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RESEARCH

## Fall 2023 Industrials Outlook: Aerospace & Defense



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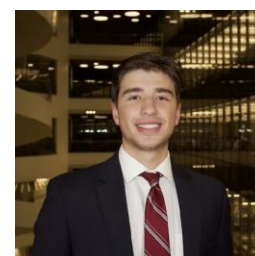
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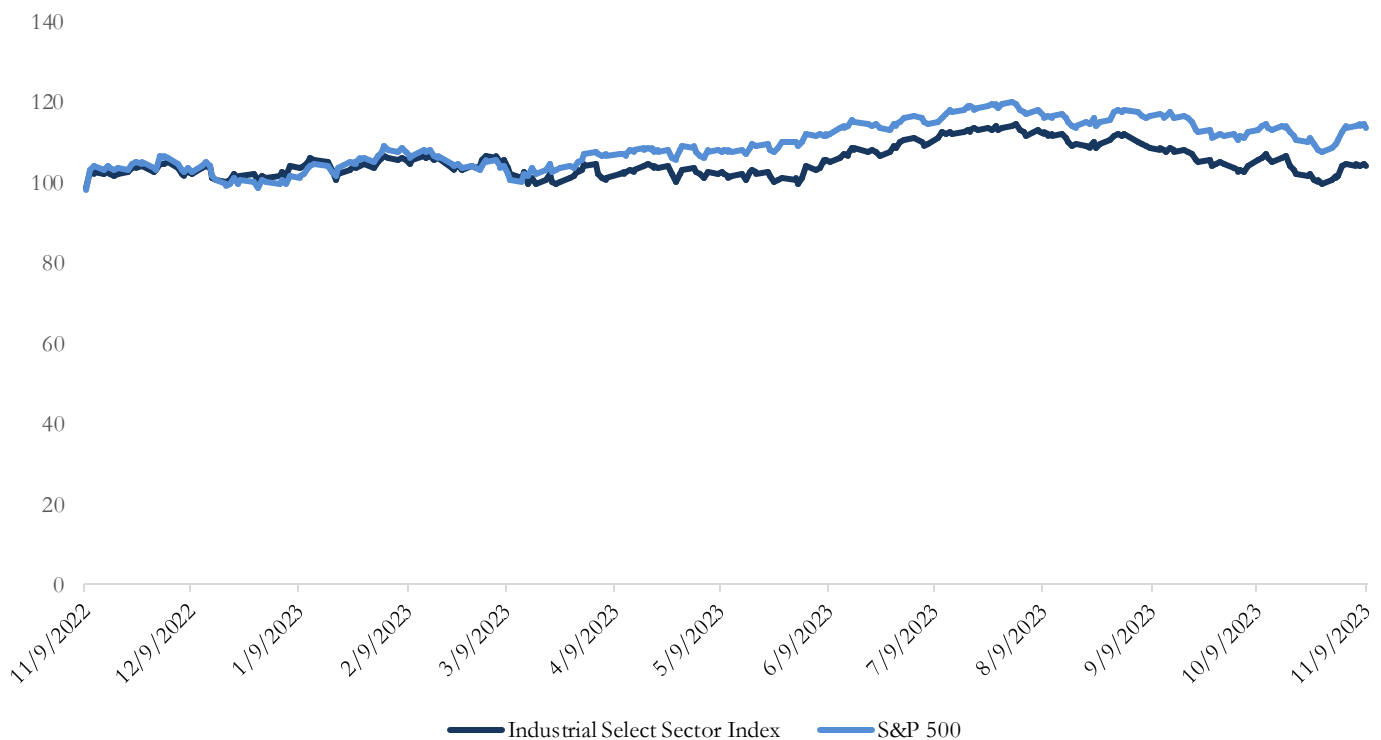
# INDUSTRY OVERVIEW

## Standing Strong Despite Poor Conditions

Throughout 2023, the Industrial sector has displayed a commendable number of gains. The \$3.5 trillion sector has shown a 7.2% increase TTM and a 0.5% increase YTD. Although these earnings may seem minuscule when compared to other sectors, such as Information Technology, which experienced substantial growth throughout 2023, with a 28% TTM increase and a 29.5% YTD increase, it's important to note that the majority of market sectors have faced a continuous slowdown. This slowdown has been evident as market conditions faltered in Q3 and Q4 of 2023. The vast majority of this lackluster performance can be attributed to the fear of further interest rate hikes and ongoing recessionary worries, despite increased CPI numbers across the majority of sectors. This slowdown is reflected in the negative gains observed in most sectors throughout this year; the average of the 11 market sectors in the S&P 500 have seen a loss of -2.2% YTD and -0.6% TTM. Industrials have remained strong throughout the year, showing steady growth that has continued on from its gains in 2022 and re-emphasizing the sector's status quo as a conventionally safe market.

Passenger airlines and Air Freight & Logistics have proven to be the weak points of the sector this year, yielding a return of -18.9% TTM and -2.8% YTD, whereas all other industries have shown significant returns. The sharp decline in these sectors is primarily due to the shortage of FAA workers in air traffic control, significantly affecting the Airlines' ability to maintain block hour control and consequently reducing the industry's revenues throughout the year. One of the standout performers in 2023 is the Trading Companies & Distributors industry, which experienced remarkable growth with a 27.1% TTM. As the year concludes and recessionary pressures loom, it is crucial to observe how the overall sector will respond to anticipated lower consumer demand.

S&P vs Industrial Select Index



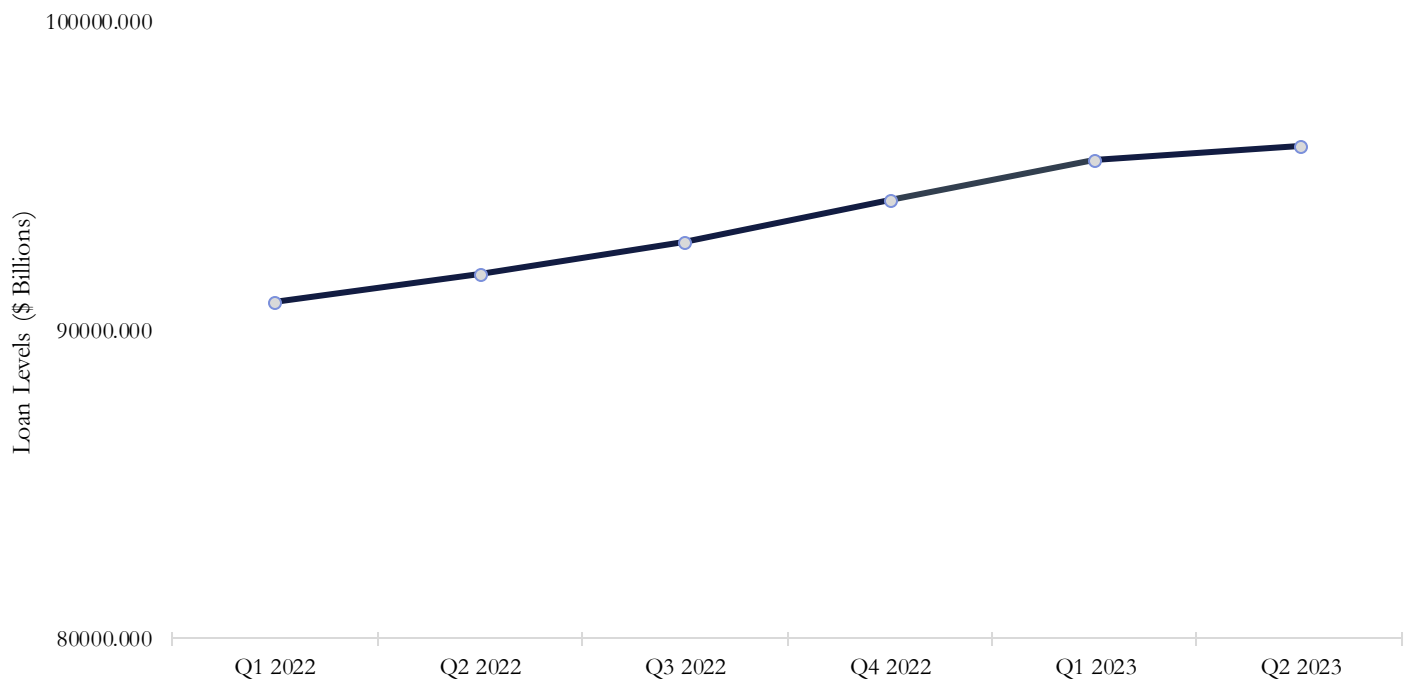
# PROJECTIONS

## Rising Debt Supported By Stable Demand

Over the past forty years, the industrial sector has grappled with underinvestment, making it susceptible to challenges such as the US-China trade tensions and the pandemic. However, recent federal legislation emphasizing domestic manufacturing has sparked renewed optimism. In 2022, the sector saw a significant surge in hiring, with job openings nearing 800,000. Yet, this growth was offset by voluntary departures surpassing layoffs, causing supply chain disruptions and reduced operational efficiency. To address the talent shortage, companies have increased wages, with a third of executives focusing on employee retention in 2023. Additionally, global investment dynamics have been influenced by geopolitical events, including the conflict in Israel.

Despite these recent advancements, throughout the second quarter, the industrial markets have been softening. This slow performance can primarily be attributed to the inflationary measures that occurred at the beginning of 2023, and industrial growth rates are expected to slow as we approach year-end. Total industrial absorption, or the total amount of industrial space being leased, decreased by 41.3% YoY, in contrast to the record number of new product deliveries. Vacancy rates continue to loom over the industry as a significant threat, having risen to 4.2%. Corporate debt maturities with higher debt costs have continued to increase, decreasing vacancy within industrial real estate. The highest amount of real estate-backed mortgage debt is maturing in 2023-2024, with most loans issued during the low-interest rates that took place around 2020. As debt approaches maturity, vacancies in this space could continue to decline and negatively affect the industrial sector in the coming years. Although debt continues to rise, demand in the industrial sector remains at strong levels. Moving into 2024, as inflationary pressures are reduced, it will be important to keep pace with the ever-increasing levels of corporate debt, even as demand for industrial materials remains at healthy levels. This could prove the sector to be somewhat of a wildcard going into 2024, as commercial construction could continue to falter.

Debt Securities and Loan Levels (\$ Billions)



# REGULATORY LANDSCAPE

## Sustainability Emerges as the Primary Emphasis

The Biden-Harris Administration is refocusing its efforts on enhancing sustainability within the industrial sector, fostering manufacturing jobs, and revitalizing America's competitiveness in this domain. The industrial sector, primarily in steel, aluminum, chemicals, and concrete production, contributes nearly a quarter of U.S. emissions and plays a significant role. Since Biden took office, 800,000 jobs have been created in the manufacturing industry, strengthening the U.S.'s industrial capabilities. These advancements are expected to boost local economies, reduce consumer costs, create well-paying union jobs, and enhance global competitiveness. The administration's primary goal is to build on employment gains and implement a series of industrial investments and initiatives aimed at decarbonizing one of the largest sectors in the U.S. The following investments and initiatives have been promised by the administration to increase sustainability and regulate the industrial sector:

- **Biden’s Bipartisan Infrastructure Law and DOE’s Industrial Demonstrations Program:** Allocates \$6 billion in funding to reduce carbonization projects and provide the U.S. industrial sector a "first-mover advantage in the global clean energy economy." The act primarily targets the most energy-intensive industries, notably iron and steel, aluminum, cement and concrete, chemicals, and pulp and paper industries.
- **Federal-State Buy Clean Partnership:** The partnership involves 12 states committed to supporting efforts to lower carbon outputs in state-funded carbon infrastructure projects. This initiative, utilizes \$630 billion of annual government purchasing, prioritizing funding towards domestic low-carbon construction materials. The Special Presidential Envoy for Climate has already committed nearly \$300 billion in private industrial investments dedicated to the purchase of these low-carbon materials.
- **Inflation Reduction Act:** Launched in 2022, the act offers \$10 billion in investment credits for clean energy projects. \$4 billion has already been allocated for release, with \$1.6 billion specifically designated for coal-based projects.
- **Buy Clean Task Force:** The task force, which is a part of the Federal-State Buy Clean Partnership, encourages federal agencies are working to drive up demand for low-carbon projects through the General Services Administration (GSA) by establishing a new benchmark for the purchase of low-carbon industrial materials such as steel and concrete used within Inflation Reduction Act projects.

Industrials Sector Manufacturing Restrictions Post 1981



## Possible Regulatory Slow Down

The current regulations and investments within the industrial sector, have primarily focused on promoting sustainability within the industry and ensuring that the U.S., which holds one of the largest industrial industries, can adapt to sustainable changes. The industrial sector is among the most regulated of all sectors, with 715 regulations and 297,696 restrictions being placed since the sector's emergence. With no end in sight, as an average of one manufacturing-related restriction has been placed on the sector each week since 1981, the emphasis on investing in cleaner technologies could prove to add greater regulatory strength in the long run.

# TRANSACTION ACTIVITY

## Testing the Waters: Evolving Industrials Sector Among Us



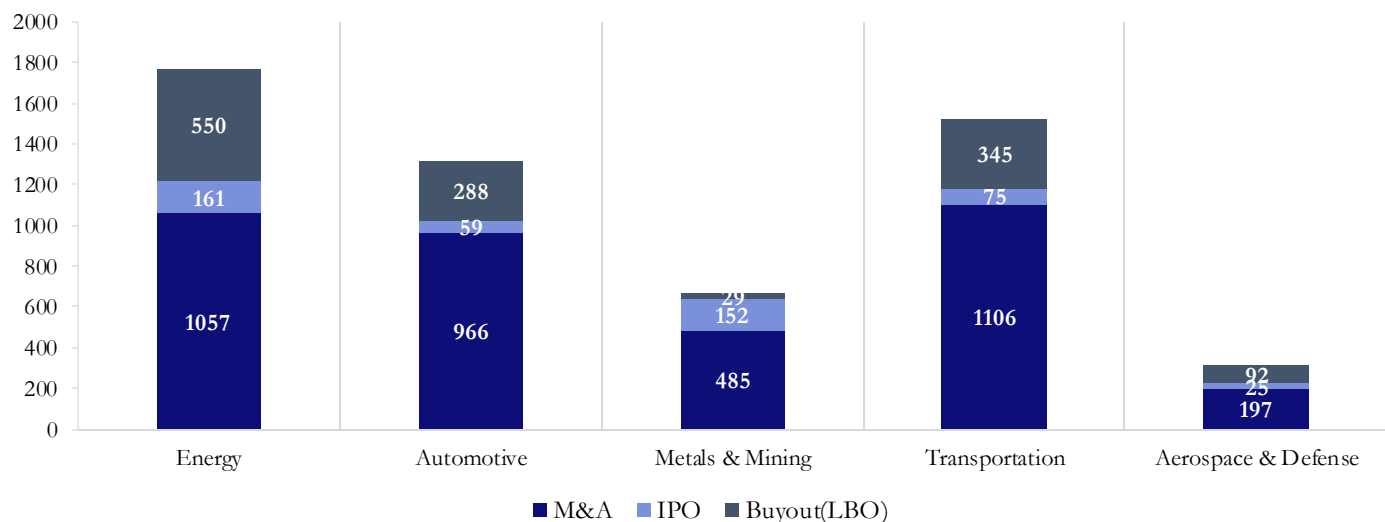
### Recent M&A Blockbuster Deals

Analyzing recent Industrials M&A deals reveals trends lying ahead. The ONEOK-Magellan merger consolidates leading midstream energy companies, enhancing scale and resilience in natural gas liquids and crude oil transportation. Carrier's acquisition of Viessmann expands its presence in the growing European heat pump market, offering advanced technology and premium branding. These transactions align with industrial trends like consolidation for scale, a focus on energy transition, and M&A for exposure to secular growth while reshaping the midstream energy sector and establishing a significant player in European climate solutions.

### Navigating Transformation in the Era of Sustainability and Digitization

The industrials sector continues to see robust M&A activity, with over 3,000 deals in energy, transportation, and automotive over the past year. This consolidation is driven by companies combining to achieve economies of scale and integrate operations. According to the Fidelity Institutional outlook, major themes propelling M&A include sustainability initiatives, digitization of manufacturing, and reshoring production. The shift to EVs is also catalyzing deals in automotive and energy. IPO volumes vary but are strongest where new technologies are emerging, like battery metals, aerospace, and renewable energy. Private equity remains active with over 1,000 LBOs across industrials, attracted to infrastructure and renewable plays. While near-term economic uncertainty presents headwinds, the outlook states that secular trends around sustainability, digitization, and domestic manufacturing will continue transforming industrials over the long run.

Deal Count Across Industrials TTM



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# VERTICAL OVERVIEW

## In Brief

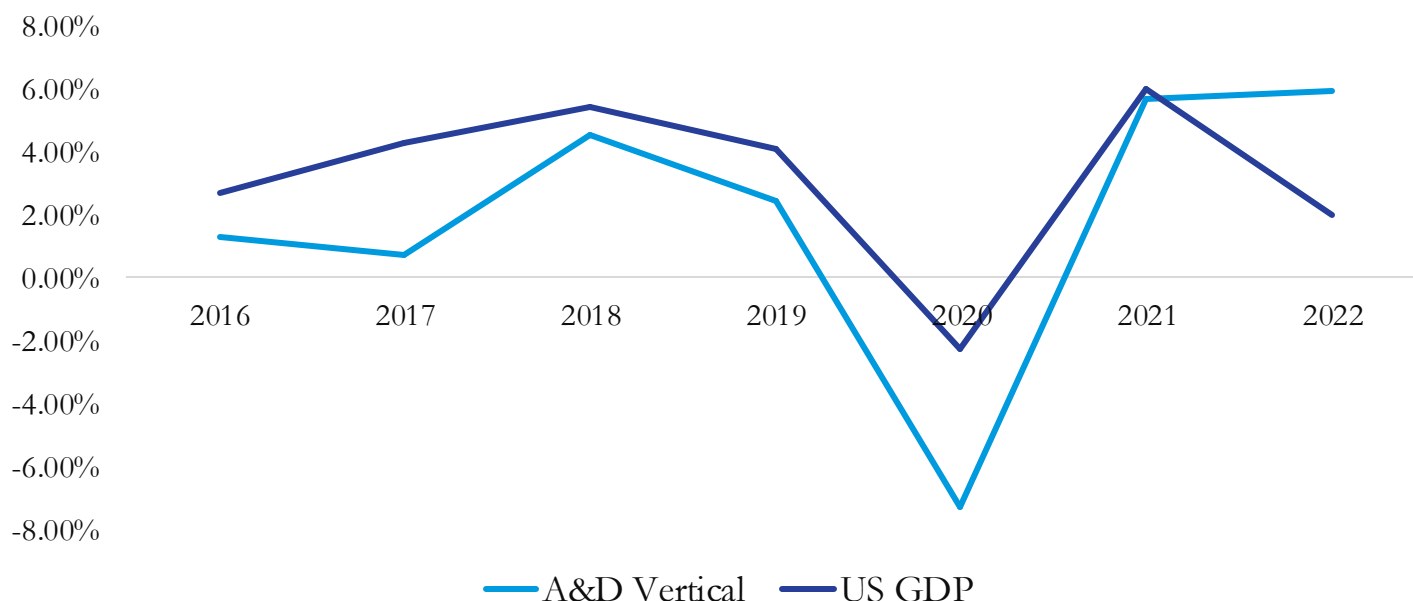
Aerospace and defense is a vertical within the industrials sector playing a massive role on the state of global security. Companies within this vertical partake in business that pertains to building aircrafts, military transportation, weapons systems, defense equipment, etc. As of November 2023, there are 71 publicly traded firms in the Aerospace and Defense vertical with a combined market capitalization of \$716.64 billion. Notably, this vertical contributed \$807.7 billion in 2022, making up 0.8% of the total global GDP. Some of the most relevant contributors to this achievement being Boeing (BA), Airbus (EADSY), Lockheed Martin (LMT), and RTX (RTX) just to name a few. Due to the Aerospace and Defense vertical's historical success and global impact, generally, analysts have had bullish forecasts for its future. Recent projections by various analysts estimate a compounded annual growth rate of 6.3% from 2022 to 2023. Generally, this industry is typically marked by its steady growth and high barriers of entry, allowing it to be a target for investors searching for a stable industry with and significant long-term potential.

Supply chain risks, volatile energy prices, talent shortages, and the influence of geopolitical tensions on the industry are among some of the industry's headwinds. Conversely, industry tailwinds consist of higher rates of defense spending, supply chain resilience, commercial aviation recovery post-COVID, and new emerging markets. Most recently, we have seen major rises in geopolitical tensions, with the Israeli-Palestinian conflict, the Russo-Ukrainian War, and constant tensions between the United States and China. These conflicts will have an impact on the current and future state of the vertical and must be considered.

Aerospace and Defense companies are making Environmental Social Governance a priority and have begun various sustainability initiatives. Given the fact that aviation accounts for 2.5% of the world's carbon emissions, many of these large aerospace companies, such as Airbus and Boeing, have set ambitious goals to achieve net-zero emissions by 2050. This presents a formidable undertaking, and surely lots of their funding will have to go into these initiatives.

All in all, expectations are that the vertical will grow in the future given pandemic recovery, high spending from governments, and recovery in commercial aerospace.

Year Over Year CAGR (based on aggregate revenue)



# PROJECTIONS

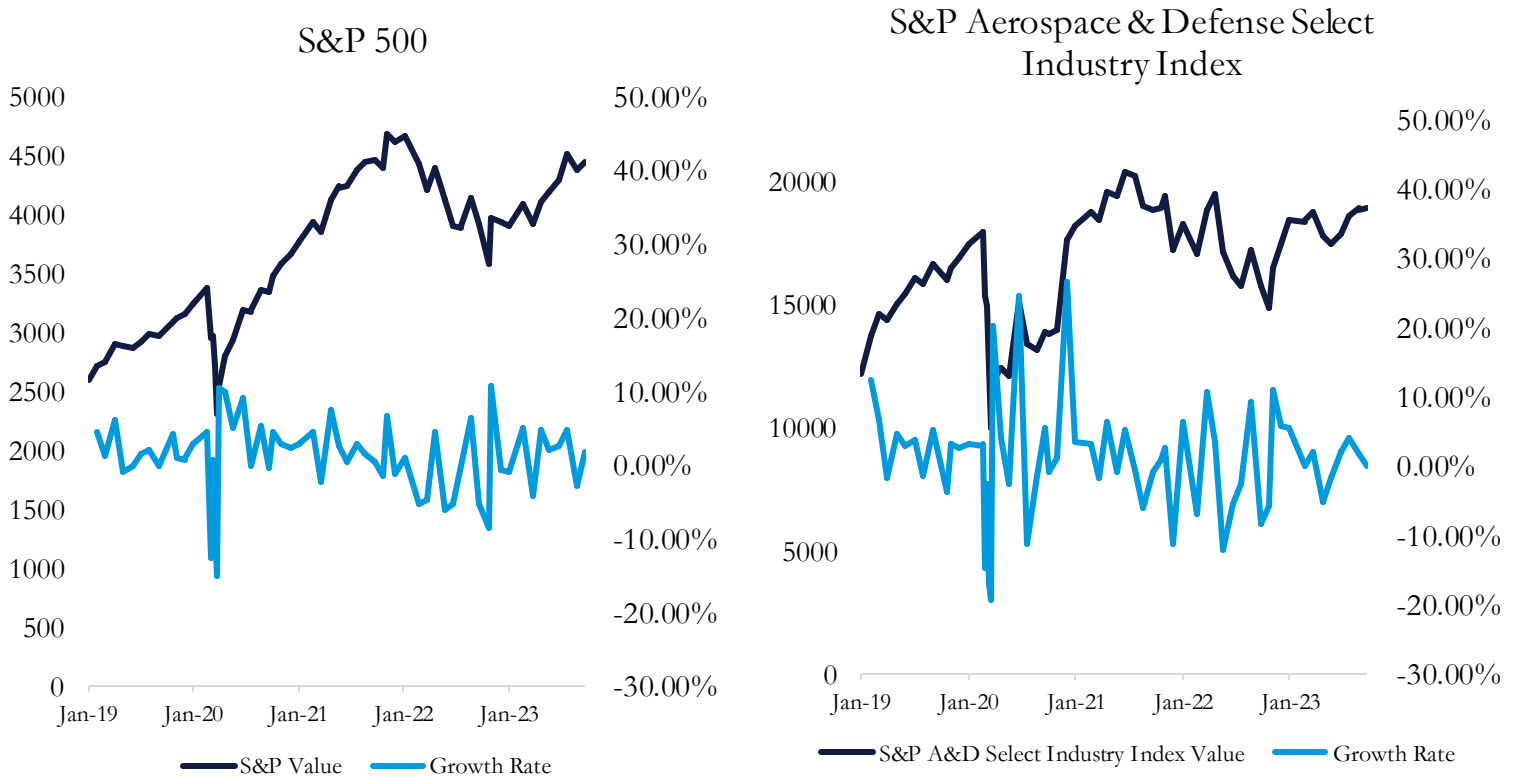
## Navigating Turbulence: Aerospace Companies Weather COVID Downtrends

In the past couple years aerospace companies have dealt with some very tough obstacles, given the pandemic, the subsequent supply chain issues, and increases in oil prices, among other things. However, the industry is currently surpassing expectations in their recovery and the future is looking very positive. Companies like TransDigm, Safran, and Rolls Royce increased their revenues by 13.15%, 14.65%, and 8.41%, respectively, in 2022.

When discussing the biggest A&D companies, it is essential to look at commercial plane manufacturers. Two of the biggest aerospace and defense companies that fall into this category are Boeing and Airbus. For these companies the outlook appears favorable. Demand for these aircrafts are projected to grow, as Revenue Passenger Kilometers (RPK) increased to 77% of pre-pandemic levels by the end of 2022 and is expected to continue to increase. Currently, Boeing and Airbus have a combined aircraft backlog worth \$720 billion dollars despite working feverishly to deliver on these orders. Airbus delivered 661 aircrafts in 2022, a 9% increase over 2021 output, and Boeing delivered 480 aircrafts, a 41% increase. Yet, they are still each very far under pre-pandemic output levels.

However, these companies have been looking to new markets to chase new growth opportunities. In April of 2022, Airbus stated that it had plans to double its production in China. It is expected that China’s air traffic is going to grow massively in the next 20 years, potentially reaching 20% of global demand for new aircrafts. Consequently, Airbus is looking to tap into this market early.

A growing market is corporate jetting. Currently, monthly private flights are over double 2019 levels, and even make up a quarter of all of US flights. This is a market that is expected to steadily increase, with aircraft manufacturers such as Bombardier, Embraer, and Gulfstream reaping the most benefits as of right now. The market is likely to increase from \$24.21 billion in 2020 to \$28.64 billion in 2023 and a projected \$36.94 billion in 2028.



Sources: PWC, Deloitte, Airbus, Macrotrends

# PROJECTIONS

## Defense Industry’s Upward Trajectory Amid Rising Government Investment

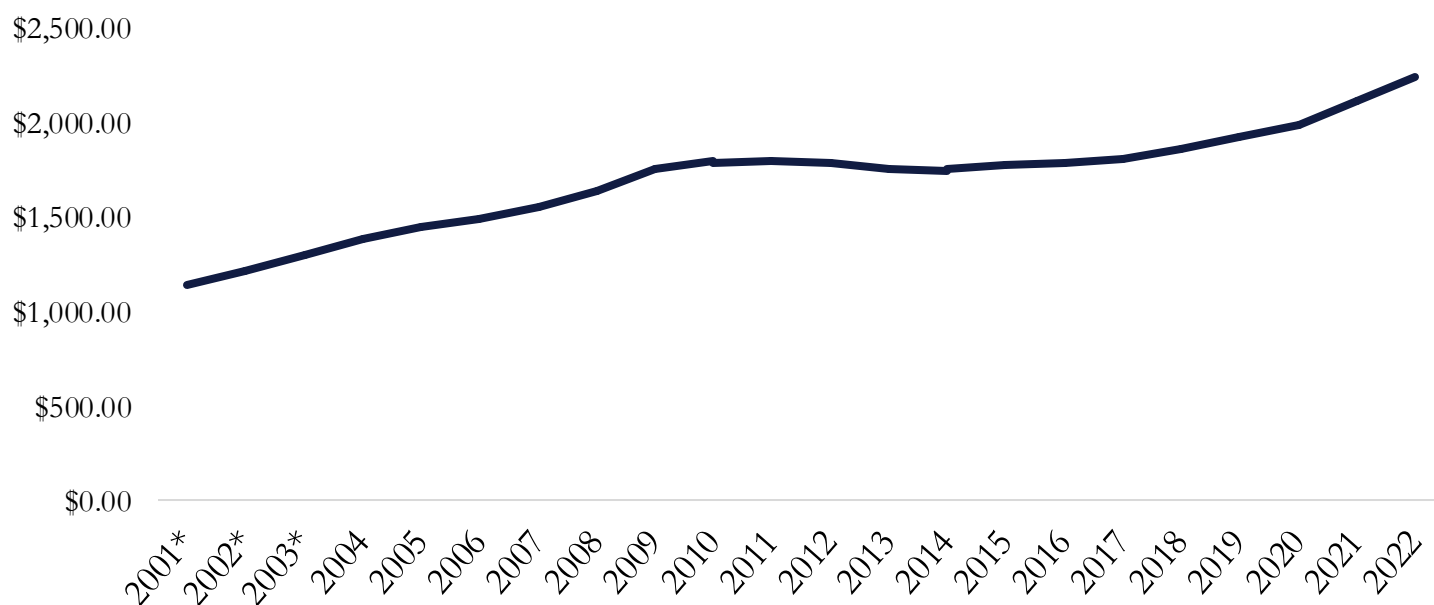
Rising geopolitical risks are causing significant increases in defense spending, and this increase, combined with continuous supply chain improvements, is expected to result in industry expansion. In 2022, however, despite an increase in demand, revenues for the 11 biggest companies decreased 4% YoY. Additionally, the top 6 American defense companies had a 3% combined decreased revenue. Part of this decrease in revenue could perhaps be due to an 11% decrease in operating profits in the 11 largest defense companies. However, companies with notable financials include Lockheed Martin with the highest operating margin of 12.7% and Rolls Royce with an operating margin of 11.8%.

Despite this poor 2022 outlook, companies like PwC believe that this coming decade is going to yield “tremendous growth”, with military spending increasing by 3.7% in real dollars to a high of \$2.24 trillion. Additionally, upon analyzing the top 100 companies, a notable increase in revenues was observed.

It is also worth noting that given the geopolitical situation in Europe, it is likely that there will be great growth in the industry in the next couple years. 2022 saw the biggest annual increase in military expenditures since the end of the Cold War and there is potential for these trends to continue. PwC analysts estimate that industry growth rates could be double-digit and grow as high as 20% year over year with European countries as much as doubling their military expenses in terms of GDP percentage. This seems even more likely as Germany has already announced a \$112 billion investment in its military.

Countries like South Korea are looking to update their military capabilities by investing in defense as well. In 2021 there was a 140% increase in arms exports, leading to a record \$17.3 billion. This is all tied to the rising tensions and the need for improved military. On the same token, Japan has stated their plan to invest \$313 billion over the next five years to increase its defensive capabilities.

Military Expenditure Worldwide 2001 to 2022 (\$ Billions)



\* Data excludes Iraq from 2001 to 2003.

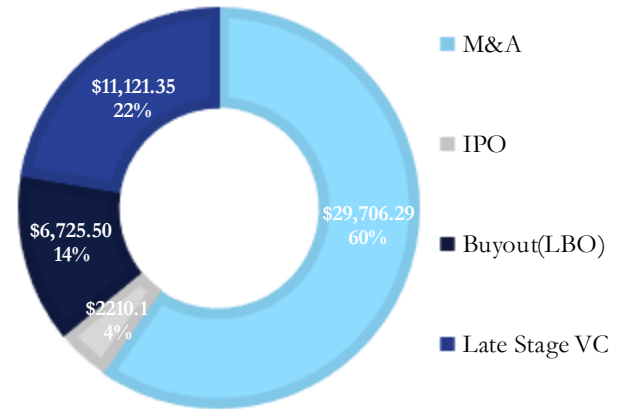
# TRANSACTION ACTIVITY

## Continued Momentum in Aerospace & Defense Transactions

### Muted M&A, Selective IPOs, and Rising LBO Activity

Forecasting 2023, the aerospace and defense sector foresees muted M&A activity due to high-interest rates, economic volatility, and supply chain challenges. While IPOs are anticipated to be sparse, primarily influenced by market unpredictability and past underperformances, there's potential for some space startups to pursue IPOs, given promising growth trajectories. Buyout endeavors may grow, particularly for mid-cap aerospace firms with margin pressures, as they offer restructuring and cost mitigation avenues. Since the beginning of 2023, deal volumes have reached \$29.7 billion for M&A, \$2.21 billion for IPOs, and \$6.73 billion for Leveraged Buyouts (LBO).

Total Capital Raised 2023 (\$ Millions)

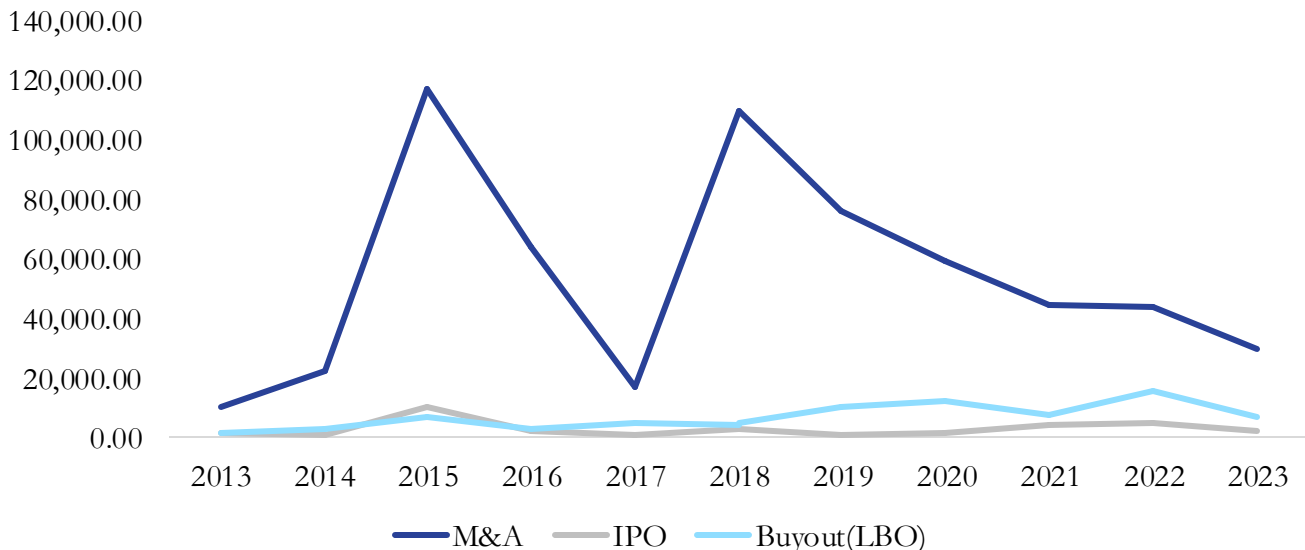


### Emerging Trends in the Sector over the Last Decade (IPO, M&A, LBO)

Recent industry analysis highlights continued strength in aerospace and defense deal dynamics, with 2022 seeing heightened deal volume despite supply chain challenges. Private equity involvement has notably risen, accounting for a quarter of deals in 2020-2021, according to KPMG. While M&A trends have fluctuated—reaching \$116.8 billion in 2015 and dipping to \$16.9 billion in 2017—IPOs have shown resilience, bouncing back from a 2019 low of \$787 million to consistently exceed \$2 billion annually since 2020. LBOs remained steady at \$2-4 billion annually until 2018 before seeing a surge, underlining sustained private equity interest.

Moving forward, PwC and Deloitte analysts predict a stable M&A climate through 2023, driven by major firms' hunger for innovation and technology. Despite a SPAC slowdown, the strong IPO trend from 2021, spurred by SPACs targeting aerospace entities, suggests promising IPO volumes ahead. In summary, optimism pervades the industry, backed by demands in both commercial and defense aerospace sectors.

Aerospace & Defense Deal Volume (\$ Millions)



Sources: Pitchbook, SEC Edgar Filings, Yahoo Finance, Deloitte, KPMG, McKinsey, PwC

# AEROSPACE & DEFENSE HEADWINDS

Macroeconomic challenges such as supply chain disruptions, talent shortages, interest rate increases, regulatory sanctions, and political risks are constraining the Aerospace and Defense industry.

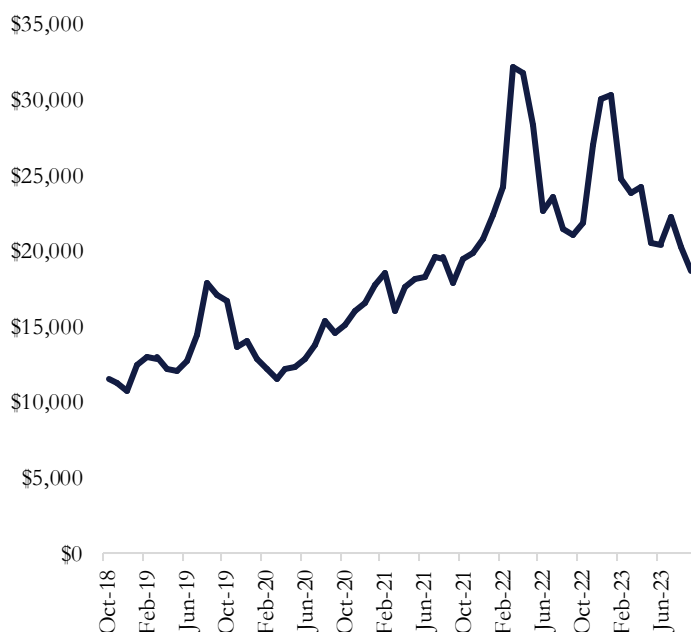
## Supply Chain Risks

The Aerospace and Defense (A&D) sector navigates through an intricately structured supply chain, interwoven with an expansive network of suppliers. This complexity inherently challenges companies to maintain cost-efficiency while safeguarding the flow of materials and components. Recent global occurrences such as the COVID-19 pandemic, workforce shortages, and geopolitical conflicts have introduced additional layers of complexity, further entwining the already complicated supply chain structure.

A case in point is the sanctions imposed on Russia in response to its invasion of Ukraine, which has considerably constricted the supply of critical materials, notably titanium and nickel. These materials are indispensable in the production of key aeronautical components, such as jet engines and fuselage components. Prior to the sanctions, Russia was a substantial supplier of titanium, contributing about 30% and 50% of the titanium utilized by an array of companies like Boeing, GE, Pratt & Whitney, Rolls Royce, and Airbus respectively. As a result of these issues several of these companies have been forced to delay the delivery of aircraft engines.

This sudden interruption in the supply chain has compelled impacted companies to explore alternative sources for these vital materials. There is a notable pivot towards nations like Japan, with expectations leaning towards an augmentation of their titanium production to offset the deficit. The efforts to restructure and stabilize the supply chain are underway, yet they underscore the urgent need for the A&D sector to fortify its supply chain against future disruptions.

Historical Nickel Prices (per tonne)



## Attracting & Developing Top Talent

This scarcity in skilled personnel reverberates through the A&D sector, instigating companies to downgrade their sales forecasts in a bid to align with the constrained operational capabilities arising from workforce shortages. This situation is further intensified by the surging demand for defense equipment, thereby exacerbating the prevailing talent crunch.

Moreover, the commercial airline industry echoes a similar sentiment, anticipating a requisite addition of approximately 610,000 maintenance technicians to adequately service the sector. This underscores a sector-wide urgency to address the talent gap, not just within the defense companies but also within the commercial airline space.

# AEROSPACE & DEFENSE TAILWINDS

Revitalization and Innovation: How A&D Companies are Transforming Supply Chains and Pioneering Emerging Markets in Aviation

## Increased Defense Spending

Global defense budget has hit new milestones in the recent year. And is significantly stronger than prior years. Rising global security threats necessitate advancements in defense capabilities, thereby driving investments and innovations in the sector. About 70% of A&D companies' revenue is attributed from government. Many countries have seen a double digit increase in defense spending and it is expected that by the end of 2023 defense spending will increase by as much as 10% in multiple western countries.

## Commercial Aviation Recovery

As global markets gradually recover from the pandemic, there's an anticipated surge in leisure and business travel. Furthermore, Airlines are looking to renew and expand their fleets, translating to more orders for aircraft manufacturers. There is currently a significant backlog of 9,400 passenger aircraft until 2027. and manufacturers are planning on scaling up their production significantly over the next five years. It is expected that at the end of 2023 aviation will be back to pre-pandemic levels.

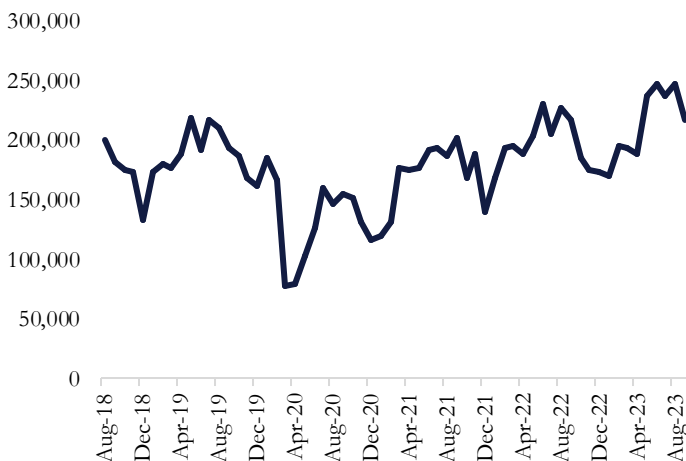
## Supply Chain Resilience

As more A&D companies are navigating the supply chain disruptions, they are also looking to implement solutions that will ensure that they are going to be resilient to future events. The solution to the supply chain disruptions will put A&D companies in a better position than they are in today and reduce the probability of delays and cost fluctuations.

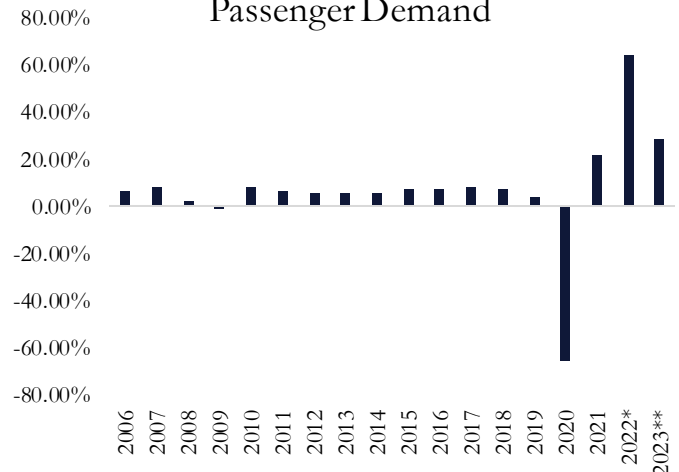
## Emerging Markets

Space Exploration: The growing interest in space exploration and commercial space travel offers lucrative opportunities for aerospace companies. As nations prioritize modernizing their defense capabilities and as commercial aviation experiences growth in previously underserved regions, new opportunities and challenges are arising. These markets not only signify new regions of operation but also encompass innovative technologies, such as unmanned aerial systems, space exploration ventures, and cyber defense mechanisms.

Flight Radar Activity 2019-2023



Annual Growth in Global Air Traffic Passenger Demand



# M&A & IPO ACTIVITY

## Ball Aerospace & Technology Acquisition by BAE Systems (M&A)

BAE Systems, in a strategic move to fortify its position in the aerospace and defense sector, has acquired Ball Aerospace & Technology, a prominent manufacturer serving both governmental and commercial sectors. This manufacturer specializes in space-based instruments, tactical solutions, antennas, and a vast range of aerospace systems and components. The acquisition, worth \$5.55 billion, took place on August 17, 2023. Ball Aerospace's diverse portfolio, which includes technical services like avionics software support and threat detection, is expected to significantly bolster BAE Systems' revenue outlook. This deal underscores the industry's trend towards consolidation and the imperative for key players to expand, diversify, and advance their technological capabilities.

## Wencor Group Acquisition by Heico Corporation (M&A)

Heico Corporation has sealed a notable acquisition of the Wencor Group, a leading manufacturer of aircraft parts and aftermarket replacement components, with a purchase price of \$2.05 billion. This acquisition represents Heico's most significant in terms of both cost and the revenue potential offered by Wencor, which is forecasted to bring in revenues of \$724 million and an adjusted proforma EBITDA of \$153 million for 2023. This strategic integration solidifies Heico's position in the aerospace and defense sector, promising a more extensive range of services and products, while also anticipating tax benefits of approximately \$75 million by 2038.

## IPO Activity:

### Baimtec Material's Initial Public Offering (IPO)

Baimtec Material Co Ltd, recognized for its high-tech advancements in aviation, has gone public on the Shanghai Stock Exchange. Raising CNY 7.11 billion in its IPO, investors clearly demonstrated enthusiasm in Baimtec's public offering (STAR Board, dated July 18, 2023). With a value of CNY 35.55 billion post-offering, Baimtec Material's listing demonstrates a bullish sentiment for the company and the aerospace & defense sector.

### IdeaForge's Initial Public Offering (IPO)

India's premier drone manufacturer, IdeaForge, has taken a significant step in the aerospace and defense sector by announcing its Initial Public Offering (IPO) at a post valuation of approximately \$340.95 million. Raising a substantial INR 5.67 billion, the IPO emphasizes the growing importance of drone technology in the industry. Their dedication to enhancing India's domestic manufacturing through initiatives like "Atmanirbhar Bharat" is expected to boost the local aerospace industry, offering a promising future in both civil and defense UAV applications.

Date	Targeter	Acquirer	Deal Size (\$mm)	Transaction Multiple (Valuation/EBITDA)	Transaction Type
17-Aug-23	Ball Aerospace & Technology	BAE Systems	5550	17.90x	Merger and Acquisition
28-Jul-23	Aerojet Rocketdyne Holdings	L3 Harris Technologies	4700	27.47x	Merger and Acquisition
4-Aug-23	Wencor Group	Heico Corporation	2050	13.40x	Merger and Acquisition
31-Aug-23	MB Aerospace Holdings	Barnes Group	740	11.38x	Merger and Acquisition
18-Jul-23	Baimtec Material	IPO	987	52.28x	Initial Public Offering
7-Jul-23	ideaForge	IPO	69	52.51x	Initial Public Offering

# BASIC INFORMATION

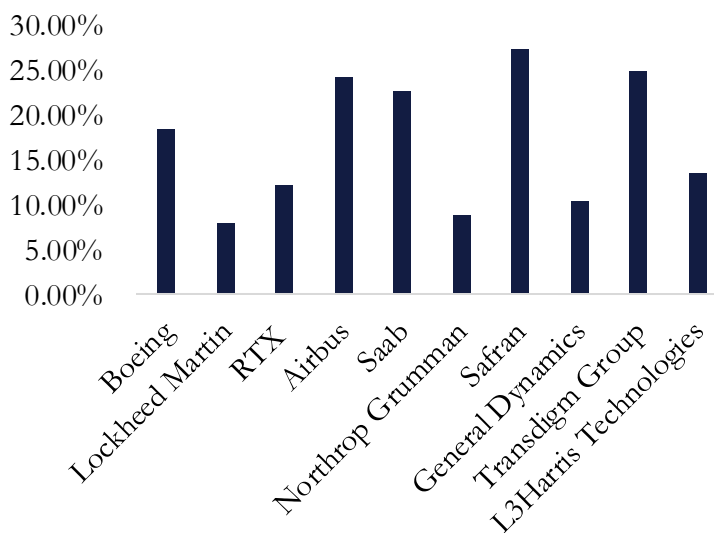
Basic Information (2023)

Company Name	Ticker (NYSE)	Market Cap. (\$Bn)	Stock Price (10/16/2023)	Revenue (TTM \$Bn)	Revenue per Employee (\$ MM)	Revenue Growth (YoY)	Adj EPS (TTM)	Beta
Boeing	BA	118.27	183.42	73.61	0.51	18.40%	(\$7.49)	0.92
Lockheed Martin	LMT	109.96	436.00	67.39	0.58	8.07%	\$27.45	0.62
RTX	RTX	106.70	72.66	70.57	0.39	12.27%	\$3.80	0.72
Airbus*	AIR	99.84	122.40	61.62	0.46	24.12%	\$4.91	0.95
Saab*	SAABB	78.52	583.20	46.58	2.45	22.65%	\$22.08	0.38
Northrop Grumman	NOC	71.62	484.26	37.88	0.40	8.81%	\$30.33	0.60
Safran*	SAF	64.97	150.72	21.98	0.26	27.35%	\$7.48	0.95
General Dynamics	GD	64.92	242.30	40.86	0.39	10.48%	\$12.29	0.71
TransDigm Group	TDG	47.95	863.52	6.24	0.45	24.75%	\$18.77	1.04
L3Harris Technologies	LHX	33.44	176.58	17.99	0.38	13.49%	\$4.23	0.69
Lower		60.68	143.64	20.98	0.39	0.10	4.12	0.61
Median		75.07	212.86	43.72	0.43	0.16	9.89	0.71
Mean		79.62	331.51	44.47	0.63	0.17	12.39	0.76
Upper		107.52	509.00	68.19	0.53	0.24	23.42	0.95

An average revenue growth rate of 17% indicates that the industry is strongly expanding. As previously mentioned, this is in part due to the recovery of commercial air travel, a resilient supply chain, and increased defense spending. Conflicts in Eastern Europe, the Middle East, and Southeast Asia are resulting in increased spending on all sides. Emerging sectors of the industry including commercial space travel and space-based weapons systems point towards a competitive and dynamic future for these firms. There is not much variance in growth rates within the companies examined, conveying similarities in positioning and strategy. The average beta of 0.76 suggests that the industry is also less volatile than the overall market.

One reason the industry is considered less volatile is because these firms benefit from stable and oftentimes long-term government contracts. Such contracts provide a reliable source of revenue even during economic downturns. As defense spending continues to increase in the United States (despite which political party controls the government during any given year), it is unlikely contracts to private defense firms will slow anytime soon. Additionally, costs associated with R&D, talent acquisition, sourcing of materials, etc. provide high barriers to entry, therefore reducing the chance of price-wars from smaller firms. The median revenue per employee is significantly higher than the total market, suggesting that the Aerospace and Defense industry is highly productive and efficient.

Revenue Growth (YoY)



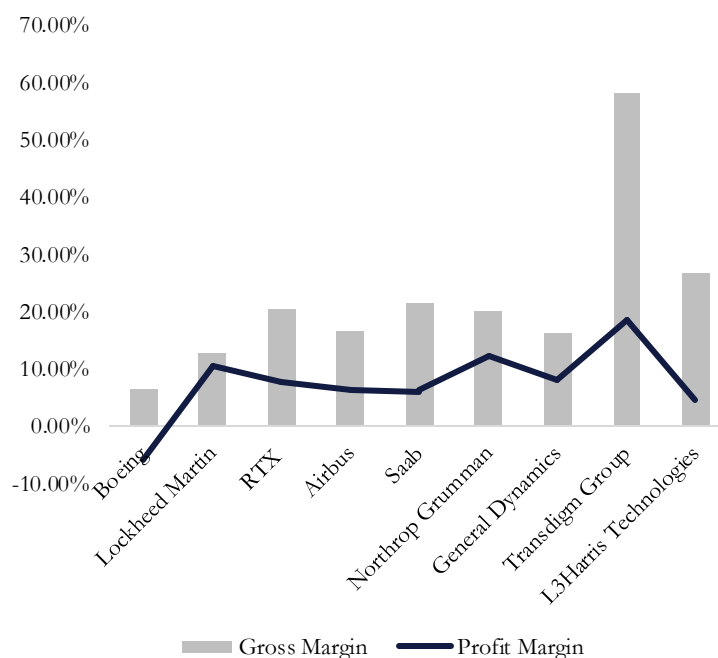
# PROFITABILITY MARGIN

Profitability Margins (TTM)

Company Name	Gross Margin	Operating Margin	Profit Margin	EBITDA (\$Bn)	EBITDA Margin	ROA	ROE
Boeing	6.65%	-4.62%	-6.08%	-1.49	-2.03%	-3.31%	-
Lockheed Martin	12.70%	12.80%	10.48%	10.01	14.86%	12.99%	68.31%
RTX	20.43%	8.63%	7.88%	10.26	14.54%	3.46%	7.78%
Airbus*	16.50%	7.12%	6.28%	6.99	11.35%	3.33%	32.54%
Saab*	21.45%	9.24%	6.28%	6.35	13.63%	3.97%	10.19%
Northrop Grumman	20.24%	9.67%	12.27%	4.99	13.18%	10.62%	31.91%
Safran*	-	-	-	3.75	-	6.75%	31.12%
General Dynamics	16.12%	10.34%	8.24%	5.12	12.52%	6.54%	18.28%
TransDigm Group	58.24%	43.39%	18.40%	2.99	47.96%	5.99%	-
L3Harris Technologies	26.90%	5.21%	4.46%	1.92	10.66%	2.31%	4.28%
Lower	14%	6%	5%	2.72	11%	3%	8%
Median	20%	9%	8%	5.06	13%	5%	25%
Mean	22%	11%	8%	5.09	15%	5%	26%
Upper	24%	12%	11%	7.75	15%	8%	32%

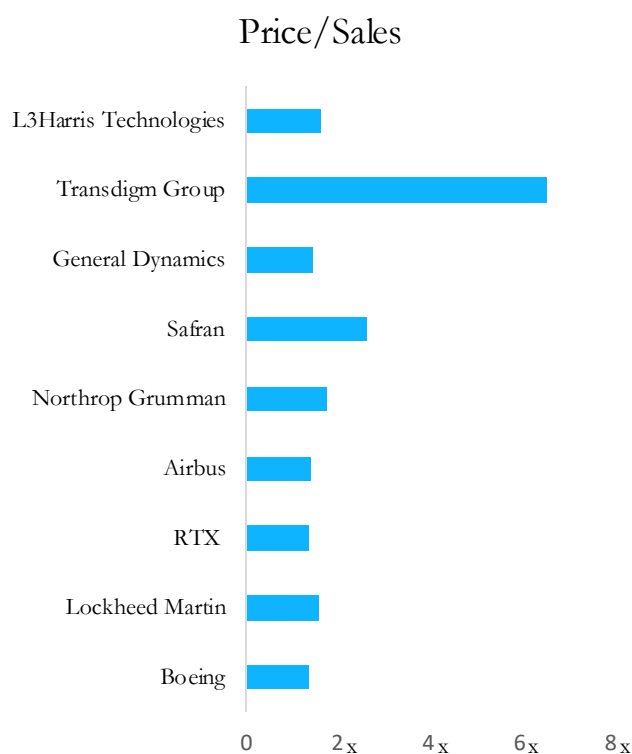
TransDigm Group stands out due to its robust performance in several profitability metrics, notably holding the lead in gross margin at 58.24%, operating margin at 43.39%, and EBITDA margin at 47.96%. This underscores their capability in maintaining cost efficiencies and solid operational management. Lockheed Martin also showcases admirable results, especially with the highest EBITDA in absolute terms at \$10.01 billion and significant ROA and ROE figures of 12.99% and 68.31% respectively, signaling effective asset utilization and generating strong returns for shareholders. On the other end of the spectrum, Boeing grapples with evident financial challenges, marked by its negative values in operating margin, profit margin, and EBITDA at -4.62%, -6.08%, and -\$1.49 billion, respectively. Meanwhile, companies like Airbus, Saab, and Safran generally align with industry benchmarks, performing around the median values in most categories.

Gross Margin vs. Profit Margin (TTM)



# VALUATION MULTIPLES

Lockheed Martin stands out by having the highest Price/Book ratio (3.10x), indicating that the firm is trading at a little over three times its book value. Meanwhile, TransDigm Group is an outlier with its standout P/E (43.34x) and P/Sales (6.61x) ratios, reflecting expectations of strong future growth. The argument against believing TransDigm and Lockheed Martin are overvalued companies is that both have strong and consistent yearly growth, high profitability margins and 43% and 96% of revenue stemming from ironclad government contracts, respectively. It is also important to note Boeing's lack of inclusion in the figure below - the company's legal and financial issues persist surrounding the Boeing 737 MAX airplane, following the fleet being grounded in 2019 after two crashes killed 346 people. Lack of demand due to pandemic traveling restrictions and supply chain woes did not make things any better for Boeing. However, this "perfect storm" of unfortunate events for the company does not reflect the industry trend. Across the companies examined, strong EV/EBITDA ratios indicate that Aerospace and Defense firms are generally able to generate enough earnings to cover debt obligations.



## Valuation Multiples (2023)

Company Name	EV/EBITDA	EV/EBITDAR	Price/Book	P/E	P/Sales
Boeing	-	-	-	-	1.40x
Lockheed Martin	11.29x	11.64x	3.10	14.36x	1.63x
RTX	11.19x	15.37x	0.37	14.78x	1.39x
Airbus	12.13x	9.88x	1.38	25.79x	1.45x
Saab	12.38x	9.43x	-	26.70x	-
Northrop Grumman	16.78x	17.70x	1.11	19.81x	1.80x
Safran	16.09x	13.65x	-	20.44x	2.70x
General Dynamics	14.71x	14.46x	0.82	19.52x	1.49x
TransDigm Group	21.29x	16.95x	-	43.34x	6.61x
L3Harris Technologies	14.21x	13.05x	0.46	18.33x	1.65x
Lower	11.71x	10.76	0.43x	16.56x	1.42x
Median	14.21x	13.65	0.96x	19.81x	1.63x
Mean	14.45x	13.57	1.21x	22.56x	2.24x
Upper	16.43x	16.16	1.81x	26.25x	2.25x

Sources: Bloomberg, Defense News

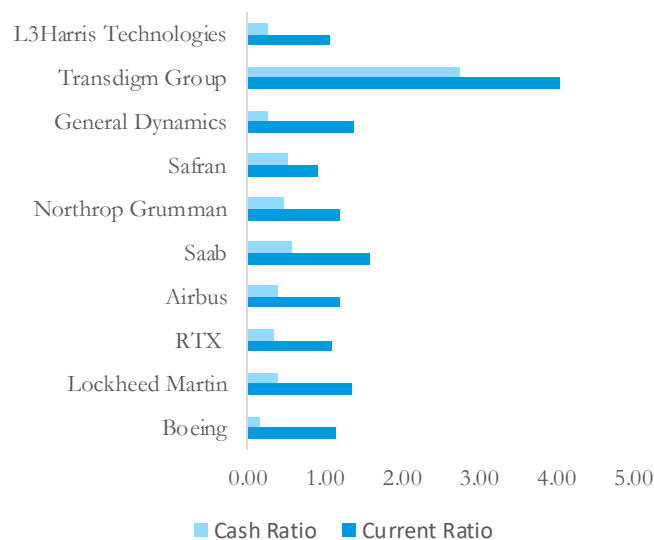
# LIQUIDITY ANALYSIS

## Liquidity Analysis (2023)

Company Name	Current Ratio	Cash Ratio	Quick Ratio	Free Cash Flow (\$Bn)	Net Operating Assets (\$thsnd)	CapEx (\$Bn)
Boeing	1.17	0.15	0.18	2.58	25.50	(0.34)
Lockheed Martin	1.36	0.21	0.40	0.77	23.50	(0.49)
RTX	1.10	0.13	0.37	0.19	101.90	-0.62
Airbus	1.20	0.31	0.41	2.34	4.70	(0.62)
Saab	1.59	0.40	0.59	(1.31)	27.00	(0.73)
Northrop Grumman	1.20	0.29	0.47	0.62	26.70	(0.39)
Safran	0.93	0.23	0.52	-	10.90	-
General Dynamics	1.39	0.07	0.28	0.52	29.70	(0.25)
TransDigm Group	4.08	2.00	2.76	0.37	13.30	(0.05)
L3Harris Technologies	1.09	0.06	0.28	0.32	25.70	(0.07)
Lower	1.10	0.12	0.28	0.26	12.70	(0.62)
Median	1.20	0.22	0.40	0.52	25.60	(0.39)
Mean	1.51	0.39	0.63	0.71	28.89	(0.40)
Upper	1.44	0.34	0.54	1.56	27.68	(0.16)

TransDigm Group showcases robust financial health with an exceptionally high Current Ratio of 4.08 and a Quick Ratio of 2.76, suggesting a strong ability to cover short-term liabilities. Saab also reflects a commendable liquidity stance with a Current Ratio of 1.59, though its negative Free Cash Flow of \$-1.31 Bn hints at potential operational concerns or substantial investments. In contrast, Safran's liquidity position raises concerns with the lowest Current Ratio of 0.93, indicating possible challenges in meeting short-term obligations. Additionally, L3Harris Technologies and General Dynamics have notably low Cash Ratios at 0.06 and 0.07, respectively, pointing to limited cash reserves relative to their short-term liabilities. On a brighter note, both Boeing and Airbus maintain a balance between significant Net Operating Assets and healthy liquidity metrics. Overall, while many companies exhibit good liquidity, outliers like TransDigm Group stand out for their superior position, and firms like Safran warrant closer scrutiny.

## Current Ratio vs. Cash Ratio (2023)



# BALANCE SHEET RATIOS

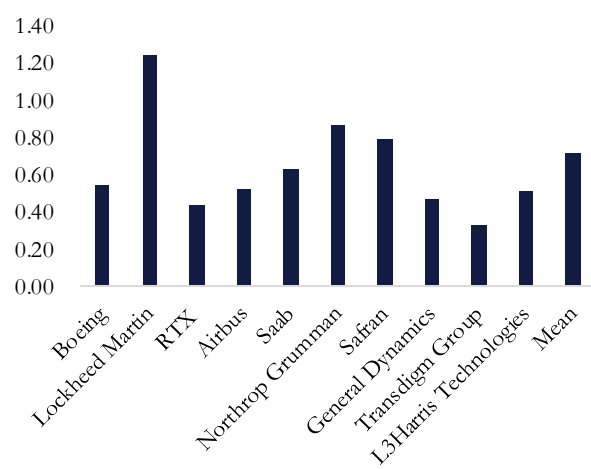
Balance Sheet Ratios (2023)

Company Name	Debt/EBITDA	Debt/EV	Debt/Working Capital	Total Debt /Equity	Asset Turnover
Boeing	-	0.26x	2.51	-	0.54
Lockheed Martin	1.39x	0.11x	2.17	1.90	1.24
RTX	3.07x	0.23x	7.59	0.50	0.44
Airbus	-0.98x	-0.08x	(0.63)	1.13	0.53
Saab	-0.58x	-0.05x	(0.19)	0.31	0.63
Northrop Grumman	2.44x	0.14x	5.27	1.01	0.87
Safran	2.02x	0.13x	1.68	0.59	0.79
General Dynamics	-0.02x	-0.001x	0.04	0.62	0.47
TransDigm Group	5.66x	0.26x	3.59	-	0.33
L3Harris Technologies	4.78x	0.21x	16.93	0.51	0.52
Lower	-0.30x	-0.01x	(0.02)	0.50	0.46
Median	2.02x	0.14x	2.34	0.61	0.54
Mean	1.97x	0.12x	3.90	0.82	0.64
Upper	3.92x	0.23x	5.85	1.10	0.81

Several insights can be inferred regarding the capital structure and financial health of the analyzed companies. Notably, there is considerable diversity in metrics across top players. Lockheed Martin stands out with a conservative capital structure, which is characterized by a low Debt/EV ratio (0.11x) and Debt/Working Capital ratio (2.17). This suggests Lockheed Martin has a balanced approach to short-term liquidity. In contrast, RTX demonstrates a higher level of leverage, featuring relatively high Debt/EBITDA (3.07x) and Debt/Working Capital (7.59) ratios. This indicates that RTX could face short-term liquidity challenges soon. The median Debt/EBITDA ratio is 2.02x and the mean is 1.97x, suggesting that a typical company in this sector carries a moderate level of debt relative to its earnings. Moreover, Airbus, Saab and General Dynamics have negative Debt/EBITDA ratios, suggesting they have conservative financial structures and more cash than debt. All the examined firms have Asset Turnover ratios that are less than 1.00, raising the possibility that firms in the Aerospace and Defense industry have trouble using their assets to generate revenue.

There are many reasons behind the industry's issues regarding leverage and short-term liquidity. First and foremost is the high capital intensity of the industry; significant investments are required for research and development, manufacturing facilities, materials and equipment. The second is the long sales cycles associated with projects. These projects often have extensive R&D and sales cycles, which can lead to delayed cash flow. It may take several years from the signing of the contract to actual delivery and payment, resulting in a prolonged period of low liquidity. The third major reason is complex supply chains. Projects of this industry often rely on complex and global supply chains. Delays or disruptions can affect an already extensive sales cycle, furthering cash flow issues. Lastly, unforeseen events such as warranty claims, accidents, or legal disputes can require a substantial amount of cash to be redirected, affecting liquidity.

Asset Turnover Ratio (2023)



BBR

**BULL & BEAR**  
RESEARCH

Initiating Coverage: TransDigm



# TRANSDIGM GROUP INC.

December 4th, 2023 | NYSE Symbol: **TDG** | **TDG** is a component of the S&P 500

Recommendation: **HOLD**

Current Price: **\$968.38**

12-Mo. Target Price: **\$909.05**

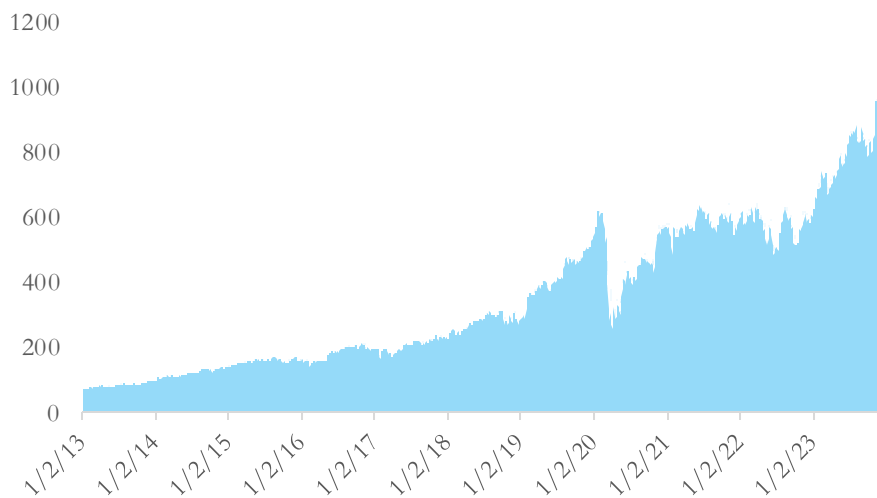
## Key Statistics

52-Wk Range	<b>599.42 - 1,013.08</b>	Dividend Frequency	<b>N/A</b>
TTM EPS	<b>22.03</b>	Dividend Yield [%]	<b>N/A</b>
P/E	<b>43.93</b>	Beta	<b>1.40</b>
Shares Outstanding [mln]	<b>55.31</b>	Institutional Ownership [%]	<b>96.50</b>
Market Cap [bln]	<b>53.67</b>	USD 10K Invested 5 Years Ago	<b>31,511.17</b>

## Highlights

TransDigm's record-breaking company revenue of \$6.58 billion demonstrates impressive financial performance. In November, TransDigm announced a \$1.358 billion cash acquisition of Communications and Power Industries. In completing this strategic acquisition, TransDigm saw an opportunity to strengthen its position in electronic military defense products, such as missile defense systems, satellites, and radar. This massive cash acquisition and a current ratio of 4.27 affirm the company's capability to meet short-term financial obligations. After the Paris Air Show in June, there was a general bullish trend among investors resulting in increased share prices across the A&D industry. During this time, TransDigm's share price increased from 778.15 to 894.17. Other noteworthy events this year include a 13-day streak of consecutive gains in share price in November. During these 13 days, the stock had a trading volume of 335,105 shares which demonstrates clear market interest from investors.

## Price Performance | Jan 2013 – Dec 2023



Sources: Yahoo Finance, Macrotrends

## Reasons to Hold and Considerations

Despite our valuation of \$909.05, investors should hold shares of TransDigm. TransDigm have found success in strategically acquiring small companies in the A&D industry to strengthen their competitive positioning, sometimes even being compared to private equity firms. Additionally, many analysts forecast gains in the coming 12 months, with CNN analysts having its median target price of \$1,100. Nevertheless, while A&D industry averages remain at 15.67 for TTM P/FCF and 1.89 for TTM P/S, TransDigm showcases sizeable ratios of 44.59 and 8.4, indicating market overvaluation. Looking into the future, our forecasts predict a profound decrease in revenue growth, projecting only a 5% increase from 2024-2025. Investors should err on the side of caution, remaining more underweight than overweight in their holdings.

Year	Revenue (million USD)	EPS (USD)
2023 (TTM)	6,585	22.03
2022	5,429	13.40
2021	4,798	10.41
2020	5,103	8.96
2019	5,223	13.84

# WALL STREET PERSPECTIVE

## Wall Street Analyst Price Target (TransDigm Group)

### Analyst Price Target Summary

Broker	Rating Date	Price Target	Method Used	Rating
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Current Share Price: \$968.38

Median Price Target: \$1100.00

<b>Morgan Stanley</b> Kristine Wang	11/10/23		\$1,200 N/A	Attractive
<b>Capital Markets</b> RBC Kenneth Herbert	11/09/23		\$1,150 N/A	Outperform
<b>J.P.Morgan</b> Seth M. Seifman	11/17/23		\$1,115 16x CY25E adj. EBITDA	Buy
<b>Jefferies</b> Sheila Kahyaoglu	11/12/23		\$1,150 N/A	Buy
<b>BARCLAYS</b> David Strauss	11/10/23	\$1,040	16x EBITDA Multiple	Overweight
<b>STIFEL</b> Bert Subin	11/30/23	\$1,000	N/A	Hold

Median \$1100.00

### Select Commentary

Adjusted EBITDA seen \$105M higher at midpoint at \$3,365B. We estimate guidance at midpoint implies Q4 organic revenue growth at 17% along with 51.2% adjusted EBITDA margin (down from 52.5% in Q3).

David Strauss, Barclays, Aug 8, 2023

TDG Guided FY24 ahead of our model and consensus, while its latest acquisition appears to show the M&A pipeline is still fluid. **We think TDG's business model is among the most differentiated in A&D.**

Eric Yan, Wells Fargo, Nov 10, 2023

Unsurprisingly, the market was quite pleased with TransDigm's strong 4Q23 results, above-consensus FY24 guide, \$35/sh special dividend and plans for a \$1.4b acquisition.

Seth Seifman, JPM, Nov 17, 2023

# VALUATION SUMMARY

## Various Valuation Methods of TransDigm Group

<u>Valuation Method</u>		<u>Share Price</u>	<u>Commentary</u>
Precedent Transactions	LTM IEV/Diluted Shares	<p>\$614.52      \$1,053.53</p>	Calculates Implied Share price by dividing LTM Implied EV/Diluted Shares
	DCF (Gordon Growth Model)	<p>\$720.30      \$909.05</p> <p><b>Current Price: \$968.38</b></p>	DCF Analysis per Group Projections
Public Market Perspectives	52 Week Trading Range	<p>\$599.42      \$1,013.08</p>	Based on Daily High/Lows since January 2023
	Trading Comps EV/EBITDA	<p>\$474.07      \$819.50</p>	Multiples based on mean EV/EBITDA of comparable companies
	Wall Street Perspectives	<p>\$705.40      \$1,200.00</p>	Based on a group of equity research analyst estimates

**BBR** **BULL & BEAR**  
RESEARCH

Initiating Coverage: **Textron**



# TEXTRON INC.

December 4th, 2023 | NYSE Symbol: **TXT** | **TXT** is a component of the S&P 500

Recommendation: **BUY**

Current Price: **\$77.27**

12-Mo. Target Price: **\$88**

## Key Statistics

52-Wk Range	<b>61.27 - 81.39</b>	Dividend Frequency	<b>Quarterly</b>
TTM EPS	<b>5.88</b>	Dividend Yield [%]	<b>0.10</b>
P/E	<b>16.84</b>	Beta	<b>1.35</b>
Shares Outstanding [mln]	<b>196.19</b>	Institutional Ownership [%]	<b>99.39</b>
Market Cap [bln]	<b>15.26</b>	USD 10K Invested 5 Years Ago	<b>14,183</b>

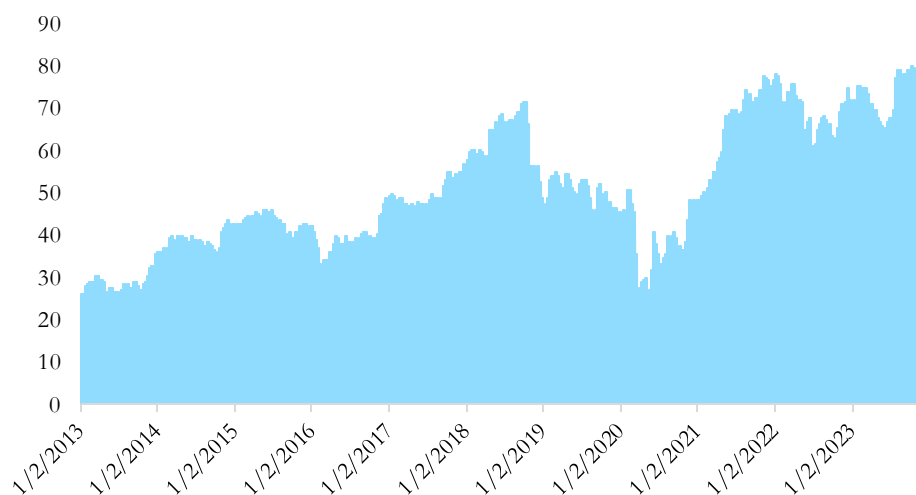
## Highlights

- Bell Helicopter, a subsidiary of Textron, has recently secured a new contract with the U.S. military in November 2023 for its cutting-edge Bell V-280 Valor, poised to replace the current UH-60 Blackhawk. This contract, projected to span the next decade, is anticipated to yield \$70 billion in revenue for the company.
- Textron has revived its efforts to sell its vehicle fuel tank manufacturing business. The business unit, named Kautex, is worth near \$1 billion. Anticipating the future shift towards electric vehicles surpassing traditional gas-powered cars, Textron's management appears keen on shedding a potentially troubled segment of the company. If the sale is successful, the company would have an ample amount of cash to invest in its aircraft-focused businesses. Textron's management is not opposed to the adoption of sustainable technology, evident in the 2022 acquisition of electric aircraft maker Pipistrel for \$238 million.

## Investment Rationale

Textron stands as a well-established company capable of competing effectively with larger players across the industry. Contributing to this stance is the recent awarding of the V-280 Valor contract to Bell Helicopter and a series of strategic acquisitions that underscore the company's dedication to sustainable technology and ongoing innovation. With exceptionally high institutional ownership of 99.39%, there is a clear vote of confidence in strategy. With the help of popular subsidiaries such as Bell Helicopter and Cessna, Textron has demonstrated relatively steady growth in recent years. Although the stock is currently being traded roughly \$4 below its 52-week high, we anticipate its price will reach \$88 within the next twelve months, as indicated by our conservative estimate using the discounted cash flow model.

## Price Performance | Jan 2013 – Dec 2023









Sources: Bloomberg, Macrotrends, Reuters

Year	Revenue (million USD)	EPS (USD)
2023 (TTM)	13,427	5.88
2022	12,869	4.01
2021	12,382	3.31
2020	11,651	1.92
2019	13,630	3.67

# WALL STREET PERSPECTIVE

## Wall Street Analyst Price Target (Textron Inc.)

### Analyst Price Target Summary

Broker	Rating Date	Price Target	Method Used	Rating	
		Current Share Price: \$77.27	Median Price Target: \$87.45		
 Morgan Stanley Kristine Liang	10/27/23	\$89.00	N/A	Attractive	
 Citibank Jason Gursky	11/29/23	\$90.00	N/A	Buy	
 J.P. Morgan Seth M. Seifman	10/31/23	\$98.00	13x EPS adj. Multiple	Neutral	
 Goldman Sachs Noah Poponak	10/26/23	\$84.00	N/A	Buy	
 BARCLAYS David Strauss	10/30/23	\$102.00	16x EBITDA Multiple	Overweight	
 BAIRD Peter J Arment	10/26/23	\$88.00	N/A	Outperform	
Median				\$87.45	

### Select Commentary

**Business Jet Demand is strong, which should drive earnings growth at Textron Aviation.** We are raising our Dec-24 price target of \$84, which is ~13x our 2025 EPS estimate of \$6.45.

Seth Seifman, JPM, Nov 17, 2023

**Q3 adj. EPS at \$1.49 ahead of our estimate at \$1.34 and consensus at \$1.30.** FCF guidance reiterated at \$0.9B-1.0B vs our \$983M and \$551M YTD.






David Strauss, Barclays, Oct 26, 2023

I see some interesting trends. For the three months ending in July 2023, the company generated a total revenue of \$3,424 million, marking an **8.56% uptick from the \$3,154 million it made during the same period in 2022.**

Jason Gursky, Citi, Nov 29, 2023

# VALUATION SUMMARY

## Various Valuation Methods of Textron Inc.

<u>Valuation Method</u>		<u>Share Price</u>	<u>Commentary</u>
Precedent Transactions	LTM IEV/Diluted Shares	\$53.84  \$106.09	Calculates Implied Share price by dividing LTM Implied EV/Diluted Shares
	Intrinsic Valuations	DCF (Gordon Growth Model)	\$56.35  \$148.24
Public Market Perspectives	52 Week Trading Range	\$61.27  <b>Current Price: \$77.27</b> \$81.39	Based on Daily High/Lows since January 2023
	Trading Comps EV/EBITDA	\$51.58  \$177.65	Multiples based on mean EV/EBITDA of comparable companies
	Wall Street Perspectives	\$73.00  \$102.00	Based on a group of equity research analyst estimates

# Team Outlook

The Aerospace and Defense sector have maintained a positive trajectory compared to many other sectors which saw negative growth. Throughout 2023, the industry has navigated a mixed year, demonstrating modest but consistent gains, reflected in an overall increase of 3.4% year to date in the aerospace and defense sector. As the Aerospace & Defense industry advances, it inches closer to reclaiming pre-pandemic gains experienced before February 2020. However, the industry, along with the entire industrials sector, lags behind the S&P post-pandemic. This is primarily attributed to the escalating costs and mounting debt that the industrials sector has accrued over the past three years. Loan levels have continued to rise in 2023, with debt securities currently reaching a staggering range of \$96,000 billion. Despite companies within the aerospace and defense vertical taking on more leverage in the past three years, growth remains on the rise, with an expected 6.3% Compound Annual Growth Rate (CAGR) from 2022 to 2023.

Recent conflicts overseas have created a false sense of profitability among investors, as the belief that conflicts in Ukraine and Israel act as tailwinds for these countries has not translated into substantial growth. Real support must come in the form of intensified government contracts. As conflicts overseas escalate, the possibility arises that the US Government will allocate more of its balance sheet towards military spending. An emerging industry contributing to non-military related gains is the corporate jetting sector, projected to grow by \$9.3 billion from 2023 to 2028. Despite a 4% decline in Year-over-Year (YoY) revenues for the 11 largest aerospace and defense companies, military spending is expected to increase by 3.7%. This increase could offer tremendous growth, especially as deteriorating US and Chinese relations have heightened the urgency for military spending among Congress.

In summary, despite quiet gains throughout 2023, the aerospace and defense industry appears poised for growth. Increasing defense budgets, the recovery of commercial aviation, and supply chain restoration provide a robust foundation for the industry to build upon moving into 2024. As revenues have rebounded in 2023, and numerous major companies have consistently reported positive earnings, it is evident that growth is on the upswing. However, 2024 still presents something of an economic wildcard. If any form of growth is anticipated across the entirety of the equities market, aerospace and defense could yield steady gains, building upon a relatively quiet yet positive year. This trajectory is likely due to increasing government spending and the associated contracts, which are expected to continue rising.

