accenture

ACCENTURE COMMERCIAL AEROSPACE INSIGHT REPORT

LEAD IN THE NEW

JULY 2018

EXECUTIVE SUMMARY

Uptick in orders compliment narrow-body production ramp up and MRO growth

Aircraft order levels are still down from their peak in 2013-2014. Increasing MRO demand, low fuel prices and higher aircraft deliveries are driving the commercial market.

We anticipate the overall 2018 commercial market to grow at a healthy 4.5% annual rate compared to the 2.1% 2017 annual growth. The Asia Pacific region continues its global growth lead, but North America is seeing a strong boost at 5.9% YoY, which is driving our higher 2018 forecast. Looking further ahead, there is a storm cloud looming for the Asia Pacific with growth perhaps cutting in half from what we have seen in past/current periods. Year to date aircraft orders have been relatively brisk, stronger than 2017. This bodes well for order growth in parallel with the ongoing delivery increases.

Aerospace executives have deferred their geopolitical risk concerns to the future, with economic concerns top of mind in the short term. The US Tax Cut and Reform Bill have provided both short and long term benefits to US companies. Aerospace companies are investing in their people, increasing dividends and evaluating repatriating stranded profits. The Brexit is looming large from both a supply chain and regulatory perspective. Concerns about supply chain continuity and civil aviation authority loom large. Finally, trade wars and retaliatory tariffs have the potential to broadly drive up costs for raw materials, sub-systems and parts that may or may not be able to be passed through to customers.

Continued capacity expansion will put pressure on costs and drive additional efficiency, production automation, cost visibility, and supplier development investments. Both Airbus and Boeing have over 5 years of production backlog for their commercial aircraft models. While book to bill ratios have recently dropped below 1.0 for the first time in years, that looks to change. Boeing has managed a book to bill of 1.5 thus far and Airbus expected to top 1.0 for 2018. These significant backlogs are allowing the commercial aerospace industry to ride through aircraft order volatility.

In 2018, the Asia Pacific market is expected to sustain its global lead with 10.7% commercial aerospace industry growth when compared to 2017. North America aerospace demand is expected to be up 5.9%. YoY. Optimistic signs are coming from Europe, Latin America and Middle East. We expect the EALA market will increase 1.7% YoY.

Lagging aircraft retirements and additional shop visits for older aircraft will provide more opportunity for cost-competitive third-party MROs. This trend may also delay OEMs' ability to differentiate with proprietary service offerings targeted at newer platforms.

Geopolitical risks remain the areas of concern for industry executives. Terrorist plots in Europe and the US and political instability remain top of mind risks.

The era of relatively low fuel costs seems to have come to an end, eliminating a key economic basis for maintaining older aircraft in service. For the time being however, older aircraft (10+ years of age) constitute more than 50% of the global commercial fleet and require ongoing maintenance events.

Overall, Accenture's econometric modeling, together with the results from our aerospace executive poll, support the case for a continued rise in 2018 air traffic growth. This combined with the large fleets of older aircraft will fuel the MRO market over the next 18 months.

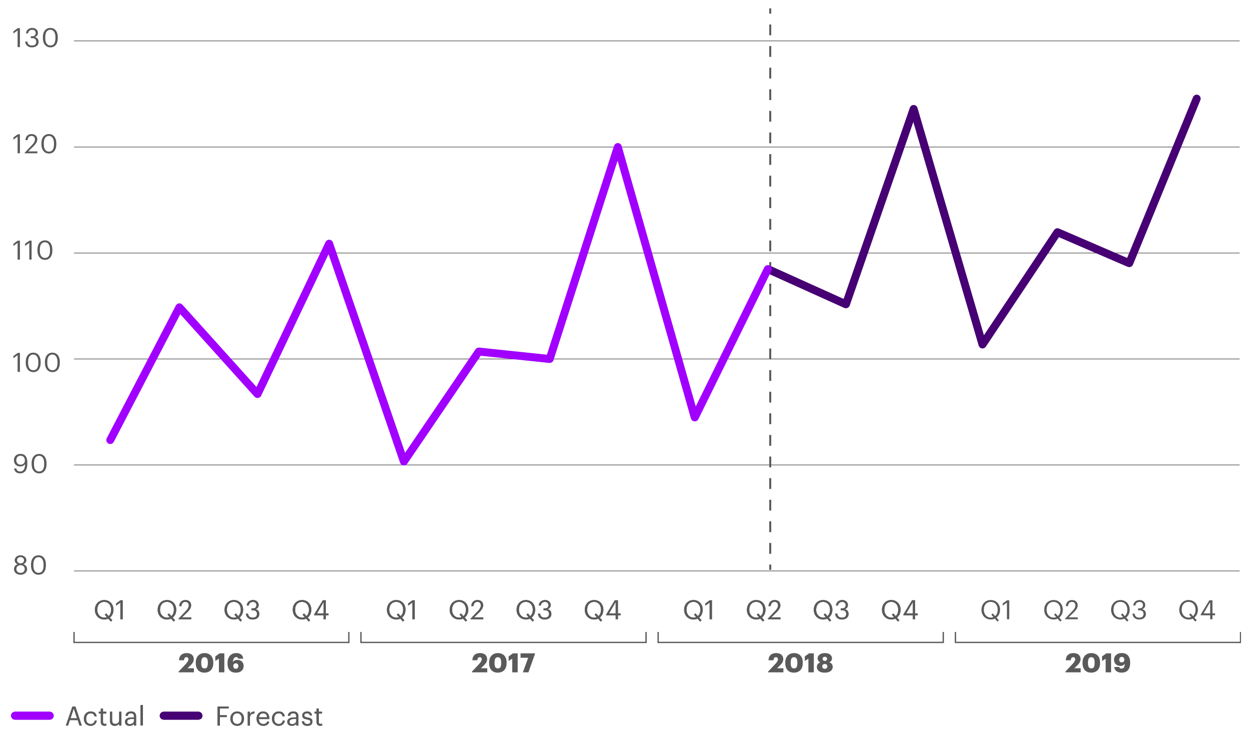
GLOBAL OUTLOOK

2018 builds upon 2017 for higher growth rates across regions, with a tempered 2019 outlook

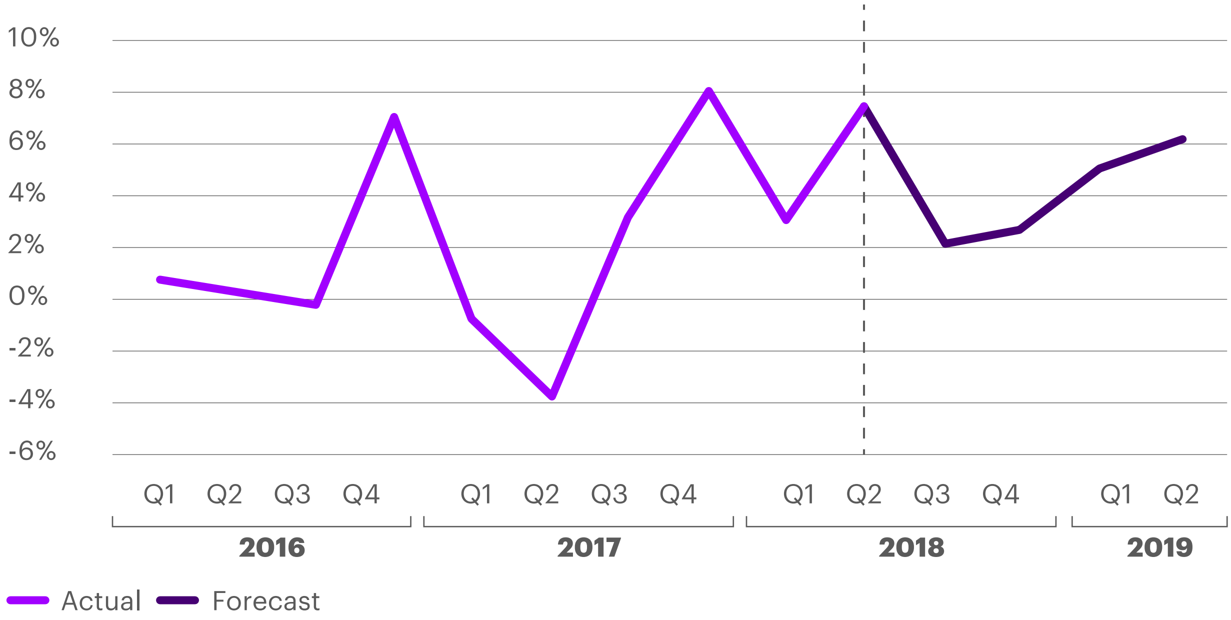
New aircraft deliveries in 2017 met overall expectations with increases anticipated for 2018. The aftermarket continues to be healthy, driven mainly by traffic growth and older fleets continuing to fly. These factors are shoring up the overall commercial aerospace market, with both North America and Asia Pacific driving global demand. EALA is continuing to pick up speed and starting to once again help drive global growth vs. dragging global growth down.

The 2018 forecast shows APAC sustaining the highest commercial aerospace industry growth rate at 10.7% YoY, followed by 5.9% YoY in North America. EALA posted stronger than expected gains in 2017 and is expected to additionally grow 1.7% YoY in 2018.

Global Commercial Aerospace Index
(USD, 2014 = 100)



Global Commercial Aerospace Index Performance
(quarterly YoY percent change)



New for this year, we expect sustained quarterly YoY growth rates, reflecting sustained product rate increases. The first half of 2018 should be stronger than 2017 with the last half of 2018 deliveries fueling even a higher annual growth of 4.4% overall. This annual growth rate has increased from our earlier forecast of 3.5% due to strong first half industry performance.

2019 is anticipated to continue 2018 growth, perhaps tempered a bit to a 3.7% YoY growth from 2018. The primary driver for lower continued growth is forecasted weaker growth in the Asia Pacific region.

PRODUCTION OUTLOOK

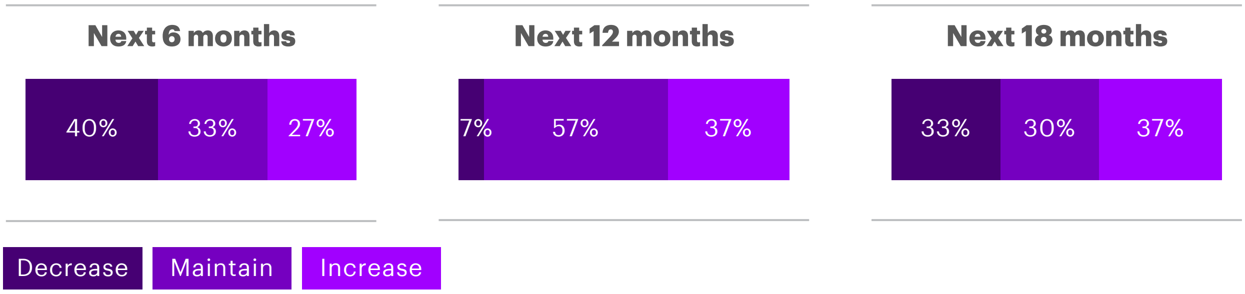
Intelligently keeping up with rate increases.
Narrow-body aircraft production expansion will continue to drive unit volume growth. This capacity increase will allow the OEMs to start making a dent in their significant aircraft backlogs. As the entire value chain ramps up, production input costs are certainly important, but we are also seeing rapid change in how those inputs are transformed into final products, as well as efforts to maximize capacity utilization. Production capacity increases are driving demand for solutions aimed at bringing innovation into existing manufacturing process as well as additional capacity investments. Driving new efficiencies remain elusive. In our executive survey, only 13% indicated that they were successfully using digital technologies to unlock new levels of operational efficiency.

While the supply chain will ultimately meet OEM demands, many continue to be challenged by the sustained production rate increases. Continued capacity expansion is putting pressure on costs and drives for additional efficiency, production automation, cost visibility, and supplier development investments.

For the most part, surveyed executives see suppliers meeting expectations in the next 6-12 months, with anticipation that they will exceed their delivery expectations in the longer term.

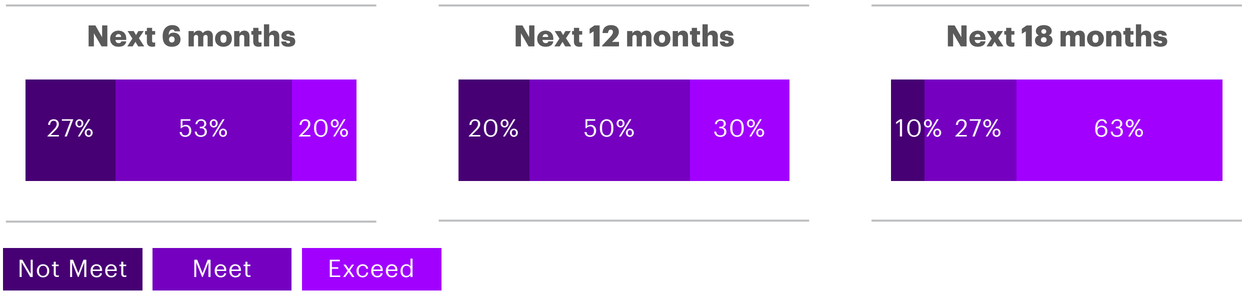
Production Capacity Outlook

(Percent of executives surveyed)



Supplier Delivery Expectations Outlook

(Percent of executives surveyed)



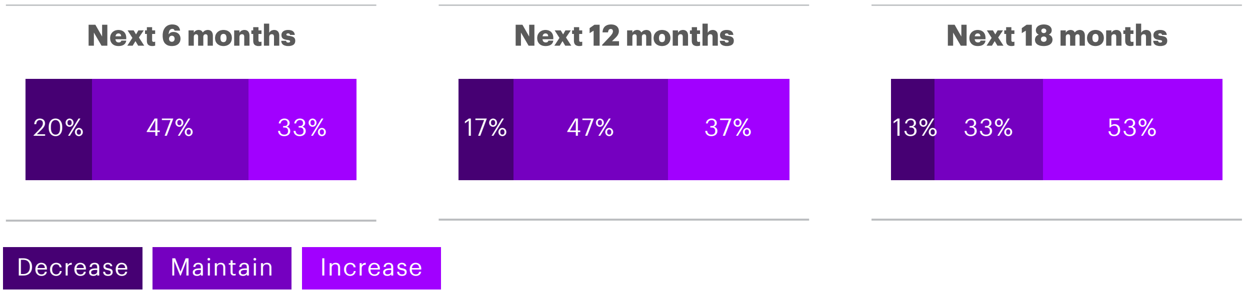
PRODUCTION INPUTS

Flat costs with increases anticipated.
2018 material and labor costs are anticipated to stay at similar levels or increase vs 2017. Two-thirds of respondents indicated similar costs to 2017, but one-third indicated increasing costs across production labor, raw materials and sub-system or parts costs. Over the next 12-24 months, almost half of respondents anticipated increased costs across all categories.

The talent market for highly skilled workers, whether they be manufacturing or design talent, will remain highly competitive, with recruiting competition coming from other industries such as high tech. At the same time, driving innovation and culture change across the myriad of functions in the typical aerospace company remains a top challenge for aerospace company leadership. According to our recent industry research, 74% of aerospace and defense executives believe corporate bureaucracies are stifling productivity and innovation.

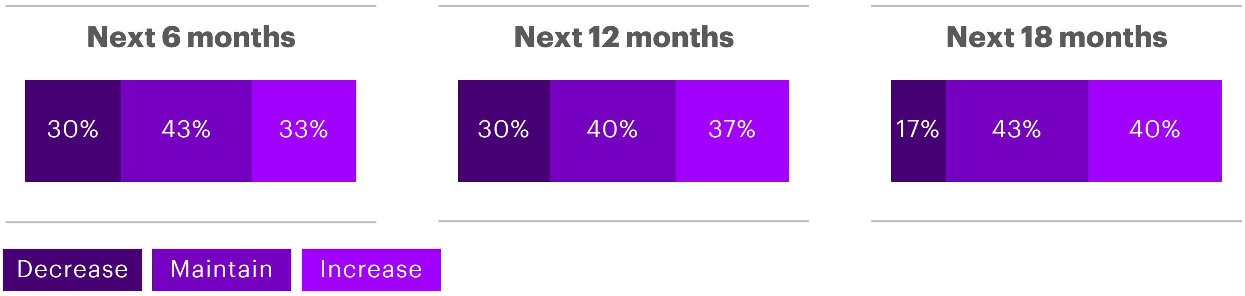
Raw Materials Cost Outlook

(Percent of executives surveyed)



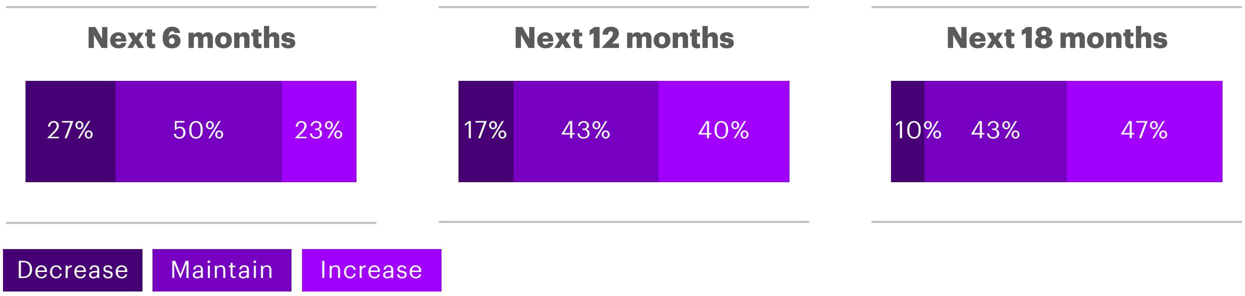
Sub-System or Parts Cost Outlook

(Percent of executives surveyed)



Production Labor Cost Outlook

(Percent of executives surveyed)



BUSINESS CYCLE STANCE

Solid 2018. In the next 18 months, we do not expect a dramatic increase in new aircraft orders. A very strong MRO market and delivering on the current backlogs are the main market growth drivers with respondents generally seeing increased revenues over the next 6-24 months These combine to deliver an estimated 4.4% YoY increase in 2018 and is a healthy improvement over the 2.1% growth seen in 2017. In our executive survey, 50% indicated that they were successfully using digital technologies to drive new sources of growth. While encouraging, this is tempered by the fact that only 10% of firms are successfully using digital technologies to simultaneously drive both operational efficiency and new business growth.

Business Cycle Stance Outlook

Next 6 months	Next 12 months	Next 18 months
Rising	Rising	Rising

AIRCRAFT OPERATIONS

The fleets keep flying, driving MRO demand.
Rise in air traffic and load factors coupled with older fleets continuing to fly will have an overall positive impact on MRO. This trend is largely anticipated to continue though the next 18 months.

Sustained by the continued demands of both legacy and new aircraft fleets, the MRO market is becoming a large driver of digital innovation. There is a renaissance of intelligent solutions, such as predictive maintenance, supply chain, flight planning, fuel management systems that improve aircraft operations and operator ROI. This is reflected in a recent Accenture aerospace survey where 97% of executives indicated that they were willing to digitally reinvent their business and industry.

Aircraft Operations Activity Outlook

Next 6 months	Next 12 months	Next 18 months
Rising	Rising	Rising

RISKS

What keeps aerospace executives up at night?

Economic concerns more so than geopolitical risks are now weighing on industry executives' minds. Realized terrorist tragedies and international turmoil seem to be behind us compared to prior executive sentiment.

In the short term, executives are now more concerned about economic risks in terms of interest rates and economic conditions challenging their firms. Political instability and armed conflict concerns have not gone away, but have certainly shifted toward a concern for the future vs. now.

	Next 6 months	Next 12 months	Next 2 years
Terrorism	Low	Low	Low
Political instability	Medium	Medium	High
Worsening economic conditions	Low	Medium	Medium
Interest rate changes	Medium	High	High
Regional armed conflicts	Medium	Medium	High
Exchange rate changes	Medium	Low	Low

NORTH AMERICA OUTLOOK

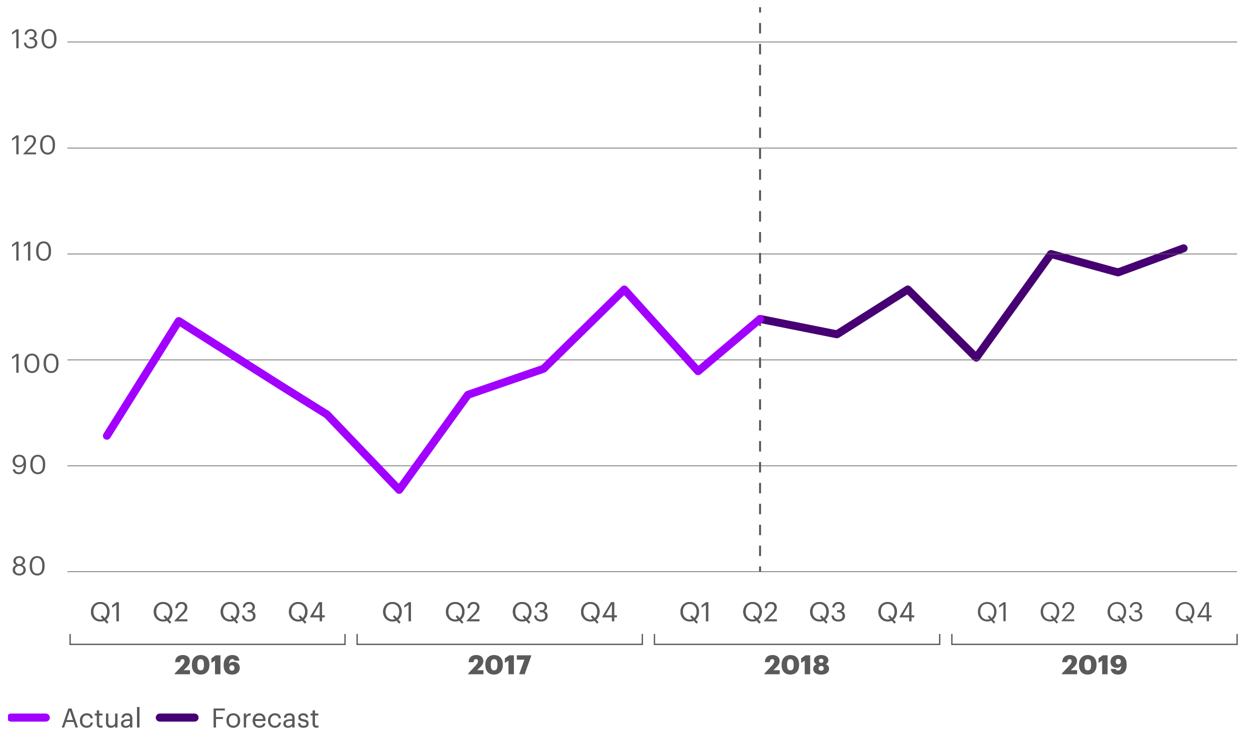
Rebounding to sustained and strong growth

2018 North America aerospace annual demand is expected to be up 5.9%. While we will see the typical front half softness in demand, quarterly YoY growth will be mostly higher. Overall yearly commercial aerospace industry growth is forecast at 5.9%. 1H18 is expected to be strong vs. prior year with the last half of the year driving overall annual year on year growth.

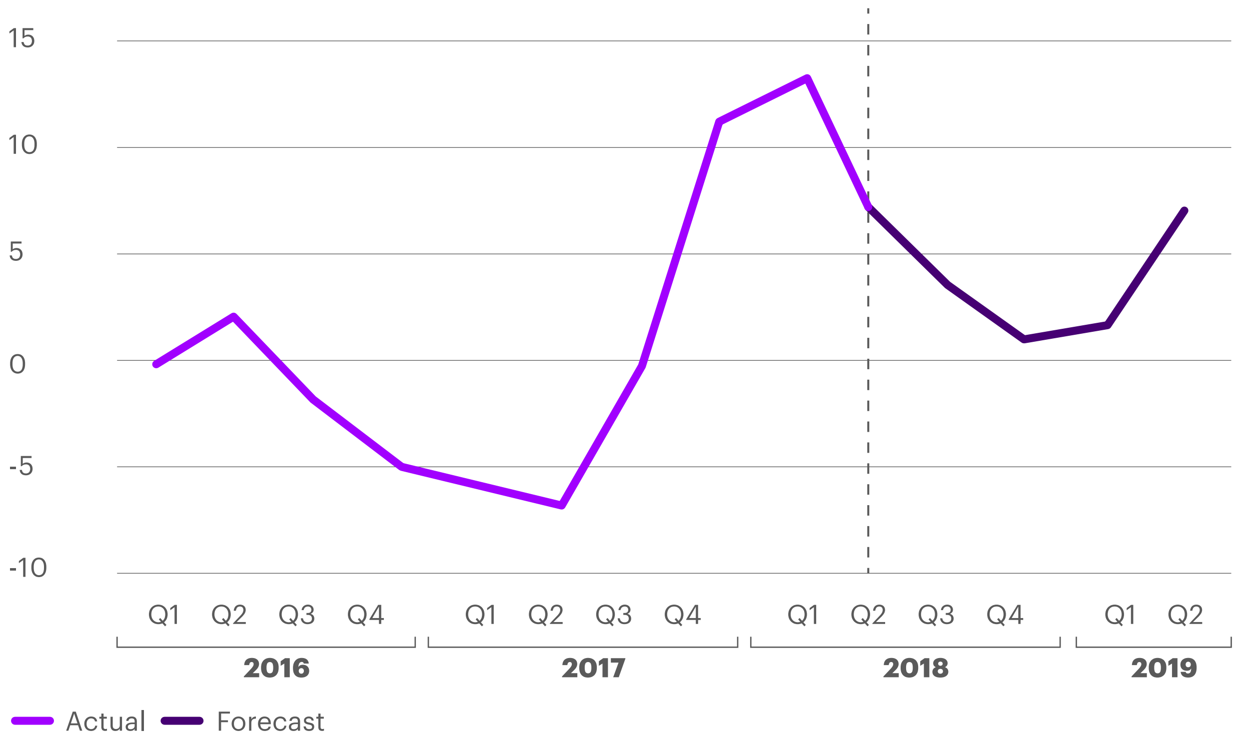
2018 sets up for a promising 2019, with growth anticipated to increase 4.9% YoY from 2018.

1H18 vs. 1H17	2018 vs. 2017	1H19 vs 1H18
Rising	Rising	Rising

North America Commercial Aerospace Index
(USD, 2014 = 100)



North America Commercial Aerospace Index Performance
(quarterly YoY percent change)



ASIA PACIFIC OUTLOOK

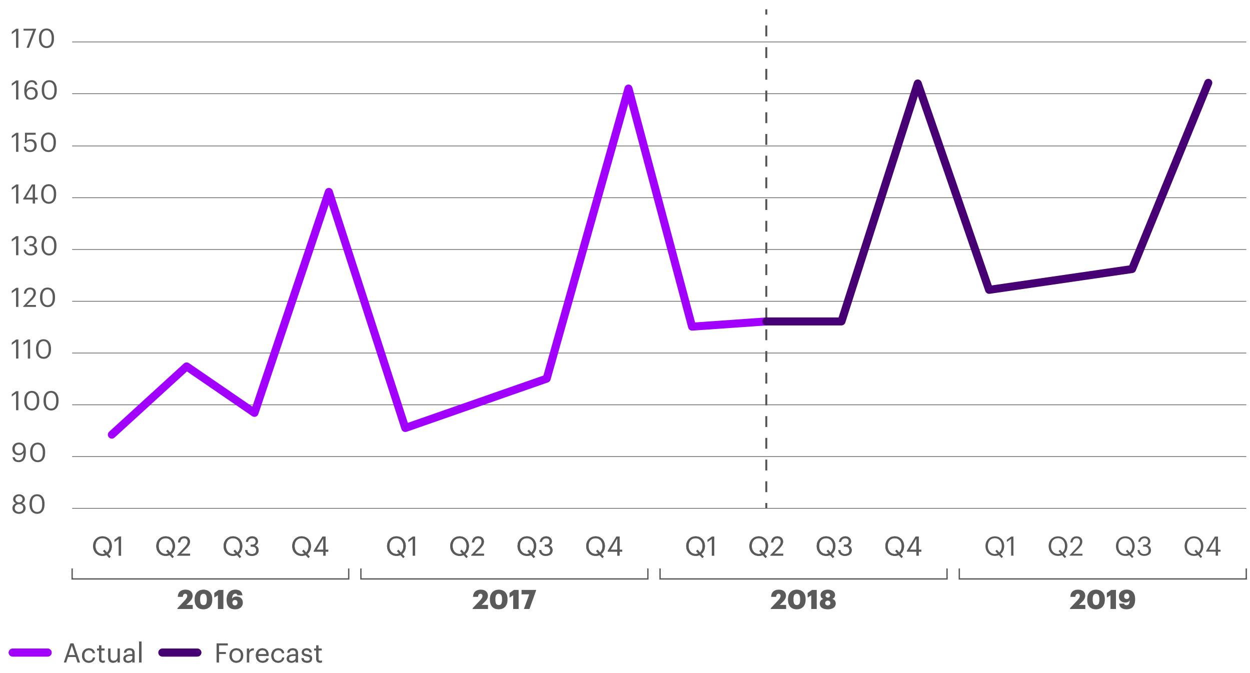
Strong growth with risk looming for 2019

2018 annual demand is once again expected to be the regional leader with a strong 10.9% increase. Relative to 2017, the first half of 2018 promises to have extremely strong growth versus 1H17. This will contribute to a strong base for last half 2018 growth. Overall, projected 2018 annual growth allows the Asia Pacific region to sustain its strong global growth position.

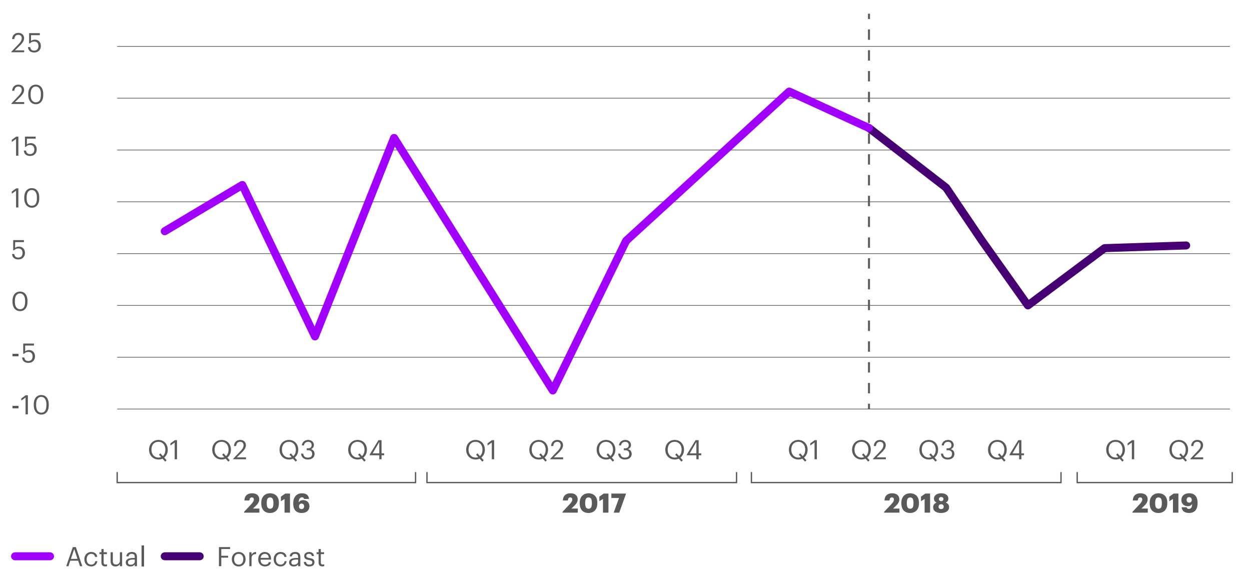
While 2018 is anticipated to be another strong year for the Asia Pacific region, our forecast hints at a storm cloud developing in this region, with annual growth only driving to 4.9% for 2019.

1H18 vs. 1H17	2018 vs. 2017	1H19 vs 1H18
Rising	Rising	Rising

Asia Pacific Commercial Aerospace Index (Yuan, 2014 = 100)



Asia Pacific Commercial Aerospace Index Performance
(quarterly YoY percent change)



*Note that due to half-year reporting periods for most Asia aerospace companies, quarterly results are amplified when compared to other regions.

EUROPE, AFRICA, MIDDLE EAST AND LATIN AMERICA OUTLOOK

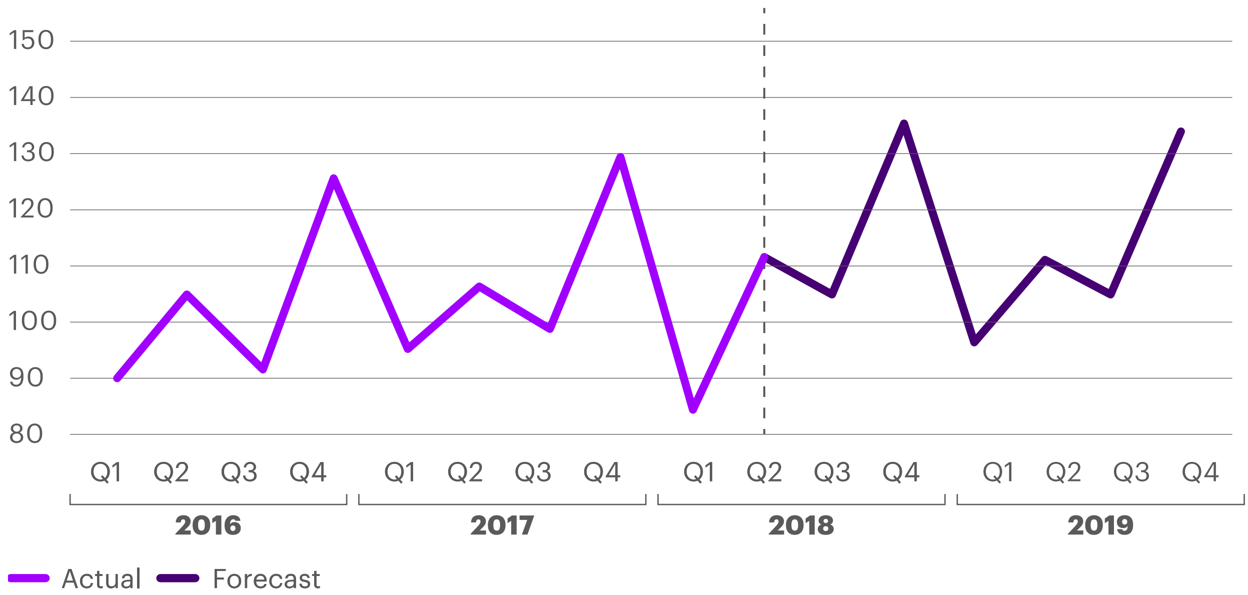
Growth returns

Europe, Africa, Middle East and Latin America markets aerospace demand is tipping to growth versus flat.
In 2018, we expect to see an annual commercial aerospace industry demand increase of 1.7%. While 2018 is definitely backloaded, 1H18 is anticipated to be 5.9% higher than 1H17 which sets up for an overall solid year.

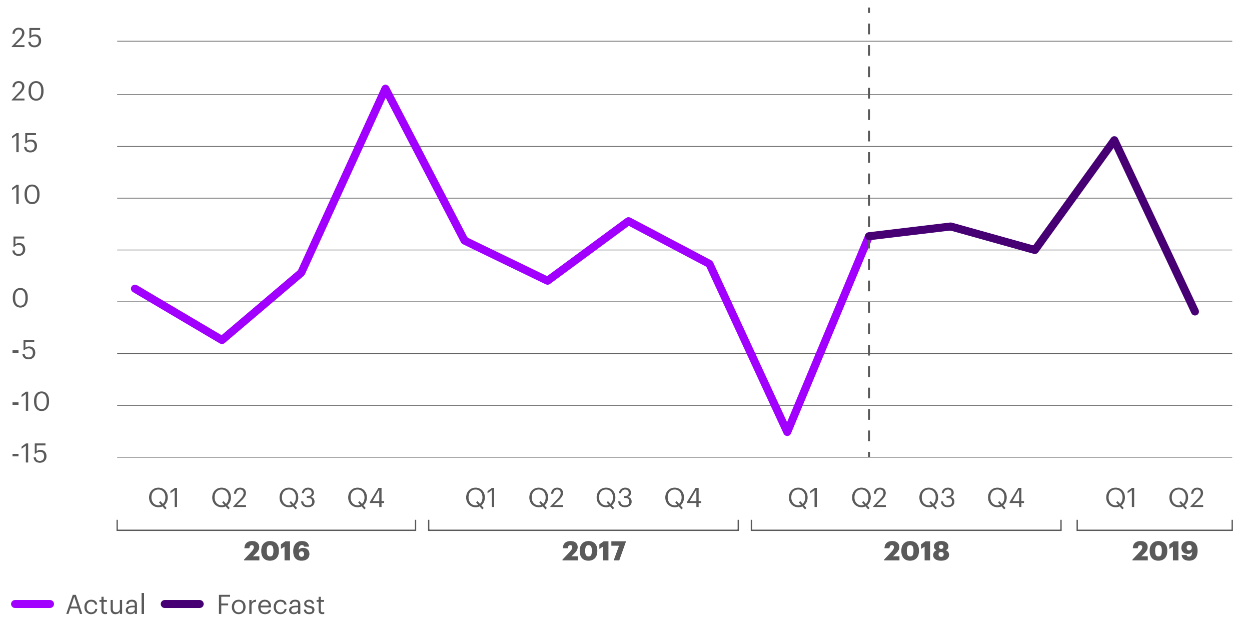
2018 sets up for a promising 2019, with growth anticipated to increase 2.4% YoY from 2018.

1H18 vs. 1H17	2018 vs. 2017	1H19 vs 1H18
Rising	Increasing	Flat

Europe, Africa, Middle East and Latin America Commercial Aerospace Index
(Euro, 2014 = 100)



Europe, Africa, Middle East and Latin America Commercial Aerospace Index Performance (quarterly YoY percent change)



IMPLICATIONS

Steady on course

Orders have picked up and we see overall production rates and in-service demand continue to stress the supply chain.

The current uptick in new orders may make for more of a seller's market for those operators that do come to the table. That said, megadeals such as narrowbodies for Dubai Aerospace Enterprise will likely drive highly competitive negotiations that decide the OEM split of the anticipated 400 aircraft order. Deep order books will afford some negotiating position for OEMs, but winning the orders battle is always a powerful pull.

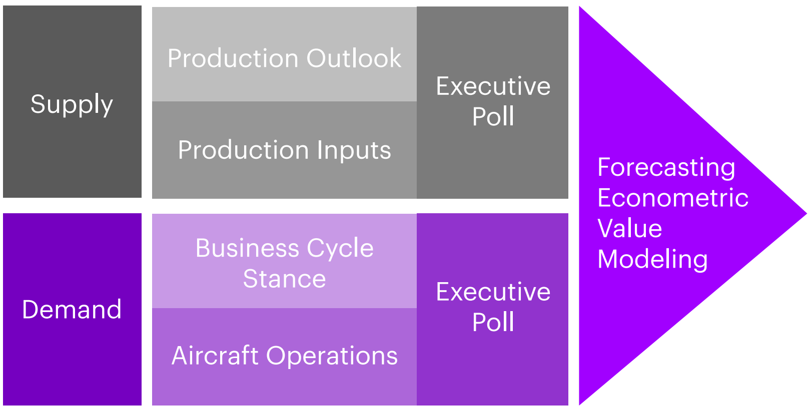
Both Airbus and Boeing have commercial aircraft backlogs greater than 5 years. Production rate increases are a reality that suppliers are struggling to keep up with. Efficiency gains and investment are the order of the day to keep up with new and announced product rate increases. Significant backlogs will allow both Airbus and Boeing to ride through order volatility.

Lagging retirements and additional shop visits for older platforms will provide additional opportunity for cost-competitive third-party MROs and may delay the ability of OEMs to differentiate with proprietary service offerings targeted at newer platforms. These factors all contribute to an estimated $72B 2018 global commercial MRO market.

Ongoing production ramp ups will continue to put pressure on costs and drive additional investments in efficiency, production automation, cost visibility, and supplier development.

ABOUT THE ACCENTURE COMMERCIAL AEROSPACE MARKET INSIGHT REPORT

Combining sophisticated econometric modeling methodologies to drive quantitative quarterly forecasts on the health of the commercial aviation market, together with insights from leading industry executives worldwide, the "Accenture Commercial Aerospace Insight Report" provides a unique perspective on short- and medium-term trends and drivers in this market. Instead of focusing solely on OEM sales, the report covers a wide range of activities, from suppliers to MRO.



Notes: Regional forecasts are in the highest-impact regional currency with the global index aggregated in US dollars, using current exchange rates (at time of writing). The index baseline year is 2014, both regional and global indices are based from this year.

To complement the econometric modeling, executives at major commercial aerospace companies were polled to get their insights on future supply and demand outlook. The outlook indicators in this report are based on the combination of the econometric modeling and the executive poll.

For more information, please contact:

John Schmidt
Global Managing Director,
Aerospace and Defense
john.h.schmidt@accenture.com

Key contributors from Accenture Research:

Rofhiwa Netshivhambe
Geoffrey Nolting
Mélina Viglino
Jeffrey Wheless

About Accenture Research

Accenture Research is a global team of industry and digital analysts who create data-driven insights to identify disruptors, opportunities and risks for Accenture and its clients. Using innovative business research techniques such as economic value modeling, analytics, crowdsourcing, expert networks, surveys, data visualization and research with academic and business partners, they create hundreds of points of view published by Accenture every year.

The views and opinions expressed in this document are meant to stimulate thought and discussion. As each business has unique requirements and objectives, these ideas should not be viewed as professional advice with respect to your business.

About Accenture

Accenture is a leading global professional services company, providing a broad range of services and solutions in strategy, consulting, digital, technology and operations. Combining unmatched experience and specialized skills across more than 40 industries and all business functions – underpinned by the world's largest delivery network – Accenture works at the intersection of business and technology to help clients improve their performance and create sustainable value for their stakeholders. With 449,000 people serving clients in more than 120 countries, Accenture drives innovation to improve the way the world works and lives. Visit us at www.accenture.com.

181175