

# The Boeing Company (NYSE: BA)

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## Notre Dame Investment Club

Analysts: Colin Mahoney, Mitchell Brown, John O'Neill, & Will Zafian  
April 26, 2022

Base Target Price: \$249.72  
Current Price: \$175.91  
Upside: 42%  
Recommendation: Buy

## Investment Thesis

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- Rebound to pre-pandemic highs in commercial air travel and growing global accessibility, particularly in Asia-Pacific
  - Approval of the 737 MAX in China, their 4<sup>th</sup> largest customer by geographic distribution
  - Increasing advocacy for climate-conscious air travel, prompting the purchase of newer, more fuel-efficient airplanes
  - Increased military spending by allied nations in response to Russia's aggression toward Ukraine
  - Rising interest rates will direct money away from high growth stocks and into cyclical/value stocks
  - "Too big to fail" market positioning and lobbying power in Washington
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# Executive Summary

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# The Boeing Company Overview



The Boeing Company has historically been the most prolific manufacturer of commercial airplanes domestically and globally. They expanded their defense portfolio with the acquisition of McDonnell Douglas in 1997, with the allied nations currently acting as one of their biggest customers.

## Company Description

- The Boeing Company (NYSE: BA) is an American corporation that designs, manufactures, sells, and services **commercial jetliners, military aircraft and equipment**, satellites, and space flight vessels
- They operate in a **duopoly** with **Airbus** in the commercial jetliners space but compete with several established firms for defense contracts
- Fatal crashes of two flagship **737 MAX** airplanes in 2018 and 2019 resulted in huge **fiscal losses** and **legal battles** for the company

## Total Enterprise Value (\$ mm)

Latest Share Price	\$175.91	Cash	16,244.0
Shares Outstanding	583	Total Debt	59,641.0
<b>Market Capitalization</b>	<b>102,555.53</b>	<b>Enterprise Value</b>	<b>158,621.9</b>

## Corporate Governance



### David Calhoun: *President & CEO, 2020-Present*

- Elected in January 2020 following the 737 MAX safety issues
- Diverse experience as Head of Portfolio Operations, The Blackstone Group and CEO, General Electric Infrastructure



### Brian West: *CFO & Executive VP, 2021-Present*

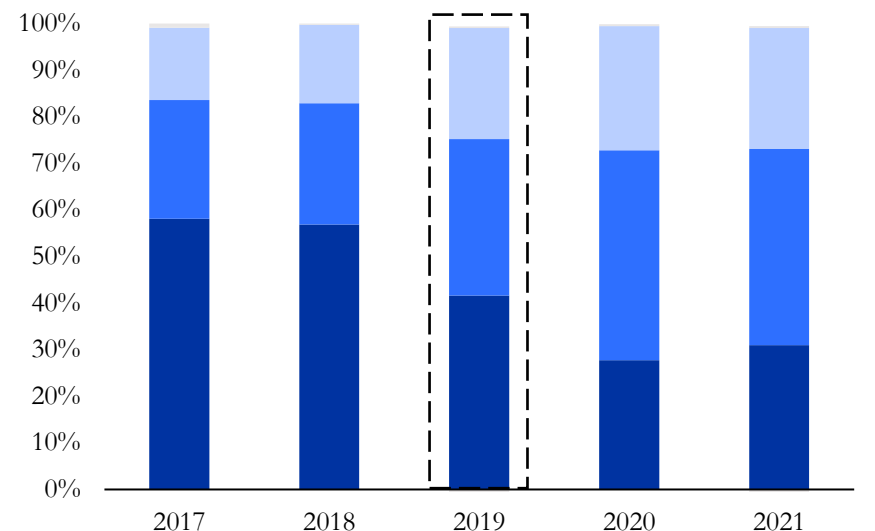
- Previously CFO, General Electric Aviation and Engine Services
- Directs Boeing's financial strategy, investor relations, and audit operations, and Boeing Capital Corporation



### Gregory Hyslop: *Chief Engineer & Executive VP, 2019-Present*

- Has held a variety of roles in the company since 1982
- Doctor of Science in Systems Science & Mathematics, Wash U
- Oversees Boeing's technological vision, investment, and integrity

## Revenue Segmentation



- Commercial Airplanes
- Defense, Space, & Security
- Boeing Capital
- Global Services
- Unallocated Items

## Valuation Multiples

<b>EV/LTM EBITDA</b>	<b>2.42x</b>
EV/LTM Revenue	82x
EV/LTM FCF	160x
PEG Ratio	13.7%

## Operating Statistics

<b>Total Revenue</b>	<b>\$62,286</b>
Gross Margin	8.3%
EBITDA Margin	2.3%
Net Income Margin	(6.7%)

# Segment Breakdown



*Boeing operates and reports through four main divisions. Its BCA and BDS divisions offer aircraft manufacturing for global airlines and government contracts. Boeing's Global Services and Capital divisions assist with the maintenance and procurement of their products.*

## Commercial Airplanes (BCA)

- Boeing's Commercial Airplane Division manufactures airplanes for airlines and air freight companies
- More than 10,000 Boeing commercial jetliners are in service today
- Holds contractual backlog of 5,186 aircraft valued at **\$297 billion**
- Current planes in production include the Next-Gen 737, 737 MAX, 747-8, 767, 777, 777X, 787, freighters, and business jets
- Most aircraft manufactured in Everett, WA, Renton, WA, and Charleston, SC plants



737-MAX



747-8 Freighter



787 Dreamliner

## Global Services (BGS)

- Boeing's Global Services Division is the main service and support branch for aircraft customers' needs
- Accounts for **26%** of revenues at **12.4%** operating margin
- Provides integrated solutions for supply chain management, inventory and parts sourcing, maintenance servicing, and training
- More than 300 dedicated locations in over 70 countries and 40 US states
- Service centers in airports offer routine maintenance and heavy maintenance programs
- Company offers complete training certifications and courses for airlines and individual pilots

## Defense, Space, and Security (BDS)

- Boeing's Defense, Space, & Security Division accounts for 45% of company revenues
- Serves in Commercial Derivative Aircraft, Military Rotorcraft, Human Space Exploration, Satellites, Autonomous Systems, and Services sectors
- Also maintains presence in fixed-wing strike, weapons, and integrated missile system markets
- Delivered 169 aircraft in 2021
- Military aircraft include F/A-18 Super Hornet, F-15EX, EA-18G Growler, Chinook and Apache Attack Helicopters, C-17 Tankers, vertical take-off planes, and unmanned surveillance and attack drones



## Boeing Capital (BCC)

- Boeing Capital provides financing for customers to ensure they can take delivery of aircraft
- List price of \$100-\$300 million can hamper airlines' abilities to outright purchase, thus necessitating financing
- Portfolio includes equipment under operating leases, sales-type/finance leases, notes, and assets held for sale or re-lease
- Leases apply to simulators, parts, and other assets in addition to aircraft
- Main portion of portfolio composed of customers with less than investment-grade credit
- Alternative lessors and capital sources can hinder customer's needs for BCC

# Financial Analysis



*Despite its enormous balance sheet and sustainable streams of revenue, Boeing will face significant challenges over the years to come in repaying its newly established debt acquired to remain operational with 737 MAX woes and Covid-19 lockdowns.*

## General Overview

- Boeing has an enormous balance sheet with **sustainable revenue** streams
- They have **assumed enormous amounts of debt** in recent years while burning cash to stay afloat with 737 MAX and Covid-19 troubles
- Operating cash flows are predicted to sufficiently cover this debt
- Historically trades at a **higher multiple** than competitors because of its **market power** and **diversified exposure**
- They have posted a **net loss** in each of the last three years

## Capital Structure Summary

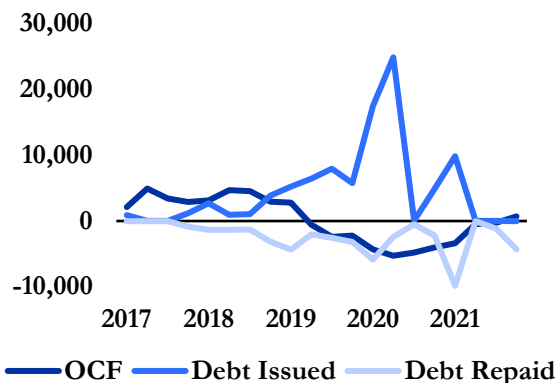


Assets: \$138,552  
Liabilities: \$153,398  
Equity: (\$14,846)

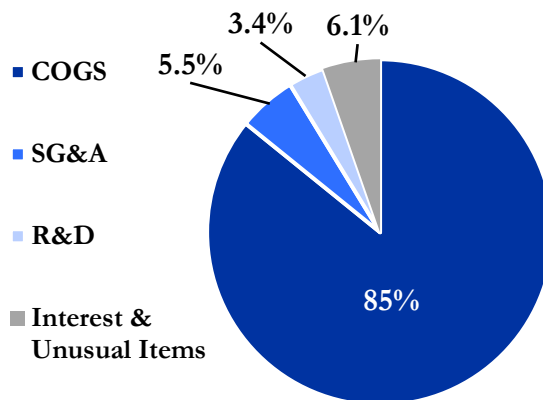


Sen. Bonds/Notes: 104.2%  
Lease Liabilities: 2.9%  
Adjustments: (7%)  
Total Debt: 100%

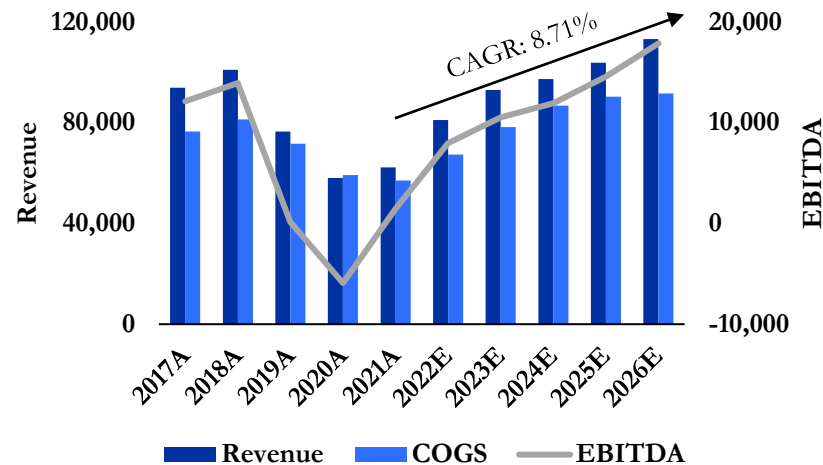
## Quarterly Cash Flows (\$ mm)



## FY 2021 Cost Breakdown



## Revenue & EBITDA Trends (\$ mm)



## Liquidity & Solvency Metrics

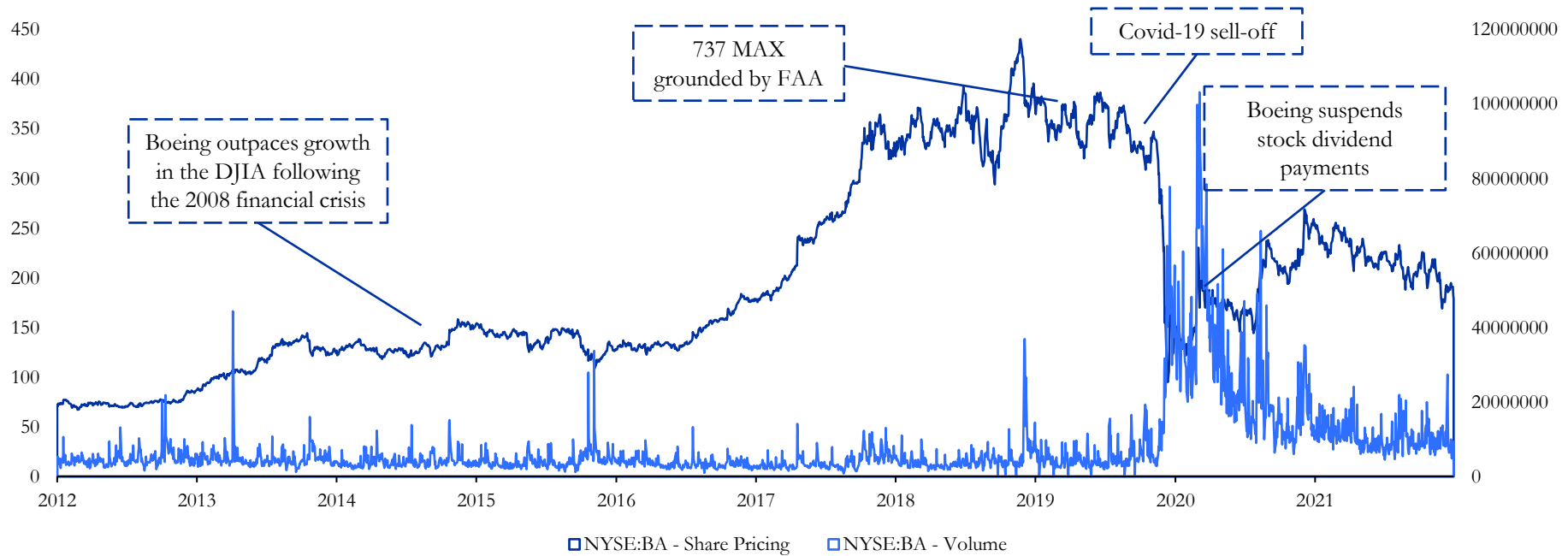
Quick Ratio	1.3x
Current Ratio	0.3x
Avg. Days Sales Outstanding	62.1
Debt/EBITDA	32.5x
Interest Coverage Ratio	(-1.87x)
Debt/Equity	(-402x)

# Stock Chart Analysis



*Boeing significantly outperformed the overall market emerging from the 2008 financial crisis, but 737 MAX woes combined with the decline in air travel due to Covid-19 led to a significant sell-off in the stock over the last two years.*

## Annotated Stock Chart



### Valuation Multiples

<b>P/E</b>	<b>(24.50)</b>
Diluted EPS	(7.15)
P/BV	(5.68)
Pre-Pandemic Dividend Yield	2.41%

### Technical Metrics

<b>200-Day Moving Average</b>	<b>\$211.5</b>
Beta 5Y	1.41
Unlevered Beta 1Y	1.09
Float %	92.4%

### Ownership Interest

<b>Institutions</b>	<b>46.74%</b>
Retail & Other	45.67%
Employee Ownership Plan	7.44%
Miscellaneous	0.15%

# Aerospace Industry Overview

*The Aerospace Industry operates as a duopoly between Airbus and Boeing. The industry's high barriers to entry, government support, and strong relationships with customers make it difficult for new firms to compete with the legacy players. The industry is expected to grow twice as fast as GDP over the next 20 years.*

## Major Players



- 60% Market Share
- \$100B Market Cap
- 140,000+ Employees

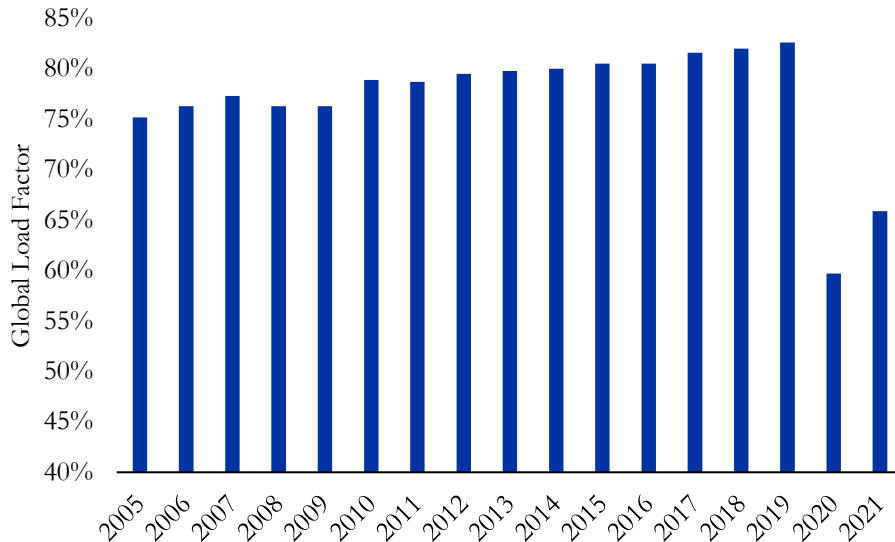
New Competitors



**AIRBUS**

- 40% Market Share
- \$90B Market Cap
- 120,000+ Employees

## Global Load Factor



## Industry Characteristics

High Barriers To Entry

Capital Intense

Government Support

Long-Term Contracts With Customers

## Future Drivers of Growth

Global Tourism

Rising Disposable Income in Developing Countries

Climate-Change Upgrades

# Exposures



*While exposed to a variety of markets and pinch points, Boeing takes necessary steps to mitigate potential disruptions while ensuring manufacturing output capabilities even during economic downturns*

## Raw Materials & Supply Chain

- Boeing is heavily reliant on materials and parts suppliers for manufacture
- Direct purchase and sourcing agreements enhance procurement & supply chain efficiencies
- Titanium, aluminum, and other raw materials purchased directly through mills
- Russia's titanium supply companies likely not to present issue given built-up metal inventory from reduced production rates**
- Company's 400+ suppliers supports procurement diversification while limiting upstream risk
- Direct distribution to parts facilities and service centers reduce logistical overhead costs
- Robust warehousing network provides streamlined servicing solutions

## Government Spending

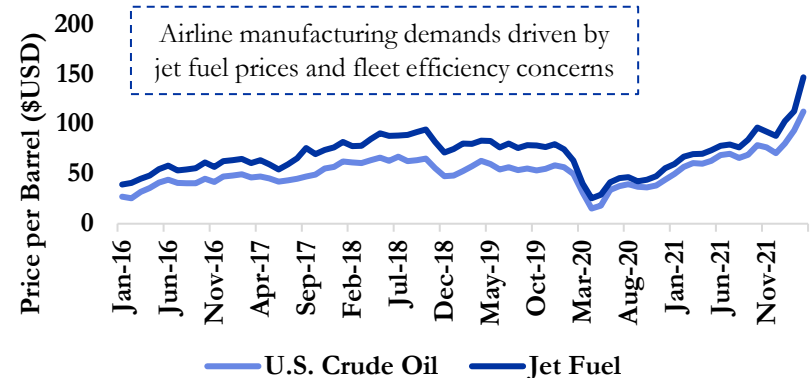
- Boeing serves as a main contractor for US Department of Defense
- Second largest defense contractor behind Lockheed Martin
- US Government provides ~50% of Boeing's revenues**
- Contract defense spending has grown at a 3% CAGR over past four years
- Enhanced government defense spending and fleet overhauls likely to increase Boeing's contracts and project continuations
- Fierce competition with Lockheed, Raytheon, Northrup Grumman, and Aeronautical Systems can limit frothy contract margins
- Tense Russia-Ukraine conflicts and nuclear threats could ramp up defense spending over the next few years

## Main Suppliers

Aircraft Engines			
Software Controls			
Mechanical Gear			
Raw Materials			

## Commodity Price Volatility

### U.S. Crude vs. Jet Fuel Prices





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*Boeing is positioned very well to rebound from Covid-19 effects, manufacturing backlog issues, and crash scandals due to its strength as a reputable brand in safety in a duopoly industry that looks to grow in coordination with a surge in travel demand*

## Covid-19 Impact on Air Travel

- Domestic Travel spending dropped by **42%** in 2020 due to pandemic restrictions on travel
- By December 2021, domestic spending rebounded to levels that were **2% lower** than pre-pandemic levels
- International Travel dropped **76%** with only a **4% recovery** in 2021
- Historically, travel spending has increased by **2-4%** every year with a disposable income annual increase of **2.7%** for the next 5 years
- Post-Covid, its estimated that the number of domestic trips will increase by **9.2% annually**
- Load factor is expected to reach **85%**, hinting at the need for airlines to demand larger airline fleets
- Airline manufacturing industry is projected to **increase 6% annually** to keep up with demand

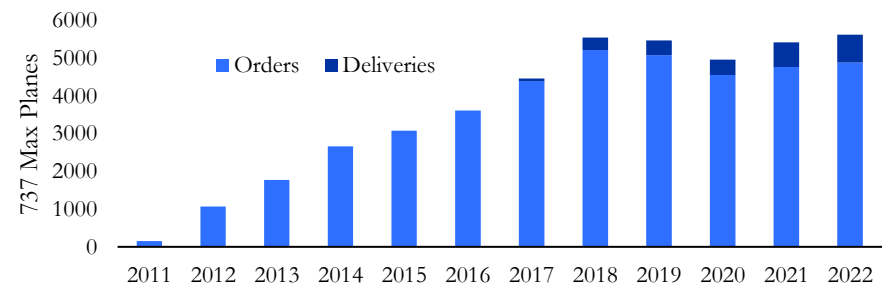
## China Eastern 737-800 Crash

- Initial Reports indicate that there are low odds that there was Boeing manufacturing or design defect as those are rare when a plane model has been flying for ten plus years
- 737-800s have been flying since 1998 and have developed some of the highest safety values
- Additionally, 737-800s represent **0.04% of Boeing's back-order system**, making the crash unlikely to effect future orders and revenue
- With positive developments regarding the resumption of 737 Max approvals and flights, the crash, although tragic, will have little effect on Boeing's ability to deliver new models

## Manufacturing

- Boeing is anticipated to have an increase in the production rate of aircrafts to **47 aircrafts per month** by 2023, which will improve company efficiency and boost cash flow
- Boeing operates on order-delivery based model, yet is extremely backlogged
- Currently, commercial aircraft production is backlogged **6-8 years**
- Yet, once a company places an order, it is very difficult to cancel the order as the **airline pays 50% of the costs upfront** and if they did switch, they would be placed at the end of a new backlog
- With Airbus and Boeing representing close to **99% of the industry**, it is very difficult to see Boeing as a concern in this duopoly
- Increased Travel Demand will necessitate the delivery of **43,610 new passenger jets** by 2040

## 737 Max Operations



Since 2020, the number of 737 Orders has a **3.6% CAGR** with the number of deliveries having a **33.7 CAGR**

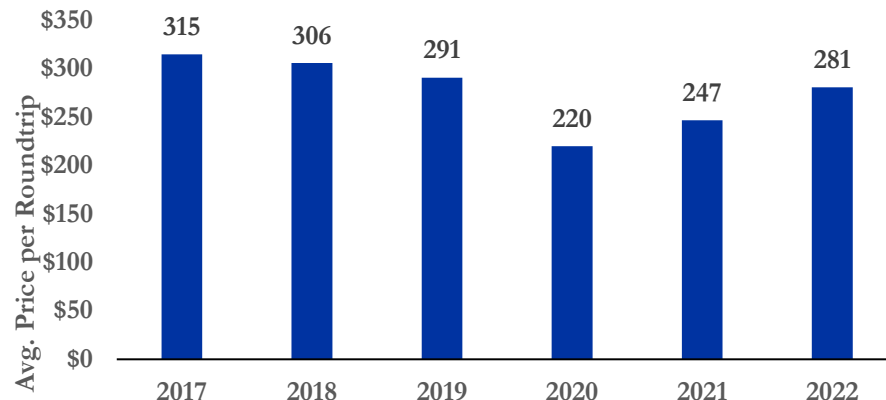
# Air Travel Recovery Continued



*With manageable airfare prices, airlines ramping up their full fleets, increasing travel demand, and expansion into new markets, Boeing looks primed to recover and take advantage of both short and long-term plans*

## Pricing

- Airfare pricing is down **4-9%** compared to Summer 2019 prices for both domestic and international traveling
- With travel restrictions gradually being decreased internationally, it is expected for prices to increase to pre-pandemic levels and higher
- Few Operating Flights internationally have temporarily hiked up prices, but with restrictions being revoked, fully operational fleets will be back in business
- Prior to the pandemic, prices were becoming cheaper and more accessible to passengers of all socio-economic backgrounds
- During the pandemic, airlines operated at **20% operations** while also slashing prices to generate any possible sales
- Post-pandemic, travel demand surged drastically, meaning that that airlines are still progressing to full operations causing a temporary increased fare prices due to low supply of flights
- With increased competition, more available flights, and optimistic look at projected jet fuel prices, airfares will be more accessible for all people, offering a promising outlook on the growth of industry



## Market Expansion

- Prior to the pandemic, advanced economies passenger traffic had an annual growth rate of **5.2%**
- Emerging economies had an annual group rate of **10.3%**
- With 737 Max approval and resumption, Boeing looks primed to enter new markets
- Record shattering **25%** increase in private jet usage suggests virtual meetings have not reduced the need for business travel

### Recent News and Expansions

#### China/Asia Pacific

China Southern Airlines will receive 39 737 Max planes this year after recent 737 approval by the Chinese government; additionally, the airline will receive 103 more aircrafts by the end of year 2024

#### Domestic Airlines

With the recertification of safety measures in the 737 Max, domestic airlines have strengthened their order with Southwest increasing their order to 382 planes and United increasing to 365 on order

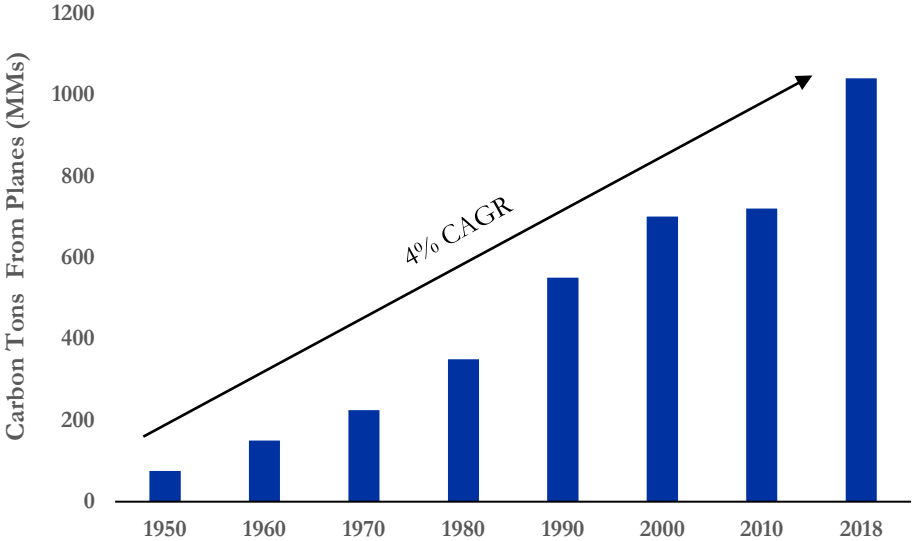
#### Low Cost Airlines

Airlines like Allegiant Air, Flair Air, and Akasa Air have chosen the 737 Max to lead their fleets, which is especially noteworthy as these companies were all entirely Air-Bus prior to the move

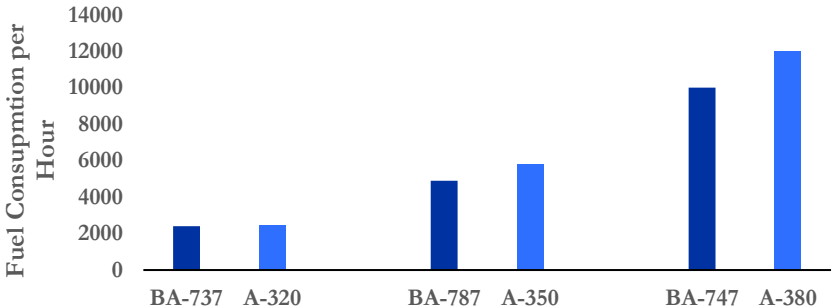
# Climate Change and Boeing

Over the past seventy years, Carbon emissions from airplanes has grown by over 4% CAGR and now account for nearly 5% of the world's total carbon footprint. As the world economy shifts to decarbonization, Airlines will need to upgrade their fleets to become more efficient, and eventually zero-carbon.

## Global Emissions from Airplanes



## Boeing vs Airbus Fuel Efficiency



## Boeing's Climate Change Plan

- Boeing has pledged to reach net-zero carbon emissions by 2050
- The company has historically provided the most fuel-efficient aircraft compared to their main competitor Airbus
- 737-MAX offers 103 mpg while A320 competitor achieves 97 mpg
- Each new plane model Boeing releases is 15-25% more efficient than the model it replaces
- Boeing plans to have all their plans be able to run on SAF by 2030
- According to the Carbon Disclosure Project, Boeing is already an industry leader in disclosing their total carbon footprint and sustainability plans

### Short Term Climate Upgrades

Transition to SAF

Increased Engine Efficiency

### Long-Term Climate Upgrades

Hydrogen & Electric-Powered Planes

Model Phase-Outs and Fleet Upgrades

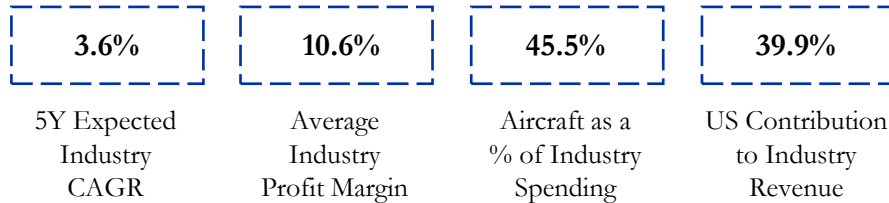
# Global Military Spending



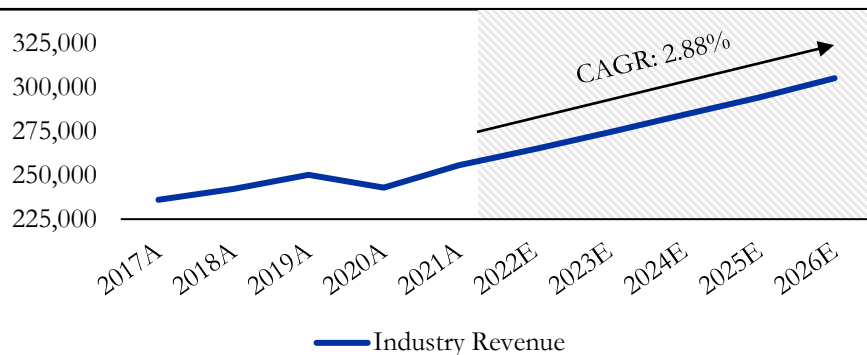
*Boeing's exposure to defense across allied nations allows them to capitalize on growing and actualized calls to increase spending on national security in light of Russia's aggression toward Ukraine.*

## Forecasts & Outlook

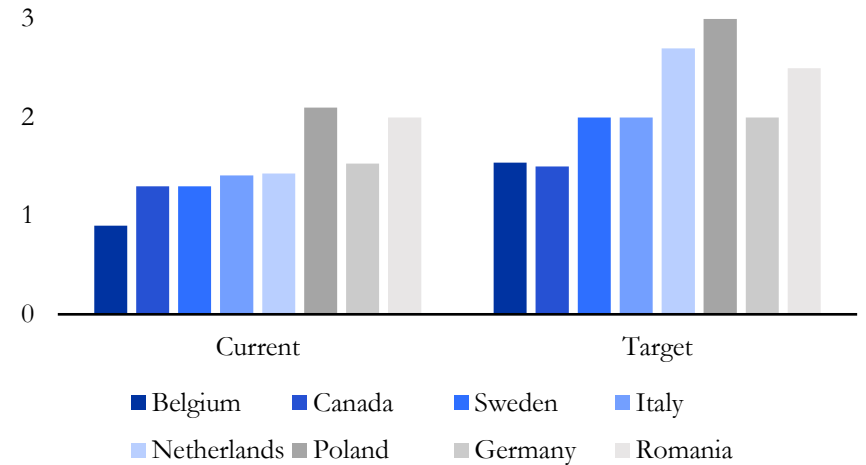
- With the onset of **Russia's** invasion of **Ukraine**, many nations have renewed calls to **increase military expenditure**
- Much of this spending will be targeted on next-generation **jet fighters**, cargo & transport aircraft, helicopters, and space-oriented weaponry
- Boeing's portfolio of next-generation and established aircraft position them well to capitalize on this spending
- Boeing was the **16<sup>th</sup> largest lobbying spender** in Washington in FY 2021
- Boeing has a **zero-tolerance policy** regarding the sale of military equipment to non-friendly nations



## Industry Revenue Projections (\$ mm)



## Defense as a % of GDP



## FY '20 Largest Defense Department Contractors

Rank	Contractor	Obligation	Specialization
1	Lockheed Martin	\$74.2 bn	Aircraft
2	Raytheon	\$27.4 bn	Radar, Missile Systems
3	General Dynamics	\$22.6 bn	Land Vehicles, Weaponry
4	Boeing	\$25.1 bn	Aircraft
5	Northrop Grumman	\$12.7 bn	Aircraft, Missile Systems

# Risks & Mitigants



Risks	Mitigants
Future/Current Regulatory & Culture Issues	737 Max has begun the recertification process and is expected to be completed by the end of this year. New management team committed to long-term safety over short-term profit.
New Competitors	New competitors don't have enough capital to compete with Boeing and Western customers are weary working with foreign competitors.
Poor Capital Allocation	New CEO has a demonstrated track record of long-term success with turnarounds.

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# Final Recommendation

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Analyst Recommendation: **Buy**

Downside Target Price:

\$168.81

Downside: (4%)

Base Target Price:

\$249.72

Upside: 42%

Upside Target Price:

\$313.27

Upside: 78%

## Investment Rationale

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- Rebound to pre-pandemic highs in commercial air travel and growing global accessibility, particularly in Asia-Pacific
- Approval of the 737 MAX in China, their 4<sup>th</sup> largest customer by geographic distribution
- Increasing advocacy for climate-conscious air travel, prompting the purchase of newer, more fuel-efficient airplanes
- Increased military spending by allied nations in response to Russia's aggression toward Ukraine
- Rising interest rates will direct money away from high growth stocks and into cyclical/value stocks
- "Too big to fail" market positioning and lobbying power in Washington



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# Comparable Companies Analysis

## Valuation Statistics

\$ in millions		Market	Enterprise	EV / Revenue		EV / EBITDA			Price / Earnings	
Company	Ticker	Capitalization	Value	2021A	LTM	2019A	2021A	LTM	Curr/TTM	Forward
Airbus SE	AIR FP	\$90,238	\$85,989	1.6x	1.5x	22.5x	10.9x	11.3x	18.35x	18.6x
BAE Systems PLC	BA LN	31,359	36,121	1.1x	1.4x	8.5x	3.5x	4.6x	13.5x	14.3x
Astronics Corporation	ATRO	379	532	1.2x	1.2x	26.9x	(77.9x)	759.3x	NA	12.2x
Northrup Grumman Corporation	NOC	72,775	83,852	2.0x	2.4x	12.6x	10.4x	16.8x	20.5x	17.5x
Lockheed Martin Corporation	LMT	124,647	134,119	1.6x	2.0x	12.2x	7.3x	9.5x	13.8x	16.3x
Embraer	ERJ US	2,130	3,962	1.2x	0.8x	19.7x	10.6x	7.4x	NA	12.0x
Bombardier Inc.	BDRBF	2,787	8,775	1.5x	1.4x	NM	14.2x	13.6x	NA	NA
AeroVironment Inc.	AVAV	2,720	2,851	7.0x	6.3x	31.8x	41.0x	43.9x	NA	50.0x
Raytheon Technologies Corp.	RTX	148,455	175,797	2.4x	2.7x	21.6x	15.5x	17.5x	38.56x	19.5x
Textron Inc.	TXT	14,851	16,114	1.5x	1.3x	7.3x	13.4x	11.6x	20.5x	16.1x
<b>Boeing</b>	<b>BA</b>	<b>\$107,415</b>	<b>\$150,965</b>	<b>2.6x</b>	<b>2.4x</b>	<b>356.6x</b>	<b>95.5x</b>	<b>44.3x</b>	<b>NM</b>	<b>38.2x</b>
Low		\$379	\$532	1.1x	0.8x	7.3x	(77.9x)	4.6x	13.5x	14.3x
Mean		49,034	54,811	2.1x	2.1x	18.1x	4.9x	89.6x	17.1x	23.3x
Median		23,105	26,118	1.5x	1.5x	19.7x	10.7x	12.6x	17.1x	17.5x
High		148,455	175,797	7.0x	6.3x	31.8x	41.0x	759.3x	20.5x	50.0x

## Operating Statistics

\$ in millions		Revenue		Revenue Growth		EBITDA			EBITDA Margin	
Company	Ticker	2019A	LTM	20-'21A	LTM	2019A	2021A	LTM	2021A	LTM
Airbus SE	AIR FP	\$76,116	\$56,321	4.5%	4.5%	\$9,497	\$8,370	\$7,591	11.0%	13.5%
BAE Systems PLC	BA LN	23,797	25,377	1.3%	1.3%	2,412	7,795	7,795	32.8%	30.7%
Astronics Corporation	ATRO	773	445	(11.5%)	(11.5%)	88	(7)	1	(0.9%)	0.2%
Northrup Grumman	NOC	33,841	35,667	(3.1%)	(3.1%)	6,017	6,890	4,996	20.4%	14.0%
Lockheed Martin	LMT	59,812	67,044	2.5%	2.5%	11,937	14,458	14,183	21.6%	21.2%
Embraer	ERJ US	4,578	4,761	15.4%	15.4%	926	535	535	11.7%	11.2%
Bombardier	BDRBF	7,488	6,085	(6.2%)	(6.2%)	9	644	644	8.6%	10.6%
AeroVironment Inc.	AVAV	314	449	7.5%	14.0%	46	68	65	21.6%	14.5%
Raytheon Technologies Corp.	RTX	45,349	64,388	13.8%	13.8%	9,437	12,575	12,050	27.7%	18.7%
Textron Inc.	TXT	13,630	16,114	6.3%	6.3%	1,665	1,343	1,394	9.9%	8.7%
<b>Boeing</b>	<b>BA</b>	<b>\$76,559</b>	<b>\$62,286</b>	<b>7.1%</b>	<b>7.1%</b>	<b>\$8,987</b>	<b>\$1,697</b>	<b>\$3,405</b>	<b>2.2%</b>	<b>5.5%</b>
Low		\$314	\$445	(11.5%)	(11.5%)	\$9	(\$7)	\$1	(0.9%)	0.2%
Mean		26,570	27,665	3.1%	3.7%	4,203	5,267	4,925	16.4%	14.3%
Median		18,713	20,746	3.5%	3.5%	2,039	4,116	3,195	16.0%	13.7%
High		76,116	67,044	15.4%	15.4%	\$11,937	\$14,458	\$14,183	32.8%	30.7%

# Operating Assumptions – Base Case

	2018A	2019A	2020A	2021A	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Manufacturing Revenue Growth %		(21.2%)	(28.7%)	9.0%	25%	18%	15%	8%	8%	5%	5%
Servicing Revenue Growth %		(38.6%)	5.3%	(1.1%)	10%	8%	5%	3%	3%	3%	3%
BCC Financing Revenue Growth %		(10.9%)	7.0%	4.2%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
<b>Total Revenue Growth %</b>		(24.1%)	(23.9%)	7.1%	22.3%	15.9%	13.5%	6.8%	6.8%	4.7%	4.7%
Manufacturing COGS % of Revenue	97.1%	95.1%	115.8%	97.2%	90%	90%	88%	85%	80%	80%	80%
Servicing COGS % of Revenue		87.5%	83.8%	85.2%	80%	80%	80%	80%	80%	80%	80%
Bocing Capital Int. Expense % of Interest Expense		2.3%	2.0%	4.4%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
<b>Total COGS % of Revenue</b>	<b>95.2%</b>	<b>93.9%</b>	<b>109.3%</b>	<b>94.7%</b>	<b>88.2%</b>	<b>88.3%</b>	<b>86.3%</b>	<b>84.1%</b>	<b>79.8%</b>	<b>79.8%</b>	<b>79.8%</b>
<b>Gross Margin</b>	<b>4.8%</b>	<b>6.1%</b>	<b>(9.3%)</b>	<b>5.3%</b>	<b>11.8%</b>	<b>11.7%</b>	<b>13.7%</b>	<b>15.9%</b>	<b>20.2%</b>	<b>20.2%</b>	<b>20.2%</b>
SG&A % of Revenue	4.5%	5.1%	8.2%	6.6%	5.1%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
R&D % of Revenue	3.2%	4.2%	4.2%	3.6%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%	3.8%
<b>Operating Expenses % of Revenue</b>	<b>7.7%</b>	<b>9.3%</b>	<b>12.5%</b>	<b>10.2%</b>	<b>8.9%</b>	<b>8.3%</b>	<b>8.3%</b>	<b>8.3%</b>	<b>8.3%</b>	<b>8.3%</b>	<b>8.3%</b>
<b>EBIT Margin</b>	<b>(3.0%)</b>	<b>(3.1%)</b>	<b>(21.8%)</b>	<b>(5.0%)</b>	<b>2.9%</b>	<b>3.4%</b>	<b>5.4%</b>	<b>7.6%</b>	<b>11.9%</b>	<b>11.9%</b>	<b>11.9%</b>
Tax Expense (Benefit) %	37.8%	67.1%	19.9%	23.8%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%	16.0%
D&A % of Revenue	2.1%	3.0%	3.8%	3.4%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
Capex % of Revenue	1.6%	2.0%	2.2%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%	1.6%
Accounts Receivable % of Revenue	13.7%	16.0%	17.0%	18.0%	15%	15%	15%	15%	15%	15%	15%
Inventory % of COGS	64.9%	106.3%	128.0%	133.0%	95%	90%	85%	80%	80%	80%	80%
Deferred Tax Assets % of Revenue	0.3%	0.9%	0.1%	0.1%	0.3%	0.1%	0.1%	0.05%	0.05%	0.05%	0.05%
Other Current Assets % of Revenue	2.3%	4.0%	7.3%	3.6%	3%	3%	3%	3%	3%	3%	3%
Accounts Payable % of COGS	13.4%	21.6%	20.2%	15.6%	16%	16%	16%	16%	16%	16%	16%
Unearned Revenue % of Revenue	50.1%	67.1%	86.4%	84.7%	85.0%	85.0%	80.0%	80.0%	80.0%	80.0%	80.0%
Deferred Tax Liabilities % of Revenue	1.7%	0.5%	1.7%	0.3%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Other Current Liabilities % of COGS	3.2%	4.7%	2.3%	3.0%	3%	3%	3%	3%	3%	3%	3%
Net Working Capital % of Revenue	10.6%	28.4%	51.6%	45.0%	(0.7%)	(5.2%)	(6.0%)	(11.6%)	(14.3%)	(14.3%)	(14.3%)
Change in NWC % of Revenue	(1.6%)	14.4%	14.3%	(3.1%)	(37.5%)	(4.6%)	(1.4%)	(6.0%)	(3.4%)	(0.6%)	(0.6%)

# Operating Build – Base Case

(\$ in millions)	FYE December 31,				FYE December 31,						
	2018A	2019A	2020A	2021A	2022E	2023E	2024E	2025E	2026E	2027E	2028E
Manufacturing Revenue	\$83,891.0	\$66,094.0	\$47,142.0	\$51,386.0	\$64,232.5	\$75,473.2	\$86,794.2	\$93,303.7	\$100,301.5	\$105,316.6	\$110,582.4
Servicing Revenue	17,056.0	10,465.0	11,016.0	10,900.0	11,990.0	12,889.3	13,533.7	13,872.1	14,218.9	14,574.3	14,938.7
BCC Financing Revenue	274.0	244.0	261.0	272.0	282.9	294.2	306.0	318.2	330.9	344.2	357.9
<b>Total Revenue</b>	<b>\$101,221.0</b>	<b>\$76,803.0</b>	<b>\$58,419.0</b>	<b>\$62,558.0</b>	<b>\$76,505.4</b>	<b>\$88,656.6</b>	<b>\$100,633.8</b>	<b>\$107,494.0</b>	<b>\$114,851.3</b>	<b>\$120,235.1</b>	<b>\$125,879.0</b>
Manufacturing COGS	81,490.0	62,877.0	54,568.0	49,954.0	57,809.3	67,925.9	75,944.9	79,308.2	80,241.2	84,253.3	88,465.9
Servicing COGS	14,919.3	9,154.0	9,232.0	9,283.0	9,592.0	10,311.4	10,827.0	11,097.6	11,375.1	11,659.5	11,950.9
Boeing Capital Int. Expense		62.0	43.0	32.0	61.4	54.9	45.2	30.9	23.8	16.8	16.8
<b>Total COGS</b>	<b>\$96,409.3</b>	<b>\$72,093.0</b>	<b>\$63,843.0</b>	<b>\$59,269.0</b>	<b>\$67,462.7</b>	<b>\$78,292.1</b>	<b>\$86,817.0</b>	<b>\$90,436.7</b>	<b>\$91,640.1</b>	<b>\$95,929.5</b>	<b>\$100,433.7</b>
<b>Gross Profit</b>	<b>\$4,811.7</b>	<b>\$4,710.0</b>	<b>(\$5,424.0)</b>	<b>\$3,289.0</b>	<b>\$9,042.7</b>	<b>\$10,364.5</b>	<b>\$13,816.8</b>	<b>\$17,057.3</b>	<b>\$23,211.2</b>	<b>\$24,305.5</b>	<b>\$25,445.4</b>
SG&A	4,567.0	3,909.0	4,817.0	4,157.0	3,901.8	3,989.5	4,528.5	4,837.2	5,168.3	5,410.6	5,664.6
R&D	3,269.0	3,219.0	2,476.0	2,249.0	2,907.2	3,369.0	3,824.1	4,084.8	4,364.3	4,568.9	4,783.4
<b>Operating Expenses</b>	<b>\$7,836.0</b>	<b>\$7,128.0</b>	<b>\$7,293.0</b>	<b>\$6,406.0</b>	<b>\$6,809.0</b>	<b>\$7,358.5</b>	<b>\$8,352.6</b>	<b>\$8,922.0</b>	<b>\$9,532.7</b>	<b>\$9,979.5</b>	<b>\$10,448.0</b>
<b>EBIT</b>	<b>(\$3,024.3)</b>	<b>(\$2,418.0)</b>	<b>(\$12,717.0)</b>	<b>(\$3,117.0)</b>	<b>\$2,233.8</b>	<b>\$3,006.0</b>	<b>\$5,464.2</b>	<b>\$8,135.3</b>	<b>\$13,678.5</b>	<b>\$14,326.0</b>	<b>\$14,997.4</b>
Interest Expense, Net		(2,682.0)	(2,156.0)	(722.0)	(2,456.0)	(2,195.0)	(1,807.0)	(1,234.0)	(952.0)	(672.0)	(672.0)
Tax Expense (Benefit)	(1,144.0)	(1,623.0)	(2,535.0)	(743.0)	(35.6)	129.8	585.2	1,104.2	2,036.2	2,184.6	2,292.1
<b>Net Income</b>	<b>(1,880.3)</b>	<b>(3,477.0)</b>	<b>(12,338.0)</b>	<b>(3,096.0)</b>	<b>(186.7)</b>	<b>681.2</b>	<b>3,072.0</b>	<b>5,797.1</b>	<b>10,690.3</b>	<b>11,469.4</b>	<b>12,033.3</b>
<b>EBIAT</b>	<b>(\$1,880.3)</b>	<b>(\$795.0)</b>	<b>(\$10,182.0)</b>	<b>(\$2,374.0)</b>	<b>\$2,269.3</b>	<b>\$2,876.2</b>	<b>\$4,879.0</b>	<b>\$7,031.1</b>	<b>\$11,642.3</b>	<b>\$12,141.4</b>	<b>\$12,705.3</b>
D&A	2,114.0	2,271.0	2,246.0	2,144.0	2,371.7	2,748.4	3,119.6	3,332.3	3,560.4	3,727.3	3,902.2
<b>EBITDA</b>	<b>(\$910.3)</b>	<b>(\$147.0)</b>	<b>(\$10,471.0)</b>	<b>(\$973.0)</b>	<b>\$4,605.4</b>	<b>\$5,754.3</b>	<b>\$8,583.8</b>	<b>\$11,467.6</b>	<b>\$17,238.9</b>	<b>\$18,053.3</b>	<b>\$18,899.6</b>
<b>Capex</b>	<b>\$1,602.0</b>	<b>\$1,500.0</b>	<b>\$1,303.0</b>	<b>\$980.0</b>	<b>\$1,224.1</b>	<b>\$1,418.5</b>	<b>\$1,610.1</b>	<b>\$1,719.9</b>	<b>\$1,837.6</b>	<b>\$1,923.8</b>	<b>\$2,014.1</b>
Accounts Receivable	13,904.0	12,309.0	9,950.0	11,261.0	11,475.8	13,298.5	15,095.1	16,124.1	17,227.7	18,035.3	18,881.9
Inventory	62,567.0	76,622.0	81,715.0	78,823.0	64,089.5	70,462.9	73,794.5	72,349.3	73,312.1	76,743.6	80,346.9
Deferred Tax Assets	284.0	683.0	86.0	77.0	229.5	88.7	100.6	53.7	57.4	60.1	62.9
Other Current Assets	2,335.0	3,106.0	4,286.0	2,221.0	2,295.2	2,659.7	3,019.0	3,224.8	3,445.5	3,607.1	3,776.4
<b>Non-cash Current Assets</b>	<b>\$79,090.0</b>	<b>\$92,720.0</b>	<b>\$96,037.0</b>	<b>\$92,382.0</b>	<b>\$78,090.0</b>	<b>\$86,509.8</b>	<b>\$92,009.2</b>	<b>\$91,752.0</b>	<b>\$94,042.7</b>	<b>\$98,446.1</b>	<b>\$103,068.1</b>
Accounts Payable	12,916.0	15,553.0	12,928.0	9,261.0	10,794.0	12,526.7	13,890.7	14,469.9	14,662.4	15,348.7	16,069.4
Unearned Revenue, Current	50,676.0	51,551.0	50,488.0	52,980.0	65,029.6	75,358.1	80,507.1	85,995.2	91,881.0	96,188.1	100,703.2
Deferred Tax Liabilities	1,736.0	413.0	1,010.0	218.0	765.1	886.6	1,006.3	1,074.9	1,148.5	1,202.4	1,258.8
Other Current Liabilities	3,059.0	3,422.0	1,486.0	1,750.0	2,023.9	2,348.8	2,604.5	2,713.1	2,749.2	2,877.9	3,013.0
<b>Non-debt Current Liabilities</b>	<b>\$68,387.0</b>	<b>\$70,939.0</b>	<b>\$65,912.0</b>	<b>\$64,209.0</b>	<b>\$78,612.5</b>	<b>\$91,120.2</b>	<b>\$98,008.6</b>	<b>\$104,253.1</b>	<b>\$110,441.2</b>	<b>\$115,617.0</b>	<b>\$121,044.4</b>
Net Working Capital	10,703.0	21,781.0	30,125.0	28,173.0	(522.5)	(4,610.4)	(5,999.4)	(12,501.1)	(16,398.4)	(17,171.0)	(17,976.3)
<b>Change in NWC</b>	<b>(\$1,620.0)</b>	<b>\$11,078.0</b>	<b>\$8,344.0</b>	<b>(\$1,952.0)</b>	<b>(\$28,695.5)</b>	<b>(\$4,087.9)</b>	<b>(\$1,389.0)</b>	<b>(\$6,501.7)</b>	<b>(\$3,897.3)</b>	<b>(\$772.5)</b>	<b>(\$805.3)</b>

# DCF Output – Base Case

(\$ in millions)	FYE December 31,				FYE December 31,							Enterprise Value	
	2018A	2019A	2020A	2021A	2022E	2023E	2024E	2025E	2026E	2027E	2028E		
<b>Total Revenue</b>	\$101,221.0	\$76,803.0	\$58,419.0	\$62,558.0	\$76,505.4	\$88,656.6	\$100,633.8	\$107,494.0	\$114,851.3	\$120,235.1	\$125,879.0	Cumulative Present Value of FCF	\$80,419.8
<i>Revenue Growth</i>	--	(24.1%)	(23.9%)	7.1%	22.3%	15.9%	13.5%	6.8%	6.8%	4.7%	4.7%	<b>Terminal Value</b>	
<b>Expenses</b>												Terminal Year EBITDA	\$18,899.6
COGS	96,409.3	72,093.0	63,843.0	59,269.0	67,462.7	78,292.1	86,817.0	90,436.7	91,640.1	95,929.5	100,433.7	Exit Multiple	12.5x
<b>Gross Profit</b>	<b>\$4,811.7</b>	<b>\$4,710.0</b>	<b>(\$5,424.0)</b>	<b>\$3,289.0</b>	<b>\$9,042.7</b>	<b>\$10,364.5</b>	<b>\$13,816.8</b>	<b>\$17,057.3</b>	<b>\$23,211.2</b>	<b>\$24,305.5</b>	<b>\$25,445.4</b>	<b>Terminal Value</b>	\$236,245.5
<i>Gross Margin</i>	4.8%	6.1%	(9.3%)	5.3%	11.8%	11.7%	13.7%	15.9%	20.2%	20.2%	20.2%	Discount Factor	49.93%
SG&A	4,567.0	3,909.0	4,817.0	4,157.0	3,901.8	3,989.5	4,528.5	4,837.2	5,168.3	5,410.6	5,664.6	<b>Present Value of Terminal Value</b>	\$117,957.0
R&D	3,269.0	3,219.0	2,476.0	2,249.0	2,907.2	3,369.0	3,824.1	4,084.8	4,364.3	4,568.9	4,783.4	% of Enterprise Value	59.5%
Operating Expenses	7,836.0	7,128.0	7,293.0	6,406.0	6,809.0	7,358.5	8,352.6	8,922.0	9,532.7	9,979.5	10,448.0	<b>Enterprise Value</b>	\$198,376.8
<b>Operating Income (EBIT)</b>	<b>(\$3,024.3)</b>	<b>(\$2,418.0)</b>	<b>(\$12,717.0)</b>	<b>(\$3,117.0)</b>	<b>\$2,233.8</b>	<b>\$3,006.0</b>	<b>\$5,464.2</b>	<b>\$8,135.3</b>	<b>\$13,678.5</b>	<b>\$14,326.0</b>	<b>\$14,997.4</b>		
<i>EBIT Margin</i>	(3.0%)	(3.1%)	(21.8%)	(5.0%)	2.9%	3.4%	5.4%	7.6%	11.9%	11.9%	11.9%		
Income Tax Expense (24%)	(\$1,144.0)	(\$1,623.0)	(\$2,535.0)	(\$743.0)	(\$35.6)	\$129.8	\$585.2	\$1,104.2	\$2,036.2	\$2,184.6	\$2,292.1		
<b>EBIAT</b>	<b>(\$1,880.3)</b>	<b>(\$795.0)</b>	<b>(\$10,182.0)</b>	<b>(\$2,374.0)</b>	<b>\$2,269.3</b>	<b>\$2,876.2</b>	<b>\$4,879.0</b>	<b>\$7,031.1</b>	<b>\$11,642.3</b>	<b>\$12,141.4</b>	<b>\$12,705.3</b>		
<b>Cash Flow</b>													
<i>Plus: D&amp;A</i>	2,114.0	2,271.0	2,246.0	2,144.0	2,371.7	2,748.4	3,119.6	3,332.3	3,560.4	3,727.3	3,902.2		
<b>Discretionary Cash Flow</b>	<b>\$233.7</b>	<b>\$1,476.0</b>	<b>(\$7,936.0)</b>	<b>(\$230.0)</b>	<b>\$4,641.0</b>	<b>\$5,624.6</b>	<b>\$7,998.7</b>	<b>\$10,363.4</b>	<b>\$15,202.7</b>	<b>\$15,868.7</b>	<b>\$16,607.6</b>		
<i>Less: Increase in NWC</i>	1,620.0	(11,078.0)	(8,344.0)	1,952.0	28,695.5	4,087.9	1,389.0	6,501.7	3,897.3	772.5	805.3		
<i>Less: CapEx</i>	(1,602.0)	(1,500.0)	(1,303.0)	(980.0)	(1,224.1)	(1,418.5)	(1,610.1)	(1,719.9)	(1,837.6)	(1,923.8)	(2,014.1)		
<b>Free Cash Flow</b>	<b>\$251.7</b>	<b>(\$11,102.0)</b>	<b>(\$17,583.0)</b>	<b>\$742.0</b>	<b>\$32,112.4</b>	<b>\$8,294.0</b>	<b>\$7,777.6</b>	<b>\$15,145.2</b>	<b>\$17,262.4</b>	<b>\$14,717.5</b>	<b>\$15,398.9</b>		
<i>Free Cash Flow Growth</i>	--	(4510.8%)	58.4%	(104.2%)	4227.8%	(74.2%)	(6.2%)	94.7%	14.0%	(14.7%)	4.6%		
Discount Period					0.5	1.5	2.5	3.5	4.5	5.5	6.5		
Discount Factor					0.95	0.85	0.77	0.69	0.62	0.56	0.50		
<b>Present Value of Free Cash Flow</b>					<b>\$30,441.8</b>	<b>\$7,065.7</b>	<b>\$5,954.3</b>	<b>\$10,419.6</b>	<b>\$10,672.7</b>	<b>\$8,177.1</b>	<b>\$7,688.6</b>		

## DCF Sensitivity Analysis

EV/EBITDA	WACC				
	9.3%	10.3%	11.3%	12.3%	13.3%
10.5x	\$245.43	\$230.92	\$217.30	\$204.51	\$192.48
11.5x	\$263.48	\$247.93	\$233.34	\$219.64	\$206.77
12.5x	\$281.52	\$264.94	\$249.38	\$234.77	\$221.05
13.5x	\$299.57	\$281.94	\$265.41	\$249.90	\$235.34
14.5x	\$317.61	\$298.95	\$281.45	\$265.03	\$249.62

## DCF Implied Equity Value and Share Price

Enterprise Value	\$198,376.8
<i>Less: Total Debt</i>	\$59,641.0
<i>Plus: Cash &amp; Cash Equivalents</i>	\$8,000.0
<b>Implied Equity Value</b>	\$146,735.8
Implied Share Price	\$249.72
Shares Outstanding (mil)	587.6

# DCF Output – Upside Case

(\$ in millions)	FYE December 31,				FYE December 31,							Enterprise Value	
	2018A	2019A	2020A	2021A	2022E	2023E	2024E	2025E	2026E	2027E	2028E		
<b>Total Revenue</b>	\$101,221.0	\$76,803.0	\$58,419.0	\$62,558.0	\$78,065.3	\$94,047.1	\$108,781.8	\$123,297.2	\$134,521.6	\$140,875.7	\$147,538.1	Cumulative Present Value of FCF	\$97,693.3
Revenue Growth	--	(24.1%)	(23.9%)	7.1%	24.8%	20.5%	15.7%	13.3%	9.1%	4.7%	4.7%	<b>Terminal Value</b>	
<b>Expenses</b>												Terminal Year EBITDA	\$22,114.9
COGS	96,409.3	72,093.0	63,843.0	59,269.0	66,908.2	79,098.5	86,845.8	98,422.6	107,377.6	112,435.8	117,751.2	Exit Multiple	12.5x
<b>Gross Profit</b>	<b>\$4,811.7</b>	<b>\$4,710.0</b>	<b>(\$5,424.0)</b>	<b>\$3,289.0</b>	<b>\$11,157.1</b>	<b>\$14,948.6</b>	<b>\$21,936.0</b>	<b>\$24,874.6</b>	<b>\$27,144.0</b>	<b>\$28,439.9</b>	<b>\$29,786.9</b>	<b>Terminal Value</b>	\$276,436.9
Gross Margin	4.8%	6.1%	(9.3%)	5.3%	14.3%	15.9%	20.2%	20.2%	20.2%	20.2%	20.2%	Discount Factor	49.93%
SG&A	4,567.0	3,909.0	4,817.0	4,157.0	4,059.4	4,232.1	4,895.2	5,548.4	6,053.5	6,339.4	6,639.2	<b>Present Value of Terminal Value</b>	\$138,024.5
R&D	3,269.0	3,219.0	2,476.0	2,249.0	2,966.5	3,573.8	4,133.7	4,685.3	5,111.8	5,353.3	5,606.4	% of Enterprise Value	58.6%
Operating Expenses	7,836.0	7,128.0	7,293.0	6,406.0	7,025.9	7,805.9	9,028.9	10,233.7	11,165.3	11,692.7	12,245.7	<b>Enterprise Value</b>	\$235,717.8
<b>Operating Income (EBIT)</b>	<b>(\$3,024.3)</b>	<b>(\$2,418.0)</b>	<b>(\$12,717.0)</b>	<b>(\$3,117.0)</b>	<b>\$4,131.2</b>	<b>\$7,142.7</b>	<b>\$12,907.1</b>	<b>\$14,640.9</b>	<b>\$15,978.7</b>	<b>\$16,747.2</b>	<b>\$17,541.3</b>		
EBIT Margin	(3.0%)	(3.1%)	(21.8%)	(5.0%)	5.3%	7.6%	11.9%	11.9%	11.9%	11.9%	11.9%		
Income Tax Expense (24%)	-1,144.0	-1,623.0	-2,535.0	-743.0	661.0	1,142.8	2,065.1	2,342.5	2,556.6	2,679.5	2,806.6		
<b>EBIAT</b>	<b>(\$1,880.3)</b>	<b>(\$795.0)</b>	<b>(\$10,182.0)</b>	<b>(\$2,374.0)</b>	<b>\$3,470.2</b>	<b>\$5,999.9</b>	<b>\$10,842.0</b>	<b>\$12,298.4</b>	<b>\$13,422.1</b>	<b>\$14,067.6</b>	<b>\$14,734.7</b>		
<b>Cash Flow</b>													
Plus: D&A	2,114.0	2,271.0	2,246.0	2,144.0	2,420.0	2,915.5	3,372.2	3,822.2	4,170.2	4,367.1	4,573.7		
<b>Discretionary Cash Flow</b>	<b>233.7</b>	<b>1,476.0</b>	<b>(\$7,936.0)</b>	<b>(\$230.0)</b>	<b>5,890.2</b>	<b>8,915.3</b>	<b>14,214.2</b>	<b>16,120.6</b>	<b>17,592.2</b>	<b>18,434.8</b>	<b>19,308.3</b>		
Less: Increase in NWC	1,620.0	(11,078.0)	(8,344.0)	1,952.0	25,421.7	4,401.6	2,041.9	5,420.4	6,201.0	729.8	6,647.3		
Less: CapEx	(1,602.0)	(1,500.0)	(1,303.0)	(980.0)	(1,249.0)	(1,504.8)	(1,740.5)	(1,972.8)	(2,152.3)	(2,254.0)	(2,360.6)		
<b>Free Cash Flow</b>	<b>\$251.7</b>	<b>(\$11,102.0)</b>	<b>(\$17,583.0)</b>	<b>\$742.0</b>	<b>\$30,062.9</b>	<b>\$11,812.2</b>	<b>\$14,515.5</b>	<b>\$19,568.2</b>	<b>\$21,640.9</b>	<b>\$16,910.6</b>	<b>\$23,595.0</b>		
Free Cash Flow Growth	--	(4511.1%)	58.4%	(104.2%)	3951.6%	(60.7%)	22.9%	34.8%	10.6%	(21.9%)	39.5%		
Discount Period					0.5	1.5	2.5	3.5	4.5	5.5	6.5		
Discount Factor					0.95	0.85	0.77	0.69	0.62	0.56	0.50		
<b>Present Value of Free Cash Flow</b>					<b>\$28,498.9</b>	<b>\$10,062.9</b>	<b>\$11,112.7</b>	<b>\$13,462.6</b>	<b>\$13,379.7</b>	<b>\$9,395.6</b>	<b>\$11,781.0</b>		

## DCF Sensitivity Analysis

EV/EBITDA	WACC				
	9.3%	10.3%	11.3%	12.3%	13.3%
10.5x	\$309.37	\$291.81	\$275.32	\$259.83	\$245.26
11.5x	\$330.49	\$311.71	\$294.09	\$277.53	\$261.98
12.5x	\$351.60	\$331.61	\$312.85	\$295.24	\$278.69
13.5x	\$372.72	\$351.51	\$331.62	\$312.95	\$295.41
14.5x	\$393.83	\$371.41	\$350.39	\$330.65	\$312.12

## DCF Implied Equity Value and Share Price

Enterprise Value	\$235,717.8
Less: Total Debt	\$59,641.0
Plus: Cash & Cash Equivalents	\$8,000.0
<b>Implied Equity Value</b>	<b>\$184,076.8</b>
Implied Share Price	\$313.27
Shares Outstanding (mil)	587.6

# DCF Output – Downside Case

(\$ in millions)	FYE December 31,				FYE December 31,						
	2018A	2019A	2020A	2021A	2022E	2023E	2024E	2025E	2026E	2027E	2028E
<b>Total Revenue</b>	\$101,221.0	\$76,803.0	\$58,419.0	\$62,558.0	\$70,549.3	\$78,226.6	\$83,510.8	\$90,963.1	\$97,172.6	\$101,719.6	\$106,486.2
Revenue Growth	--	(24.1%)	(23.9%)	7.1%	12.8%	10.9%	6.8%	8.9%	6.8%	4.7%	4.7%
<b>Expenses</b>											
COGS	96,409.3	72,093.0	63,843.0	59,269.0	62,208.5	65,746.8	66,633.8	72,568.4	77,515.4	81,133.6	84,926.1
<b>Gross Profit</b>	\$4,811.7	\$4,710.0	(\$5,424.0)	\$3,289.0	\$8,340.8	\$12,479.8	\$16,876.9	\$18,394.7	\$19,657.3	\$20,586.0	\$21,560.1
Gross Margin	4.8%	6.1%	(9.3%)	5.3%	11.8%	16.0%	20.2%	20.2%	20.2%	20.2%	20.2%
SG&A	4,567.0	3,909.0	4,817.0	4,157.0	4,374.1	4,850.1	5,177.7	5,639.7	6,024.7	6,306.6	6,602.1
R&D	3,269.0	3,219.0	2,476.0	2,249.0	2,680.9	2,972.6	3,173.4	3,456.6	3,692.6	3,865.3	4,046.5
Operating Expenses	7,836.0	7,128.0	7,293.0	6,406.0	7,054.9	7,822.7	8,351.1	9,096.3	9,717.3	10,172.0	10,648.6
<b>Operating Income (EBIT)</b>	(\$3,024.3)	(\$2,418.0)	(\$12,717.0)	(\$3,117.0)	\$1,285.9	\$4,657.2	\$8,525.8	\$9,298.4	\$9,940.0	\$10,414.0	\$10,911.4
EBIT Margin	(3.0%)	(3.1%)	(21.8%)	(5.0%)	1.8%	6.0%	10.2%	10.2%	10.2%	10.2%	10.2%
Income Tax Expense (24%)	-1,144.0	-1,623.0	-2,535.0	-743.0	205.7	745.1	1,364.1	1,487.7	1,590.4	1,666.2	1,745.8
<b>EBIAT</b>	(\$1,880.3)	(\$795.0)	(\$10,182.0)	(\$2,374.0)	\$1,080.1	\$3,912.0	\$7,161.7	\$7,810.6	\$8,349.6	\$8,747.8	\$9,165.6
<b>Cash Flow</b>											
Plus: D&A	2,114.0	2,271.0	2,246.0	2,144.0	2,187.0	2,425.0	2,588.8	2,819.9	3,012.4	3,153.3	3,301.1
<b>Discretionary Cash Flow</b>	233.7	1,476.0	-7,936.0	-230.0	3,267.2	6,337.0	9,750.5	10,630.5	11,362.0	11,901.1	12,466.7
Less: Increase in NWC	1,620.0	(11,078.0)	(8,344.0)	1,952.0	21,524.7	1,893.9	5,889.4	110.2	90.2	69.3	73.0
Less: CapEx	(1,602.0)	(1,500.0)	(1,303.0)	(980.0)	(1,269.9)	(1,408.1)	(1,503.2)	(1,637.3)	(1,749.1)	(1,831.0)	(1,916.8)
<b>Free Cash Flow</b>	\$251.7	(\$11,102.0)	(\$17,583.0)	\$742.0	\$23,522.0	\$6,822.9	\$14,136.7	\$9,103.3	\$9,703.1	\$10,139.4	\$10,622.9
Free Cash Flow Growth	--	(4510.8%)	58.4%	(104.2%)	3070.1%	(71.0%)	107.2%	(35.6%)	6.6%	4.5%	4.8%
Discount Period					0.5	1.5	2.5	3.5	4.5	5.5	6.5
Discount Factor					0.95	0.85	0.77	0.69	0.62	0.56	0.50
<b>Present Value of Free Cash Flow</b>					\$22,298.2	\$5,812.4	\$10,822.6	\$6,262.9	\$5,999.0	\$5,633.5	\$5,304.0

Enterprise Value	
Cumulative Present Value of FCF	\$62,132.8
<b>Terminal Value</b>	
Terminal Year EBITDA	\$14,212.5
Exit Multiple	12.5x
<b>Terminal Value</b>	\$177,656.4
Discount Factor	49.93%
<b>Present Value of Terminal Value</b>	\$88,703.6
% of Enterprise Value	58.8%
<b>Enterprise Value</b>	\$150,836.4

## DCF Sensitivity Analysis

EV/EBITDA	WACC				
	9.3%	10.3%	11.3%	12.3%	13.3%
10.5x	\$165.45	\$154.61	\$144.44	\$134.88	\$125.89
11.5x	\$179.02	\$167.40	\$156.50	\$146.25	\$136.63
12.5x	\$192.58	\$180.19	\$168.56	\$157.63	\$147.37
13.5x	\$206.15	\$192.98	\$180.62	\$169.01	\$158.11
14.5x	\$219.72	\$205.77	\$192.68	\$180.39	\$168.85

## DCF Implied Equity Value and Share Price

Enterprise Value	\$150,836.4
Less: Total Debt	\$59,641.0
Plus: Cash & Cash Equivalents	\$8,000.0
<b>Implied Equity Value</b>	\$99,195.4
Implied Share Price	\$168.81
Shares Outstanding (mil)	587.6

# WACC

Capital Structure		Notes Outstanding	Amount (\$m)	Coupon	Maturity	Ask Price	YTW (Current)	% Total	Weighted
Debt-to-Total Capitalization	36.87%	5.805% Sr. Secured	\$5,500	5.805%	5/1/2050	104.49	5.49%	12.8%	0.70%
Equity-to-Total Capitalization	63.13%	2.196% Call. Sr. Uns.	5,500	2.196%	2/4/2026	92.83	4.28%	12.8%	0.55%
		5.93% Call. Sr. Uns.	3,500	5.930%	5/1/2060	104.35	5.67%	8.1%	0.46%
		4.508% Call. Sr. Uns.	3,000	4.508%	5/1/2023	101.44	2.98%	7.0%	0.21%
		5.15% Call. Sr. Uns.	4,500	5.150%	5/1/2030	101.99	4.87%	10.5%	0.51%
		4.875% Call. Sr. Uns.	3,500	4.875%	5/1/2025	102.44	4.01%	8.1%	0.33%
		3.625% Call. Sr. Uns.	1,400	3.625%	2/1/2031	92.9	4.63%	3.3%	0.15%
<b>Cost of Debt</b>	<b>4.47%</b>	2.7% Call. Sr. Uns.	1,000	2.700%	2/1/2027	93.59	4.22%	2.3%	0.10%
Cost of Debt	4.47%	3.25% Call. Sr. Uns.	1,100	3.250%	2/1/2028	94.35	4.38%	2.6%	0.11%
Tax Rate	14.80%	1.95% Call. Sr. Uns.	1,000	1.950%	2/1/2024	97.67	3.33%	2.3%	0.08%
<b>After-tax Cost of Debt</b>	<b>3.81%</b>	3.75% Call. Sr. Uns.	1,250	3.750%	2/1/2050	80.88	5.06%	2.9%	0.15%
		1.433% Call. Sr. Uns.	3,000	1.433%	2/4/2024	96.61	3.46%	7.0%	0.24%
		1.167% Call. Sr. Uns.	1,325	1.167%	2/4/2023	99.08	2.54%	3.1%	0.08%
		3.2% Call. Sr. Uns.	1,000	3.200%	3/1/2029	92.2	4.560%	2.3%	0.11%
<b>Cost of Equity</b>	<b>15.64%</b>	5.04% Call. Sr. Uns.	2,000	5.040%	5/1/2027	103	4.370%	4.7%	0.20%
Risk-free Rate <sup>(1)</sup>	2.86%	5.705% Call. Sr. Uns.	3,000	5.705%	5/1/2040	104.49	5.330%	7.0%	0.37%
Market Risk Premium <sup>(2)</sup>	6.00%	2.2% Call. Sr. Uns.	250	2.200%	10/3/2022	100.07	2.170%	0.6%	0.01%
Beta	2.13	2.8% Call. Sr. Uns.	400	2.800%	3/1/2024	99.14	3.330%	0.9%	0.03%
		2.95% Call. Sr. Uns.	750	2.950%	2/1/2030	89.27	4.630%	1.7%	0.08%
<b>Cost of Equity</b>	<b>15.64%</b>								
<b>WACC</b>	<b>11.28%</b>								
		<b>Total Notes</b>	<b>\$42,975</b>				<b>Average Yield:</b>		<b>4.47%</b>

Current Share Price	\$174
Current Shares Outstanding	587.6
Equity Value	\$102,119
Total Debt	\$59,641
Total Equity	\$102,119