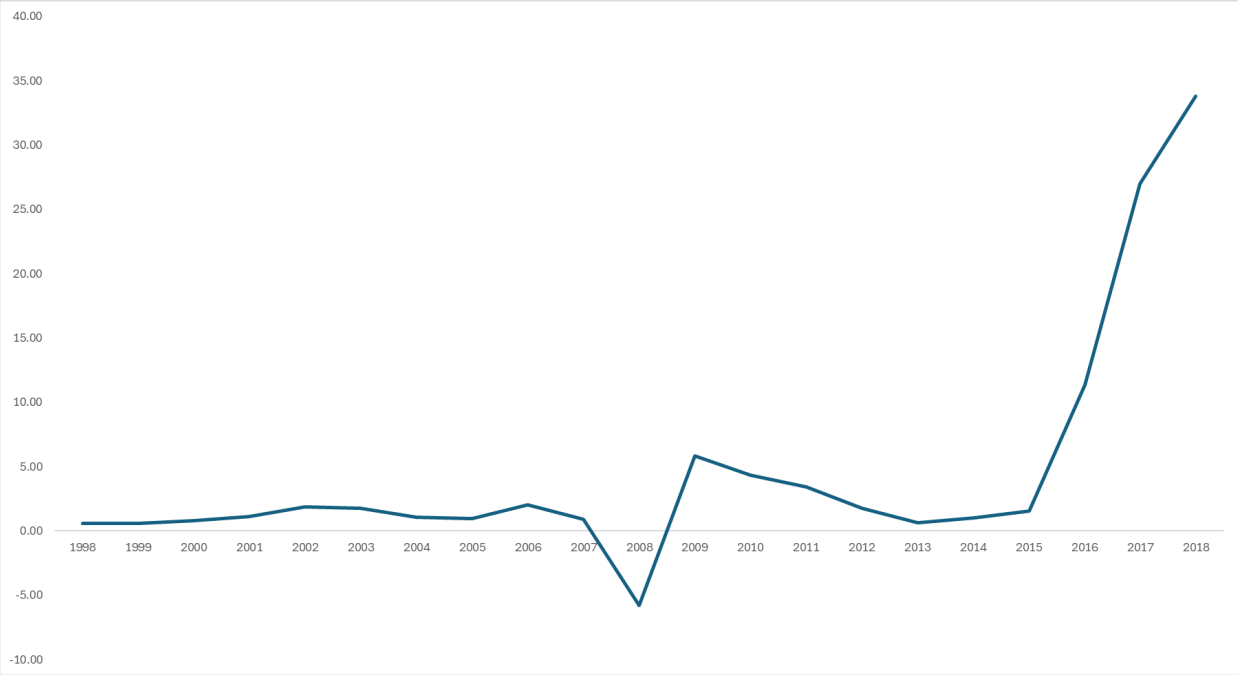
Source: Compiled from Boeing Annual Report

Exhibit TN 8 – Dividend per share evolution from 1998 to 2018



Source: Compiled from Boeing Annual Report

Exhibit TN 9 – Accounting Debt-to-Equity Evolution from 1998 to 2018



Source: Compiled from Boeing Annual Report

Exhibit TN 10 –Cost of Equity

Equity Beta	1.10
Estimated Market Risk Premium	5.94%
US 10y Treasury Bond Yield	4.19%
Cost of Equity	**10.75%**

Source: Computations from case writer

Exhibit TN 11 – Calculations for the Present Value of Dividends

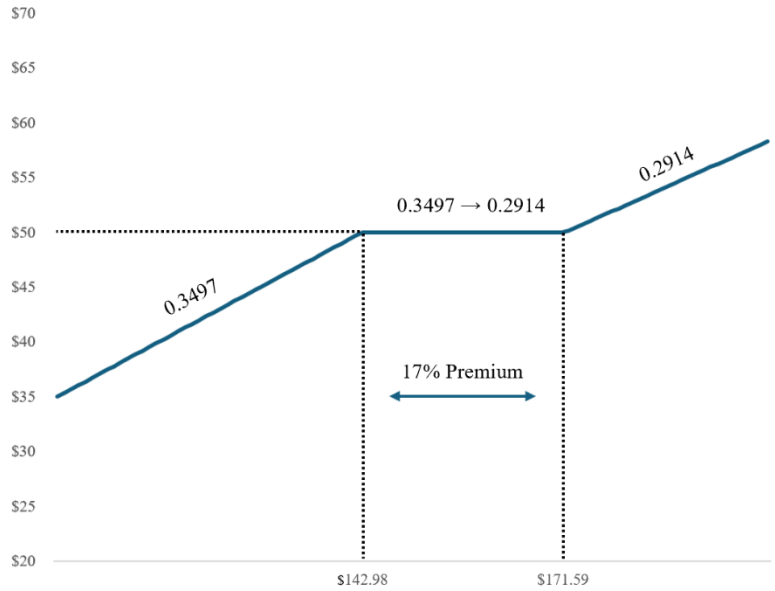
Dividend Rate (annually)	6%
Price	50
Annual Dividend	3
Quarterly Dividend	0.75
Cost of Equity	10.75%

Periods	1	2	3	4	5	6	7	8	9	10	11	12
	Jan-25	Apr-25	Jul-25	Oct-25	Jan-26	Apr-26	Jul-26	Oct-26	Jan-27	Apr-27	Jul-27	Oct-27
Quarterly Dividend	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
	0.730	0.711	0.693	0.675	0.657	0.640	0.623	0.607	0.591	0.575	0.560	0.546

PV of Dividends	**$ 7.61**

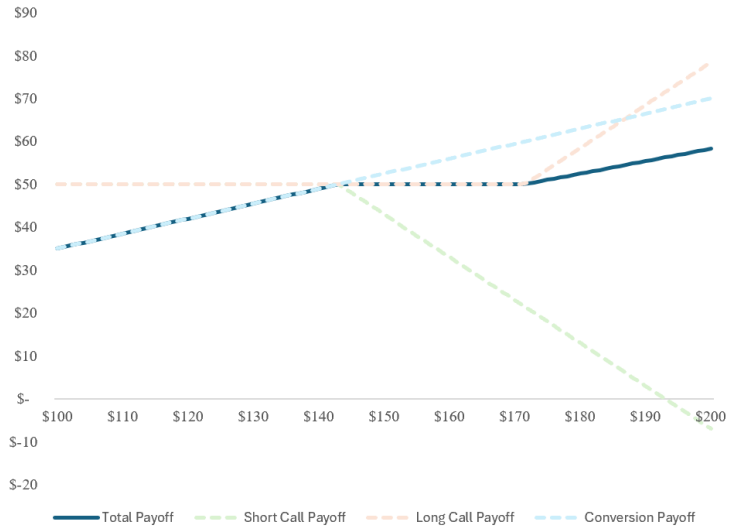
Source: Boeing, Computations from case writer

Exhibit TN 12 – Payoff Diagram for the MCPS



Source: Computations from case writer

Exhibit TN 13 – Payoff Diagram for the MCPS with call components highlighted



Source: Computations from case writer

Exhibit TN 14 – Calculations for the Mandatory Option Value

Stock Price at Issue	150.59	
MCPS Price	50.00	
Convertion Rates	0.3497	0.2914
Spot Price	150.59	150.59
Exercise Price	142.98	171.59
Volatility	37.13%	37.13%
Maturity	3.00	3.00
US 10y Treasury Bond Yield	4.19%	4.19%
d1	0.60	0.31
d2	-0.05	-0.33
N(d1)	0.72	0.62
N(d2)	0.48	0.37
Call Value	$ 48.41	$ 37.71

Mandatory Convertible Value	**$ 46.72**

Source: Computations from case writer

Exhibit TN 15 – Calculations for the total value of the Mandatory Convertible Preferred Stock

PV of Dividends	$ 7.61
Mandatory Convertible Value	$ 46.72

Total Value	**$ 54.33**

Source: Computations from case writer

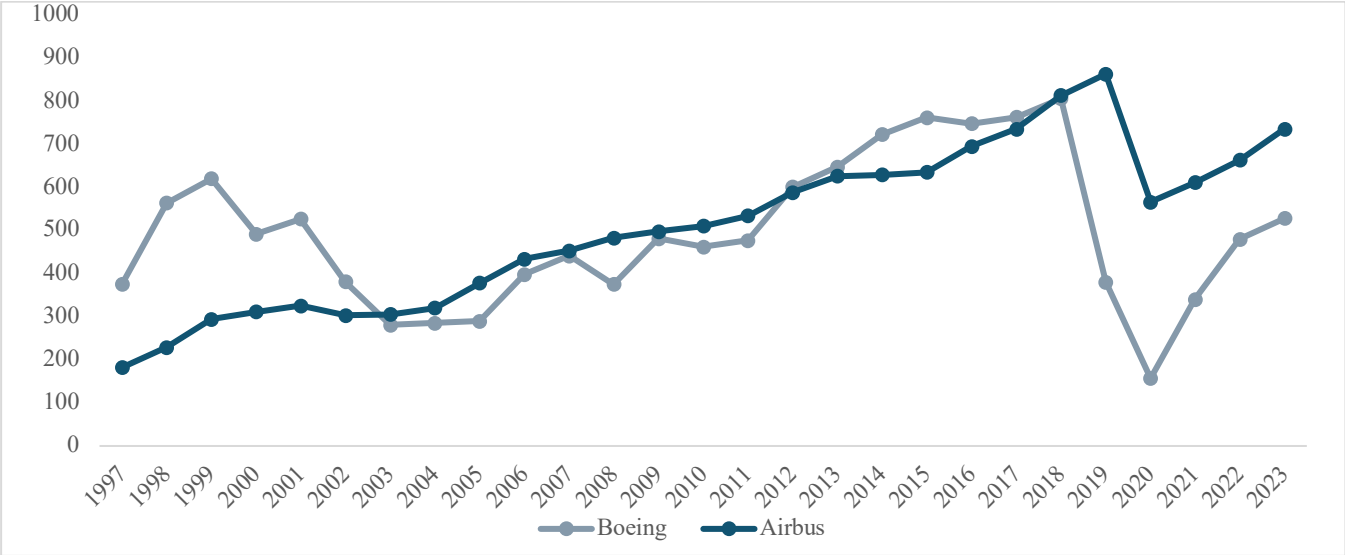
Appendix Industry Note

Exhibit IN 1 - Aircraft deliveries by manufacturer 1999-2021

Years	Boeing	Airbus	Bombardier	Embraer	Others	Total
1997	375	182	60	33	27	677
1998	564	229	75	60	22	950
1999	620	294	82	97	38	1,131
2000	492	311	99	157	48	1,107
2001	527	325	147	154	39	1,192
2002	381	303	185	120	8	997
2003	281	305	222	88	11	907
2004	285	320	175	135	8	923
2005	290	378	99	121	4	892
2006	398	434	79	103	1	1,015
2007	441	453	60	133	0	1,087
2008	375	483	61	162	0	1,081
2009	481	498	59	122	0	1,160
2010	462	510	34	97	0	1,103
2011	477	534	47	108	5	1,171
2012	601	588	14	106	8	1,317
2013	648	626	26	90	15	1,405
2014	723	629	59	92	28	1,531
2015	762	635	44	101	22	1,564
2016	748	695	46	108	21	1,618
2017	763	735	26	101	26	1,651
2018	806	813	20	90	35	1,764
2019	380	863	26	89	19	1,377
2020	157	566	16	43	39	821
2021	340	611	3	41	41	1,036

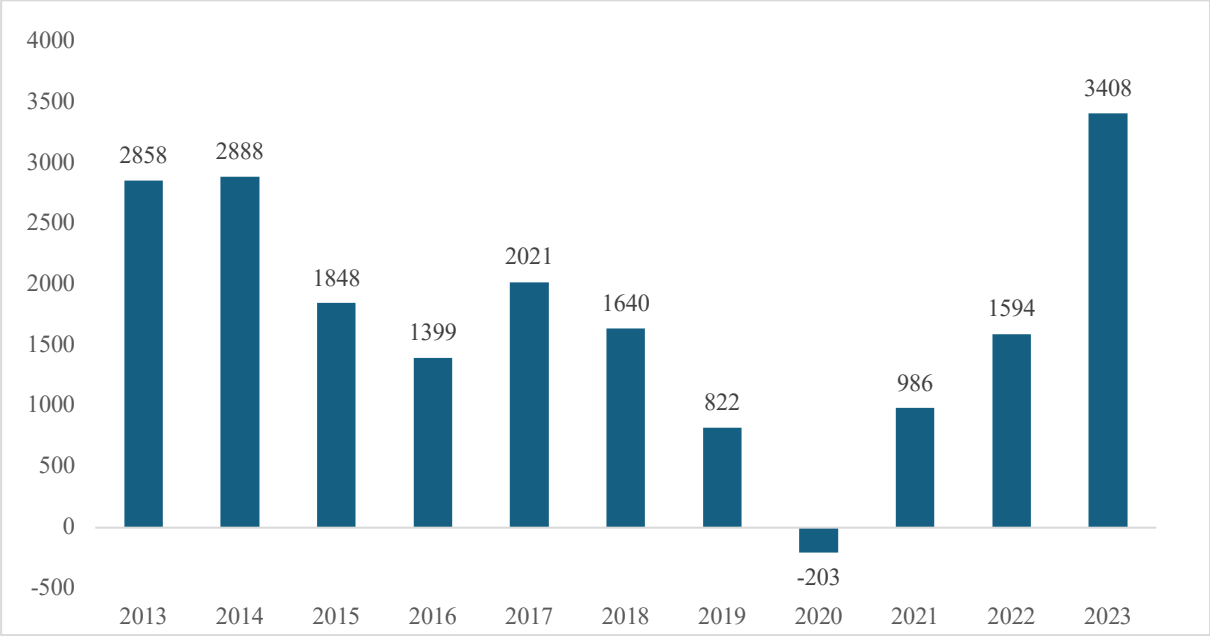
Source: Statista

Exhibit IN 2 – Boeing Vs. Airbus Orders Evolution



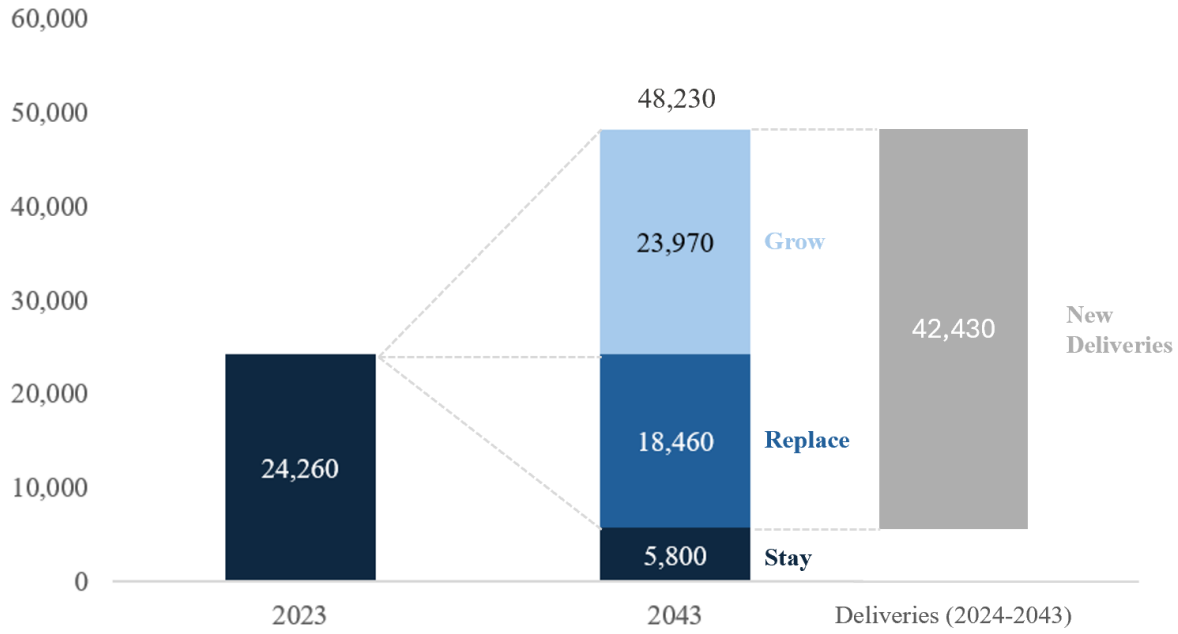
Source: Collected from companies Official Websites

Exhibit IN 3 – Total Market Orders Evolutions



Source: Collected from companies Official Websites

Exhibit IN 4 – Demand for new aircraft until 2043



Source: Airbus

Exhibit IN 5 – Predicted 2034 fleet by World Region

2034 Fleet	Africa	Middle East	Asia-Pacific	China	India	Latin America	North America	Eastern Europe	Russia	Western Europe
Narrowbody	625	1,056	2,468	4,847	1,253	1,508	6,186	904	184	3,945
Widebody	254	1,099	1,659	725	137	218	1,831	95	41	1,343
Regional Jet	231	53	264	645	16	250	1,276	121	322	290
Turboprop	319	19	762	212	139	158	557	105	1	295
Total	**1,429**	**2,227**	**5,153**	**6,429**	**1,545**	**2,134**	**9,850**	**1,225**	**548**	**5,873**

Source: Oliver Wyman