

## Industry Top Trends 2020

### Aerospace and Defense

Fairly stable credit quality despite some risks



November 18, 2019

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#### What's changed?

**Grounding of the 737 MAX is disrupting the commercial aerospace market.**

Boeing is taking the brunt of the financial hit from the grounding so far, but the supply chain has been holding up well

**U.S. defense spending set for the next two years.** Military spending should grow modestly in fiscal 2020 and then level off in fiscal 2021, supporting moderate revenue growth for most contractors.

**A no-deal Brexit could disrupt supply chains in Europe.** After repeated delays, firms are now as well prepared as they will likely ever be after building buffer stocks, making alternative transport arrangements and preparing for tariff and other regulatory changes.

#### What to look for in the sector in 2020?

**The MAX returns to service.** Boeing expects to begin delivering the MAX in late 2019, but we believe this is likely to be pushed into 2020.

**Weak aircraft orders likely to continue.** Orders for new aircraft likely to continue to be constrained in 2020 by large backlogs for popular aircraft, as well as slowing global growth and trade tensions.

**More M&A.** In commercial aerospace, changes in how Boeing deals with its suppliers is spurring M&A, while defense companies use it to increase capabilities and program diversity.

#### What are the key medium-term credit drivers?

**Aircraft demand remains solid.** Rising global wealth and GDP, even at a slower pace, will keep air traffic growing and airlines need to replace old aircraft.

**Supply chain is a key constraint to production increases.** The global aerospace supply chain remains strained, limiting the ability of Boeing and Airbus to increase production rates, especially for narrowbodies, much above current plans.

**U.S. defense spending will likely level off, with Europe's defense spending still rising.** This should result in military contractors in both regions seeing moderately growing revenues.

# Ratings trends and outlook

## Global Aerospace and Defense

Chart 1

Ratings distribution

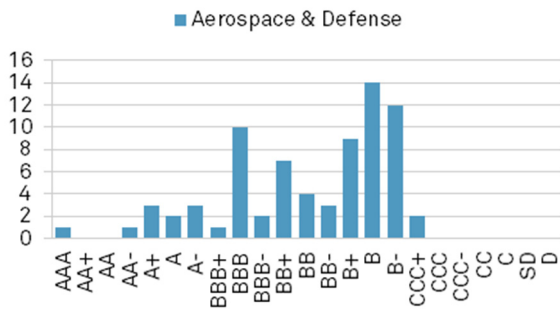


Chart 2

Ratings distribution by region

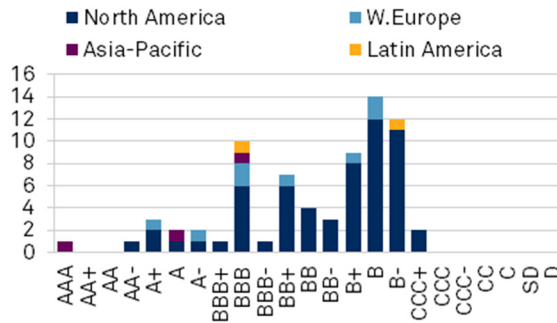


Chart 3

Ratings outlooks

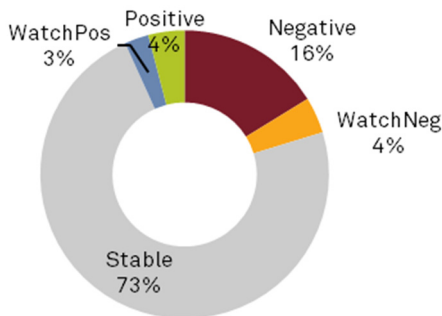


Chart 4

Ratings outlooks by region

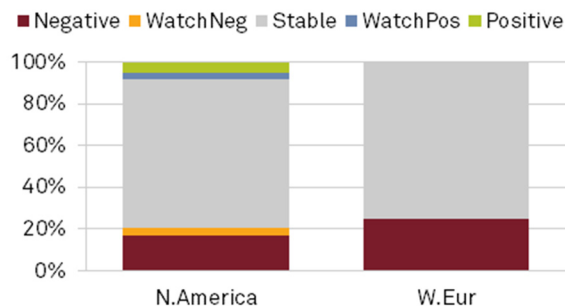


Chart 5

Ratings outlook net bias

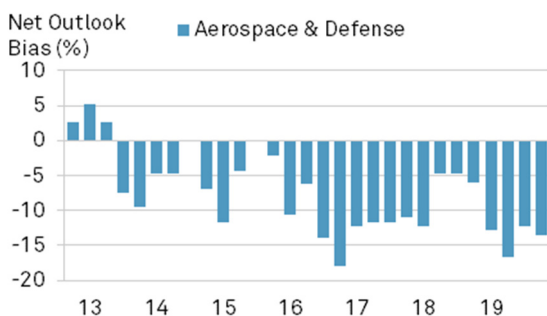
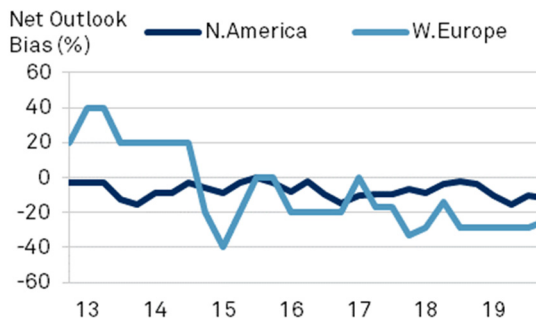


Chart 6

Ratings net outlook bias by region



Source: S&P Global Ratings. Ratings data measured at quarter end. Data for Q4 2019 is end October, 2019

We don't expect many rating changes in 2020 because 73% of outlooks are stable, the non-stable outlooks have a heavy negative bias. In the U.S., the negative outlooks largely result from M&A, as well as sponsor-owned companies' failure to meet expectations for earnings growth. There could be negative rating actions on aerospace suppliers if Boeing cuts or suspends MAX production. In Europe, we consider the ratings on our large investment-grade issuers to be relatively stable, with one or two exceptions (Roll-Royce and GKN both have a negative outlook due, in part, to their relative exposure to a potential no-deal Brexit). There are several very highly leveraged, niche high yield players who could be vulnerable to any additional bottlenecks or disruption to supply chains.

# Commercial Aerospace

## Key assumptions

### 1. Boeing resumes MAX deliveries in early 2020

Our current base case assumes Boeing receives approval from at least the FAA to resume deliveries of the MAX by January 2020. However, we expect approval from other global regulators to occur at different times, which will further delay aircraft delivery to those countries. We also expect Boeing to increase production from 42 a month to 57 by early 2021, and deliver all the aircraft it has produced during the grounding by 2022.

### 2. New aircraft orders likely to remain weak

Aircraft orders have declined dramatically in 2019 and we expect this trend to continue in 2020. Boeing has received no new firm orders for the MAX since the grounding and is unlikely to receive any significant orders until the aircraft is flying again, likely in early 2020. Overall demand will likely remain weak due to the long wait for popular aircraft, a slowing global economy, and trade tensions. However, air traffic growth remains good, despite a recent slowdown, and the ongoing need for airlines to replace their existing aircraft with new, more fuel-efficient models.

### 3. Margin and cash flow should improve

Although the impact on most suppliers has been modest, the MAX grounding has resulted in slower margin improvement than we had expected because many suppliers are carrying costs to produce 57 aircraft a month, which will likely not happen until late 2020 or early 2021. Margins and cash flow should improve as Boeing increases MAX production rates and suppliers reduce costs and improve operating efficiency. This improvement could be offset by pricing pressures from the original equipment manufacturers (OEMs). Similarly, cash flow should improve as the pace of production rate increases slowly, reducing the need for capital expenditures and working capital.

Despite weak orders and an uptick in cancellations (almost 300 total between Boeing and Airbus in the first nine months of 2019), backlogs for most aircraft should support production-rate targets for the next 12-24 months. Therefore, we expect overall aircraft production to spike in 2020 as MAX deliveries resume, return to the level we would have expected prior to the MAX grounding in 2021 and then probably flatten out. Boeing recently announced that it would be reducing 787 production to 12 a month from 14 a month (a rate it just reached this year) at the end of 2020 due to weak demand from China, which is likely related to the ongoing trade disputes. Development delays in the new 777X are also resulting in Boeing keeping overall 777 production lower for longer than we had expected. MAX production is likely to increase to 57 a month by late 2020 or early 2021, but further increases may be on hold.

Airbus is responding to its large order book by ramping up production rates for the key A320 single-aisle program, which dominates the order book. Monthly production is also stabilizing for the A350 twin-aisle program at 10 since the fourth quarter. Airbus' neo, which are more attractive to airline customers, given better fuel efficiency, have taken good traction in the market. We expect the A330 program to also benefit from increasing orders, with the neo option as the replacement cycle approaches. Airbus has reached its near term target of 10 A350s a month and is on track to increase A320neo production to 63 a month if supply chain issues are resolved.

## Key risks and opportunities

### 1. Delays to MAX return to service and long term impacts

The grounding of the MAX has gone on longer than we expected and the final approval of the updated software by global regulators could be delayed beyond our current expectation. If delays continue well into 2020, Boeing could decide to further cut or even suspend MAX production temporarily. This could result in lower revenues, earnings, and cash flow for many suppliers, weakening the already fragile supply chain. The MAX grounding is also likely to hinder the aircraft certification process, increasing costs for manufacturers.

### 2. Brexit could exacerbate the current supply-chain constraints

In 2018, delivery numbers of both the MAX and A320neo were delayed by operational bottlenecks and delays at the engine manufacturers, as well as capacity constraints further down the supply chain and quality concerns with some castings and forgings. The grounding of the MAX has enabled both CFM and the engine-component suppliers to catch up. Airbus is still experiencing delays with the A320neo due to engine supply delays, specifically for the A321 model. Overall the supply chain remains fragile and additional disruptions are possible.

### 3. Trade wars and slowing global economy

Air traffic in 2018 has trended below the long-term average of 5% due to trade tensions and slowing economic growth, a trajectory that is likely to continue and could accelerate if the global economy weakens further. So far, the decline has primarily hampered new orders, but airlines could start cancelling or deferring orders as earnings weaken. This could also result in more airline bankruptcies following the high profile failures of WOW air hf., Thomas Cook Airlines Ltd., and Jet Airways Ltd. in 2019. The direct impact of the trade war with China so far hasn't resulted in a material increase in costs for suppliers.

It's increasingly unlikely that the FAA and other global regulators will approve the updated MAX software at the same time, which will complicate Boeing's ability to deliver aircraft already built during the grounding and new ones coming off the production line. Depending on how much of a lag there is, Boeing could decide to slow production further or even temporarily suspend production. Either of these actions could be very disruptive to the supply chain and result in financial difficulties for smaller suppliers or ones that have a very large MAX exposure. The supply chain is still strained from years of significant production increases and the introduction of new models. As many suppliers are still producing at the old rate of 52 a month, there's also the possibility that they'll have to reduce production after Boeing resumes MAX deliveries due to too much inventory in the supply chain.

The MAX grounding has brought significant attention to the aircraft-certification process and the role the manufacturers play in performing some of the certification tasks. This is likely to result in changes to the process, at least in the U.S., resulting in a longer and more costly certification process for all aircraft manufacturers. In addition, the regulatory authority in the country where the aircraft was built certified the aircraft in the past, and this was generally accepted by other countries. After the second MAX crash, many non-U.S. regulators grounded the aircraft before the FAA did and are insisting on certifying the updated software independently. If this trend continues, it could complicate the certification process even more for manufacturers.

The impact of the trade tensions between the U.S. and China and other countries so far hasn't had a direct impact on the commercial aerospace industry. Higher tariffs on certain metals and parts made in China haven't resulted in a material increase in costs

for manufacturers. Large jetliners have not been subject to tariffs, but orders from China have likely been put on hold as talks continue. However, trade tensions have contributed to the slowdown in global air traffic growth and a significant decline in the much smaller air cargo market, which will likely remain a constraint on new aircraft orders in 2020.

We don't expect the recent World Trade Organization decision and announcement by U.S. trade officials to impose tariffs on aircraft at a 10% rate to have a long-term impact on the market or Airbus due to the relatively moderate level of proposed tariffs, and exclusion of all aircraft and their parts assembled in the U.S., which is a significant share of Airbus' single-aisle aircraft delivered to the U.S. market. Furthermore, a similar case brought by Europe will likely result in tariffs on U.S. aircraft in 12-18 months, eliminating the cost differential for airlines. EU trade officials have indicated they would impose tariff on U.S. goods, including aircraft, as a countermeasure, which would constrain Boeing in the European market.

Airbus has significant business operations in the U.K., including the assembly of substantially all the wings for its commercial aircraft, which are then transported to the company's final assembly lines, notably in Toulouse and Hamburg in the EU. In addition to its own production of wings, a no-deal Brexit could disrupt the delivery schedule for engines heading from the U.K. across the channel to final assembly lines in Toulouse (for more information, see "Rolls-Royce PLC Downgraded To 'BBB'; Outlook Negative," Aug. 22, 2019). Airbus has recently highlighted the operational and financial risks that would arise if the U.K. left the EU in a disorderly way, without an agreement on the future trading relationship between the U.K. and EU. In a disorderly Brexit, we assume that Airbus would face disruptions to aircraft production, higher working capital investments, penalty payments to customers, and lost turnover. Airbus has mitigated the event by building a one-month buffer stock and ensuring operational readiness in terms of customs, transport, and logistics, as well as financial partners.

Chart 7

Large commercial aircraft orders

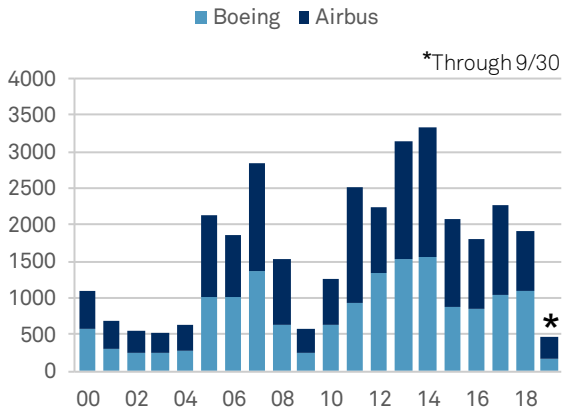
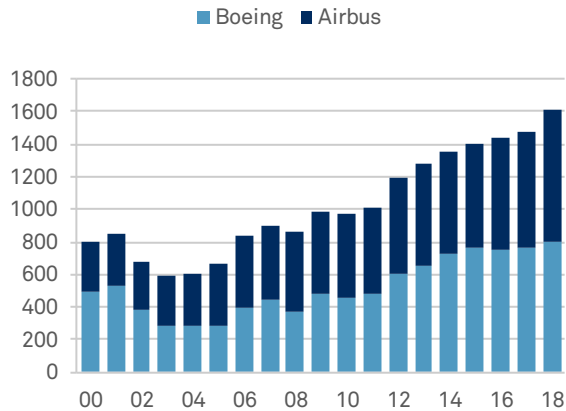


Chart 8

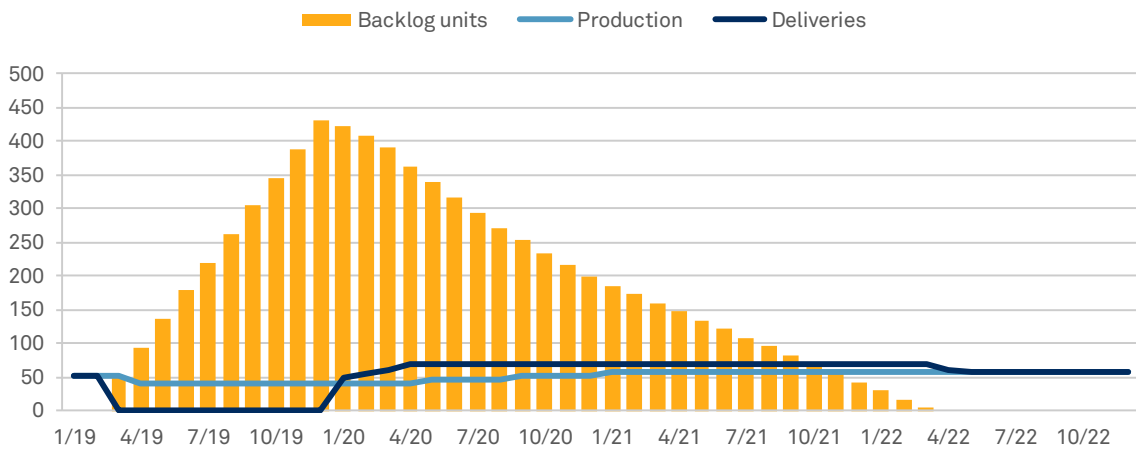
Large commercial aircraft deliveries



Source: Manufacturers' websites, S&P Global Ratings

Chart 9

Base case 737 MAX deliveries and production



Source: S&P Global Ratings

# U.S. Defense

## Key assumptions

### 1. Increasing revenue as defense spending rises

Overall military spending was set by the U.S. Congress earlier this year, which will result in an increase of 3% in fiscal 2020 to \$738 billion (including funding for nuclear weapons at the Department of Energy) and then a more modest bump of less than 0.5% in fiscal 2021 to \$741 billion. Due to the lag between when money is appropriated by Congress and actually spent by the military, most defense contractors should see growing revenues for the next few years due to previous higher increases. Solid international demand will also bolster sales, as demand for missile defense and other weapons systems will increase in countries in the Middle East, Asia, and Europe.

### 2. Margins likely to moderate

The U.S. government continues to look for the best technology at the most affordable price even though overall defense spending has increased. Therefore, we expect elevated pricing pressure in this industry will persist, although it will be less onerous than in recent years. It's not clear if Boeing's very aggressive bidding on the T-7A trainer and MQ-25A unmanned aerial refueling tanker is having a broader impact on contract pricing. Prime contractors have also been pressuring their suppliers to reduce costs as well. Most companies have worked to rationalize their cost structures in order to bid more competitively on defense programs, though much of these savings are being passed on to customers, which has limited improvement in their margins.

### 3. M&A increasing as shareholder returns moderate

Increased defense spending has led many firms to shift their cash deployment priorities toward M&A and internal investment, and away from shareholder returns, which is a trend that we expect to continue. However, the volume of share repurchases and dividends by the large firms will remain high, though these companies will likely choose to fund their shareholder rewards with internal cash flows. The notable exception is Boeing, which has suspended share repurchases until the MAX returns to service and the program has stabilized. Acquisitions could lead to elevated leverage if firms do not pull back on their shareholder returns in response; however, in some cases, the effect on their credit quality could be moderated by their improved scale and expanded capabilities.

## Key risks and opportunities

### 1. Uncertainty about longer term defense spending

We expect U.S. defense spending to increase only modestly for the next few years, with the pace of growth unlikely to exceed the rate of inflation. Although the budget deal earlier this year permanently eliminates the threat of sequestration cuts, actual declines in defense spending are possible after fiscal 2021 due to competing fiscal and political priorities. There is also still the possibility of government shutdowns in the current political environment. Military priorities are also shifting from fighting terrorists in the Middle East to countering Russia and China, which could impact individual companies depending on what types of weapons or services they provide. Defense spending has not yet been a topic in the 2020 presidential election, so it is too soon to tell if military budgets or priorities will change if there is a new administration.

### 2. Hypersonic weapons potentially a large new market segment

Evidence that Russia and China have leapfrogged U.S. technology for hypersonic weapons (generally defined as missiles that travel faster than five times the speed of sound) has prompted a significant increase in funding in this area. The U.S. also currently has no defense against these types of weapons so funding is also being directed to developing countermeasures, including sensors and command and control systems. Although many of the programs are classified, the publicly announced contracts have already totaled in the billions, with Lockheed and Raytheon being the primary beneficiaries so far.

### 3. Political impact on foreign sales

Sales of weapons to U.S. allies is an important source of demand for many large contractors, but these sales can often be impacted by political issues. There have been calls from some members of Congress to ban sales to Saudi Arabia, one of the largest buyers of U.S. weapons, following the killing of a journalist last year, but so far none have been put in place. Another recent example is removing Turkey from the F-35 program, both as a supplier and a buyer, after buying a Russian air defense system.

Fiscal 2020 has started on another continuing resolution despite the budget agreement that sets overall defense spending levels and after the fiscal 2019 budget was actually passed before the year started for the first time in more than 10 years. Defense spending is often a political issue and the current environment, including the impeachment hearings and the beginning of the 2020 presidential race, is making it difficult for Congress to reach any agreement on the detailed spending bill. We believe, even a full-year continuing resolution will result in moderate revenue growth for most defense contractors.

With our expectations for flattening defense spending in the next few years, how the money is being allocated to individual programs becomes even more important for each defense contractor. The strategic shift toward countering "near peer" countries like Russia and China, as well as rogue states like Iran and North Korea, will likely result in more spending on large platforms like aircraft and ships, as well as missile defense. Other key areas include hypersonic weapons and countermeasures, electronic warfare, cyber, artificial intelligence, and autonomous systems. Both the Army and Air Force are planning to redirect funds from upgrade programs to procuring new capabilities. The recapitalization of the country's nuclear forces will also get a lot of funding, including a new intercontinental ballistic missile, missile submarine, and air-launched cruise missile. The impact on individual companies will vary depending on which programs they are associated with.



**Industry Top Trends 2020: Aerospace and Defense**

There has been significant M&A activity in the past two years and we expect this to continue in 2020, although we still think a combination of two of the large prime contractors is unlikely. Despite growing defense spending, companies are making acquisitions to increase their range of products and capabilities or expand their customer base with the various military services, intelligence agencies, and civilian government departments. The most activity has been in the government services sector, which was hit hard by the declines in defense spending a few years ago, and where scale is important both to improve cost competitiveness and to be able to offer a broader capabilities. The impact on credit quality has varied, with the combination of L3 Technologies Inc. and Harris Corp. resulting in upgrade as it was an all-stock deal and resulted in a larger, more diversified company. Conversely, Northrop Grumman Corp. was downgraded after buying Orbital ATK Inc. because the higher leverage did not offset the modest improvement in competitive position.

Chart 10

**Base U.S. defense budget**

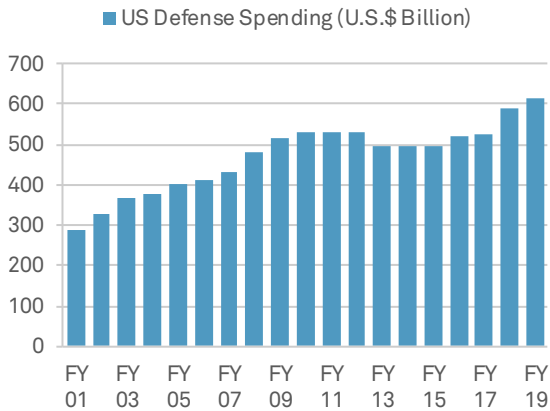
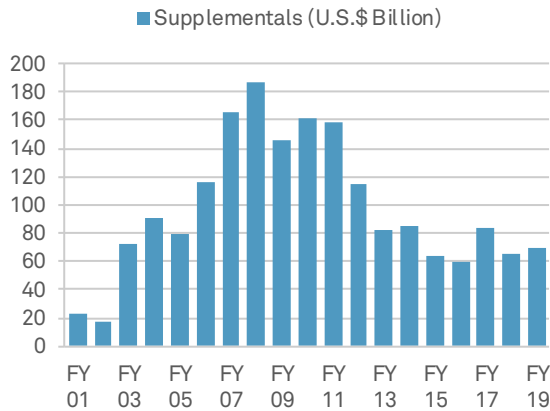


Chart 11

**U.S. supplemental war funding**



Source: U.S. Department of Defense, S&P Global Ratings

# European Defense

## Key assumptions

### 1. European government's defense budgets will continue to grow

As European governments modernize their armed forces and cyber threats become a common facet of modern warfare, European defense companies are trying to establish themselves as digital leaders through M&A or by seeking partnerships. We expect the capital expenditures of European defense companies to remain fairly stable at around 5% of revenue. Therefore, we anticipate that most issuers will utilize joint ventures or strategic M&A to boost their digital capabilities.

### 2. Digitization will continue to gather pace, presenting opportunities for some

Growth in the defense budgets of European countries, due to geopolitical tensions and the rising threats posed by cyberattacks and disruptive technologies, will continue to provide a supportive environment for defense companies. European members of the North Atlantic Treaty Organization (NATO) are attempting to reach the NATO spending target of 2% of GDP (currently 1.5% on average) and continue to increase their real spending on defense, which we estimate will rise by more than 4% in 2019. European governments continue to move toward achieving "strategic autonomy," which aims to reduce Europe's reliance on U.S.-made weapons.

### 3. Despite Brexit uncertainty, governments and primes continue to collaborate on new platforms

Since our last ITT, and despite the threat of a no-deal Brexit, we have seen multiple examples of governments and issuers agreeing to collaborate on platforms, with the U.K. still at the table. At the top of the list--Italy agreed to join the U.K.-led Tempest fighter jet project (with BAE Systems, Rolls-Royce, MDBA UK, and Leonardo S.p.a. joining up with Sweden's SAAB AB), adding weight to what is becoming a major race in Europe to develop the next generation of fighter planes (France, Germany and Spain are collaborating on their Future Combat Air System with Airbus and Dassault Aviation SA leading the initiative). We also note Leonardo's JV with Thales SA for next-generation satellites.

## Key risks and opportunities

### 1. A disorderly Brexit could negatively affect supply chains

In terms of the potential effects of a disorderly Brexit, many European defense companies are focused on how Britain's separation from the EU will affect their supply chains. Defense OEMs often have complex cross-border supply chains that would be highly sensitive to the impact of a disorderly Brexit, which could lead to immediate production delays at the OEMs due to short-term disruptions in their transport and logistics, a longer-term rebalancing of supply chains as the industry deals with the potential introduction of customs checks, and disruption caused by delays or changes in the regulatory approval process. Smaller defense suppliers would likely be the hardest hit by a disorderly Brexit because they lack the scale, resources, and liquidity to handle sudden large swings in their working capital.

### 2. Brexit could alter the U.K.'s role in the EU's defense strategy and lead to relocation of production

The U.K. is currently the EU's biggest defense spender and one of the few countries that meets NATO's target spending of 2% of its GDP on defense. In fact, the country is responsible for about 40% of the bloc's current spending on defense R&D. However, there remain many unknown factors related to the aftermath of Brexit, including what role the U.K. will play in the EU's future defense strategy, whether it will have access to European research and industrial development funding, and how the cross-border movement of skilled labor will be handled. Although most existing defense contracts will likely not be affected, U.K. firms may be prevented from bidding on future EU contracts or vice versa. Some OEMs may also decide to relocate their production assets closer to their end customers and negate some of the aforementioned risks. On the other hand, some of the impact of the U.K.'s decision to leave the EU has already been seen in the bloc's decision to raise its military budget for the first time in six years, after the U.K. dropped its opposition to the plan, with the creation of more structured defense cooperation through the EDF and DFPIP.

### 3. A change in U.K. government could impact foreign sales

Just like in the U.S., weapon sales by the U.K. and the rest of Europe to their allies is an important source of demand for many large contractors, but political issues often pose difficulties. There have been calls from some U.K. and European political parties to ban defense exports to Saudi Arabia. We note that the looming general election in the U.K. could see a new government deciding to change policy in this regard. U.K. defense prime BAE Systems generates about 13% of its group sales from the Kingdom of Saudi Arabia, but BAE is mostly either operating under a government to government contract, providing support on the ground in KSI or operating under JVs with KSI companies.

## Related Research

- Boeing Co. Outlook Revised To Negative From Stable On Reports It May Have Misled FAA On 737 MAX; Ratings Affirmed, Oct. 22, 2019
- Boeing Co., Sept. 4, 2019
- United Technologies Corp. Ratings Placed On CreditWatch Positive On Proposed Merger With Raytheon Co., June 11, 2019
- Rolls-Royce PLC Downgraded To 'BBB'; Outlook Negative, Aug 22, 2019.
- Wesco Aircraft Holdings Inc. On CreditWatch Negative On Proposed Merger With Pattonair; New Debt Rated, On CreditWatch Oct 18, 2019
- ESG Industry Report Card: Transportation, Aerospace, And Defense, May 13, 2019.

**This report does not constitute a rating action.**

# Industry forecasts

## Global Aerospace and Defense

Chart 12

Revenue growth (local currency)

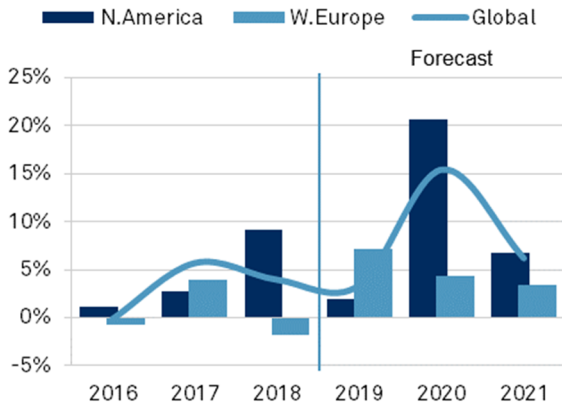
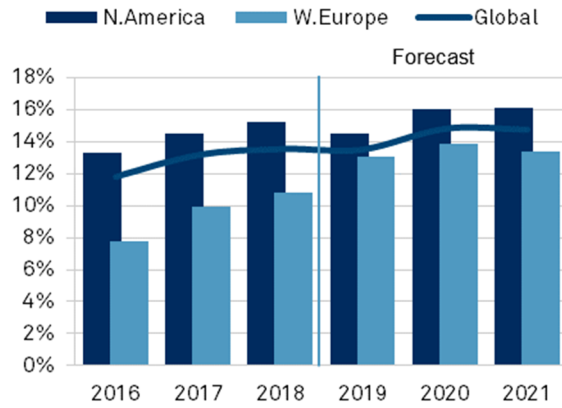
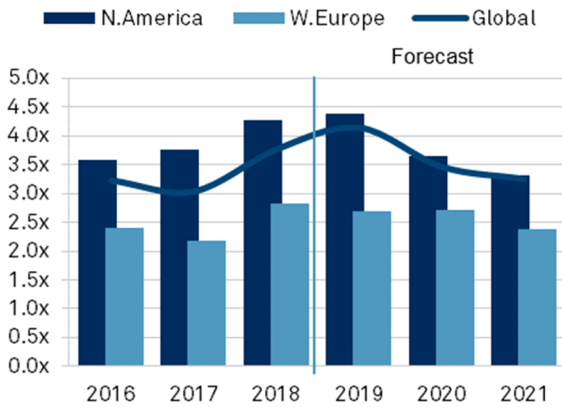


Chart 13

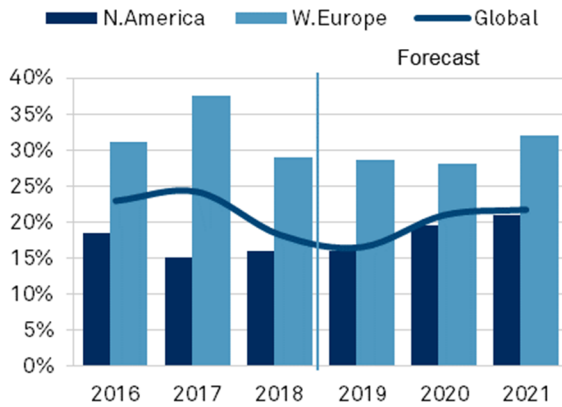
EBITDA margin (adjusted)



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 14

Cash flow and primary uses

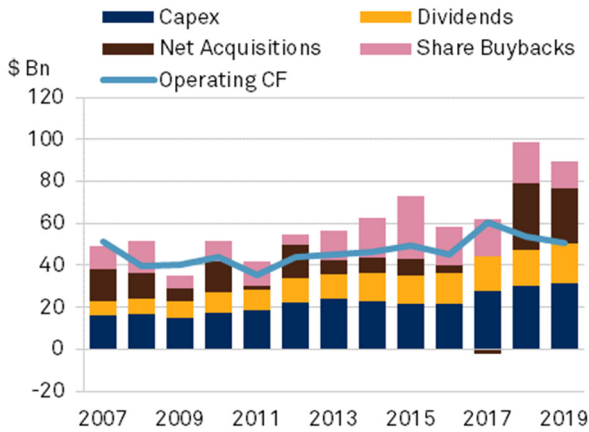


Chart 15

Return on capital employed

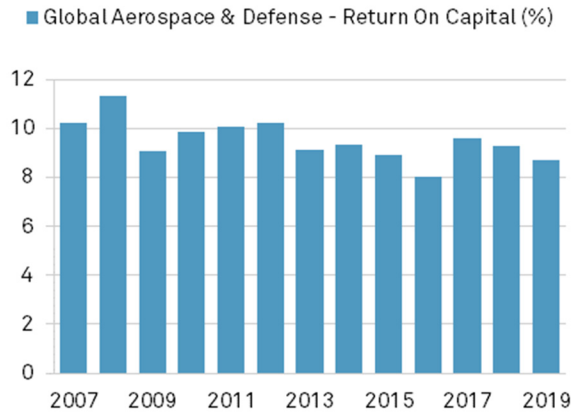


Chart 16

Fixed versus variable rate exposure

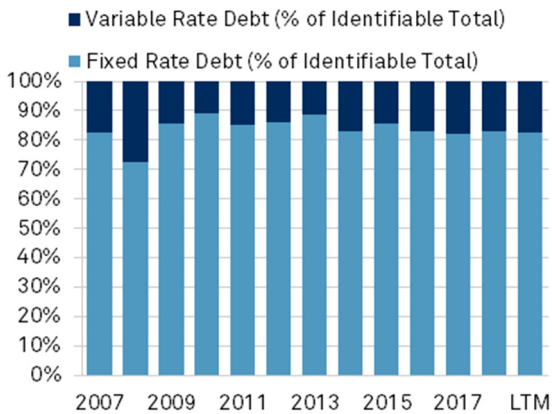


Chart 17

Long term debt term structure

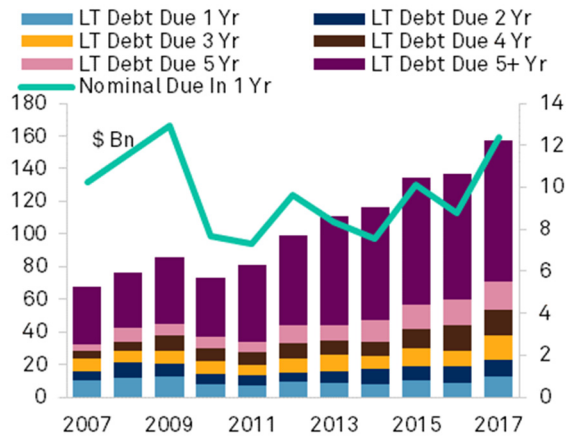


Chart 18

Cash and equivalents / Total assets

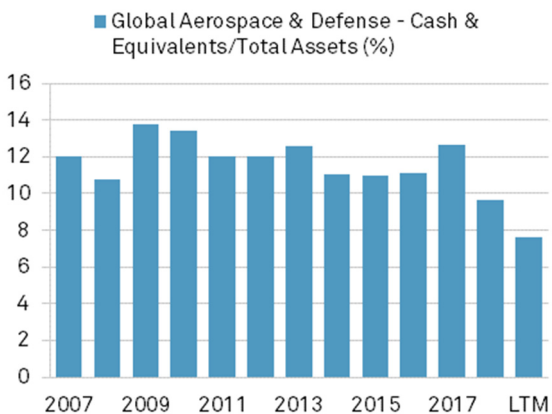


Chart 19

Total debt / Total assets



Source: S&P Global Market Intelligence, S&P Global Ratings calculations

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