

## Industry Top Trends 2022

### Aerospace and Defense

#### Signs Of Life In Commercial Aerospace, But It's A Long Runway Back



*This report does not constitute a rating action*

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#### What's changed?

**Recovery picks up for commercial aerospace.** Air traffic rebound in some large domestic markets globally has sparked demand for narrow-body aircraft.

**Boeing is not out of the woods yet.** 737 MAX flying and deliveries resume but it will take years to draw down inventory, while Airbus continues to widen its lead in the narrow-body market. The 787 delivery-halt due to quality issues persists.

**Defense spending in U.S. and Europe stable to positive.** U.S. defense bill foresees modestly higher outlays and shift in priorities to Asia-Pacific. European spending continues to gradually rise due to as countries modernize their armed forces.

#### What are the key assumptions for 2022?

**Global air travel continues a gradual, uneven recovery.** Orders and deliveries of new aircraft mostly follow air traffic trends.

**Boeing (finally) receives approval to fly 737 MAX in China and resumes 787 deliveries.** The timing of these milestones for Boeing and suppliers are uncertain. Meanwhile Airbus expands production of its successful A320 neo narrowbodies.

**Defense companies should see mostly improving results.** These companies were less affected by the pandemic, and used the opportunity to streamline cost bases, invest in more modern production techniques, and benefit from solid demand.

#### What are the key risks around the baseline?

**COVID-19 variants could slow air traffic recovery, as delta and omicron have shown.** The timing and strength of international and business travel, in particular, remain uncertain and at risk from the pandemic.

**China may leave the MAX grounded.** Boeing has apparently cleared the technical hurdles, but the final OK is largely political. Even if that comes through, Boeing may have lost share permanently to Airbus.

**Aggressive increases in aircraft build rates could strain supply chains.** Suppliers cut costs and staff during the pandemic and might not be able to ramp up to support rising narrow-body production, especially if Covid-19 disrupts operations.

# Ratings trends and outlook

## Global Aerospace and Defense

Chart 1

Ratings distribution

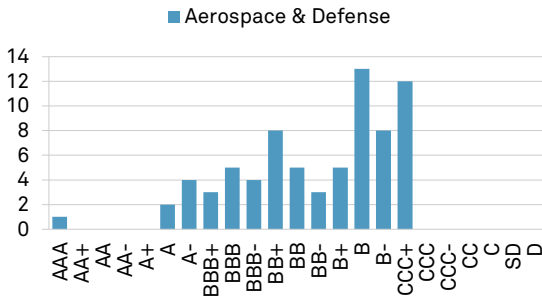


Chart 2

Ratings distribution by region

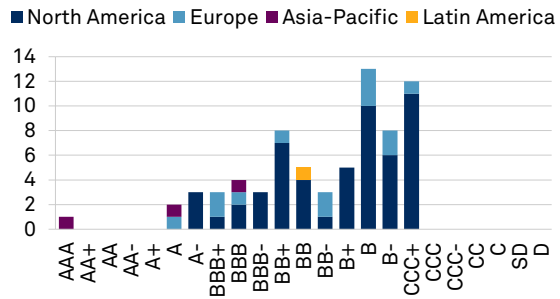


Chart 3

Ratings outlooks

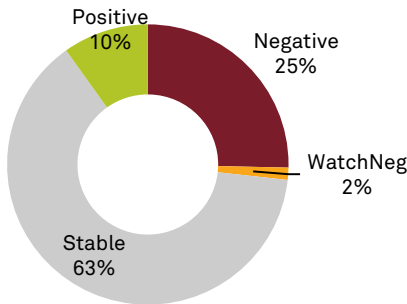


Chart 4

Ratings outlooks by region

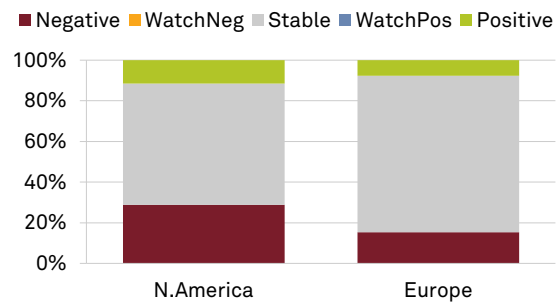


Chart 5

Ratings outlook net bias

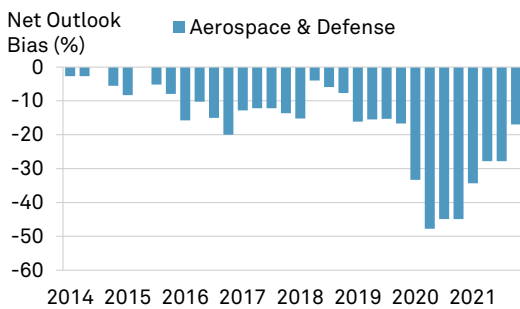
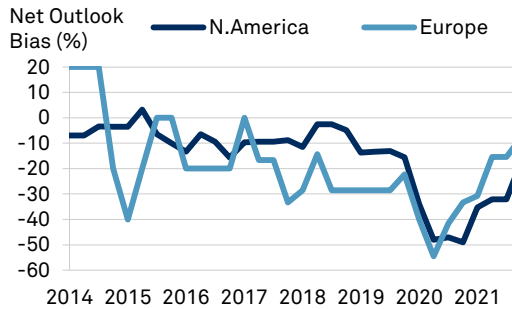


Chart 6

Ratings net outlook bias by region



Source: S&P Global Ratings. Ratings data measured at quarter end.

Ratings have mostly stabilized after a wave of downgrades and negative outlook revisions. A third of the sector is on negative outlook or CreditWatch negative, compared with about half a year ago. These are concentrated mostly in commercial aerospace, entered the pandemic rated speculative grade, or are owned by private equity. There are now more negative outlooks and CreditWatch placements in North America than Western Europe, reflecting the preponderance of suppliers to Boeing and financial sponsor-owned issuers in the U.S. Although we anticipate improving commercial aerospace demand and continued solid defense demand, some suppliers that cut capacity during the pandemic and suffered financial damage could be challenged to ramp up production and invest in the necessary capex and working capital.

# Commercial Aerospace

## Ratings trends and outlook

Rating and outlook improvement will likely come more slowly than for defense contractors, many of which were little affected by the pandemic. Although we anticipate improving commercial aerospace demand, some suppliers that cut capacity and staff during the pandemic and suffered financial damage could be challenged to ramp up production and invest in the capex and working capital needed to do so.

## Main assumptions about 2022 and beyond

### 1. Aircraft production increases, led by narrow-bodies and freighters

Airbus plans to raise production of its narrow-body A320 neo family to 64 by mid-2023 from 40 a month when the pandemic peaked, with even higher rates for 2024 and 2025 mooted. Boeing has resumed deliveries of most 737 MAX family models and is gradually working down its inventory of planes that could not be delivered during the grounding (which peaked at about 450, now about 100 lower). Demand for wide-bodies has stabilized at reduced levels, and that for freighter versions is strong.

### 2. Aftermarket demand tracks aircraft utilization

Providers of parts used in repairs and companies that perform maintenance should improve further, tracking aircraft flying, with some lag. This is partly offset by retirement of older planes, which adds some usable parts to the market, and by airlines that shrank their fleet now having ample spare parts inventory.

### 3. Earnings, cash flow, and credit ratios improve gradually

Despite likely increases in revenue and earnings over the next year, credit ratios are unlikely to reach 2019 levels until at least 2024. However, this will vary based on a company's mix of commercial/military, original equipment manufacturer (OEM)/aftermarket, and narrow-body/wide-body sales. Investment in working capital to support growth will limit cash flow available for debt reduction.

Global air traffic is unlikely to return to 2019 levels until at least 2024. However, that trend obscures significant variation by region and passenger type. Leisure travel, either in large domestic markets or closely integrated regions like Europe, leads. Business travel lags, but should continue a gradual improvement with more widespread vaccinations and better economic conditions. Long-distance international travel is harder to project, because it is most vulnerable to health conditions and restrictions. Asia, with its huge distances and heavily populated islands, represented a large and increasing proportion of pre-pandemic global air traffic (which is measured by revenue passenger miles or kilometers, so is distance-weighted). Some large Asian countries have also been among the most stringent in terms of measures to counteract the virus, which have included severe restrictions on air travel to and from (and in some cases within) those countries.

The implications for commercial aerospace are evident in trends already underway--demand for narrow-body planes used mostly on domestic or intra-regional routes has picked up materially. By contrast, demand for widebody planes used mostly on longer international routes remains weak, although stable. Accelerated retirement of older planes by airlines during the past two years helps demand for replacements when the traffic outlook supports renewed expansion. The rapidly increasing prominence of environmental, social, and governance (ESG) considerations helps, too, because new planes are more fuel efficient than those they replace. But the influence of ESG will

unfold over decades, and will eventually require substantial investment by aircraft and engine OEMs. For 2022, the pandemic's evolution is a much more important factor.

Two smaller markets--air freighter and business jets--have, by contrast, prospered during the downturn. Air freighters have benefited from pandemic-related factors: a shift in spending from services to goods, government stimulus that boosted consumer spending, idling of passenger wide-body aircraft (which also carry cargo in their belly space), and lengthy marine shipping delays. This has boosted demand for new freighter aircraft (which mostly benefits Boeing and its suppliers) and conversion of some older passenger planes to freighters. We expect that an eventual normalization of passenger wide-body operations and marine supply chains will cool demand somewhat, but the shift to internet commerce, an acceleration of ongoing secular trends, is likely to persist. Airbus is working on a freighter version of its flagship wide-body the A350, but deliveries are unlikely before 2025.

Business aviation, which had recovered only slowly from the 2008-2009 global financial crisis, has seen increased demand from well-off passengers wary of perceived health risks at airports and on commercial flights. In the U.S., the largest single market, business aircraft flights are well above 2019 levels. Deliveries of new planes have improved from 2020 lows, with most manufacturers likely to return to pre-pandemic levels by late 2022 or early 2023. There is potential for further gains since business travel overall is still somewhat depressed. Long-term demand depends on economic recovery and easing of international travel restrictions.

Demand for aircraft maintenance and spare parts tracks flight operations more closely than demand for new planes, though it does so with a lag. Some maintenance, repair and overhaul (MRO) providers, particularly those that mostly service narrow-body planes, are already operating at pre-pandemic levels. The process of airlines returning parked planes to active service also requires some added maintenance work. Permanent retirement of older planes, by contrast, constrains the pace of recovery for parts suppliers (because older aircraft require more maintenance and usable spares are scavenged from retired planes), though it appears to have a limited impact so far. Another limit on recovery is that many airlines that retired older planes or deferred deliveries of new ones now have excess spare parts.

## **Credit metrics and financial policy**

We expect gradual improvement in credit metrics, with the pace depending not only on final demand but also on OEMs' and suppliers' ability to manage production increases. The main obstacles to faster progress for Boeing and, indirectly, many of its suppliers are regulatory approval to resume 787 deliveries, regulatory approval for the 737-7 MAX (the smallest version of the 737 MAX family), clearance from China to resume flying grounded 737 MAX planes and deliveries of new ones in that country, and Boeing's ability to pull grounded 737 MAX planes out of inventory and deliver them. The 787 issues, which relate to FAA concerns about quality, are taking longer to resolve (it now appears by second-quarter 2022 at the earliest) than we and others expected. Approval for MAX operations from China could come at any time, but visibility into timing is limited. Boeing states that it plans to increase the monthly production rate for the MAX to 31 per month early in 2022 from 19 as of Sept. 30, 2021. Boeing will also continue to deliver grounded planes from inventory, estimated at about eight per month.

This plus good demand (albeit on a much smaller scale) for freighter aircraft and contributions from Boeing's defense operations should support positive free operating cash flow (FOCF) in 2022. The changes in delivery plans and uncertainty regarding the timing and pace of recovery make life difficult for Boeing's suppliers, which, like the OEM, have to carry excess inventory and will have to invest in working capital as production steps up. Accordingly, though we see a positive trend for credit measures, we expect few upgrades among U.S. commercial aerospace firms. However, our outlook on Boeing is still

negative. Rising internal cash flow will be the principal source of improving credit measures for Boeing, with share issuance (aside from shares issued as compensation or contributed to pension plans) unlikely.

Compared with closest peer Boeing, Airbus has a stronger position in narrow-body aircraft, which in our view, will enjoy significantly higher demand than wide-body aircraft the next few years. The company has guided the market that it will raise production rates on its A320 family to 64 per month by mid-2023 from 40 at the peak of the pandemic. It is converting its A380 production line in Toulouse to manufacture A320s and its highly anticipated A320XLR enters a critical year in 2022, with numerous tests and certification processes to be completed before it can enter into full production. Rates of the A350 will rise to six per month by fall 2022 from five currently, the A330 remains stable at two per month, and the A220 rises to six per month imminently from five now, with the target of producing 14 per month by 2025. We anticipate that Airbus will continue to increase revenues and EBITDA through 2022, generate positive FOCF and that its credit metrics will continue their gentle improvement.

## Key risks or opportunities around the baseline

### 1. Progress on containing COVID is the largest near-term variable

International flying, and thus widebody demand, is most vulnerable to continued health restrictions. And if some level of ongoing virus infections, with periodic flare-ups and government countermeasures, becomes “the new norm”, long-term air travel prospects are at risk.

### 2. Boeing, and its suppliers, need regulatory clearance to continue recovery

Boeing’s 737 MAX and 787, their largest revenue generators, need approval from U.S. regulators and Chinese officials if the company is to restore operating performance. Although unlikely, a permanent grounding of the MAX in China or more serious and lasting quality issues for the 787 would be a major setback.

### 3. Risks of potentially too aggressive ramp-up in production rates

Airbus and Boeing’s planned production increases for narrow-body aircraft, though responding to market demand, could strain supply chains and even cause operational disruptions. This is particularly the case for Airbus’ step-ups in A320 neo family production.

The main near-term risks and opportunities continue to relate to the pandemic and related government actions, as they have been for the past two years. The general trend is positive, but with periodic setbacks, a pattern that we expect to continue. This is an issue mostly for wide-body orders and deliveries, because long-haul international air travel is most vulnerable. Progress on the health front, including easing restrictions in the large Asian market, could prompt renewed wide-body orders and customers seeking earlier delivery of planes they deferred. Boeing’s ability to take advantage of this would require resumption of 787 deliveries. Its larger 777X, with initial deliveries still several years out, depends even more on improvements in health conditions. Downside scenarios include a longer-lasting series of virus flare-ups, possibly exacerbated by rising geopolitical tensions, that cause airlines to revise their assumptions about long-term international traffic growth.

Potential risks for Boeing include geopolitical tensions complicating its efforts to secure approval for resumed MAX operations in China, and potentially further undermine its long-term competitive position in that important market. The 787 regulatory risk is somewhat less complicated, although taking surprisingly long to resolve. This may be

related in part to the FAA's careful and deliberate approach to approving proposed fixes after criticism from Congress and others over its handling of the MAX issues.

Plans by Airbus and Boeing to step up production rates for narrow-body aircraft meet rising needs for those planes but could strain supply chains and cause operational disruptions. Airbus struggled to deliver some planes on time in the few years leading into the pandemic. Boeing tried to raise rates rapidly in the late 1990s in a bid to gain market share, but succeeded mostly in snarling its own production lines and incurring heavy costs to correct the problems. During the pandemic, both Airbus and Boeing maintained production and (to a degree) supported their supply chains by allowing their balance sheets to grow. However, those smaller, more commoditized and niche suppliers (further down the supply chain) that entered the pandemic with higher leverage and lower liquidity levels than the OEMS and tier 1 companies are now stretched to the point that they could drag on the supply chain if it becomes overheated.

Airbus, presented with a rare opportunity to increase market share (at Boeing's expense), plans to ramp-up production of its A320 family to 64 per month by the summer of 2023. The A321XLR enters service in 2023, which should drive demand and Airbus' desire to raise rates further--Airbus' management have publicly stated that it has asked its suppliers to contemplate rates rising to 70 per month by 2024, should the market support it, and is investigating whether it could push rates as high as 75 per month by 2025. This would take production into uncharted territory. Key engine makers Safran and Pratt & Whitney, and the wider supply chain have responded cautiously, noting that although rate rises are welcome, the supply chain has been damaged through the pandemic and, at some point, a supply ceiling will be reached. Some engine manufacturers are also reportedly wary of a trend that could push existing aircraft into retirement ahead of schedule, harming revenue streams from servicing older engines. Lessors too have expressed concern at overheating the narrow-body market, as their businesses can depend on the life span of older planes.

From 2023, a fully constrained supply chain might even seesaw aggressively between demand from Boeing and Airbus. In a post-pandemic world where A320 rates are at a record high, the MAX is back on more normal footing, and the wide-body market sees an uptick: at that point, everyone wants to build, the supply chain is maxed out, and some suppliers might start choosing what they will produce and supply.



# U.S. Defense

## Ratings trends and outlook

Ratings are mostly stable for defense contractors without significant exposure to commercial aerospace. However, earnings growth from increased defense spending might be offset by higher shareholder returns.

## Main assumptions about 2022 and beyond

### 1. Revenue continues to rise as defense spending increases

Most defense contractors (or the military operations of diversified aerospace defense firms) are likely to see increasing revenues in 2022 as the defense budget continues to expand moderately.

### 2. Priorities shift to China and Russia

Established programs aren't likely to experience significant changes, but the current global geopolitical climate has resulted in a shift in U.S. strategic focus away from the Middle East and toward China and Russia. This mostly favors spending on the Navy and Air Force at the Army's expense.

### 3. Additional shareholder returns

Cash flows are likely to remain high, especially with increased demand, so some large firms might increase share repurchases or dividends, limiting credit metric improvement.

Defense spending in the U.S. is unlikely to see significant changes under the Biden Administration, as illustrated by the recent budget. Military spending is up 5% year over year, with the budget slightly larger than expected (the Biden administration's original request was for a 1.5% increase). This was in response to perceived strategic threats from China and Russia, which offset Congressional concerns over the budget deficit and competing domestic priorities. The legislation attracted fairly wide bipartisan support, suggesting that defense spending is likely to remain substantial and gradually increasing in future budgets.

The recently passed budget has less focus on the Middle East, as expected, with more emphasis on China, through the Pacific Deterrence Initiative, and discouraging Russian aggression in Europe, through the European Deterrence Initiative. Electronic warfare and cyber security are likely to remain key areas of focus.

The larger-than-expected budget includes orders for additional aircraft, including 12 additional F/A-18 Super Hornets and five more F-15EX jets, both made by Boeing. The order for 85 F-35s from Lockheed Martin is unchanged. In addition, the budget calls for 13 ships (five more than the original budget plan), with the additional funding for two destroyers, one expeditionary fast-transport, and one fleet oiler. Reductions in some programs were tied mostly to a modest cut in the number of troops across all military branches.

## Credit metrics and financial policy

Credit metrics should be stable-to-improving for most defense contractors. Companies with exposure to commercial aerospace continue to face greater risk as uncertainty from the pandemic remains. Revenue, earnings, and cash flow are likely to increase moderately. But the positive effect on credit measures will likely be at least partly offset

by increased dividends and share buybacks, particularly among large defense contractors. Smaller, weaker contractors will more likely focus on rebuilding financial strength, at least for a while, even if private equity own a lot of these.

Despite the fiscal 2022 budget being larger than expected, we still expect a gradual flattening in spending growth, which could result in companies seeking growth through M&A. Most notably, we are likely to see continued consolidation of the government IT services sector. However, one obstacle to M&A activity could be the Biden Administration's concerns with vertical integration, such as Lockheed Martin's pending acquisition of Aerojet Rocketdyne, the only remaining independent U.S. maker of rocket propulsion. We view a merger of prime contractors as very unlikely.

## Key risks or opportunities around the baseline

### 1. Supply chain issues disrupt sales

There is significant overlap in the supply chains for commercial aircraft and military aircraft and other weapons. Recent supply chain issues and the potential for demand exceeding capacity could result in significant constraints.

### 2. Priorities shift

While the Biden administration doesn't seem to have shifted priorities dramatically, the geopolitical landscape has resulted in some changes. The decreased emphasis on the Middle East while turning more toward China, for example, will result in changes to funding for certain programs. Other changes are possible if some threats (such as more widespread and serious cyberwarfare) increase.

### 3. Defense spending declines materially

This seems less likely given the recent defense budget, but with the pandemic still a factor and the potential for political factors shaping decisions, a decreasing defense budget remains a possibility.

After initial disruptions early in the pandemic due to illness, government restrictions, and an inability to access customer sites, prime contractors have been reporting more delays and shortages of some materials in recent months. This issue could worsen due to omicron's impact as labor becomes a risk, related to both vaccine mandates and the availability of healthy workers. Given the more significant impact to commercial aerospace, defense suppliers with commercial aerospace exposure could have limited funds to invest in working capital. Ultimately, this could lead to higher costs and delayed revenue, but is unlikely to be a ratings factor for larger firms. However, some of the smaller contractors could see a ratings impact if disruptions last longer than expected.



# European Defense

## Ratings trends and outlook

Despite rising threats, many European NATO members seem more focused on managing their priorities versus materially increasing their individual defense budgets (as a share of GDP). Still, European defense issuers should continue enjoying robust demand for their products and services in 2022. We do not expect a significant number of rating actions in 2022, unless there were sudden, large-scale changes to European defense spending.

## Main assumptions about 2022 and beyond

### 1. Russian sabre rattling and the U.S. pivot to Asia-Pacific won't drive a sudden increase in European defense budgets

Despite a military buildup by Russia along Ukraine's border and a shift of focus (by the U.S.) away from the Middle East and towards China, there has been no notable reactionary rise in the defense budgets of NATO members U.K., Germany, France, or Italy. We expect most European governments to continue focusing on modernizing and honing the effectiveness of their existing armed forces for now.

### 2. Demand for military equipment remains robust, especially for European players present on key defense platforms

Despite the pandemic, governments continued to invest in key platforms. Many rated issuers are on these long-term platforms, so revenue visibility should remain high.

### 3. Many defense players used the pandemic as an opportunity to reduce costs and upgrade their production facilities

Many players will emerge from the pandemic with leaner cost bases and streamlined processes. Smart production lines and increased digitization are features following investment in these areas over the past 12-18 months.

We continue to expect gradual increased spending in many regions outside of the U.S., presenting good opportunities for European defense issuers, which tend to be more global (versus U.S. peers that are more domestic focused). We also expect that many countries will continue to modernize their armed forces, with rising interest in the east and South China sea. Ongoing tensions in the Middle East continue to add momentum.

Increased political cohesion in Europe, the rise in perceived threats (political sabre rattling on Europe's borders and the Baltic and North Seas, active conflict zones, terrorist threats, and cyberattacks) and the need to modernize their armed forces means that many defense budgets in Europe continue to rise, although many countries still fall short of the NATO target of 2% of GDP. We expect this trend of rising expenditure to continue through 2022, at least to the point where governments start to reassess stimulus measures and count the economic cost of COVID-19 in earnest.

## Credit metrics and financial policy

Any pure-play defense issuers should continue to enjoy good contract, revenue, and cash flow visibility with stable credit metrics. Companies with exposure to commercial aerospace continue to face a greater risk to their financial performance. Slightly improving credit metrics credit measures will likely be at least partly offset by increased dividends and share buybacks, particularly among large defense contractors. Smaller,

weaker contractors will more likely focus on rebuilding financial strength, at least for a while, although many of these are owned by private equity.

## Key risks or opportunities around the baseline

### 1. The pandemic's financial cost starts to drag on defense budgets

Nearly two years since the pandemic first hit Europe, governments are still counting the cost that lockdowns and other virus containment measures have had on their economies. As this cost continues to rise, spending priorities could change.

### 2. The shift in strategic priorities could affect contracts and platforms

As AUKUS--the trilateral security pact between the U.S., the U.K., and Australia--showed, the strategic pivot to Asia-Pacific will result in massive new contract and platform opportunities for some and losses for others. This might affect existing contracts platforms too.

### 3. The pandemic's cost stresses government budgets

Many governments are raising debt and dramatically increasing domestic spending to support their economies and protect their citizens, workers, and businesses. Many have promised or launched stimulus packages that incorporate investments in defense that might not fully materialize.

# Industry forecasts

## Global Aerospace and Defense

Chart 7

Revenue growth (local currency)

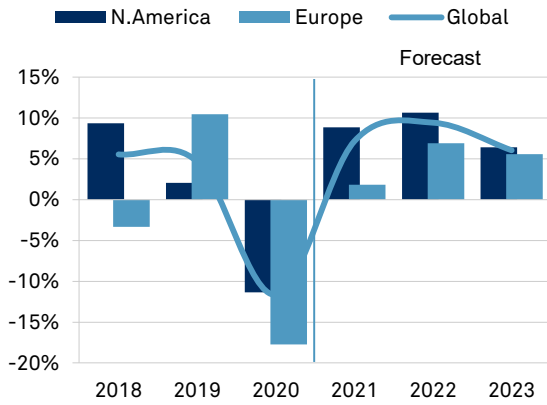
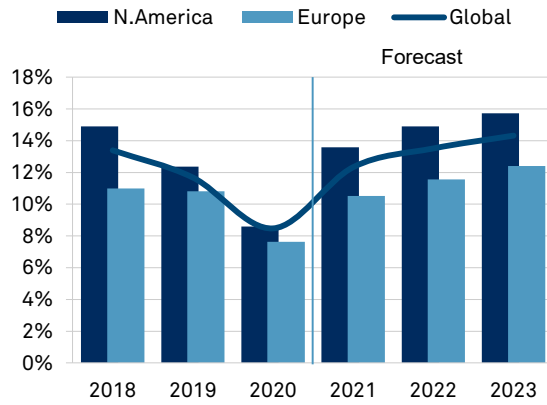
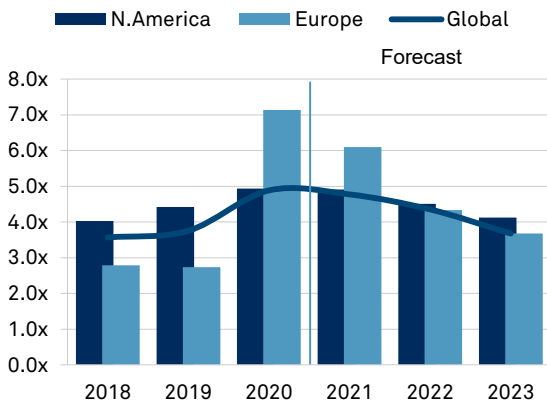


Chart 8

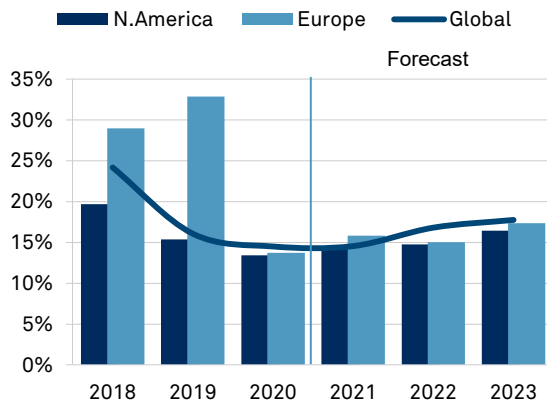
EBITDA margin (adjusted)



Debt / EBITDA (median, adjusted)



FFO / Debt (median, adjusted)



Source: S&P Global Ratings. Revenue growth shows local currency growth weighted by prior-year common-currency revenue-share. All other figures are converted into U.S. Dollars using historic exchange rates. Forecasts are converted at the last financial year-end spot rate. FFO—Funds from operations.

# Cash, debt, and returns

## Global Aerospace and Defense

Chart 9

Cash flow and primary uses

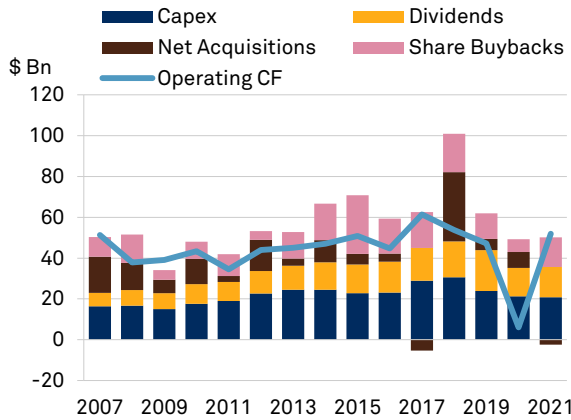


Chart 10

Return on capital employed

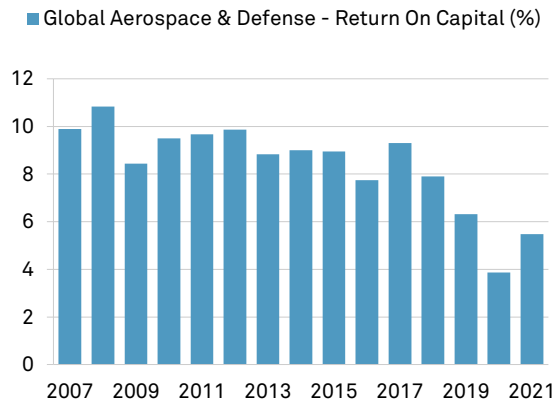


Chart 11

Fixed versus variable rate exposure

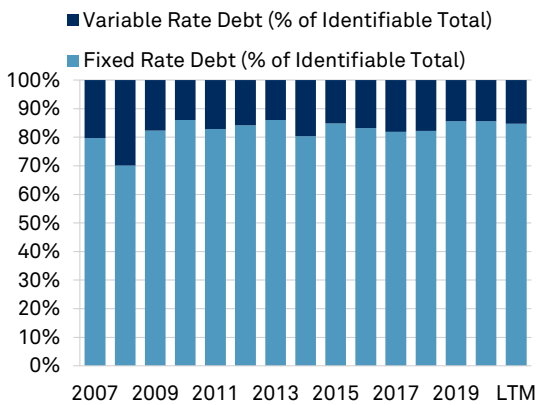


Chart 12

Long term debt term structure

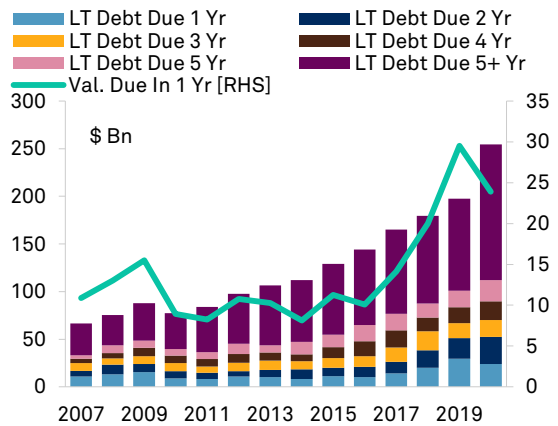


Chart 13

Cash and equivalents / Total assets

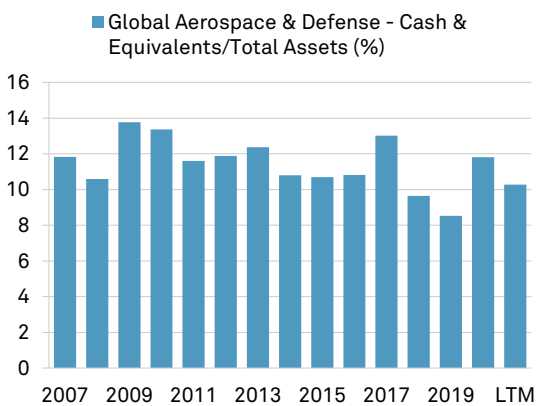
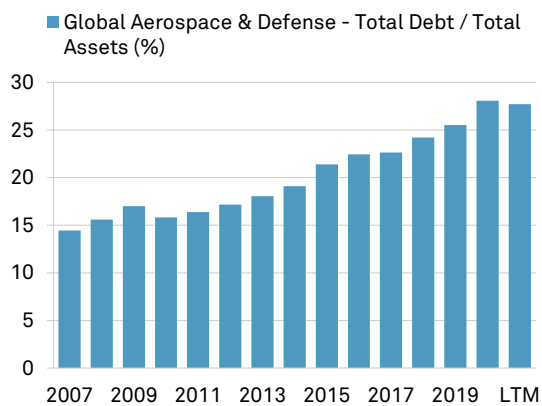


Chart 14

Total debt / Total assets



Source: S&P Global Market Intelligence, S&P Global Ratings calculations. Most recent (2021) figures are using last twelve months (LTM) data.

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