

Aerospace and Defense

The only way is up (supply chain permitting)

January 9, 2024

This report does not constitute a rating action.



What's changed?

Demand is outpacing supply in commercial aerospace. Customers are expanding fleets to meet strong demand. Supply-chain and labor constraints and manufacturing defects persist.

New engine durability is a challenge. Some new engines are seeing lower time-on-wing performance, reflecting the tradeoffs and diminishing returns of engineering advances.

U.S. defense spending growth is likely to slow. Europe's will rise. Europe's defense spending is driving higher backlogs for many players and growing revenues, EBITDA, and cash flows.

What are the key assumptions for 2024?

Global airline capacity is likely to remain stretched. Demand is strong but equipment downtime, maintenance constraints, and new aircraft supply lagging demand will test system reliance.

Aircraft production and deliveries will increase. Boeing will increase MAX production and deliver its inventory of finished planes. Airbus will keep increasing production of its A320 family.

Defense companies will exhibit robust earnings. Global tensions will support high defense spending, and current backlogs will grow. Supply-chain and capacity constraints will persist.

What are the key risks around the baseline?

Air travel growth might falter. Recession could weaken long-haul international travel demand.

Production problems could hinder aircraft makers' delivery rates. Productivity might not improve, or manufacturing flaws could persist, causing delivery delays and lost revenue.

Equipment durability limitations could constrain air travel capacity. Lower-than-expected time-on-wing performance of new engine models could limit airline capacity, and remediation efforts might exacerbate the strain on maintenance networks.

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Ratings Trends: Aerospace and Defense

Chart 1
Ratings distribution

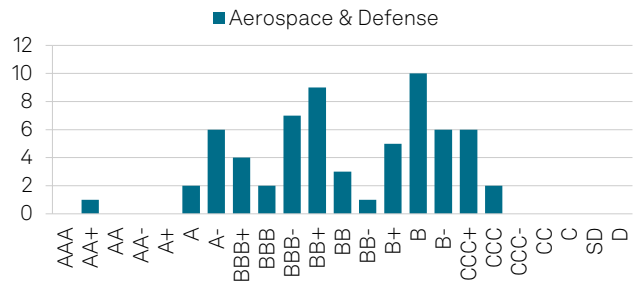


Chart 2
Ratings distribution by region

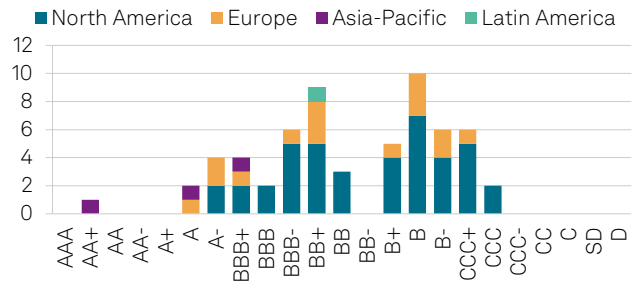


Chart 3
Ratings outlooks

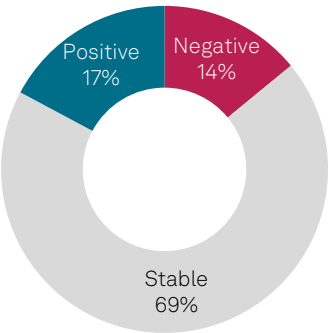


Chart 4
Ratings outlooks by region

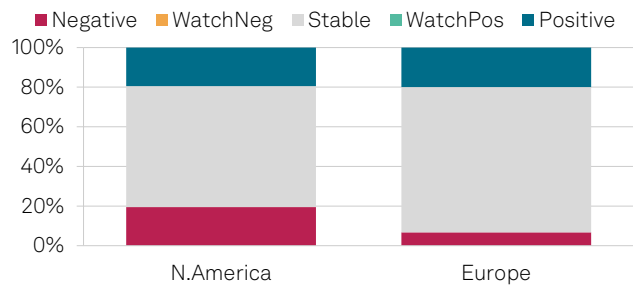


Chart 5
Ratings outlook net bias

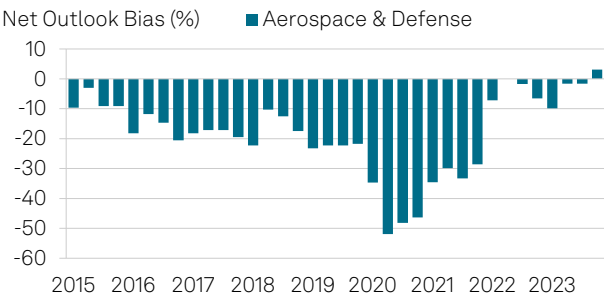
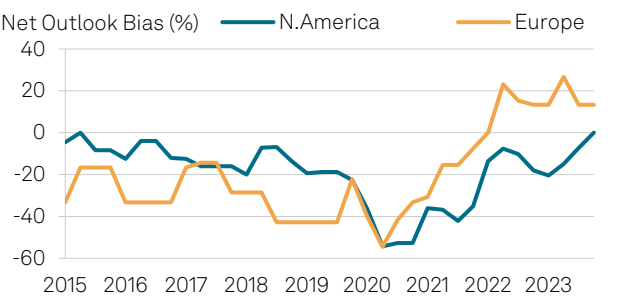


Chart 6
Ratings net outlook bias by region



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

Ratings are largely stable, and those not on a stable outlook are balanced between positive and negative. The positive outlooks include aircraft component makers benefiting from a long-delayed increase in original equipment manufacturer (OEM) production rates. They also include companies taking advantage of strong cash flows to reduce debt, especially with higher interest rates making refinancing less attractive. The negative outlooks include aerospace suppliers dealing with the effects of manufacturing flaws and labor disruptions, as well as aggressive financial policies. More negative outlooks in North America, compared with Europe, reflects the prevalence of suppliers to Boeing and financial sponsor-owned issuers in the U.S. Sponsor-owned companies typically have high debt levels and are very sensitive to rising interest rates.

In Europe, rating changes have largely been positive in the past 12-18 months, but this will level off. Gradually improving revenues, profitability, cash flows, and credit metrics will likely be at least partly offset by increased mergers and acquisitions (M&A), dividends, and share buybacks, particularly among the primes. Smaller players are a mixed bag; fortunes depend on product and service offerings and the aerospace and defense (A&D) platforms they're on. For example, suppliers with significant exposures to narrowbody will benefit more than those highly exposed to widebody, and on the defense side suppliers with a heavy leaning toward battlefield equipment, radar, communications, unmanned aerial vehicles (UAVs), and munitions will benefit more in the short term.

Industry Outlook: Commercial Aerospace

Ratings trends and outlook

The overall rating trend is modestly positive. Several issuers should benefit from continuing strong demand for commercial aircraft and improving (though still constrained) build rates. Our ratings on most issuers are linked to underlying OEMs, and some are well positioned to materially improve cash flows and credit measures via growth in parts sales and services. OEMs are navigating industrywide supply constraints, but long-dated backlogs could boost cash flow growth. We expect narrowbody production to ramp up in 2024 as Boeing addresses manufacturing flaws and, along with Airbus, achieves supply-chain efficiencies. Widebody aircraft production, while a smaller, slower-growing proportion of the overall market, incorporates high-value components and is important for OEM and supplier returns. Aside from already documented durability challenges, large engine makers will benefit from rising production rates on the OEM side, coupled with higher engine flying hours and increasing engine shop visits. We expect demand to remain strong even if economic conditions slow. As such, shareholder returns and higher interest rates (namely for lower-rated issuers, which account for most of the negative outlooks in the commercial aerospace sector) pose greater potential risk to ratings.

Main assumptions about 2024 and beyond

1. Airbus and Boeing continue to increase narrowbody rates toward record levels.

We assume production rates for Airbus and Boeing broadly in line with their own targets. Airbus targets 65 A320 aircraft per month by the end of 2024 and 75 by 2026; four A330s through 2024; and nine A350s by the end of 2025. Boeing targets 50 737 MAXs and 10 787s in 2025-2026. We assume a gradual production uptick, reflecting previous challenges and lingering supply-chain issues.

2. Engine durability remains a hot topic.

Remediation of a manufacturing flaw in Pratt & Whitney's (P&W) geared turbofan (GTF) engine will cause much equipment downtime in 2024. New engine models were already experiencing elevated downtime before the flaw emerged, thereby reducing fleet availability. All large engine makers continue to explore next-generation technology in the drive toward greater efficiency.

3. MRO demand is strong, buoyed by reliance on older equipment.

Companies that provide parts used in repairs and perform maintenance will likely see their operating results further improve, benefiting from air traffic growth, engine reliability issues, and tight industrywide capacity. However, the retirement of older planes, which add some usable parts to the market, could limit the pace of expected improvement.

Airbus is keeping to its production rate guidance despite the RTX recall, and 2024 looks bright.

Airbus delivered 488 commercial aircraft in the year ended Sept. 30, 2023, and announced 800 new orders at the Paris Airshow, including a record 500-plane deal with Indian airline IndiGo. The group's order backlog is now a record 7,992 aircraft as of Sept. 30. Management guides for 720 commercial aircraft deliveries in 2023. RTX Corp. has announced it will remove about 3,000 PW1100 GTF engines from service for inspection and repairs to the high-pressure turbine discs between now and 2026, resulting in 600-700 incremental shop visits mostly in 2023-2024. P&W's engines power a significant proportion of Airbus' narrowbody A320 and A220 planes. Despite this, Airbus does not expect 2023 deliveries or 2024 ramp-up plans to be affected. This recall will primarily be felt in the aftermarket and therefore by airlines (not Airbus). Airbus continues to

work on bringing its A321XLR and A350F aircraft into service. The A321XLR is a long-range version of the A320 family and is undergoing test flights. The A350F--a freighter version of its flagship A350 widebody--has first deliveries slated for 2026. The A220 program will gradually move toward breakeven. We note positively Turkish Airlines' recent order for 220 aircraft from Airbus, including 150 Airbus A321neo aircraft, and 70 A350s, including five freighters. Turkish Airlines has also ordered 100 Trent XWB-84 and 40 Trent XWB-97 engines from Rolls-Royce Plc, to be delivered between 2025 and 2033.

Boeing aims to increase aircraft production and deliveries, moving past manufacturing flaws.

In October, Boeing lowered its 2023 guidance for 737 MAX deliveries, reflecting the operational impact of production defects uncovered earlier in the year. The company disclosed a flaw in a fuselage fitting supplied by Spirit Aerosystems in April and a subsequent flaw in an aft bulkhead also made by Spirit in August. Boeing had to pause production and implement remediation plans for in-progress and completed aircraft. As a result, it reduced expected MAX deliveries to 375-400 planes from 400-450 previously for the year and slowed the pace of increased production to 38 planes per month from 31 earlier in the year. Boeing remains on target to deliver 70-80 widebody 787 aircraft. Meanwhile, it received net 841 new orders in 2023. It remains committed to raising MAX production above 50 planes per month by 2025-2026 and expects to increase its 787 rate to five per month by year end (from about four currently) and to 10 by 2025-2026. Both targets are vulnerable to labor and supply chain constraints. Component makers are poised to meet higher rates but are hesitant to outpace the OEMs until they demonstrate stability.

Boeing is also addressing the manufacturing flaws in a number of its completed aircraft, including 250 737 MAXs and 75 787s as of the end of the third quarter. Boeing plans to deliver most of these planes by the end of 2024 or early 2025. The MAX inventory includes 85 MAX planes ordered by Chinese airline customers that Boeing has not yet received approval to deliver. Preparing planes from inventory for delivery is tying up its manufacturing resources and reducing its operating efficiency. Once Boeing has worked through this inventory and can again increase production, we believe profitability and cash flows will improve, as will its ability to meet demand for new aircraft.

Limitations in new engine model durability will result in reduced airline capacity. RTX Corp. has reported that it will remove certain GTF aircraft engines made by P&W from service to inspect them for a potential manufacturing flaw. RTX expects the number of planes affected will peak in early 2024, when we estimate about 20% of Airbus' A320neo aircraft powered by GTF engines could be grounded. GTF engines power a significant proportion of Airbus' narrowbody A320 and A220 planes, which serve the faster-recovering domestic and regional air travel segments. That said, its GTF engines were experiencing durability constraints before the company disclosed the turbine disc issue, especially in harsh environments featuring sand, pollution, and high temperatures. Rolls-Royce's technical challenges with the Trent 1000 are well documented but now largely remediated, and the group's newer generation XWB engines are performing relatively well. CFM-made LEAP engines have also experienced lower-than-expected durability, though much less so than GTF engines. All these issues are likely to limit the availability of in-service planes at a time when OEMs are struggling to meet demand for new aircraft. They are also increasing the reliance on older aircraft that, in turn, run on earlier, less fuel-efficient engine technology.

Demand for aerospace maintenance repair and overhaul (MRO) is strong given high travel volumes, the delayed delivery of new assets, and grounded aircraft. The underperformance of popular engine models is also contributing to the extended use of aging aircraft. Following significant supply-chain problems in 2023, build rates for major commercial platforms started to improve toward the end of the year. We expect OEM supply chain constraints to ease in 2024, though airframe MRO demand will likely stay strong until new aircraft delivery rates return to

closer to pre-COVID-19 pandemic levels. We expect engine MRO capacity to remain stretched. Repair turnaround time nearly tripled during 2023, with the waiting period for an engine to enter overhaul now up to one year. We expect spare parts to also be in high demand because older engines remain in use. The normal evolution of aircraft platforms will also naturally drive MRO demand most notably for the Boeing 787 fleet, which is approaching its 10-year maintenance cycle. MRO services for military and defense platforms will also likely remain in high demand in 2024 given activity in Ukraine and Israel. Overall, we expect the MRO market to grow modestly over the next 24 months.

Though business aircraft demand has been slightly down from its 2022 peak, orders for planes remain strong in the U.S., the largest market for business aviation. We expect the production of business jets to increase modestly over the next two years and for deliveries in 2024 to increase by about 10%. Operators are eager to expand their active fleets and replace older planes with more fuel-efficient models. Major U.S.-based OEMs' orderbooks have reached record highs, resulting in wait times for new plane deliveries of roughly one year. Pricing remains favorable despite extended delivery schedules. While lightweight business jets remain popular with new buyers, larger long-range and ultra-long-range aircraft are expected to make up more than half of spending on new jets over the medium term. Supply-chain constraints, largely related to components, remain a headwind while the industry itself is vulnerable to economic downturns.

Credit metrics and financial policy

Credit measures should modestly improve in 2024 for most commercial aerospace issuers.

Continuing strong demand fundamentals are expected to translate into higher revenues across much of the sector. Supply-chain constraints and related inefficiencies will likely persist beyond 2024 and limit margin improvements, but we estimate higher average earnings and cash flow across the sector. As such, we forecast lower leverage and stronger cash flow coverage ratios--in some cases, to an extent that could support higher ratings. For lower-rated companies, liquidity pressures and reduced capacity to withstand sharply higher interest rates are key risks this year. Overall, we do not anticipate material changes to financial policies. Shareholder returns for most have been well broadcast, and M&A activity in the commercial aerospace supply chain is likely to be subdued based on high regulatory scrutiny, which we expect will persist. However, higher-than-expected share repurchases contributed to negative rating actions in 2023 and remain a risk if not curtailed in the event of deteriorating business conditions.

Key risks or opportunities around the baseline

1. The supply chain can't keep up.

For Airbus, this could dent production of the popular A320 family, which was 80% of deliveries in the year ended September 2023. For Boeing, this could mean backtracking on 737 MAX production growth, which was uneven in much of 2023 but appeared to stabilize at the end of the year.

2. Unforeseen technical/engineering challenges that are costly to fix.

Manufacturing defects discovered on components from one of Boeing's key suppliers in 2023 showed how disruptive unexpected problems can be. Any new issues could lead to higher costs and delays for OEMs and their suppliers. Remediation of previously identified problems, including those on GTF engines, could also prove more costly than currently anticipated.

3. Aggressive financial policies.

Several commercial aerospace companies are using a material portion of their discretionary cash flow for share repurchases. We believe most will proceed with share buybacks in a manner that limits negative effects on credit measures and ratings. However, as we have seen previously, unexpected increases in cash outflows for discretionary uses--particularly amid weaker-than-expected operating results--is a notable downside rating risk.

Industry Outlook: U.S. Defense

Ratings trends and outlook

Our ratings on U.S. defense companies should remain mostly stable amid continued robust government spending. While the pace of spending is expected to slow in 2024, this follows a material increase last year. Generally steady improvement in earnings and cash flows should follow, particularly for the larger, higher-rated issuers. However, these companies tend to prioritize shareholder returns as a use of discretionary cash flows, and we expect this will continue, therefore limiting improvements in credit measures and ratings. On the other hand, several smaller, lower-rated companies will continue to face cash flow challenges stemming from high leverage and sharply rising interest rates. These issuers mostly account for the higher share of negative versus positive outlooks in the sector.

Main assumptions about 2024 and beyond

1. Defense spending will remain strong, while growth flattens.

Broad-based consensus around strategic risks is supporting defense spending. However, delays in passing budgets are creating uncertainty, tempering our growth expectations for defense companies. Those with a large installed base of long-dated programs are afforded revenue stability, but supply-chain challenges will likely persist and limit margin accretion.

2. Near-peer threats will drive spending priorities.

Heightened conflicts in the Middle East, Russia's invasion of Ukraine, and continued tensions with China underpin strategic focuses and defense spending priorities. As such, we expect limited material downside risk to defense spending in the U.S.

3. Companies will emphasize shareholder returns.

Cash flows are likely to remain high, even after factoring in cost pressures. Large firms face limited M&A opportunities and may prioritize share repurchases or dividends, limiting improvements to credit metrics.

The fiscal 2024 budget of \$841 billion is up 3% from last year. The budget focuses on enhanced readiness and modernization efforts, artificial intelligence research and development (R&D), and nuclear deterrence in response to more recent conflicts in the Middle East and Ukraine, as well as continued perceived threats from China. Major aircraft programs receiving funding include the F-35 made by Lockheed Martin, the B-21 made by Northrop Grumman, and unmanned aircraft systems. Funds are also going to the construction of two Virginia class submarines built by Huntington Ingalls and General Dynamics, one Columbia class submarine built by General Dynamics, and two Arleigh Burke class destroyers built by Huntington Ingalls. International sales growth is supported by allies' commitments to increase spending in response to heightened security concerns. Foreign sales comprise less than 20% of the largest defense contractor's revenue but generally contribute higher margins than domestic sales.

Despite what seems like broad support for robust defense spending, the government delayed passing the 2024 budget until the tail end of last year, and even threatened to shut down. Continuing resolutions allowed the Department of Defense to keep operating without major interruptions, although the impasse created uncertainty and delayed new contract awards. A request for supplemental funding for Ukraine and Israel failed to pass Congress at the end of 2023, but some form of additional support could eventually succeed later this year.

Credit metrics and financial policy

Financial policies are a key driver of credit quality. While U.S. defense budget growth has flattened from very strong 2023 levels, spending remains robust and we expect most companies in the sector to generate ample free cash flow. Cash flow will benefit from the tapering effect of a 2022 tax rule that requires companies to capitalize rather than expense R&D spending. Large-scale strategic acquisitions that increase industry consolidation are unlikely given the Biden administration's concerns about maintaining competition. Prioritization of cash flow, whether for debt reduction or shareholder returns through dividends and share repurchases, will drive the direction of credit ratios for larger U.S. defense companies. Smaller companies with higher debt burdens will focus on rebuilding financial strength as they face higher borrowing costs and debt maturities.

Key risks or opportunities around the baseline

1. U.S. defense spending might decline.

The recent elevated pace of spending growth will likely be difficult to maintain, especially in the context of high deficits and increased borrowing costs. Political will to support Ukraine in an extended conflict appears to be tepid, resulting in lower spending.

2. Supply-chain constraints could get in the way of delivering on orders.

Shortages or delays in sourcing components and labor productivity limitations could impede translating orders into sales. Defense companies also face production capacity constraints.

3. Financial policies might become more aggressive.

Slowing defense spending growth and few M&A opportunities may push large U.S. defense contractors to increase share repurchases to boost equity returns. As a result, pressure on credit measures and ratings could follow if not accompanied by rising earnings and cash flows that mitigate the impact of higher adjusted debt levels.

Supply chain and labor constraints may increase costs and impede companies' ability to deliver orders. Higher costs are a key risk for companies with fixed-price contracts. Development contracts for major new aircraft or weapons systems require investment over several years to develop and produce initial units. Programs signed when inflation was minimal could result in losses due to cost overruns or production delays if the company isn't able to fully pass the excess on to the customer. Defense contractors might also hesitate to invest in expanding capacity for munitions or missiles without long-term contracts or other support.

Industry Outlook: European Defense

Ratings trends and outlook

For many European defense manufacturers, soaring backlogs, rising revenues and EBITDA, and stronger cash flows are almost a given through 2024. Rising defense budgets should underpin solid industry prospects over the medium to long term, and European defense issuers will likely continue seeing robust demand for their products and services. Ratings changes have largely been positive in the past 12-18 months, but we expect this trend will level off as issuers now prioritize (potentially debt-funded) M&A and share buybacks.

Main assumptions about 2023 and beyond

1. The Israel-Hamas and Russia-Ukraine wars are fueling strong operating performances for many European defense issuers.

It takes time for political decisions to translate into orders, but some issuers have been winning very large contracts off European countries that have been hiking defense budgets in reaction to conflict on their borders. Demand for some battlefield products and services is at a record high.

2. M&A activity is picking up, and shareholder returns will rise.

Balance-sheet headroom and liquidity is already being deployed for opportunistic M&A. A few larger issuers have share buyback programs underway, and some are accelerating the pace of return.

3. Parts of the supply chain and production lines will remain stretched through 2024.

Our issuers expect logistical challenges to persist, specifically some lingering bottlenecks in some parts of the supply chain. Some smaller players are still struggling to attract and retain highly skilled engineers. Some issuers' production headcount has been directly affected by military drafting (for example, the call up of 360,000 Israel Defense Forces [IDF] reservists in Israel).

Even before the Russia-Ukraine conflict, European NATO members' defense budgets were increasing, and defense expenditure as a percentage of national GDP was rising for most large members. The Israel-Hamas war has added further momentum to many European governments' appetite for such spending. Leading NATO members are urging their counterparts to increase defense spending toward 2% of national budgets, and European countries including Germany and France are planning for expansion. Others, such as Poland, have increased their targets even more.

The European defense industry is also benefiting from political action beyond Europe's borders. Since the start of the two recent wars, nearly \$100 billion in military funding has been committed to Ukraine. The Biden administration has committed nearly half of this--about \$45 billion. The U.S. has also just increased its annual provision to Israel (\$3.8 billion for defense) by an additional \$14.0 billion. European defense manufacturers, who tend to be more global (U.S. peers are more domestically focused), are winning large contracts, and several of our issuers have revised up their financial guidance. The main beneficiaries in our rated portfolio are BAE Systems, Babcock, Israel Aerospace, Leonardo, Rafael, and Thales. We also see benefits for defense players such as Rolls-Royce and Safran. The need for battlefield equipment--radar, communications, and munitions--has resulted in large spikes in demand for certain products and services for some issuers. Defense contracts tend to be long term and so are likely to provide

support for revenues and profitability for many years to come. Any previously anticipated pressure on defense budgets due to post-pandemic bean counting has abated.

Larger issuers will likely use their strong balance sheets to prioritize M&A and share buybacks.

This will somewhat erode ratings headroom. Some notable M&A is currently underway, including BAE Systems' \$5.6 billion acquisition of Ball Aerospace, and Thales' \$3.6 billion acquisition of Imperva and \$1.1 billion acquisition of Cobham's Aero Communications business. Safran plans to acquire Collins Aerospace's actuation and flight control business for \$1.8 billion (although Italy could still block this deal by using its "golden power" option). Collins is currently a subsidiary of U.S.-based Raytheon Technologies, now known as RTX. The European aerospace and defense industry is ripe for consolidation, and we believe 2024 will see further sizeable M&A activity. However, we don't think opportunistic M&A or shifts in financial policy will lead to material ratings downside. Instead, any downside might come from financial underperformance or operational challenges.

Many aerospace and defense issuers seized opportunities to cut production and costs during and after the pandemic.

They did this by reducing headcount, tightening working capital practices, and strengthening balance sheets. Most defense issuers are managing persistent inflation, with margins generally holding up quite well. We expect this to continue through 2024. Where we could see some pressure is not on raw materials or energy, but on the salaries of a workforce that is generally highly skilled and experienced. Our Israeli issuers are experiencing some direct effects of the IDF's call up of 360,000 reservists, but our base case is for the war to remain centered in Gaza and to last no more than three to six months.

The question mark over defense has clearly moved from the shape and timing of a demand-led rebound to whether the supply chain can keep up. Issuers expect logistical challenges to persist, specifically some lingering bottlenecks in forgings and castings. Some smaller players are still struggling to attract and retain highly skilled engineers. Despite this, the effects of peak-pandemic are fading for the industry.

Credit metrics and financial policy

Pure-play defense issuers should continue to experience good backlog, revenue, and cash flow visibility, with stable credit metrics. Gradually improving credit metrics will likely be at least partly offset by increased M&A, dividends, and share buybacks, particularly among large defense contractors. Smaller, weaker contractors will continue to focus on rebuilding financial strength, although many of these are owned by private-equity firms. We expect recent positive ratings momentum will level off.

Key risks or opportunities around the baseline

1. Poorly executed M&A and/or overly aggressive financial policies remain a risk.

Overly ambitious shareholder returns could also soften ratings headroom for some issuers.

2. Conflicts escalating/spilling over into the wider region could further strain production.

Any further demand on production could lead to shortages or supply bottlenecks.

3. A shift in strategic priorities might affect contracts and platforms.

The pivot to Asia-Pacific will result in opportunities for some and losses for others.

Poorly executed M&A and/or overly aggressive financial policies remain a risk. Although many of the M&A transactions we are seeing make strategic sense, there is always the risk of poor integration. Overly ambitious shareholder returns could also soften ratings headroom for some issuers.

Conflicts escalating/spilling over into the wider region could further strain production. Some defense players are producing as fast as they can (specifically those making radar and communications equipment, munitions, and other gear used on the battlefield). Any further demand on production could lead to shortages or supply bottlenecks.

A shift in strategic priorities might affect contracts and platforms. The strategic pivot to Asia-Pacific will result in new contract and platform opportunities for some and losses for others. This might also affect existing contract platforms.

Related Research

- [Israel Aerospace Industries Ltd. Upgraded To 'A-'; Outlook Stable](#), Dec. 28, 2023
- [Engineering Services Company Babcock International Upgraded To 'BBB+' On Sustained Lower Leverage; Outlook Stable](#), Dec. 20, 2023
- [Howmet Aerospace Inc. Upgraded To 'BBB-' From 'BB+' On Improved Credit Metrics; Outlook Stable](#), Dec. 15, 2023
- [Triumph Group Inc. Outlook Revised To Positive On Expected Improved Cash Flow And Leverage; 'CCC+' Rating Affirmed](#), Dec. 6, 2023
- [RTX Corp. Outlook Revised To Negative From Stable On Share Repurchase Announcement; 'BBB+' And 'A-2' Ratings Affirmed](#), Oct. 27, 2023
- [General Dynamics Corp. Outlook Revised To Positive From Stable On Improving Credit Metrics; Ratings Affirmed](#), Oct. 18, 2023
- [EMEA A&D Credit Quality Gains Altitude As Supply Chain Turbulence Persists](#), Oct 16, 2023
- [Bulletin: BAE Systems' Credit Metrics Can Accommodate Ball Aerospace Acquisition](#), Aug. 18, 2023
- [Tear Sheet: Rolls-Royce PLC](#), Aug. 15, 2023
- [Leonardo SpA Upgraded To 'BBB-/A-3' On Solid Operating Performance And Improving Credit Metrics; Outlook Stable](#), Aug. 4, 2023
- [RTX Corp. Downgraded To 'BBB+/A-2' On Expectation For Negative Free Cash Flow Generation. Outlook Stable](#), Aug. 3, 2023
- [Tear Sheet: Thales SA](#), Aug. 2, 2023
- [Israel-Based Rafael Advanced Defense Systems Ltd. Affirmed At 'A-/A-2'; Outlook Stable](#), July 31, 2023
- [Tear Sheet: Safran SA](#), July 28, 2023
- [Boeing Co. 'BBB-/A-3' Issuer Credit Ratings Affirmed On Improving Deliveries And Increasing Production. Outlook Stable](#), July 27, 2023
- [Industry Top Trends Update Europe: Aerospace and Defense](#), July 18, 2023
- [Industry Top Trends Update North America: Aerospace and Defense](#), July 18, 2023

Industry Forecasts: Aerospace and Defense

Chart 7
Revenue growth (local currency)

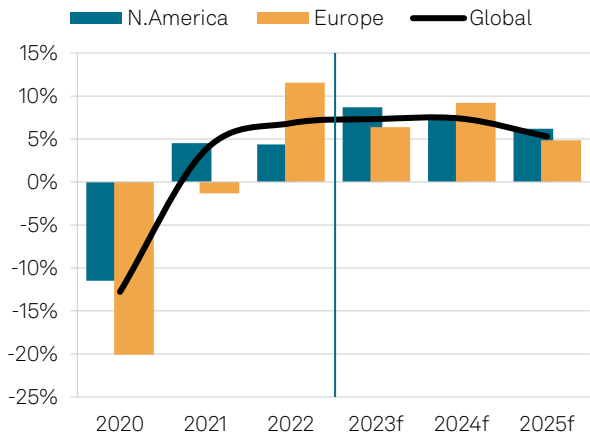


Chart 8
EBITDA margin (adjusted)

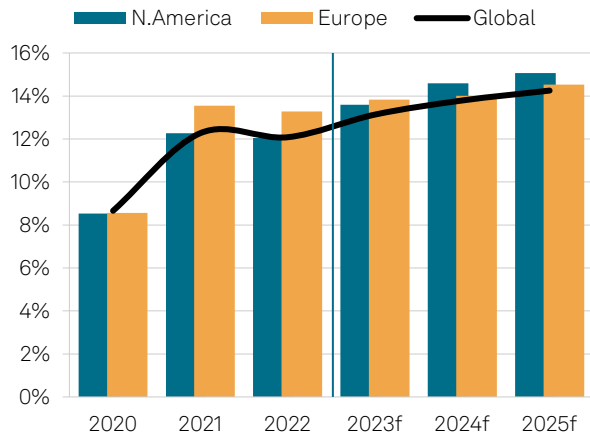


Chart 9
Debt / EBITDA (median, adjusted)

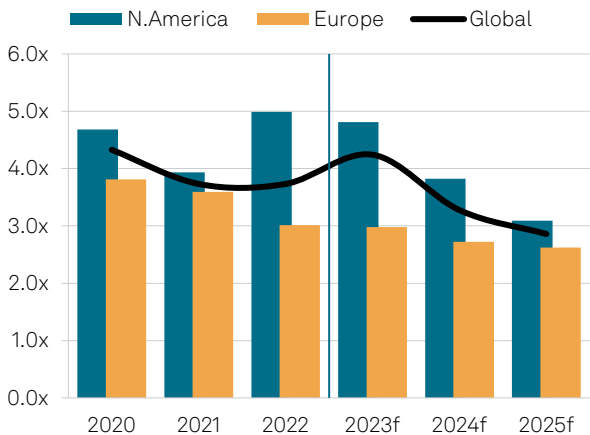
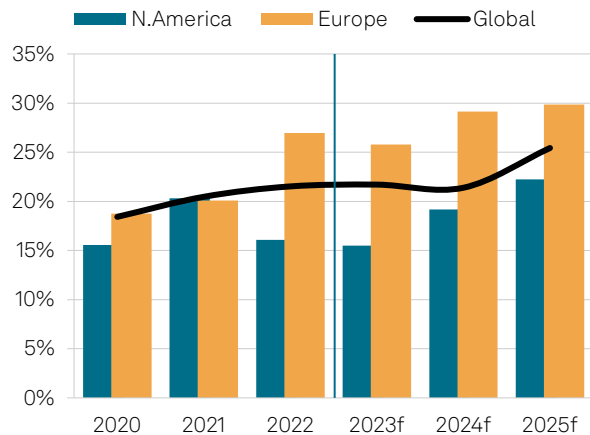


Chart 10
FFO / Debt (median, adjusted)



Source: S&P Global Ratings. f = forecast.
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: Aerospace and Defense

Chart 11

Cash flow and primary uses

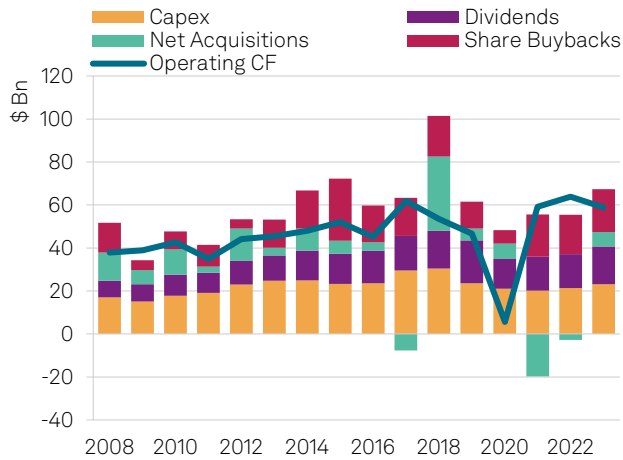


Chart 12

Return on capital employed

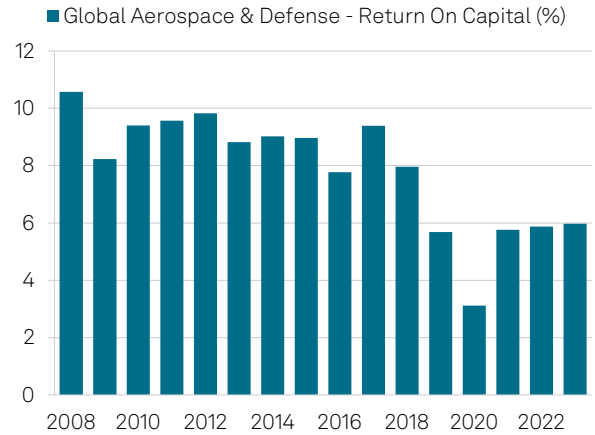


Chart 13

Fixed- versus variable-rate exposure

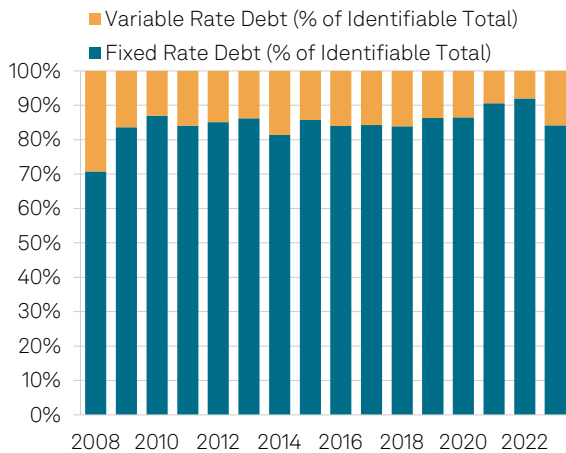


Chart 14

Long-term debt term structure

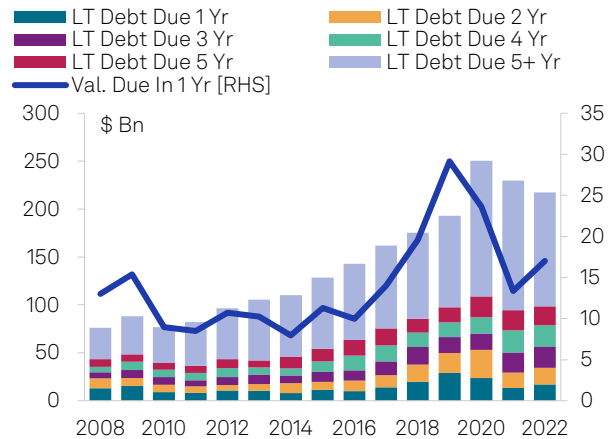


Chart 15

Cash and equivalents / Total assets

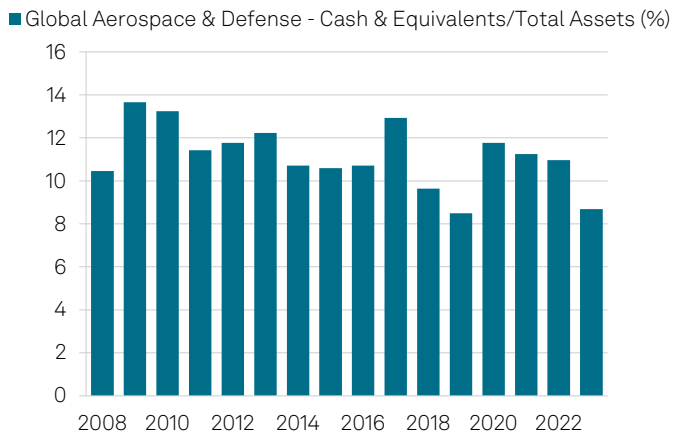
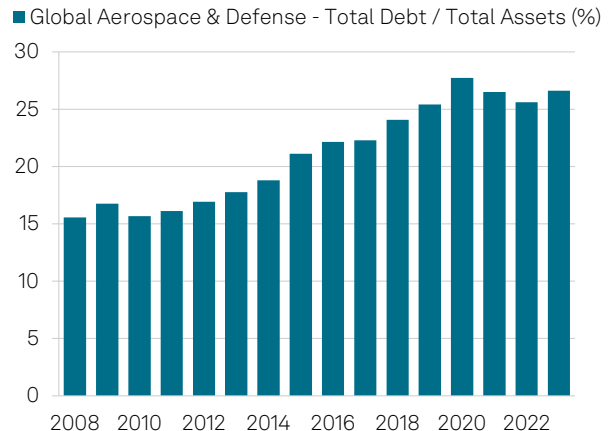


Chart 16

Total debt / Total assets



Source: S&P Capital IQ, S&P Global Ratings calculations. Most recent (2023) figures use the last 12 months' data.

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