

# **BOEING: READY TO TAKE-OFF**

**DNSD Consultancy Team** 

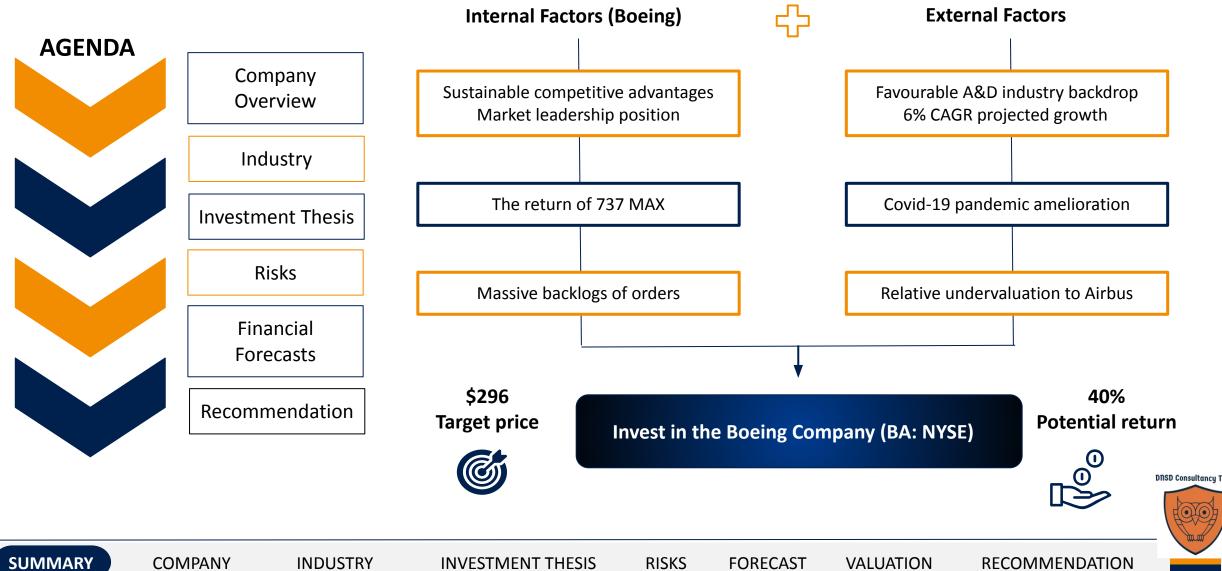
Do Nga Linh Pham Khanh Linh Do Thi Thuy Duong





## **EXECUTIVE SUMMARY**









#### **BUSINESS MODEL**

The Boeing Company is the leading aerospace company in the world and foremost manufacturer of commercial aircraft, strategic defense, security systems, and service provider of aftermarket support

#### COMPANY MANAGEMENT



#### **David Calhoun**

President & CEO of Boeing since Jan 2020 Calhoun deals with diplomatic resolutions after 737 groundings to get the recertification as soon as possible.



#### Stanley A. Deal

President & CEO, BCA since Oct 2019 Executive vice president of The Boeing Company, a member of the Executive Council, and senior executive in the Pacific Northwest.



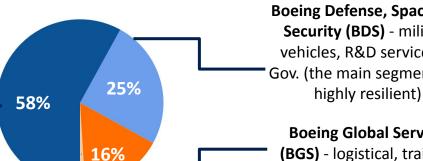
#### Leanne G. Caret President & CEO, BDS Caret stepped into the Defense division in 2016 when the company lost a lucrative contract for the US Air Force's next-generation bomber.

■ Boeing operates its business through 4 reportable segments:

## **Boeing Commercial Airplanes**

(BCA) - airplanes for commercial airliners and shipping companies (the main segment, susceptible to Covid-19 but has greatest potential)

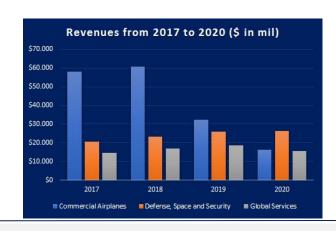
**Boeing Global Capital (BGS)** - supports other segments by ensuring its customers have the financing to procure and take delivery (comprises little)



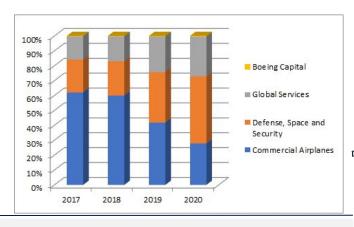
**Boeing Defense, Space and** Security (BDS) - military vehicles, R&D services to Gov. (the main segment and

**Boeing Global Services** (BGS) - logistical, training, and maintenance services (pretty resilient)

- Production facilities: Global presence with operations in 65 countries and 3 major assemblies in the U.S
- **Suppliers**: Strong supply chain that Boeing relies heavily on them. Key suppliers are Spirit AeroSystems (fuselages - aerostructures), Precision Castparts Corp. (aerostructures), Triumph Group (aerostructures)
- **Human resources:** 141,000 employees in 2020 (56,000 engineers and 47,000 union members)



RISKS





**SUMMARY** 

**COMPANY** 

**INDUSTRY** 

**INVESTMENT THESIS** 

**FORECAST** 

**VALUATION** 

RECOMMENDATION

## **INDUSTRY OVERVIEW**

#### **AEROSPACE & DEFENSE**





➤ Boeing is more bullish in its forecasts, expecting a \$9 trillion market for its commercial and military aircraft and services over the next decade

#### **MARKET TRENDS**

#### **Commercial Aerospace**

Increasing consumer expenditure on the travel industry

Pent-up demand for traveling after social distancing

Covid-19 vaccination and the easing of restrictions

#### **Defense & Security**

Major defense spending countries are likely to increase their budgets for the defense sector<sup>(1)</sup>

#### **Space**

Declining launch costs and advances in technology<sup>(4)</sup>

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Sources: (1) PWC; (2) Mordor Intelligence; (3) The Business Research Company; (4) Deloitte



## **INDUSTRY OVERVIEW**

**NEUTRAL** 

Competitiveness in non-price-based factor

## **PORTER'S 5 FORCES**



### **Suppliers' bargaining power: Moderate**

Highly dependent on five suppliers of aero-engine

Suppliers of other components have less market power

#### **Buyers' bargaining power: Moderate to High**

A large number of airline companies, but a small number of dominated suppliers

> Governments of developed countries have regulatory power.

> > Long-term contracts

#### Threats of substitutes: Low

No real substitute for aircraft and defense products and services



**Overall Market Environment** 



**BOEING** 

Sustainable competitive advantages - Large market share (38%)<sup>(1)</sup>

Solid position



Distribution channels and other barriers to entry

High capital cost

High switching cost

**SUMMARY** 

High switching cost

Sources: (1) Leeham News and Analysis

**Intensity of rivalry: High** 

High concentration

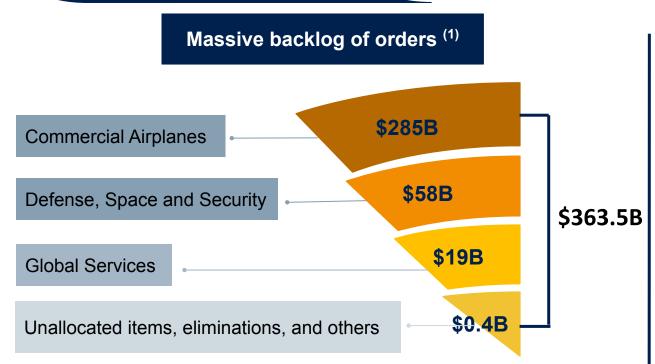
**COMPANY** 

RISKS

## **INVESTMENT THESIS 1**

Massive backlogs imply strong visibility into future revenues





#### High visibility into future revenue

- Forecast 2021 and 2022 revenues of \$66B and \$78B (vs \$58B in 2020)
- Once orders soar and cancellations decline,
   Boeing promises a bright economic outlook.

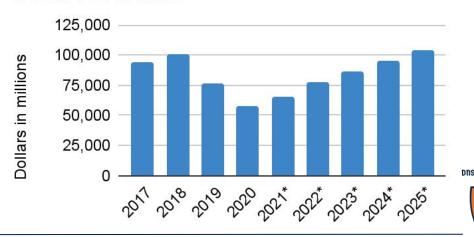
Sources: (1) boeing.com

### **High switching cost**



Airlines are highly committed to their orders

#### Total revenues





## **INVESTMENT THESIS 2**

## Improved situation of COVID-19 and pent up desire for travelling



#### **Improved Covid-19 Situation**



## Pent-up Travelling Demand



#### **Opportunities For Boeing**

#### **Vaccination**

- Covid-19 vaccines are widely distributed, with at least 199 countries have started vaccinating. (1)
- The US, UK and Europe have high levels of vaccinations and are introducing vaccine passports.

#### Intensity

- Cases and deaths have dropped in seven consecutive weeks.
- The pandemic is subsiding => expect a rapid recovery of global economics.



#### **Leisure Travel**

Increase domestic travel demand after a long period of recession



#### **Business Travel**

- In-person discussions
- Job changes



- A surge in travelling demand, especially domestically
- Boeing forecasts demand to return to pre-COVID level by 2023/2024.
- Boeing offers a wide range of narrow-bodied airplanes that are suitable for short flights.





A favorable industry backdrop can help Boeing's sales recover and grow greatly in 2021 and beyond.

Sources: (1) Reuters



**INVESTMENT THESIS** 

#### The return of 737 MAX



## SITUATION OVERVIEW

#### WHAT HAPPENED?

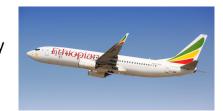
#### **Lion Air Flight 610**

Oct 29, 2018 – Boeing 737 MAX crashed shortly after takeoff, killing all 189 on board on flight from Jakarta to Pangkal Pinang



#### **Ethiopian Airlines Flight 302**

Mar 10, 2019 – Boeing 737 MAX crashed shortly after takeoff, killing all 157 on board on flight from Addis Ababa to Nairobi



#### WHAT WENT WRONG?

#### **MCAS (Maneuvering Characteristics Augmentation System)**

- To achieve more fuel efficiency on 737 MAX, plane's engines were positioned closer to nose which increases stall risk
- System was triggered by false alarm typically not a problem

#### **Pilot Training**

- Flight crews hadn't been adequately trained to use the new system of 737 MAX
- Black box findings show pilots tried to stop the MCAS system using incorrect procedure – the procedure for older 737's

#### HOW HAS BOEING FIXED THE PROBLEM?



**SUMMARY** 

Working on a hotfix for the MCAS system

**COMPANY** 



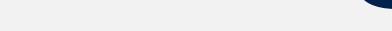


Introducing a retraining program for the pilot crews



Mending the relationships with customers





**INDUSTRY** 





The return of 737 MAX



Boeing has records of quick recovery and development after aircraft groundings

- In 2013, 787 faced international groundings for more than 4 months due to battery fires and fuel leaks.
- After the second review process, Boeing 787 Dreamliner recovered with the reputation of a safe and fuel-efficient airplane.
- Sales outpaced the initial goal of 1,400 orders.

737's backlog of 4,085 orders (85% of the total) is the largest contributor to the revenue. Boeing delivered 169 jets in 2021 up until now and 22 in Aug alone.

The return of 737 MAX should be a significant growth driver for BA in future years, bringing the company back to its golden time.



747 10

767 104

777 383

787 486

BBJ 2

1 2 5 10 20 50 100 200 500 1,000 2,000

(1)

Sources: (1) Boeing.com



5,000

## **RISK ASSESSMENT**





#### **GEOPOLITICAL RISKS**

#### **US-China** trade tensions

"Made in China 2025" strategy => rely solely on narrow-body jets from Comac

Danger areas and no-fly zones

Most of the wars are in the Middle East. North West Asia, and Sub-Saharan Africa. Such disturbances may adversely impact aerospace security.

## **ECONOMIC RISKS**

Global trade risks

Changes in levels of the government's investment

Overlooking the benefits of mergers & joint ventures

COVID-19 & the 737 **MAX** grounding

**Changes in estimated** costs

**Heavy dependence** on subcontractors and suppliers

**Operational issues** 

#### **SOCIAL RISKS**

#### **Environmental** liabilities

Non-compliance to laws and regulations could result in grounded flights and attendant cost repercussions

### Cybersecurity

Threats to the confidentiality, availability, and integrity of its data and systems

#### **Pilot** shortages

2025 - a shortfall of 34,000 commercial pilots DNSD Consultancy Team



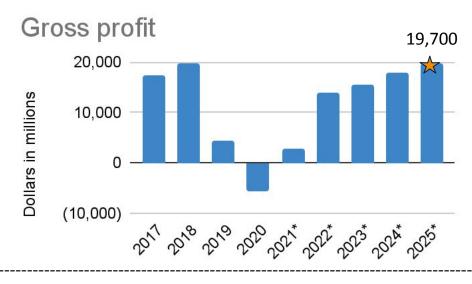


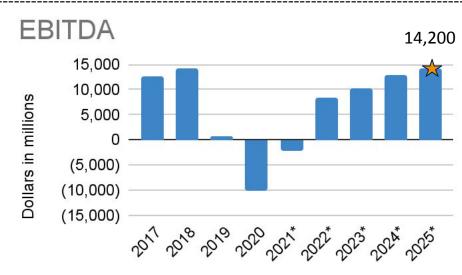
## **FORECAST**

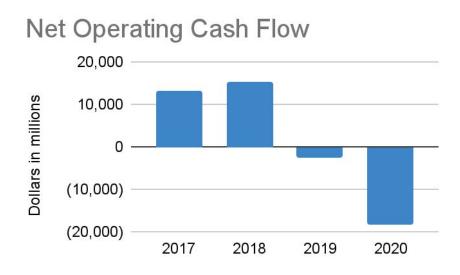
## FINANCIAL STATEMENTS











Sources: Boeing annual reports; WSJ Market

**FORECAST** 

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## **VALUATION**

## **COMPARABLE COMPANY ANALYSIS**





## Airbus is Boeing's closest competitor

Also a key player in the A&D industry



A big commercial aircraft manufacturer

Boeing vs Airbus: Duopoly in the Aerospace industry<sup>(1)</sup> (91%)



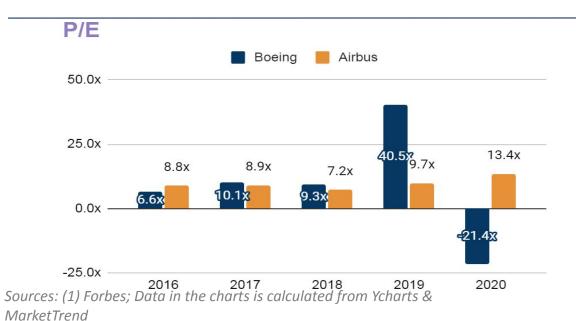
## **Boeing's competitive advantages**

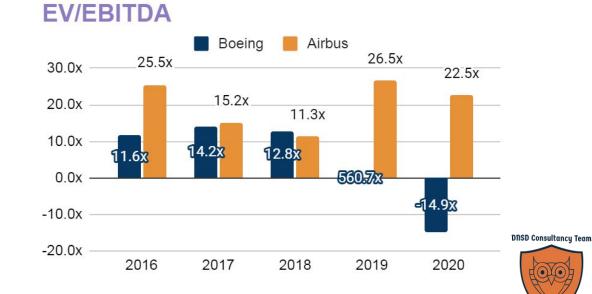


Wide range of military products

Missiles system category

**Domination in North America** 





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## **VALUATION**

## **TARGET PRICE**



#### **Comparable Company Analysis**

27x EV/ 2022 EBITDA	Boeing
EV	\$226.8B
Net debt	\$55.2B
Market cap	\$171.6B
Share price	\$291

**SUMMARY** 

## Taking the average, we have:



which offers:



#### **Discounted Cash Flow Analysis**

	Boeing
EV	\$232.8B
Net debt	\$55.2B
Market cap	\$177.5B
Share price	\$301

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**COMPANY INDUSTRY** 

**INVESTMENT THESIS** 

**FORECAST** 

**VALUATION** 

RECOMMENDATION

**RISKS** 

# THANK YOU

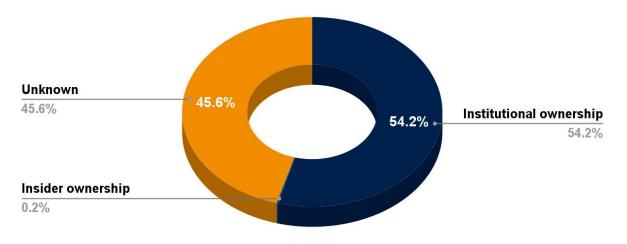
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## **Ownership Structure**

## **Ownership Structure**

Shares OS: 586,151,904

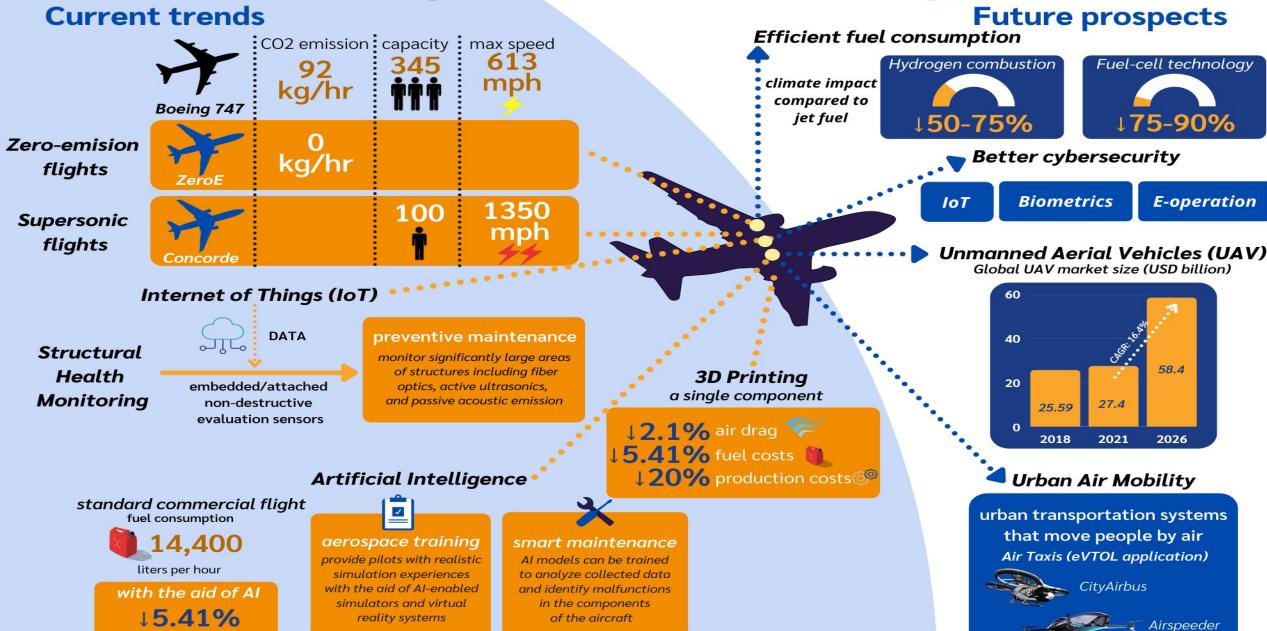


		# of shares held	% of shares outstanding
	Top 15 Institutions		
1	Newport Trust Co.	44,045,462	7.51
2	The Vanguard Group, Inc.	40,447,439	6.90
3	SSgA Funds Management, Inc.	27,000,789	4.61
4	BlackRock Fund Advisors	23,212,962	3.96
5	Loomis, Sayles & Co. LP	11,193,458	1.91
6	Fidelity Management & Research Co. LLC	10,047,959	1.71
7	Geode Capital Management LLC	8,166,628	1.39
8	Northern Trust Investments, Inc.	5,057,532	0.86
9	Capital Research & Management Co.	4,687,455	0.80
10	Morgan Stanley Smith Barney LLC	4,367,993	0.75
11	T. Rowe Price Associates, Inc.	4,278,909	0.73
12	Lyxor International Asset Management SAS	2,930,760	0.50
13	Charles Schwab Investment Management, Inc.	2,813,529	0.48
14	Susquehanna Financial Group LLLP	2,754,914	0.47
15	Schweizerische Nationalbank (Investment Portfolio)	2,285,992	0.39
	Total Top 15 Institutions	193,291,781	32.97
	Top 5 Insiders		
1	Smith Gregory D	117,230	0.02
2	Keating Timothy John	58,615	0.01
3	Calhoun David L (President, CEO)	58,615	0.01
4	Leanne Caret (Executive VP, President & CEO of BDS)	58,615	0.01
5	Stanley Deal (Executive VP, President & CEO of BCA)	58,615	0.01
	Total Top 5 Insiders	351,691	0.06
	Total	193,643,472	33.03

## **APPENDIX 2**

fuel consumption

## aerospace & defense technology



# APPENDIX 3 INCOME STATEMENT & FORECAST

(Dollars in millions, except per share data)	2017	2018	2019	2020	2021*	2022*	2023*	2024*	2025*
Commercial Airplanes	58,014	60,715	32,255	16,162	21,425	28,924	33,262	36,589	38,418
Defense, Space & Security	20,561	23,195	26,095	26,257	29,293	32,808	36,089	39,698	43,668
Global Services	14,581	17,018	18,468	15,543	15,030	15,782	16,571	18,228	21,873
Additional Revenues	849	199	(259)	196	196	196	196	196	196
Total revenues	94,005	101,127	76,559	58,158	65,944	77,709	86,118	94,710	104,155
Cost of Goods Sold (COGS)	(76,612)	(81,490)	(72,093)	(63,843)	(63,102)	(63,722)	(70,617)	(76,715)	(84,365)
Gross profit	17,393	19,637	4,466	(5,685)	2,842	13,988	15,501	17,995	19,789
	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(	4						
General and administrative expense	(4,095)	(4,567)	(3,909)	(4,817)	(4,933)	(4,663)	(4,306)	(4,736)	(5,208)
Research and development expense, net	(3,179)	(3,269)	(3,219)	(2,476)	(1,915)	(3,108)	(3,445)	(2,841)	(3,125)
(Loss)/earnings from operations	10,119	11,801	(2,662)	(12,978)	(4,006)	6,217	7,751	10,418	11,457
(Loss)/income from operating investments	204	111	(4)	9	0	0	0	0	0
Gain on dispositions	21	75	691	202	219	219	219	219	219
Other income	123	92	438	447	0	0	0	0	0
Interest and debt expense	(360)	(475)	(722)	(2,156)	(1,996)	(1,996)	(1,996)	(2,281)	(2,281)
(Loss)/earnings before income taxes	10,107	11,604	(2,259)	(14,476)	(5,783)	4,440	5,974	8,356	9,395
Income tax benefit/(expense)	(1,649)	(1,144)	1,623	2,535	1,214	(932)	(1,254)	(1,755)	(1,973)
Net (loss)/earnings	8,458	10,460	(636)	(11,941)	(4,568)	3,508	4,719	6,601	7,422
EBITDA	12,514	14,193	734	(10,074)	(2,138)	8,378	10,123	13,005	14,280
Basic outstanding shares	603	579	565	569	590	590	590	590	590
Diluted outstanding shares	610	586	565	569	590	590	590	590	590
Basic (loss)/earnings per share	14.0	18.1	(1.1)	(21.0)	(7.7)	5.9	8.0	11.2	12.6
Diluted (loss)/earnings per share	13.9	17.8	(1.1)	(21.0)	(7.7)	5.9	8.0	11.2	12.6

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# APPENDIX 4 BALANCE SHEET

Fiscal year is January-December. All values USD Millions.	2017	2018	2019	2020
Assets				
Current Assets				
Cash & Short Term Investments	9,992	8,564	10,030	25,590
Total Accounts Receivable	11,397	14,364	12,471	10,051
Inventories	61,388	62,567	76,622	81,715
Other Current Assets	2,417	2,335	3,106	4,286
Total Current Assets	85,194	87,830	102,229	121,642
Non-Current Assets				
Net Property, Plant & Equipment	12,672	12,645	13,684	13,072
Total Investments and Advances	1,260	1,087	1,092	1,092
Long-Term Note Receivable	3,249	2,662	2,380	1,936
Intangible Assets	8,132	11,269	11,398	10,924
Other Assets	1,534	1,582	2,159	3,384
Total Non-Current Assets	27,168	29,529	31,396	30,494
Total Assets	112,362	117,359	133,625	152,136

Liabilities & Shareholders' Equity	2017	2018	2019	2020
Current and Non-Current Liabilities				
Short-term debt	600	1,895	6,361	268
Current portion of long-term debt	735	1,295	1,231	1,693
Accounts Payable	12,202	12,916	15,553	12,928
Income Tax Payable	380	485	670	43
Other Current Liabilities	60,731	64,999	73,497	72,348
Long-Term Debt	9,782	10,657	20,940	62,974
Provision for Risks & Charges	22,016	19,907	20,816	18,545
Deferred Taxes	1,867	1,452	(270)	924
Other Liabilities	2,015	3,059	2,444	402
Total Liabilities	110,649	116,949	141,925	170,211
Equity				
Total Shareholders' Equity	1,656	339	(8,617)	(18,316)
Accumulated Minority Interest	57	71	317	241
Total Equity	1,713	410	(8,300)	(18,075)
Liabilities & Shareholders' Equity	112,362	117,359	133,625	152,136

Sources: Boeing annual report, WSJ Market

# APPENDIX 5 CASH FLOW STATEMENT

Fiscal year is January-December. All values USD Millions.	2017	2018	2019	2020
Operating Activities				
Net Income before Extraordinaries	8,458	10,460	(636)	(11,941)
Depreciation, Depletion & Amortization	2,047	2,114	2,271	2,246
Other Funds	589	464	548	8,620
Changes in Working Capital	2,252	2,284	(4,629)	(17,335)
Net Operating Cash Flow	13,346	15,322	(2,446)	(18,410)
Investing Activities				
Capital Expenditures	(1,870)	(1,791)	(1,961)	(1,303)
Net Assets from Acquisitions	(324)	(3,230)	(455)	-
Sale of Fixed Assets & Businesses	92	155	805	296
Purchase/Sale of Investments	38	291	101	(17,341)
Other Uses	-	(11)	(13)	(18)
Other Sources	6	-	-	-
Net Investing Cash Flow	(2,058)	(4,586)	(1,523)	(18,366)
Financing Activities				
Cash Dividends Paid - Total	(3,417)	(3,946)	(4,630)	(1,158)
Change in Capital Stock	(8,925)	(8,919)	(2,593)	36
Issuance/Reduction of Debt, Net	1,124	1,365	13,218	36,250
Other Funds	(132)	(257)	(263)	(173)
Net Financing Cash Flow	(11,350)	(11,757)	5,732	34,955
Exchange Rate Effect	80	-53	-5	85
Net Change in Cash	18	-1,074	1,758	-1,736

Sources: Boeing annual report, WSJ Market

# APPENDIX 6 FINANCIAL STATEMENTS PROJECTION

Appendix	2017	2018	2019	2020	2021*	2022*	2023*	2024*	2025*
Revenue growth (% yoy) - BCA	n/a	4.66%	-46.87%	-49.89%	33%	35%	15%	10%	5%
Revenue growth (% yoy) - BDS	n/a	12.81%	12.50%	0.62%	12%	12%	10%	10%	10%
Revenue growth (% yoy) - BGS	n/a	16.71%	8.52%	-15.84%	-3%	5%	5%	10%	20%
Revenue growth (% yoy) - BAR	n/a	-76.56%	-230.15%	-175.68%	0%	0%	0%	0%	0%
COGS as a % of revenue	81.50%	80.58%	94.17%	109.78%	96%	82%	82%	81%	81%
G&A as a % of revenue	4.36%	4.52%	5.11%	8.28%	7%	6%	5%	5%	5%
RD as a % of revenue	3.38%	3.23%	4.20%	4.26%	3%	4%	4%	3%	3%
Tax rate	16.32%	9.86%	71.85%	17.51%	21%	21%	21%	21%	21%
Long-Term Debt	9,782	10,657	20,940	62,974	57025	57025	57025	57025	57025
Interest rate	3.68%	4.46%	3.45%	3.42%	4%	4%	4%	4%	4%
AR as a % of revenue	12.12%	14.20%	16.29%	17.28%	15%	15%	14%	14%	12%
Inventories as a % of COGS	80.13%	76.78%	106.28%	127.99%	90%	90%	85%	85%	80%
AP as a % of COGS	15.93%	15.85%	21.57%	20.25%	18%	18%	17%	17%	16%
NWC	60,583	64,015	73,540	78,838	55,325	57,536	60,076	65,426	66,492

Cou	mpany Name		Boeing							
Col	прапу маше		2020	2019	2018	2017	2016			
	Price		214	326	323	295	156			
Market Data	Market Cap	(\$M)	120,840	183,370	183,060	175,640	96,080			
	EV	(\$M)	156,190	200,730	181,630	176,860	98,040			
	Sales	(\$M)	58,158	76,559	101,127	94,005	93,496			
Financial Data	EBITDA	(\$M)	-10,478	358	14,170	12,461	8,475			
Financial Data	EBIT	(\$M)	-12,724	-1,913	12,056	10,414	6,586			
	Earnings	(\$M)	-5,642	4,528	19,706	17,463	14,529			
	EV/Sales	х	2.7x	2.6x	1.8x	1.9x	1.0x			
Voluetion	EV/EBITDA	x	-14.9x	560.7x	12.8x	14.2x	11.6x			
Valuation	EV/EBIT	х	-12.3x	-104.9x	15.1x	17.0x	14.9x			
	P/E	х	-21.4x	40.5x	9.3x	10.1x	6.6x			

Company Name			Airbus							
Col	прапу маше		2020	2019	2018	2017	2016			
	Price	(\$/share)	90	130	84	83	63			
Market Data	Market Cap	(\$M)	86,540	114,340	74,500	76,720	51,310			
	EV	(\$M)	89,880	117,260	74,340	79,780	52,590			
	Sales	(\$M)	57,014	78,935	75,238	75,467	73,679			
et a state a	EBITDA	(\$M)	3,992	4,423	6,589	5,266	2,064			
Financial Data	EBIT	(\$M)	758	1,145	3,702	2,669	-475			
	Earnings	(\$M)	6,468	11,766	10,377	8,598	5,825			
	EV/Sales	x	1.6x	1.5x	1.0x	1.1x	0.7x			
	EV/EBITDA	х	22.5x	26.5x	11.3x	15.2x	25.5x			
Valuation	EV/EBIT	х	118.6x	102.4x	20.1x	29.9x	-110.7x			
	P/E	x	13.4x	9.7x	7.2x	8.9x	8.8x			

# APPENDIX 8 STOCK VALUATION

Discounted cash flow analysis	2017	2018	2019	2020	2021*	2022*	2023*	2024*	2025*
Net (loss)/earnings	8,458	10,460	(636)	(11,941)	(4,568)	3,508	4,719	6,601	7,422
CapEx	1,870	1,791	1,961	1,303	1,319	1,554	1,722	1,894	2,083
CapEx as a % of revenue	1.99%	1.77%	2.56%	2.24%	2.00%	2.00%	2.00%	2.00%	2.00%
D&A	2047	2114	2271	2246	1649	1943	2153	2368	2604
D&A as a % of revenue	2.18%	2.09%	2.97%	3.86%	2.5%	2.5%	2.5%	2.5%	2.5%
Change in NWC		3,432	9,525	5,298	(23,513)	2,211	2,540	5,350	1,067
Free Cash Flow = Earnings + D&A + Change in NWC- Capex	8,635	14,215	9,199	(5,700)	(27,752)	6,107	7,690	12,425	9,010
WACC	8%						•		
PV of FCF					(27,752)	5,655	6,593	9,863	6,622
Sum of PV of FCF	981								
Terminal growth rate	5%								
Terminal value	315,335								
PV of Terminal value	231,780								
EV	232,761								
Net Debt	55,222								
Market Cap	177,539								
Share price	301	301							

Comparable analysis	EV (Aug 17)	EV/2022 EBITDA	EV*
Boeing	172,470	20.58	226,824
Airbus	97,460	27.07	
	Boeing		
EV	226,824		
Net debt = Debt - Cash	55,222		
Market cap = EV - Debt	171,602		
Share price	291		