

Aerospace & Defence Update

Freight update: Oversupply to pressure air freight rates further

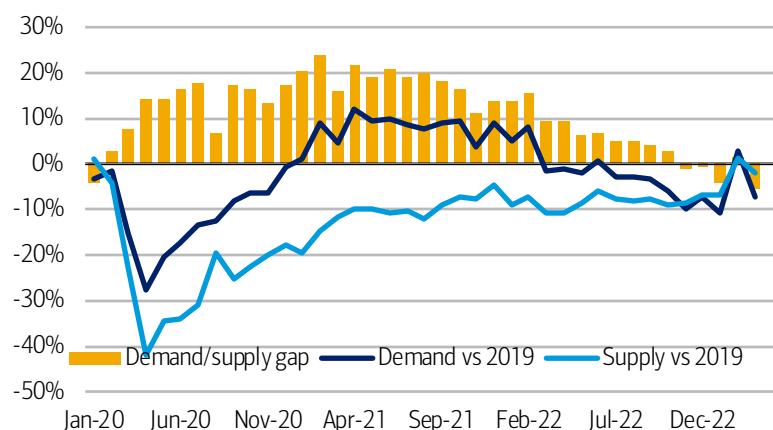
Industry Overview

Oversupply to pressure air freight rates further

We see downside risk to air freight rates as demand cools off and supply recovers. Demand has been declining YTD while supply has continued to add capacity. In March, Air cargo supply was >98% vs 2019 levels, rising c.10% YoY according to IATA. We expect belly capacity will continue to normalize in the coming months, in particular with Chinese belly capacity growing from just c.10% of 2019 levels in 1Q23 to c.45% in 2Q-3Q23 [based on BofA ests](#). We see downside risk on rates as an increasing supply meets a sluggish demand, which could put some pressure on capacity over time.

Exhibit 2: Global airfreight demand and supply vs 2019 levels and demand-supply gap

Balance has flipped to negative since November 2022 adding pressure on air freight rates



Source: IATA, BofA Global Research estimates

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Air: volumes down -8% & rates -10% YoY in March

Air freight rates were down c.10% m-m in April due to weak demand. Shanghai to N. America rates were down c.13% m-m while Shanghai to Europe rates were down c.17% in April. Global air freight volumes declined -8% y-y in March as per IATA data, an improvement from -9% in Feb. Global air cargo capacity was up 10% y-y in Mar. (7% in Feb) and c.1% below 2019 levels, due to increase in belly capacity.

MTU is the most exposed to freight from our coverage

MTU is the company exposed the most to freight from our coverage, with 24% of the groups c.15,700 engines in-service in 2021 cargo/government applications. We believe the spares revenues associated with freighters is slightly ahead of this in the c.30-35% range given the share of thrust and the size of these engines. While the government applications continue to show strong growth, freight pressure could weigh on 2024.

09 May 2023

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Europe
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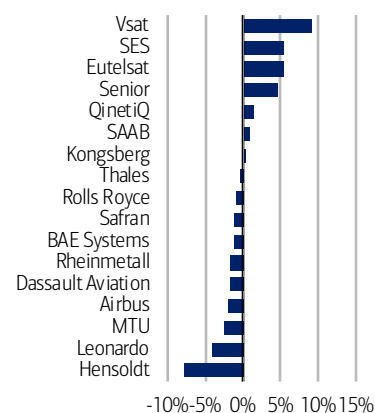
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Exhibit 1: Sector weekly performance relative to FTEU 300

Weekly stock performance



Source: Eikon (prices as of 04th May, 2023)

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Timestamp: 09 May 2023 12:30AM EDT

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GE: General Electric

CMD: Capital Markets Day

GTF: Geared Turbofan

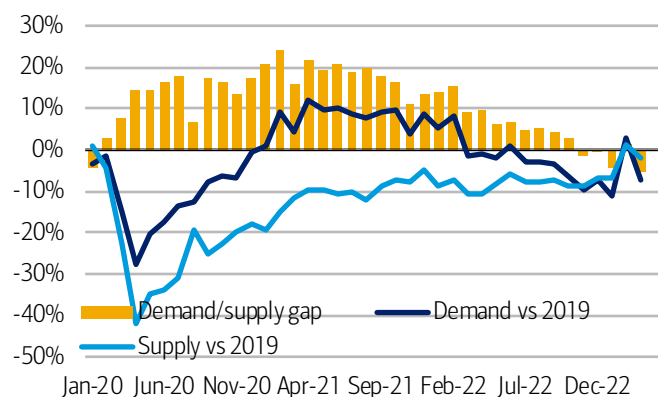
PB24: Presidential Budget 2024

Further pressure on rates as increasing capacity meets a sluggish demand

We see downside risk to air freight rates going through 2Q23 as demand cools off and supply recovers progressively. Demand has been declining YTD while supply has continued to add capacity. Airfreight capacity was almost in line with 2019 levels by Feb-Mar 2023.

Exhibit 3: Global airfreight demand and supply vs 2019 levels and demand-supply gap

Balance has flipped to negative since November 2022 adding pressure on air freight rates



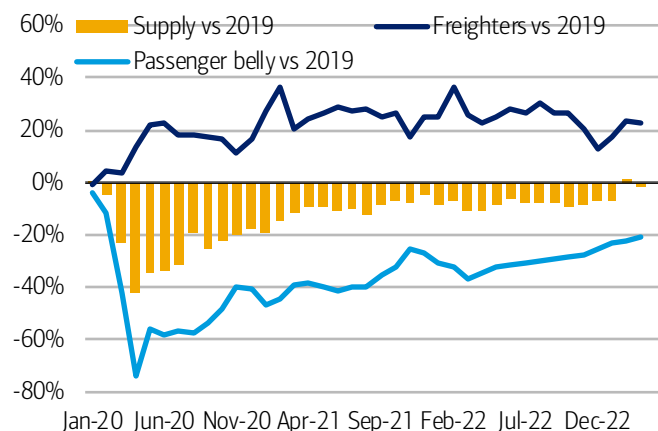
Source: IATA, BofA Global Research estimates

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In March, Air cargo supply was >98% vs 2019 levels, rising c.10% YoY according to IATA. We expect belly capacity will continue to normalize in the coming months, in particular with Chinese belly capacity growing from just c.10% of 2019 levels in 1Q23 to c.45% in 2Q-3Q23 [based on BofA ests.](#) The supply & demand balance has flipped to negative since Nov 2022, and we expect this to continue as demand weakens and supply increases. We see global capacity reaching 99% of 2019 levels in 2023. As a result, we see downside risk on rates as increasing supply meets a sluggish demand.

Exhibit 5: Global airfreight capacity vs 2019, freighters & belly

Airfreight capacity is very close to 2019 levels as of end of April 23

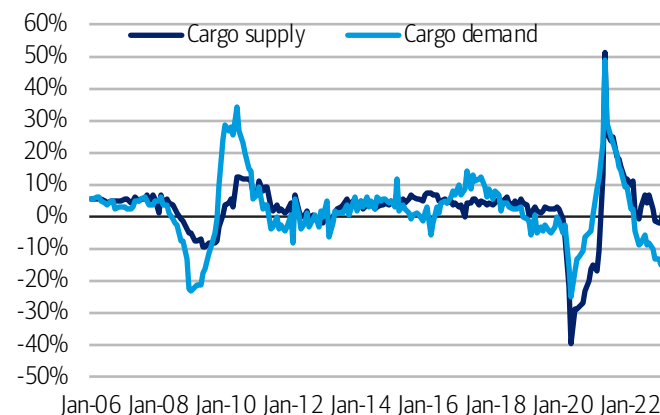


Source: BofA Global Research estimates, IATA

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Exhibit 4: Global airfreight demand and supply growth YoY %

YoY cargo demand and supply worsening further

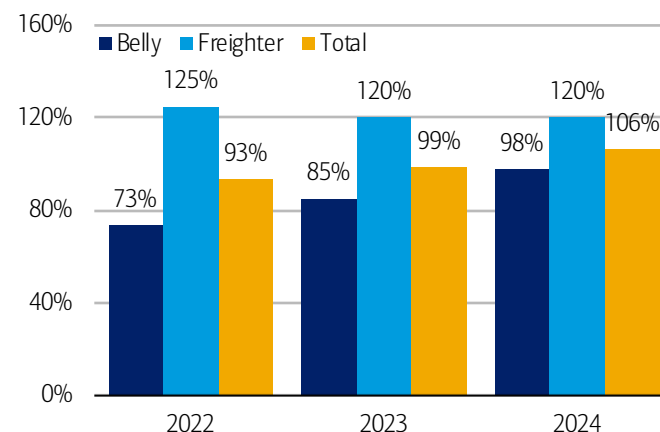


Source: IATA, BofA Global Research estimates

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Exhibit 6: Air cargo capacity by segment, as % of 2019 levels

We see global capacity to reach 93%/99%/106% of 2019 levels in 2022/23/24



Source: BofA Global Research estimates

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Air: volumes down -8% & rates -10% YoY in March

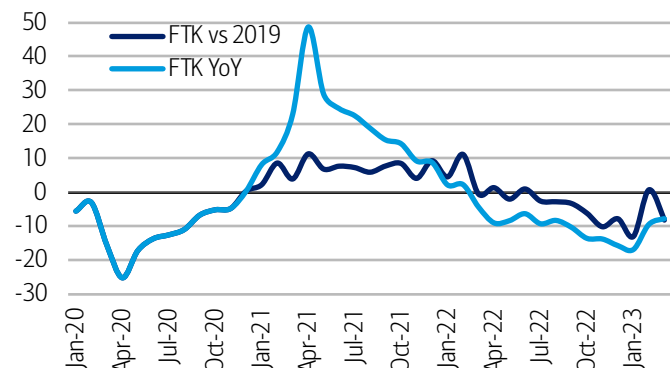
After a muted -3% MoM decline in March, the global airfreight index looks to see

renewed pressure in April with -5% MoM so far, putting the index at 44% above 2019 levels. Air freight rates were down c.10% m-m in April due to weak demand. Shanghai to N. America rates were down c.13% m-m while Shanghai to Europe rates were down c.17% in April.

Global air freight volumes declined -8% y-y in March as per IATA data, an improvement from -9% in Feb. Global air cargo capacity was up 10% y-y in Mar (7% in Feb) and c.1% below 2019 levels, due to increase in belly capacity.

Exhibit 7: Global FTK (% vs 2019 and % YoY)

Global air cargo volumes were down c.8% YoY in March 2023

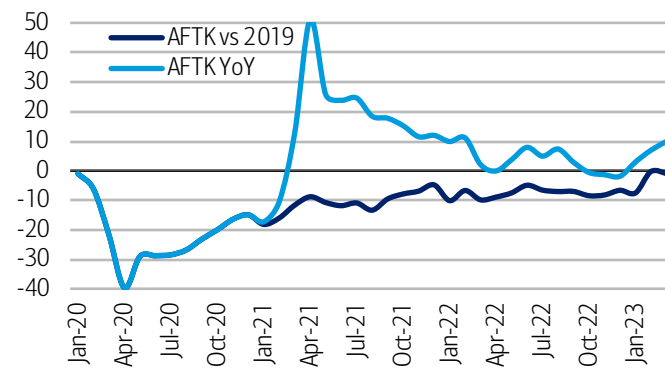


Source: IATA

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Exhibit 8: Global AFTK (% vs 2019 and % YoY)

Global air cargo capacity was up c.10% YoY in March 2023



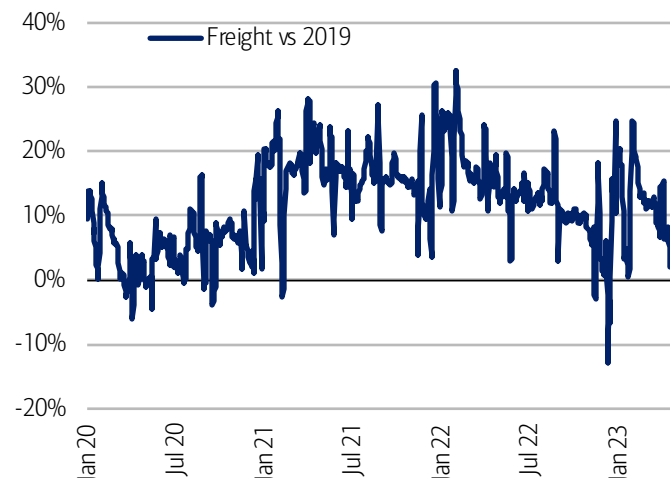
Source: IATA

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Global dedicated freighter 7-day average daily flights were -10.9% YoY through the last week of April 23, still +2.1% vs 2019 levels but exhibiting a downward trend initiated since the beginning of February 2023.

Exhibit 8: Global dedicated freighter flights tracked 7-day avg. YoY %

Freight cycles have gone from c.+22% vs 2019 at the beginning of Feb 23 to +2% at the end of April 23

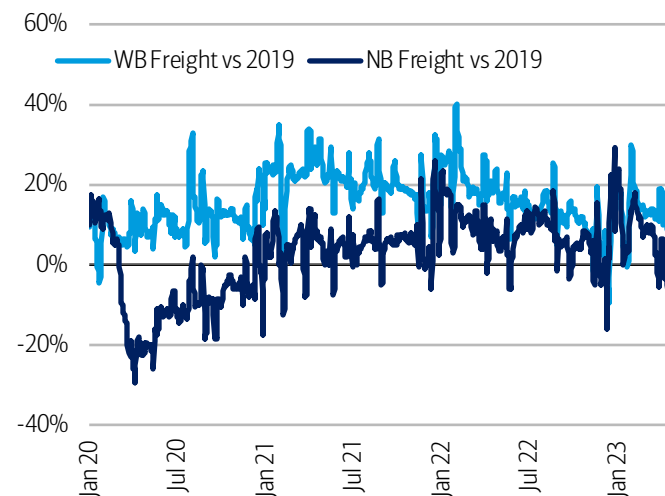


Source: BofA Global Research, Flightradar24

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Exhibit 9: Narrowbody vs Widebody dedicated freighter flights tracked 7-day avg. YoY %

Narrowbody freight flights are already below 2019 levels



Source: BofA Global Research, Flightradar24

BofA GLOBAL RESEARCH

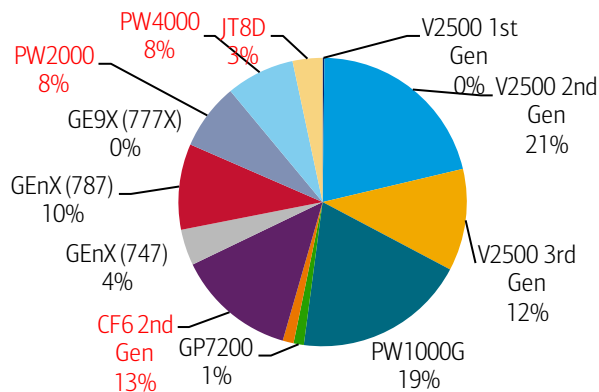
MTU is the most exposed to freight from our coverage

MTU is one of the more freight exposed companies in our coverage, with 24% of the groups c.15,700 engines in-service in 2021 cargo/government applications. We believe the spares revenues associated with freighters is slightly ahead of this in the c.30-35% range given the share of thrust and the size of these engines. Exhibit 10 shows the BofA est breakdown of the MTU installed fleet in FY22 and Exhibit 11 shows the BofA est breakdown of the revenue generating portfolio today (thrust x % share of programme

and staggered by shop visit. As a result of some of the newer engines such as the PW1000G only just beginning to see a ramp in shop visits these freight heavy engines are a higher proportion of the spares revenues vs, the current installed base in our view.

Exhibit 11: BofA est MTU Aero Engines Installed base

MTUs installed base has grown due to the ramp up of the GTF engines (PW1000G) over the past 5 years...

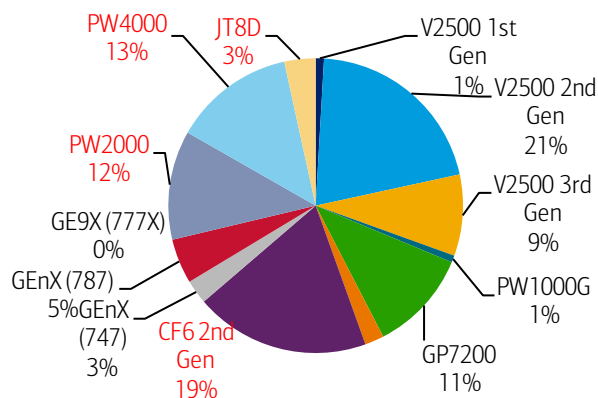


Source: BofA Global Research estimates, Cirium

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Exhibit 12: BofA est MTU Aero Engines Aftermarket Thrust base

...but the GTF engine is only a small proportion of the installed revenue generating thrust base today as these engines are still young



Source: BofA Global Research estimates, Cirium

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Weekly news round up

Exhibit 2: Global Aerospace and Defence Weekly Newsflow

Major news from the last week in the Global Aerospace & Defence Industry

Weekly newsflow

Source

Pentagon awards \$7.8 billion F-35 contract to Lockheed Martin: The U.S. Department of Defense said on Friday it has awarded a \$7.8 billion contract modification for 126 F-35 multi-role aircraft to weapons manufacturer Lockheed Martin Corp. The modification exercises options for the production and delivery of 126 Lot 17 F-35 aircraft, to include 81 F-35A aircraft for U.S. Air Force and its allies. The order for Pentagon's most expensive weapons system, expected to be completed in August 2026, also includes 15 F-35B aircraft for the U.S. Marine Corps and 13 F-35C for the U.S. Navy.

[Reuters](#)

Embraer sees positive outlook for Ipanema aircraft after higher Q1 sales: Brazilian planemaker Embraer SA said on Friday it has sold 33 Ipanema 203 aircraft in the first quarter of 2023, a 38% increase from the same period of 2021, predicting to end the year with a sales volume similar to or better than 2022's 66 planes. "With the positive performance at the beginning of the year and the backlog accumulated over the last 12 months, new orders are now included in next year's production planning and deliveries," the company said in a statement. The Ipanema 203 is an agricultural aircraft used for crop dusting. Embraer said it expects to produce and deliver by the end of this year 65 units, compared to 55 in 2022, which would mark its third consecutive year of growth in the segment.

[Reuters](#)

Air Lease says aircraft delivery delays to persist for years: Air Lease Corp said on Monday it expects delivery delays from Boeing Co and Airbus SE to persist for several years, adding to the headaches of the aerospace industry amid a faster-than-expected recovery in travel. "In recent weeks, we have received additional notices of delay from both Airbus and Boeing for 2023 and 2024 deliveries," Air Lease Chief Executive John Plueger said on an investor call. "One OEM (original equipment manufacturer) has advised us to expect delays compared to originally contracted delivery dates through 2028," Plueger added. Boeing and Airbus did not immediately respond to requests for comment. The constrained supply of jets has frustrated airlines, which then turn to aircraft lessors to expand their capacity to tap into the booming travel demand. The shortage has powered lease rates, helping the Los Angeles-based leasing giant to post better-than-expected first-quarter earnings on Monday. "Commercial aircraft demand is very high now and only seems likely to accelerate as traffic expansion continues at a strong clip," Air Lease Chairman Steven Udvar-Hazy said during the call. While Air Lease benefits from the short supply of jets, the delays are also a headache for the company which has a \$24 billion order backlog with both planemakers. "We don't accept supply chain as a delivery excuse. We expect to be compensated for our late deliveries," added Plueger.

[Reuters](#)

AerCap says aircraft delivery delays boosting leases, sales: AerCap expects to deliver full-year earnings at the higher end of its guidance as a broadening travel recovery and shortage of new aircraft boosts demand for plane leases and sales, the world's largest aircraft lessor said on Tuesday. Chief Executive Officer Aengus Kelly said first quarter demand, in particular for engine leases and the purchase of older aircraft, showed airlines "simply do not believe" under pressure manufacturers will be able to deliver new planes on time. The constrained supply of jets - which Kelly predicted will last several years - helped the Dublin-based lessor increase its first quarter revenue by 4% to \$1.87 billion and forecast full year adjusted earnings per share at the higher end of the \$7.00 to \$7.50 range provided in March. Its New York-listed shares were 2% higher at 1355 GMT. "The real interesting trend is the amount of purchases airlines are making," Kelly told an analyst call, saying customers would extend leases rather than buy planes outright if they thought there was a quick fix to delivery delays from the likes of Airbus and Boeing. "This supports our view that airlines simply do not believe the production rates announced by the OEMs (original equipment manufacturer) and are planning accordingly." AerCap, which has a portfolio of 3,500 aircraft, engines and helicopters, sold 32 planes between January and March, its third busiest quarter by value in the last four years.

[Reuters](#)

Airbus piles pressure on engine maker Pratt as profits fall: Airbus posted a smaller than expected fall in first quarter core earnings as a strong performance at its helicopters segment helped offset the hit from fewer airplane deliveries and negative currency effects. The world's largest planemaker reaffirmed production and financial targets, but said the introduction of a freighter version of its A350 jetliner would slip by a few months to early 2026 and warned of supply chain disruption throughout the year. "The production ramp-up is difficult for everyone," Chief Executive Guillaume Faury said. In an unusual move, he singled out U.S. engine maker Pratt & Whitney for some of its troubles. The supplier is having to juggle between providing enough engines for new jet production while feeding enough spares to airlines to fill a gap left by faster-than-expected engine wear. "We see more problems on the engine side than we were seeing before, in particular with the GTF," Faury told reporters, referring to the latest-generation Pratt engine for the Airbus A220 and A320neo, which fly on short and medium routes. Faury declined to comment directly on the dispute but said Raytheon Technologies unit Pratt was finding it hard to support the airline fleet with enough spare parts and engines.

[Reuters](#)

Airbus says engine maker Pratt facing problems with jet support: The head of planemaker Airbus said on Wednesday U.S. engine maker Pratt & Whitney has been struggling to support its fleet of passenger jets with enough spare parts and engines. CEO Guillaume Faury declined comment on a decision by India's third-largest airline, Go First, to file for bankruptcy, which it blamed on problems with the durability of Pratt & Whitney's GTF engines on its Airbus 320neo jets. "This being said, there are issues with in-service support of the GTF that are leading to airlines having planes with temporary issues, and planes 'AOG' (grounded), and this is something that we are very closely monitoring," Faury told reporters during a results briefing. Raytheon Technologies unit Pratt & Whitney did not immediately respond to a request for comment. The world's largest aerospace contractor told investors last week that time on wing - the period between maintenance visits - had improved but was "not yet at the level we and our customers expect". The company said it was continuing to develop upgrades.

[Reuters](#)

Rheinmetall misses Q1 operating earnings expectations: Rheinmetall reported a bigger-than-expected decline first-quarter operating earnings on Thursday, which the German defence contractor attributed to negative earnings contributions from its Chinese joint venture and inflation-compensation payments to staff. The Duesseldorf-based firm achieved operating earnings of 73 million euros (\$80.9 million) in the three months through March, below analysts' average expectations for 81.4 million, according to a poll by Vara research. The firm's stock, that recently joined Germany's blue chip index fell 1.7% in early Frankfurt trade following the results. Rheinmetall's consolidated sales, however, grew by about 7.6% to reach 1.36 billion euros. Its order backlog stood at 28 billion euros in the first quarter, rising by 8% year-on-year. The German arms maker confirmed its 2023 guidance, aiming at sales within a range of 7.4 to 7.6 billion euros, as well as an operating margin of around 12%.

[Reuters](#)

Italy's Leonardo posts lower Q1 profits, but orders rise: Italy's state-controlled defence and aerospace group Leonardo on Wednesday posted lower first-quarter profits and earnings, but reported a jump in orders and backlog, and confirmed financial targets for 2023. CEO Alessandro Profumo also said Germany's Hensoldt, in which Leonardo has a 25% stake, would not be buying his company's defence electronics business, as was suggested last month by Hensoldt CEO Thomas Mueller. Profumo said there might be a "combination" in the sector but this would be "conceptually different from an acquisition," and he called Mueller's comments "an unfortunate misunderstanding". Leonardo's Q1 profit stood at 40 million euros (\$44.2 million) compared to 72 million euros 12 months earlier, while earnings before interest, taxes and amortisation (EBITA) fell year-on-year by 20.5% to 105 million euros. Revenues were broadly flat at around 3 billion euros, while new orders rose by 28.5% year-on-year to almost 4.9 billion euros "in particular thanks to the excellent performance of helicopters," the company said in a statement. Order backlog rose in the same period by 7.9% to 39.1 billion euros, equal to more than 2.5 years of production, while net debt fell to 3.7 billion euros as of end-March, down by 1.1 billion year-on-year, thanks to stronger cash generation.

[Reuters](#)

Spirit AeroSystems takes \$110 million in charges, profit hit on Boeing 737: Spirit AeroSystems Holdings Inc on Wednesday took a hefty \$110 million loss in reach-forward charges on Airbus and Boeing jet production and expects a further hit of \$31 million to full-year gross profit from disruptions related to a Boeing 737 MAX fuselage production problem. The company announced \$110 million in charges on the Airbus A220, Airbus A350 and Boeing 787 during its first-quarter results. Losses on the A220 amounted to about \$81 million, including \$46 million in nonrecurring supply-chain costs that were due to a "distressed supplier," Spirit CEO Tom Gentile told investors in an earnings call. Spirit's first-quarter profit decreased by \$17 million as a result of the 737 issue, and "additional costs are expected" beyond the \$31 million headwind to profit expected this year, "including costs Boeing may assert to repair certain models of previously delivered units in their factory and warranty costs related to affected 737 units in service," the company said. "However, the

[Reuters](#)

Exhibit 2: Global Aerospace and Defence Weekly Newsflow

Major news from the last week in the Global Aerospace & Defence Industry

Weekly newsflow**Source**

company cannot reasonably estimate the remaining potential costs at this time," it added. Spirit reported a first-quarter adjusted loss per share of \$1.69, wider than analyst expectations of a 30-cent loss per share, as per Refinitiv data. It reported \$1.4 billion in revenue, missing the analyst consensus of \$1.5 billion.

Thales first quarter sales rise 9%, reaffirms targets: France's Thales reaffirmed financial goals as it posted an underlying 9.4% increase in first-quarter sales on Friday, led by civil aerospace and digital identity businesses. Europe's largest defence electronics firm, which also makes civil avionics, in-flight entertainment systems and payment cards, said revenue reached 4.026 billion euros. Revenues from the Aerospace and Digital Identity & Security divisions increased 10.2% and 20.1%, respectively. New orders rose by an underlying 14% to 3.422 billion euros, led by a 31% increase in Defense & Security and in particular a large order for a submarine subsystem from an unspecified buyer. Chief Financial Officer Pascal Bouchiat said defence orders were driven by the overall geopolitical climate beyond the war in Ukraine, while travel demand - highlighted by brisk orders for new biometric passports - was supporting other activities. "We see airlines in recovery mode with significant increases in traffic," Bouchiat told reporters. Thales, however, struck a mixed note on supply chains. The supply of parts is improving for the digital identity business, stable for other electronic components and under more pressure for some types of mechanical hardware, Bouchiat said. For the full year, Thales targets organic sales up 4%-7%, an operating margin of 11.5%-11.8% and a book-to-bill ratio above 1.

[Reuters](#)

Embraer posts net loss in seasonally weaker Q1; shares fall: Embraer SA widened its net loss in the first quarter from a year ago, driving its shares lower on Thursday despite saying results came in within management expectations for a seasonally weaker period and reaffirming full-year forecasts. Brazil-traded shares in the company, the world's No.3 planemaker after Boeing and Airbus, were down more than 7% in morning trading, making it the biggest faller on Brazil's Bovespa stock index, which was near flat. The planemaker reported a quarterly adjusted net loss of \$88.9 million, larger than the \$75.3 million loss seen a year ago, saying it also burnt more cash in the period as it prepares to increase deliveries in the next quarters. "Seasonally weak Q1 was lighter than expected in gross margins and book-bill with larger cash use," analysts at TD Cowen said. "Investors likely will be somewhat disappointed". The Brazilian firm had already reported deliveries of 15 aircraft in the period, up 7% on the previous year but well below the 80 jets delivered in the fourth quarter, which tends to be busier for the company.

[Reuters](#)

Denmark proposes spending extra \$5.7 billion for armed forces over 10 years: Denmark's government on Thursday proposed allocating an extra 38 billion Danish crowns (\$5.65 billion) over the coming 10 years to upgrade its armed forces and to cope with a backlog in investments. The allocation would come in addition to Denmark's commitment last year to permanently increase its spending on defence and security to 2% of the country's gross domestic product by the end of 2030, a key goal for NATO member states.

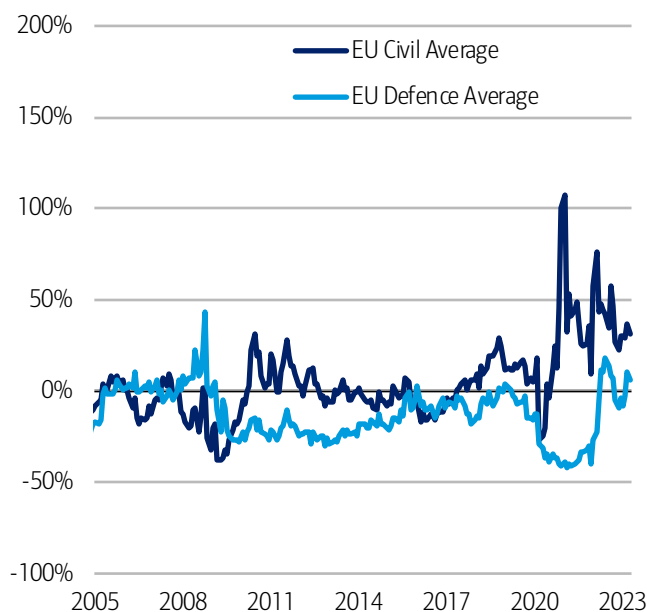
[Reuters](#)

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Global A&D Valuations

Exhibit 14: EU Civil & Defence 12mth fwd. PE rel SXNP (industrials).

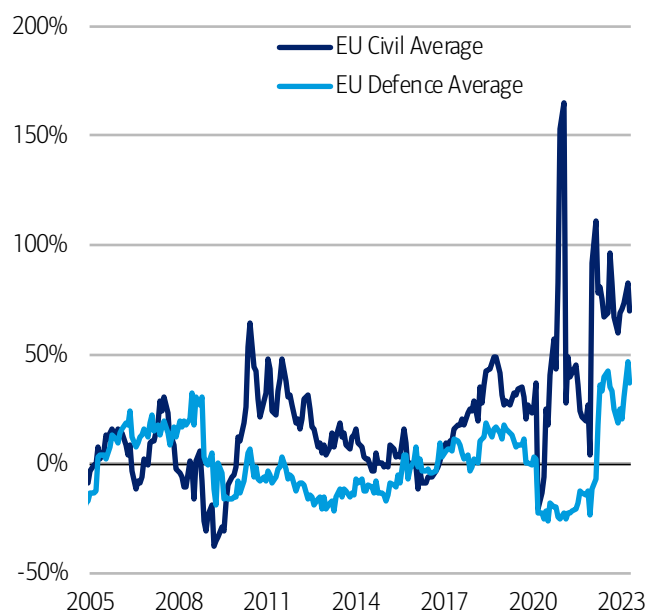
EU Civil is currently trading at 31.8% premium to SXNP, and defence is trading at 6.4% premium to index (04/05/2023)



Source: BofA Global Research estimates. EU Defence = Thales and Finmeccanica, BAE, QQ, Rheinmetall, SAAB, Hensoldt, Kongsberg EU civil: Airbus, MTU, Safran, Senior
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Exhibit 15: EU Civil & Defence 12mth fwd. PE rel SXXP (market).

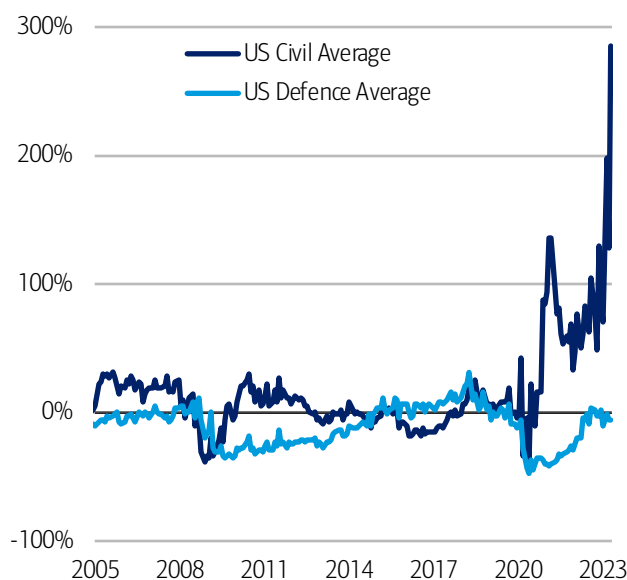
EU Civil is currently trading at a 69.9% premium to SXXP, and defence is trading at 37.1% premium to SXXP (04/05/2023)



Source: BofA Global Research estimates. EU Defence = Thales and Finmeccanica, BAE, QQ, Rheinmetall, SAAB, Hensoldt, Kongsberg EU civil: Airbus, MTU, Safran, Senior
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Exhibit 16: US Civil & Defence 12mth fwd. PE rel S&P500 Industrials.

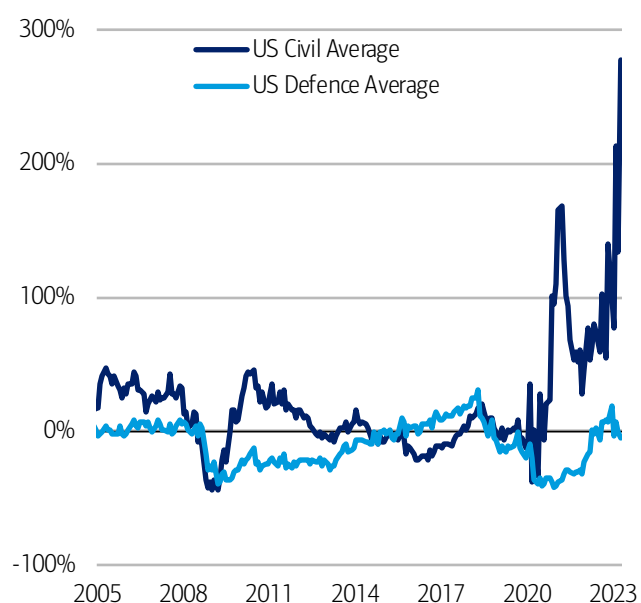
US Civil is currently trading at a 284.9% premium to index, and defence is trading at a 5.8% discount (04/05/2023)



Source: BofA Global Research estimates
US Civil: Boeing, CAE, Crane Co, Hexcel, Triumph Textron. US Defence: General Dynamics, L3, Lockheed Martin, Moog, Northrop Grumman
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Exhibit 17: US Civil & Defence 12mth fwd. PE rel S&P500.

US Civil is currently trading at a 278% premium to index, and defence is trading at a 4.7% discount (04/05/2023)



Source: BofA Global Research estimates
US Civil: Boeing, CAE, Crane Co, Hexcel, Triumph Textron. US Defence: General Dynamics, L3, Lockheed Martin, Moog, Northrop Grumman
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Where numbers are moving

Sector FY23 EPS over the last month saw 1.9% increase with Civil OE names seeing 0.2% increase, civil aftermarket names seeing 1.8% increase and defence names seeing 1.3% increase. The major estimate increase was Dassault (+8%) and decrease was Leonardo (-2.8%) during last month.

We will continue to monitor the consensus EPS data on a weekly basis.

Exhibit 7: EPS Revision to- 04th May, 2023

EPS revisions have been strongly negative in last 12m due to COVID

	1M	3M	6M	1Y
Airbus	0.2%	-8.1%	-14.8%	-18.3%
BAE Systems	0.9%	2.7%	3.3%	10.3%
Dassault	8.0%	16.4%	13.6%	11.4%
Hensoldt	0.5%	-2.1%	-9.7%	-13.3%
Kongsberg	3.3%	4.6%	6.5%	19.3%
Leonardo	-2.8%	-5.0%	-9.1%	-9.8%
MTU	3.0%	4.9%	9.2%	10.8%
QinetiQ	2.2%	3.2%	6.7%	7.7%
Rheinmetall	2.7%	6.3%	5.0%	0.1%
Rolls-Royce	-0.2%	43.1%	33.5%	-3.1%
SAAB	2.9%	8.8%	1.0%	7.8%
Safran	0.5%	-0.1%	0.9%	0.9%
Senior	2.9%	2.4%	-7.5%	-9.2%
Thales	0.6%	1.7%	-0.7%	1.7%
EU Civil OE	0.2%	-8.1%	-14.8%	-18.3%
EU Civil Aftermarket	1.8%	2.4%	5.1%	5.9%
EU Defence Average	1.3%	2.5%	0.4%	3.0%
EU Sector Average	1.9%	2.7%	0.3%	1.5%

Source: DataStream *QinetiQ EPS revisions are 2021 given march year end

BofA GLOBAL RESEARCH

Exhibit 8: 12mth FWDPE to- 04th May, 2023

Civil Aerospace has started to re-rate on hopes for travel reopening

	1M	3M	6M	1Y
Airbus	-1.7%	7.8%	26.8%	10.2%
BAE Systems	4.2%	12.6%	15.1%	8.3%
Dassault	-10.1%	-7.2%	3.9%	-14.1%
Hensoldt	-14.0%	27.4%	41.2%	9.4%
Kongsberg	6.9%	12.0%	17.0%	-3.8%
Leonardo	-7.9%	21.2%	43.1%	1.0%
MTU	-3.1%	-7.3%	12.9%	-7.7%
QinetiQ	10.1%	4.6%	-5.3%	-4.2%
Rheinmetall	-3.2%	3.5%	42.7%	-4.1%
Rolls-Royce	-7.8%	-12.7%	14.2%	9.9%
SAAB	-8.0%	23.7%	43.7%	28.2%
Safran	0.4%	0.5%	11.7%	3.5%
Senior	-5.0%	1.3%	14.4%	-23.8%
Thales	1.7%	12.1%	14.0%	-3.6%
EU Civil OE	-1.7%	7.8%	26.8%	10.2%
EU Civil Aftermarket	-3.5%	-6.5%	12.9%	1.9%
EU Defence Average	-1.8%	17.1%	26.1%	2.3%
Sector Average	-2.3%	8.6%	21.6%	0.0%

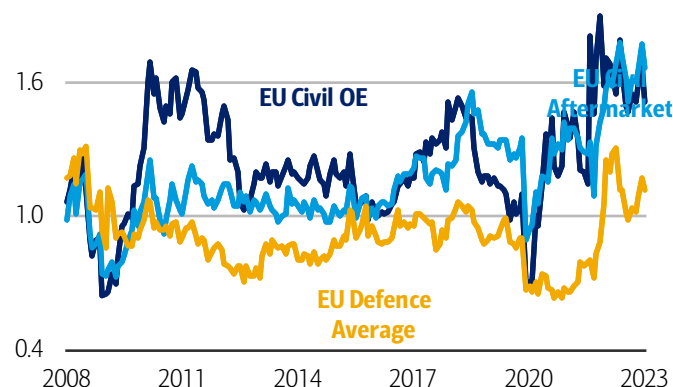
Source: DataStream

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Global PE Trends

Exhibit 20: EU A&D Sector Valuations -relative 12mnth FWD PE

Civil Aerospace has re-rated at end of 2020, Defence at trough valuation

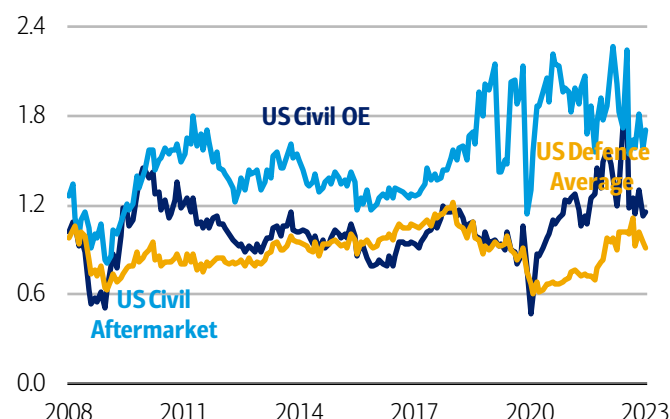


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 21: US A&D Sector Valuations -relative 12mnth FWD PE

US Defence valuations appear to have found trough vs Europe

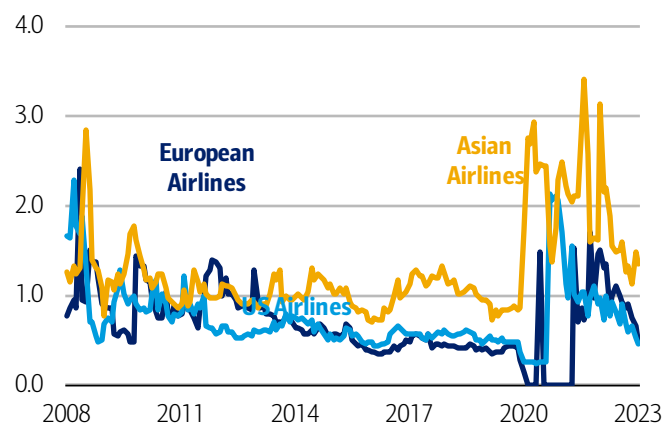


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 22: Global Airlines Valuations -relative 12mnth FWD PE

Airlines have started to re-rate on hopes of travel reopening

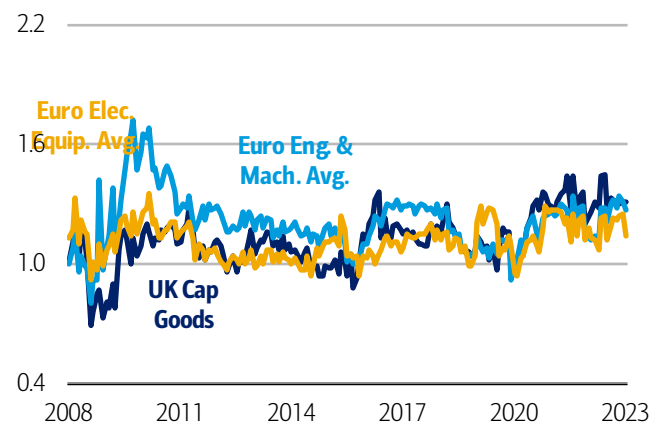


Source: DataStream

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Exhibit 23: EU Industrials Sector Valuations -relative 12mnth FWD PE

European and UK Capital Goods started to re-rate in H220

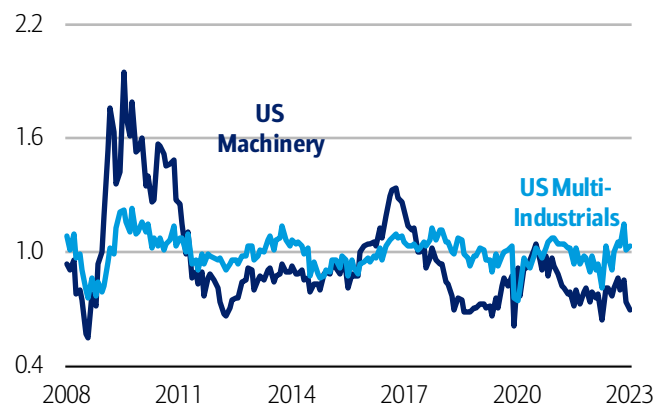


Source: DataStream

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Exhibit 24: US Industrials Sector Valuations -relative 12mnth FWD PE

US Industrials started to re-rate in H220



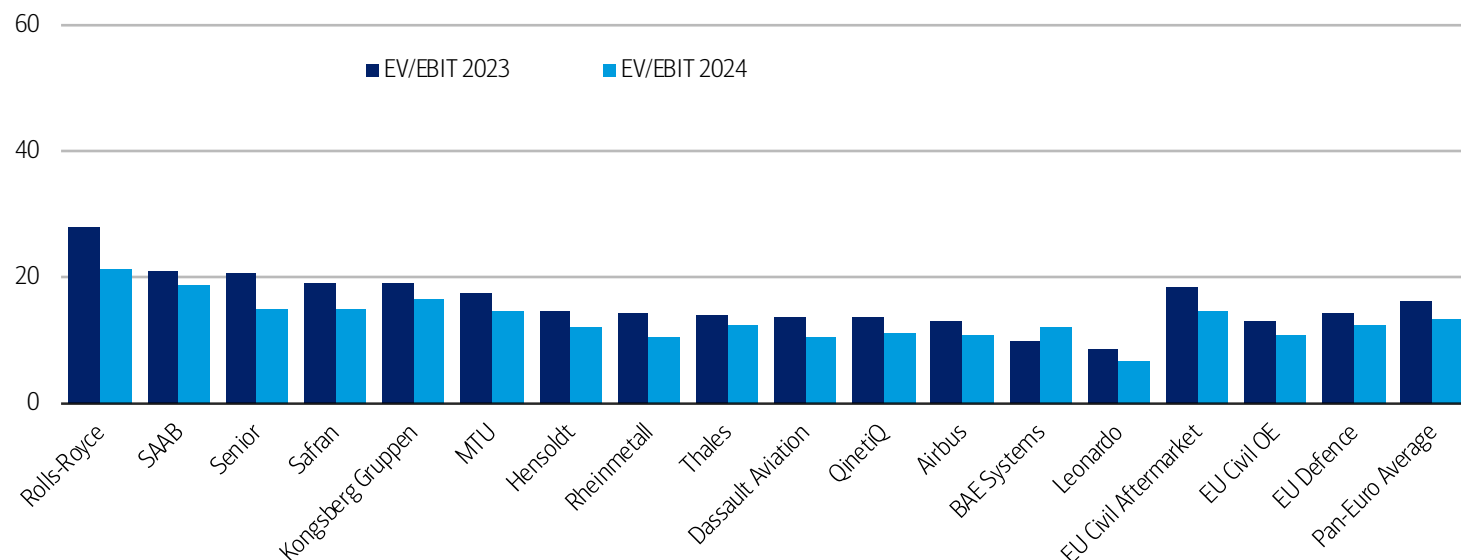
Source: DataStream

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Valuations and PE ranges

Exhibit 25: EV/EBIT for 2023 and 2024

2023 (Pan-Euro avg=16.27) and 2024 (Pan Euro avg=13.37) ordered in terms of 2023, most expensive to least

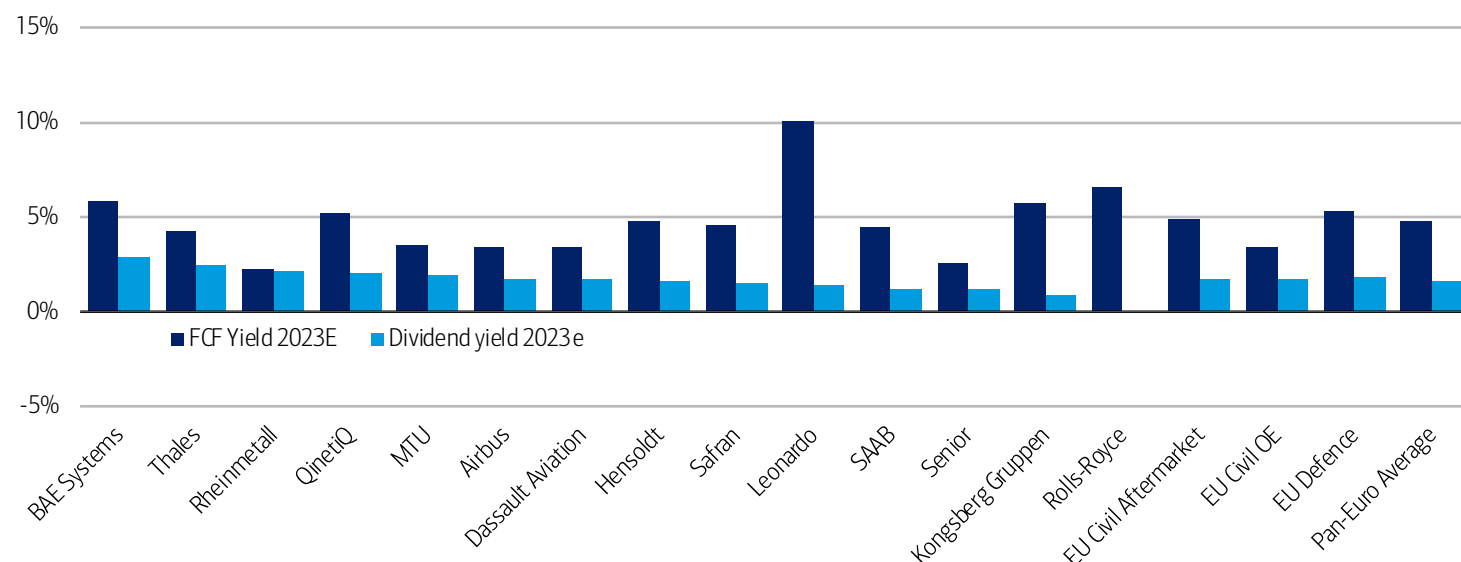


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 26: Free Cash Flow Yield % and Dividend Yield %

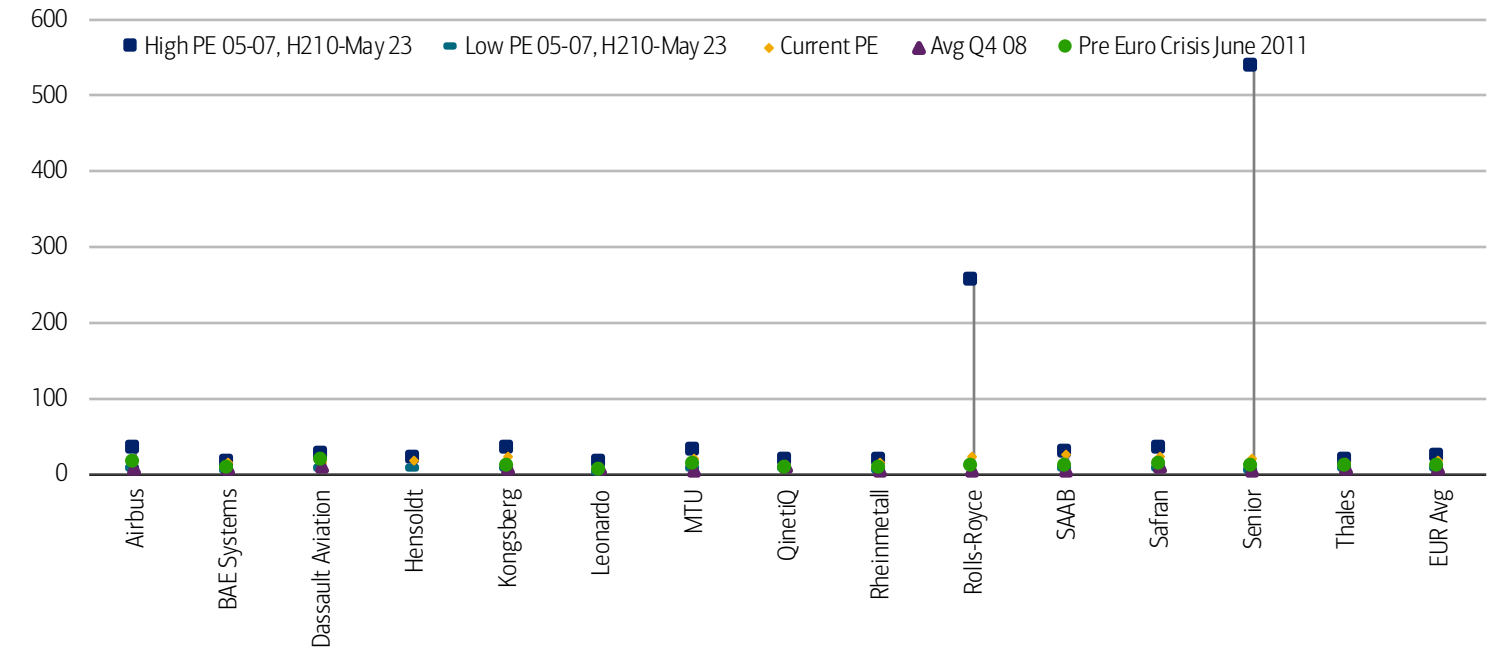
Free cash flow Pan Euro avg= 4.76% and dividend yield avg=1.61%



Source: BofA Global Research estimates

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Exhibit 27: European A&D Stock-PE Candle light Exhibit
Civil Aerospace companies trade at the top of their historical PE ranges on post COVID-19 reopening- hopes. Defence trades at bottom of ranges due to low sector average multiples (ESG pressures, budget uncertainty)



Source: BofA Global Research estimates

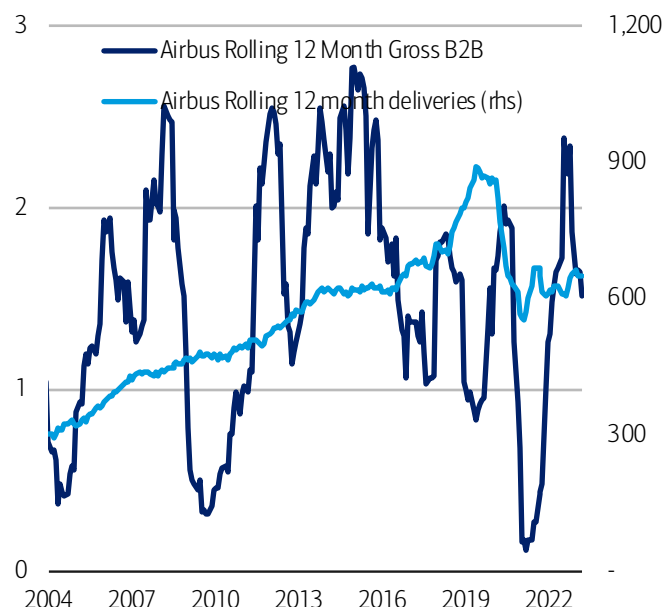
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Global book to bill trends

Exhibit 28: Airbus 12mnth Rolling B2B and deliveries

Airbus delivered 566 aircraft in 2020 driving a step down in 12m rolling deliveries - new orders had also collapsed driving weak B2B

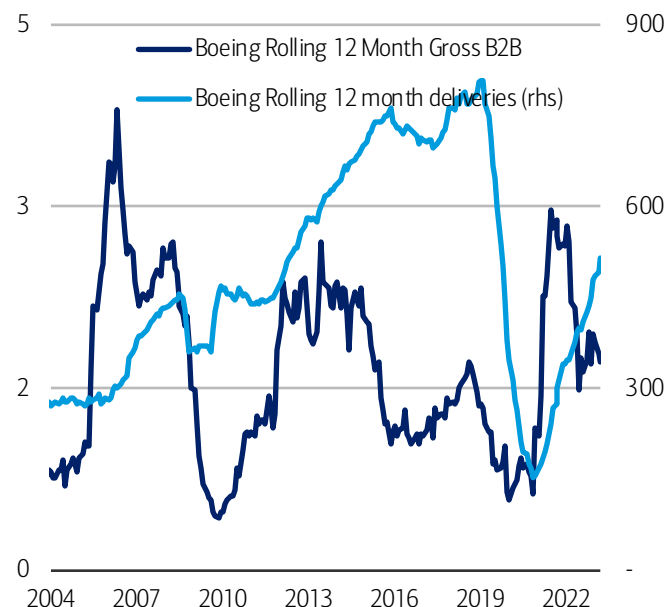


Source: BofA Global Research estimates

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Exhibit 29: Boeing 12mnth Rolling B2B and deliveries

Boeing's Gross B2B and deliveries have fallen significantly after the 737MAX grounding in 2019

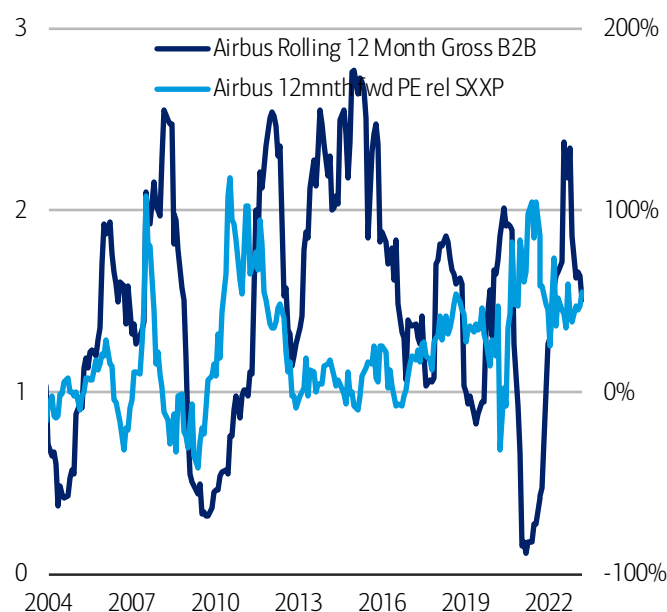


Source: BofA Global Research estimates

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Exhibit 30: Airbus 12mnth Rolling B2B vs. Air 12mnth fwd PE rel SXXP

Airbus has started to re-rate on reopening optimism

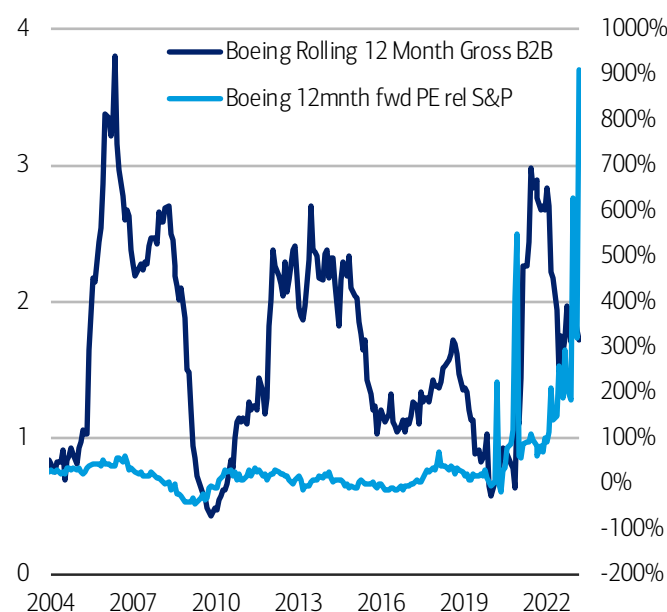


Source: BofA Global Research estimates

BofA GLOBAL RESEARCH

Exhibit 31: Boeing 12mnth Rolling B2B vs. BA 12mnth fwd PE rel S&P

Boeing's PE multiple has become disligated due to MAX impact



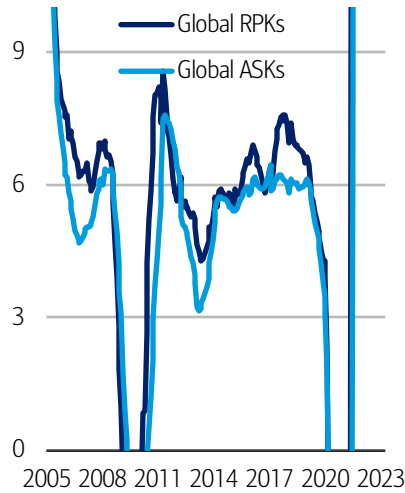
Source: BofA Global Research estimates

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Air traffic & Capacity

Exhibit 32: Global RPKs and ASKs (%)

COVID-19 drove global traffic growth to all time low levels in 2020

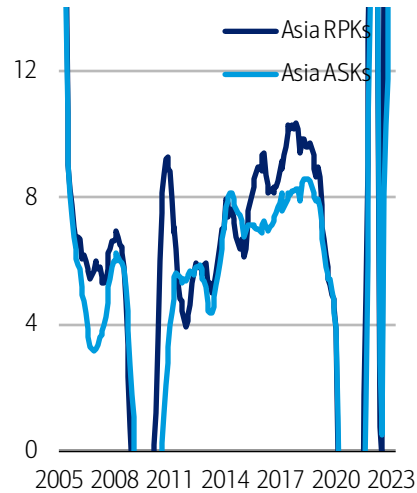


Source: IATA

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Exhibit 33: Asia RPKs and ASKs (%)

Asia-Pacific has benefitted from more resilient Chinese domestic traffic

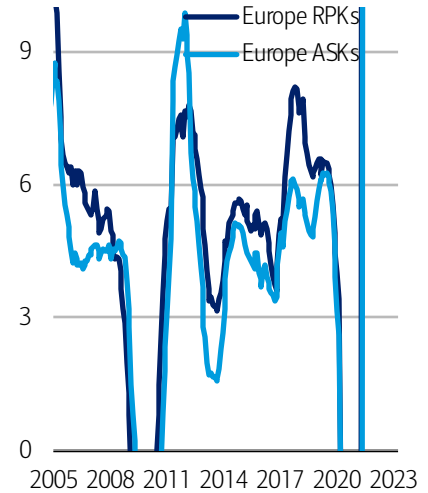


Source: IATA

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Exhibit 34: Europe RPKs and ASKs (%)

Europe has been the weakest region due to cross-border travel restrictions

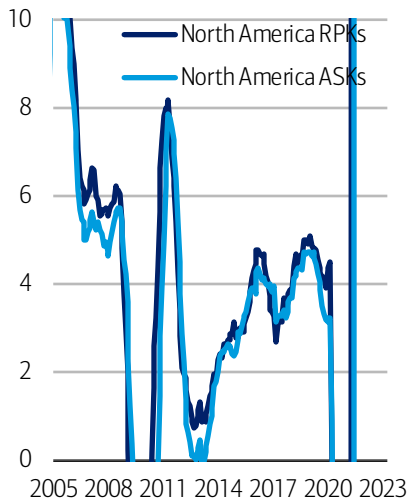


Source: IATA

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Exhibit 35: North America RPKs and ASKs (%)

NA has higher domestic mix than Europe

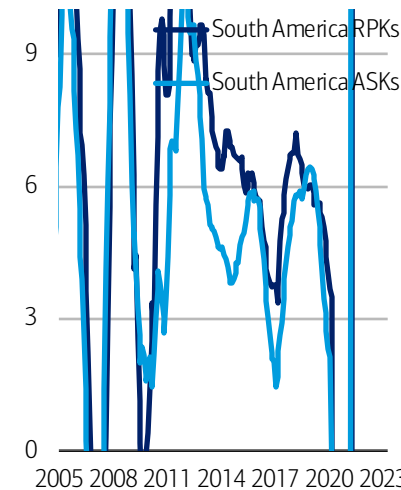


Source: IATA

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Exhibit 36: South America RPKs and ASKs (%)

South America relies heavily on intracontinental travel

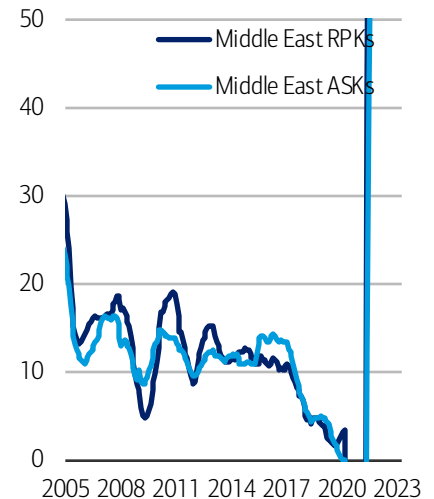


Source: IATA

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Exhibit 37: Middle East RPKs and ASKs (%)

Middle East relies heavily on international long-haul traffic through major airport hubs



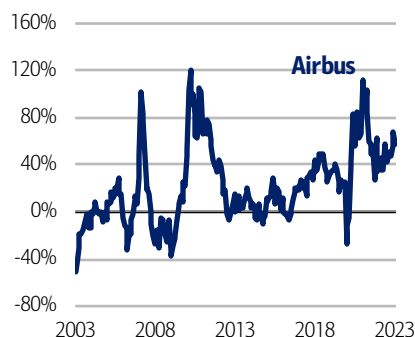
Source: IATA

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Relative stock valuations

Exhibit 38: Airbus 12 mnth fwd PE rel SXXP

Airbus has re-rated strongly on re-opening optimism

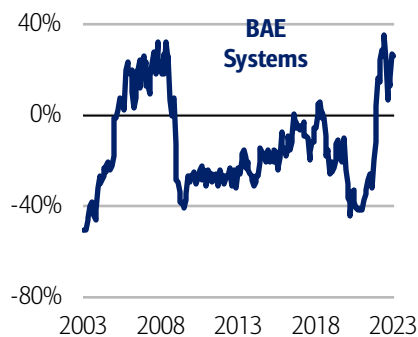


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 39: BAE 12 mnth fwd PE rel SXXP

BAE has de-rated in line with broader Defence sector and slowing US budget

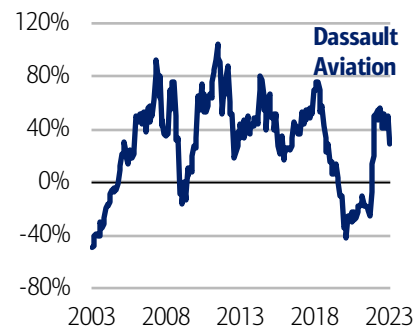


Source: DataStream

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Exhibit 40: Dassault 12 mnth fwd PE rel SXXP

Dassault has de-rated heavily on business jet order weakness and defence de-rating



Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 41: Kongsberg 12 mnth fwd PE rel SXXP

Kongsberg has started to re-rate on improving Maritime market, Defence growth

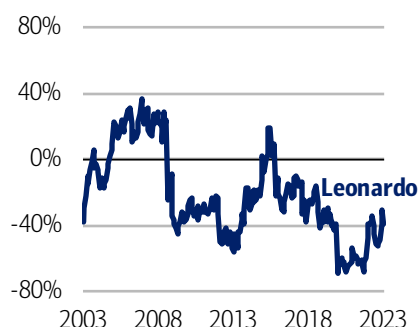


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 42: Leonardo 12 mnth fwd PE rel SXXP

Leonardo has de-rated strongly due to strong COVID impact, defence de-rating, ESG

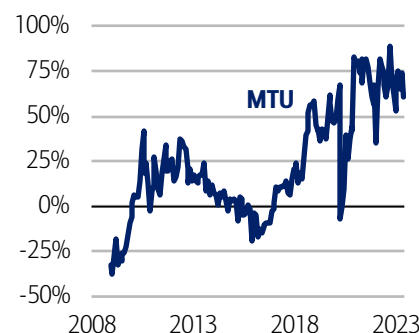


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 43: MTU 12 mnth fwd PE rel SXXP

MTU has re-rated strongly on re-opening optimism and balance sheet confidence

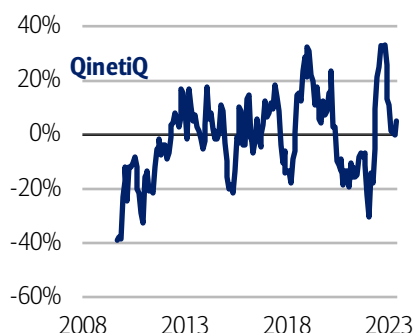


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 44: QinetiQ 12 mnth fwd PE rel SXXP

QinetiQ has de-rated in line with Defence peer group and lower earnings growth

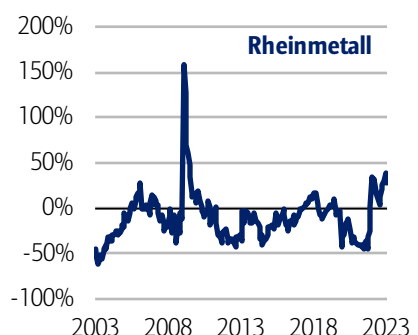


Source: DataStream

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Exhibit 45: Rheinmetall 12 mnth fwd PE rel SXXP

Rheinmetall has de-rated in line with defence peers and due to weaker Automotive outlook

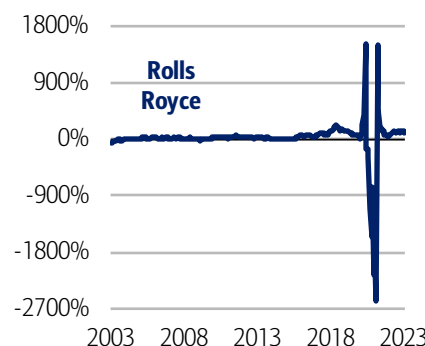


Source: DataStream

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Exhibit 46: Rolls Royce 12 mnth fwd PE rel SXXP

RR's valuation has broken from normal levels due to rights issue, negative earnings

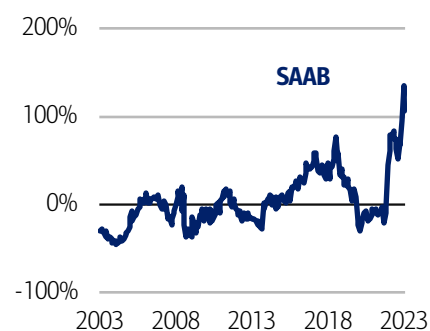


Source: DataStream

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Exhibit 47: SAAB 12 mnth fwd PE rel SXXP

SAAB has de-rated in line with broader sector de-rating and uncertainty over execution

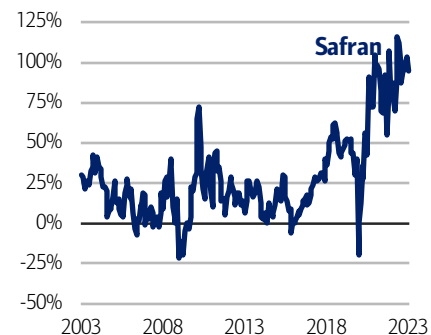


Source: DataStream

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Exhibit 48: Safran 12 mnth fwd PE rel SXXP

Safran has re-rated strongly on re-opening optimism

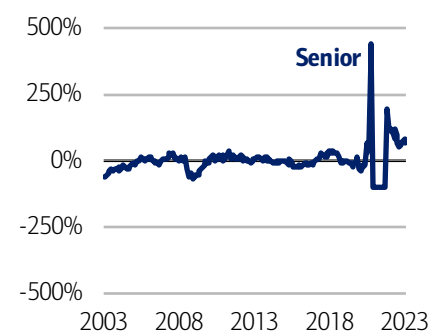


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 49: Senior 12 mnth fwd PE rel SXXP

Senior's valuation has broken from normal levels due to COVID-19 impact on earnings

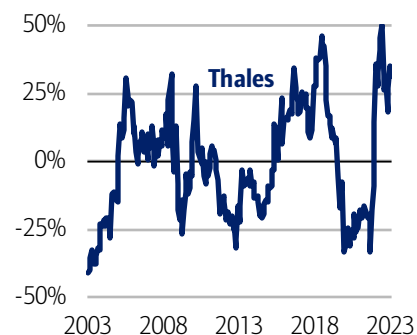


Source: DataStream

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Exhibit 50: Thales 12 mnth fwd PE rel SXXP

Thales has de-rated in line with broader Defence sector de-rating



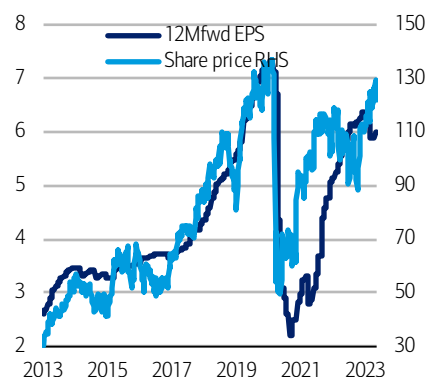
Source: DataStream

BofA GLOBAL RESEARCH

A&D EPS Trends

Exhibit 51: Airbus EPS vs Share price

Airbus faced strongly negative earnings revisions due to lower deliveries, COVID cost

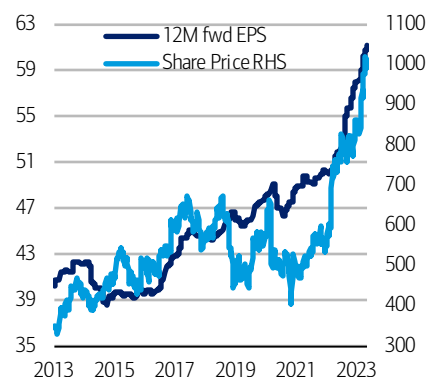


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 52: BAE EPS vs Share price

BAE EPS expectations have grown reflecting M&A, growth but share price has weakened

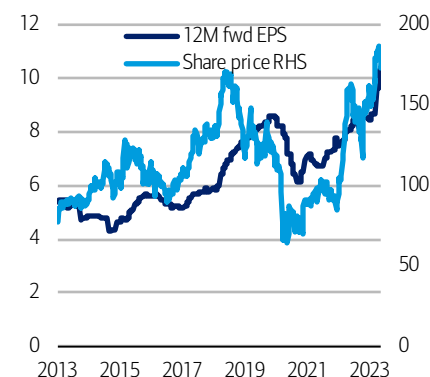


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 53: Dassault EPS vs Share price

Dassault EPS and share price have fallen due to weak business jet outlook

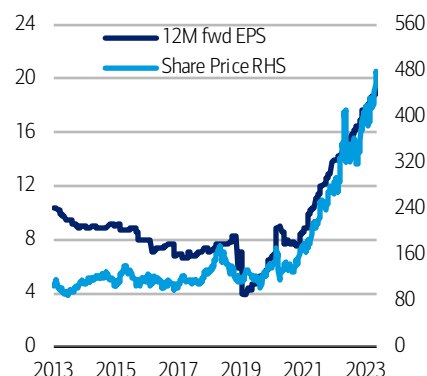


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 54: Kongsberg EPS vs Share price

Kongsberg EPS/share price has been positively correlated since 2019

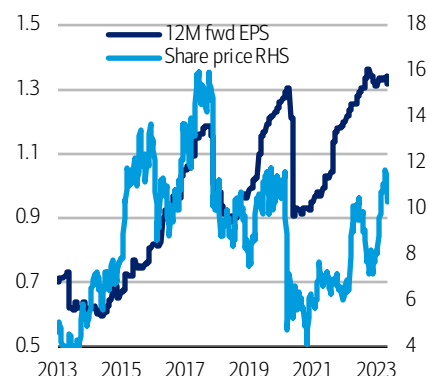


Source: DataStream

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Exhibit 55: Leonardo EPS vs Share price

Leonardo EPS expectations have followed share price reaction due to COVID impacts

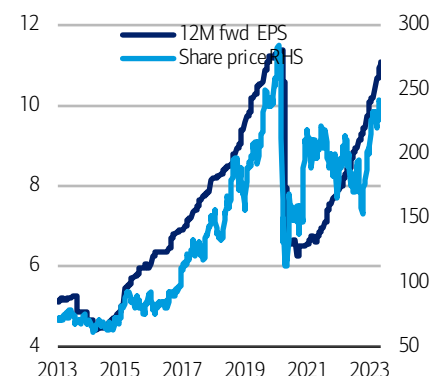


Source: DataStream

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Exhibit 56: MTU EPS vs Share price

MTU faced strongly negative earnings revisions due to weaker OE and Aftermarket

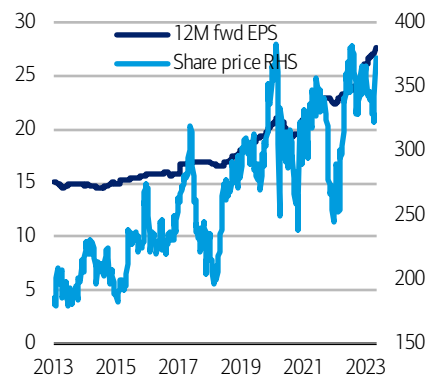


Source: DataStream

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Exhibit 57: QinetiQ EPS vs Share price

QinetiQ EPS expectations have been growing steadily with limited impact from COVID-19

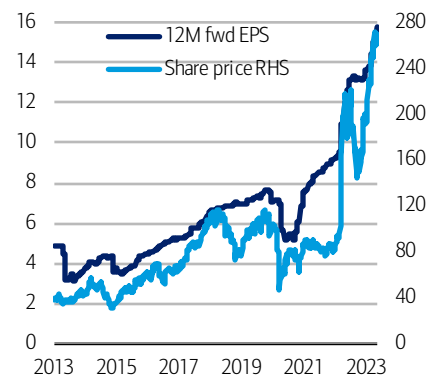


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 58: Rheinmetall EPS vs Share price

Rheinmetall EPS expectations deteriorated in 2020 on weaker Automotive outlook

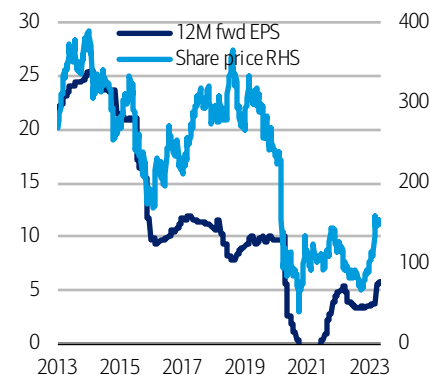


Source: DataStream

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Exhibit 59: Rolls Royce EPS vs Share price

Rolls Royce's share price was impacted by rights issue and COVID-19 pressure on FCF

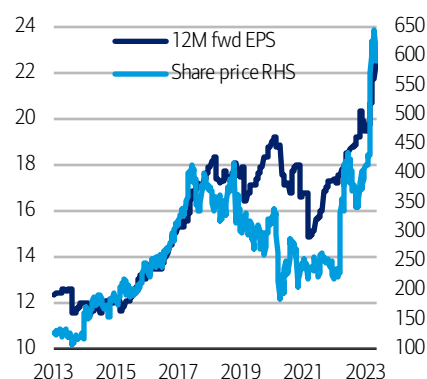


Source: DataStream

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Exhibit 60: SAAB EPS vs Share price

SAAB has seen EPS downgrades in 2020 due to COVID costs on Aeronautics, IPS

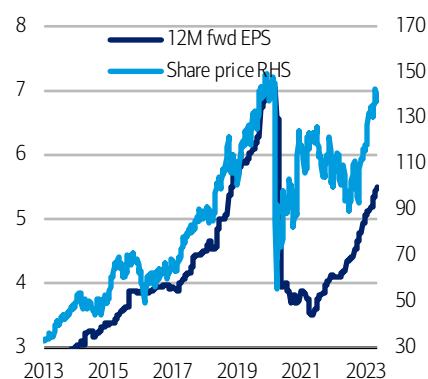


Source: DataStream

BofA GLOBAL RESEARCH

Exhibit 61: Safran EPS vs Share price

Safran faced strongly negative earnings revisions due to weaker OE and Aftermarket

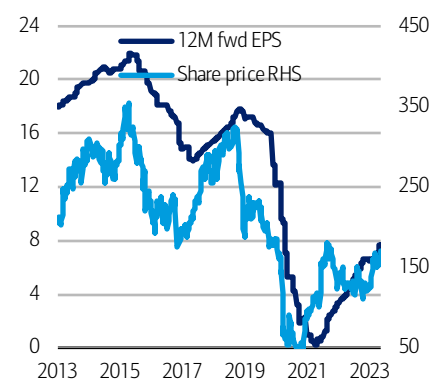


Source: DataStream

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Exhibit 62: Senior EPS vs Share price

Senior's earnings have been impacted by 737MAX grounding and lower production

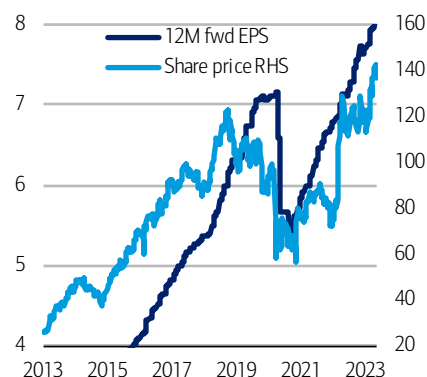


Source: DataStream

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Exhibit 63: Thales EPS vs Share price

EPS expectations fell due to COVID impact on Civil Aerospace, Transportation



Source: DataStream

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A&D Compsheet

Exhibit 53: A&D Compsheet

Below we highlight our valuation peer comparison table

Europe					EV/EBITDA			EV/EBIT			PE (x)			DY			FCF yield		
	Rating	Currency	Price	Mcap (USD)	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Airbus	1 - Buy	EUR	122	105,484	9.9	8.6	6.8	13.2	10.9	8.2	20.5	16.4	11.6	1.7%	2.1%	3.0%	3.4%	6.1%	8.0%
BAE Systems	1 - Buy	GBP	993	38,105	8.1	9.5	8.9	9.9	12.2	11.3	16.3	14.1	12.1	2.9%	3.1%	3.2%	5.8%	6.4%	7.4%
Dassault Aviation	2 - Neutral	EUR	173	15,842	11.3	8.8	6.0	13.8	10.4	6.9	18.1	14.9	11.4	1.7%	2.0%	2.7%	3.4%	2.1%	0.3%
Hensoldt	2 - Neutral	EUR	32	3,652	11.1	9.2	7.5	14.7	12.0	9.4	19.1	15.7	13.0	1.6%	2.2%	3.1%	4.7%	6.2%	6.5%
Kongsberg Gruppen	2 - Neutral	NOK	476	7,871	14.6	12.7	11.6	19.0	16.5	15.3	23.8	20.2	18.8	0.8%	0.9%	1.0%	5.7%	6.7%	5.6%
Leonardo	1 - Buy	EUR	10	6,528	5.1	4.2	3.4	8.5	6.6	5.3	10.5	8.2	6.8	1.4%	1.8%	2.2%	10.1%	12.6%	15.6%
MTU	2 - Neutral	EUR	229	12,859	11.8	10.2	9.0	17.6	14.5	12.4	19.9	16.3	13.6	1.9%	2.4%	2.8%	3.5%	5.1%	6.1%
QinetiQ	3 - Underperform	GBP	373	2,683	10.1	8.5	7.6	13.6	11.1	9.8	15.1	13.6	12.5	2.1%	2.2%	2.3%	5.3%	6.0%	7.9%
Rheinmetall	2 - Neutral	EUR	262	12,321	10.0	7.6	6.2	14.5	10.6	8.4	18.9	13.9	10.7	2.1%	2.9%	3.7%	2.3%	2.5%	4.9%
Rolls-Royce	1 - Buy	GBP	149	15,696	9.5	8.1	6.5	27.9	21.2	14.7	23.2	18.8	14.2	0.0%	0.7%	0.7%	6.5%	10.6%	11.6%
SAAB	1 - Buy	SEK	591	7,674	11.9	11.0	9.6	21.0	18.7	15.6	27.7	23.5	19.9	1.2%	1.4%	1.6%	4.4%	3.2%	3.2%
Safran	1 - Buy	EUR	137	64,529	13.8	11.1	9.4	19.3	15.0	12.3	25.7	19.4	15.4	1.6%	2.1%	2.6%	4.5%	5.2%	6.6%
Senior	3 - Underperform	GBP	170	896	8.9	7.4	6.3	20.7	14.9	11.8	27.5	18.6	14.4	1.1%	1.7%	2.1%	2.6%	4.1%	6.1%
Thales	1 - Buy	EUR	137	31,307	8.5	8.0	7.3	14.0	12.3	10.7	15.9	14.2	12.2	2.5%	2.8%	3.3%	4.3%	4.5%	5.2%
EU Civil Aftermarket					12.8	10.7	9.2	18.4	14.7	12.4	22.8	17.9	14.5	1.7%	2.2%	2.7%	4.9%	7.0%	8.1%
EU Civil OE					9.9	8.6	6.8	13.2	10.9	8.2	20.5	16.4	11.6	1.7%	2.1%	3.0%	3.4%	6.1%	8.0%
EU Defence					9.9	8.8	7.8	14.4	12.5	10.7	18.4	15.4	13.2	1.8%	2.2%	2.6%	5.3%	6.0%	7.0%
Pan-Euro Average					10.3	8.9	7.6	16.3	13.4	10.9	20.2	16.3	13.3	1.6%	2.0%	2.5%	4.8%	5.8%	6.8%

Non Europe					EV/EBITDA			EV/EBIT			PE (x)			DY			FCF yield		
	Rating	Currency	Price	Mcap (USD)	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025	2023	2024	2025
Boeing	2 - Neutral	USD	197	118,544	36.6	18.2	14.9	63.9	23.1	18.2	-281.5	40.6	26.6	0.0%	0.0%	0.0%	3.1%	7.9%	11.6%
Embraer	1 - Buy	USD	14	2,483	6.9	5.1	3.8	9.6	6.6	4.7	7.3	6.0	4.6	0.0%	0.0%	0.0%	12.4%	15.2%	18.7%
General Dynamics	1 - Buy	USD	209	57,295	13.1	11.3	10.1	15.8	13.3	11.8	16.4	13.8	12.1	2.6%	2.8%	3.0%	6.1%	8.3%	8.5%
HEICO	2 - Neutral	USD	168	20,164	32.5	28.5	26.0	38.5	34.0	30.6	56.8	48.6	43.0	0.1%	0.1%	0.1%	2.1%	2.5%	2.8%
Hexcel Corp	2 - Neutral	USD	71	6,018	17.7	14.9	13.8	26.9	21.1	19.0	37.5	28.0	24.2	0.7%	0.7%	0.7%	2.3%	3.5%	4.1%
Huntington Ing Industries	3 - Underperform	USD	193	7,688	11.6	9.9	9.1	15.5	12.7	11.7	12.9	10.6	9.6	2.6%	2.9%	3.2%	5.5%	8.9%	9.2%
L3Harris	2 - Neutral	USD	186	35,187	11.0	10.8	10.2	15.3	14.5	13.3	15.2	14.4	13.7	2.9%	3.2%	3.3%	5.9%	6.5%	7.5%
Lockheed Martin	2 - Neutral	USD	452	114,452	13.6	13.5	13.3	14.9	14.8	14.6	16.8	16.1	15.7	2.7%	3.0%	3.3%	5.6%	5.9%	6.2%
Mercury Systems	6 - No Rating	USD	39	2,276	57.9	51.0	45.4	78.7	66.4	56.1	19.6	17.4	15.7	0.0%	0.0%	0.0%	0.1%	6.6%	6.5%
Northrop Grumman	1 - Buy	USD	442	67,157	14.5	13.5	12.1	19.5	18.0	16.0	19.7	18.3	16.0	1.7%	1.8%	2.0%	3.1%	3.8%	5.0%
Raytheon	1 - Buy	USD	96	140,153	12.0	11.9	17.2	17.4	17.4	17.2	19.0	18.3	16.7	2.4%	2.6%	2.7%	3.4%	4.3%	5.1%
Spirit Aerosystems	3 - Underperform	USD	25	2,589	7.6	6.2	4.9	14.1	9.4	6.8	23.4	10.7	6.5	0.0%	0.0%	0.0%	0.8%	3.6%	13.0%
Textron	2 - Neutral	USD	65	13,182	9.6	8.6	7.9	13.0	11.5	10.3	12.7	12.1	10.5	0.1%	0.1%	0.1%	8.1%	8.4%	9.1%
TransDigm Ltd	1 - Buy	USD	760	41,494	20.2	18.0	16.2	22.3	19.7	17.6	36.0	30.0	24.5	0.0%	0.0%	0.0%	3.3%	3.4%	4.3%
Triumph Group	1 - Buy	USD	10	655	15.9	12.3	10.4	13.8	14.9	12.3	16.8	20.2	11.2	0.0%	0.0%	0.0%	-9.8%	2.9%	7.7%
US Civil Aftermarket					20.2	18.0	16.2	22.3	19.7	17.6	36.0	30.0	24.5	0.0%	0.0%	0.0%	3.3%	3.4%	4.3%
US Civil OE					17.9	12.0	10.4	29.5	16.3	13.6	-52.0	22.9	17.0	0.2%	0.2%	0.2%	3.6%	5.9%	9.4%
US Defence					12.9	12.2	12.9	16.8	15.7	14.9	17.1	15.8	14.5	2.4%	2.6%	2.8%	4.4%	5.8%	6.4%
US Average					18.7	15.6	14.4	25.3	19.8	17.4	1.9	20.3	16.7	1.1%	1.1%	1.2%	3.5%	6.1%	8.0%

Source: BofA Global Research estimates

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A&D Calendar

Exhibit 54: A&D Calendar

Calendar of events for A&D companies

Date	Subject	Event
18 Jan 23	QinetiQ	9M23 trading update
08 Feb 23	Vestas	FY22 Annual report
10 Feb 23	Kongsberg	FY22 results
10 Feb 23	SAAB	FY22 results
16 Feb 23	Airbus	FY22 results
16 Feb 23	MTU	FY22 results
17 Feb 23	Eutelsat	1H23 results
17 Feb 23	Safran	FY22 results
23 Feb 23	BAE Systems	FY22 preliminary results
23 Feb 23	Rolls-Royce	FY22 results
08 Mar 23	Thales	FY22 results
09 Mar 23	Dassault Aviation	FY22 results
16 Mar 23	Rheinmetall	FY22 results
28 Mar 23	Nordex	FY22 Annual report
30 Mar 23	Kongsberg	FY22 Annual report
05 Apr 23	SAAB	AGM
12 Apr 23	Vestas	AGM
26 Apr 23	SAAB	1Q23 results
26 Apr 23	MTU	1Q23 results
26 Apr 23	Safran	1Q23 results
27 Apr 23	Kongsberg	1Q23 results
04 May 23	BAE Systems	AGM
04 May 23	Rheinmetall	1Q23 results
05 May 23	Thales	1Q23 results
09 May 23	Rheinmetall	AGM
10 May 23	Thales	AGM
10 May 23	Vestas	1Q23 results
11 May 23	Kongsberg	AGM
11 May 23	MTU	AGM
11 May 23	Nordex	1Q23 results
11 May 23	Rolls-Royce	AGM and Trading Update
16 May 23	Dassault Aviation	AGM
25 May 23	Safran	AGM
06 Jun 23	Nordex	AGM

Source: Company report

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster ^{R1}
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

^{R1} Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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