



Commercial Aerospace Insight Report

# Recovery climb continues

April 2023

accenture



# Executive summary

Growing consumer demand, the reopening of international borders and the waning effects of COVID-19 all played their part to help the aerospace industry recover significantly in 2022. Executives are optimistic about 2023 and beyond.

One-third of the commercial aerospace executives surveyed by Accenture expect revenues to increase over the next 6-12 months, with the rest expecting them to maintain similar levels. Over the longer term, commercial aerospace executives are more bullish, with 85% expecting revenue growth in the next 24 months. Our analysis affirms this positive outlook. In the Asia Pacific region, 2023's aerospace revenues could exceed 2019 levels by 14%. In North America and Europe, 2023 revenues could remain between 4% and 14% below 2019 levels, but sustained growth is on the horizon.

Nonetheless, significant ongoing challenges including supply chain and workforce issues, high energy and fuel prices, and elevated overall inflation are expected to linger throughout 2023 as Russia's war in Ukraine continues.

To address these challenges and optimize operations to position themselves for long-term growth, we see a real need for aerospace companies to examine and even reinvent their ecosystem, from lower-tier suppliers to MRO partners. Partners can bring new assets, ideas and skills that can help industry leaders push the frontiers of functional capabilities. An expanded ecosystem can help accelerate progress at scale, for faster transformation that results in improved financials, perpetual innovation and increased resilience. To leverage these opportunities, individual companies will need a strong digital core that enables swift and secure data-sharing and interoperability between diverse value chains. ([See our report Total Enterprise Reinvention for more detail](#)).

This edition of the Commercial Aerospace Insight Report highlights the changes to the aerospace ecosystem in China and the Asia Pacific region that aerospace firms should consider in their growth plans. The emerging ecosystem may be a catalyst for transformation in this region and perhaps more broadly, something industry executives view positively at present.

# Report at a glance

## Aerospace continues recovery

We predict 2023 commercial aerospace revenues to grow at 14% YoY, which will bring them very close to 2019 levels. We expect revenues to reach 2019 levels in 2024, which is consistent with our estimate in the last insight report published six months ago. This continued positive outlook is backed by healthy 2022 OEM commercial revenue performance (Airbus €41B, 15% increase YoY<sup>1</sup>; Boeing \$26B, 33% increase YoY<sup>2</sup>) and an MRO market scrambling for parts to meet maintenance demands. Increasing narrow- and wide-body production and deliveries are likely to aid market recovery in the coming months. This is supported by our survey responses, in which two-thirds of executives predict higher deliveries in 2023 across the narrow-body and wide-body segments. This ongoing recovery is flowing to the supplier network where 73% anticipate 2023 deliveries to be higher than in 2022.

## Airlines return to profitability

Revenue Passenger Kilometers (RPKs) are expected to increase by 21% YoY in 2023, after an astounding 69% YoY increase in 2022.<sup>3</sup> The IATA forecasts airline profitability in 2023 to the tune of \$5B. This reverses a \$7B loss in 2022, and is a remarkable rise from 2021's \$42B loss.<sup>4</sup> Despite the steady pace of aviation recovery, full restoration to pre-pandemic passenger levels is not expected until 2024. Risk factors such as an economic slowdown, possible spill-over of the Russian-Ukraine war, occurrence of a new COVID variant, elevated jet fuel prices, overall high inflation and strength of the US dollar may all present headwinds to growth.

## Exchange rate concerns abound

Executives reported exchange rate changes as their primary concern over both the short- (six-month) and long-term (24-month). Central bank actions to dampen inflation,

combined with the rise in energy and commodity prices caused by the Russia-Ukraine war, have strengthened the US dollar against most other currencies. A return to more balanced exchange rates might take time and further disruptions, such as financial institution turmoil, hampering this process cannot be ruled out.

## Supply chain issues persist

While supplier deliveries are improving, supply chain issues persist and confidence levels continue their volatility swinging from high to low confidence at each point we survey executives. Sentiment is driven by volatility caused by energy price changes, suppliers' financial struggles, skilled talent shortages and material availability.

Short-term confidence in supply chains has diminished in recent months (and compared with previous years), with only 67% of executives reporting confidence in their supply chain timeliness and quality over the next six months, in comparison to 78% in our previous survey.<sup>5</sup> There is, however, optimism in the medium term, as executives express unanimous confidence in suppliers' ability to meet or exceed delivery expectations over the next 12 months.

One of the levers to address supply chain challenges is supply chain consolidation or verticalization. Executives told us that they do not believe that current supply chain challenges will result in major supplier consolidation events in the next 18 months with 79% believing supply chain consolidation would not have a notable effect on the industry.

## Aftermarket on steady track to recovery

MRO recovery is expected to stay steady through 2023, attributed primarily to increased commercial volumes on the back of a travel recovery. 52% of executives expect MRO spend to remain stable in the next six months. This expectation becomes significantly more positive for the next

24 months, in which 64% of executives anticipate a higher MRO spend. Both US and European MRO providers are bullish on their near-term growth opportunities, driven by strong momentum in engine maintenance and China's expected re-opening. For example, Raytheon's Pratt & Whitney projects a 20-25% MRO revenue increase in 2023<sup>6</sup>. A path towards a resilient, profitable, future-looking aftermarket services requires systems grounded in high-performance data and digital tools and complemented by a new approach to talent.

## Asia Pacific becoming an emerging aerospace ecosystem opportunity

Asia Pacific aerospace revenues this year could be 14% higher than in 2019. The region is increasingly important for growth and could perhaps drive a fundamental change in the aerospace ecosystem. This development, embodied by the determination of COMAC to transform itself into a global player on an equal footing with Boeing and Airbus, might be one of the key industry trends in the decades to come.

While there is much debate about the market potential for the C919 outside of China - and its production rates - industry leaders are taking notice of the ecosystem emerging to support it. We were surprised by what executives told us. We expected a negative view of COMAC and the emerging ecosystem growing around it, but executives were overwhelmingly positive about the impact of COMAC's growth on the Asia Pacific aerospace ecosystem. This was reflected across the aerospace ecosystem domains we asked about, ranging from supply networks, new supplier development, aerospace talent, digital talent up to and including the impact on incumbent suppliers. This may be the catalyst that transforms the Asia Pacific region into a hotbed of talent and new capabilities to drive efficiency gains and sustainable growth. Aerospace companies should consider this shift and its impacts on their strategies.

# Global outlook

**We expect 2023 global commercial aerospace revenues to grow 14% YoY, driven by a resurgence in traffic and improving macroeconomic conditions. This will bring the global aerospace industry very close to its pre-pandemic levels, only 9% short of the 2019 high.**

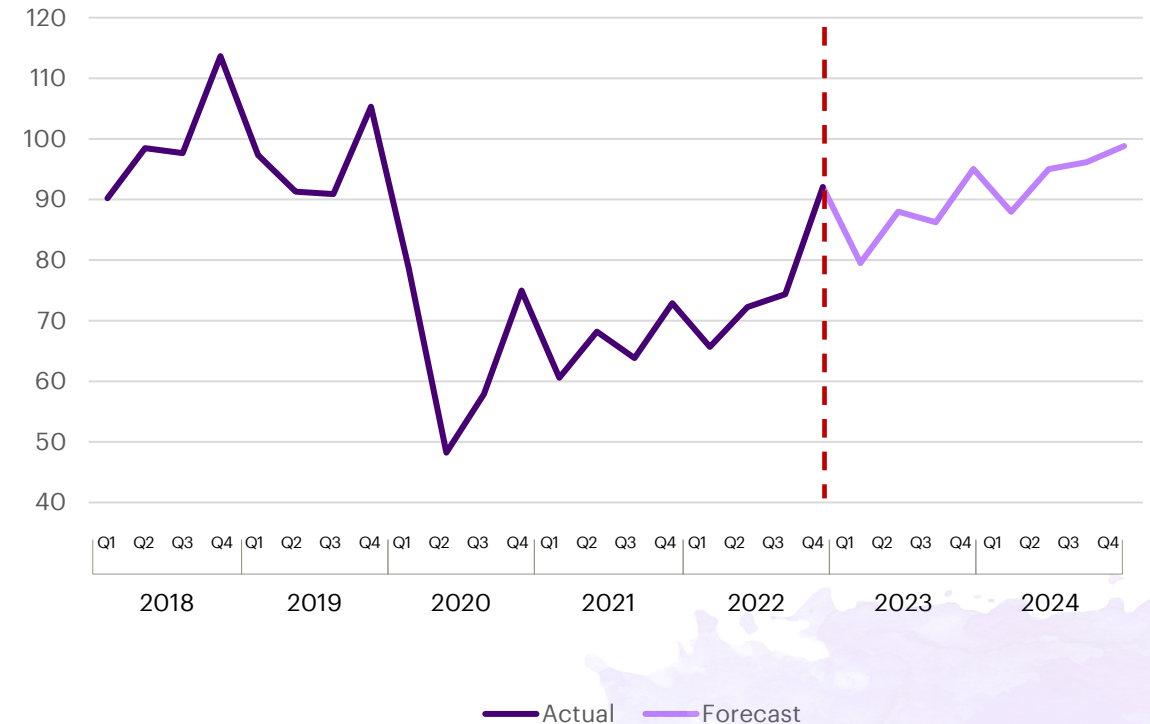
Despite protracted supply chain issues and the war in Ukraine, the industry is well positioned to continue its recovery in 2023. Our current expectation of it reaching full recovery in 12-18 months is consistent with the forecast in our October 2022 report. The recovery's main drivers are the progressive growth in production of both narrow-and wide-body segments; 737 MAX's approval to fly in China and overall growth in commercial flights worldwide.

OEMs are continuing last year's momentum. Overall commercial deliveries increased by 20% in 2022 YoY<sup>7</sup> and we expect a delivery increase of 11% YoY for the whole of 2023.<sup>8</sup>

Healthy, full-year Airbus and Boeing financial results - 15% and 33% YoY commercial revenue growth presented by Airbus and Boeing, respectively<sup>9</sup> - contributed to strong 2022 global commercial aerospace revenue growth of 15% YoY. As a result of the ongoing recovery, we expect the Aerospace industry to maintain double-digit growth in 2023, which should reach 14% YoY (Figure 1).

Forecasted global double-digit growth is denominated in US dollars and includes expected strengthening of Euro against US dollar in 2023.

**Figure 1: global commercial aerospace index (USD, 2018 = 100)**



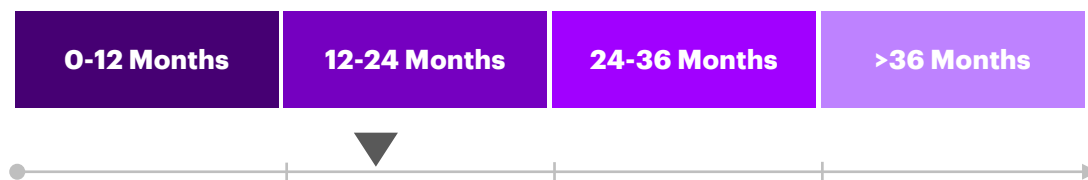
# Airline performance

IATA estimates show the global airline industry is expected to return to profitability in 2023, reaching \$5B in profit, compared to losses of \$7B and \$42B in 2022 and 2021, respectively. Airlines' financial performance is expected to improve across all geographies in 2023. North American and European carriers are expected to achieve profits of \$11B and \$1B, respectively, while Asia-Pacific airlines should narrow losses to \$7B from \$10B in 2022.<sup>10</sup>

Air passenger traffic recovery was well underway in 2022, as RPKs rose 65% YoY compared to 2021. Nevertheless, full recovery to pre-pandemic levels is still a way off, with December 2022 RPKs 23% down on the same month in 2019.<sup>11</sup> Passenger load factor (PLF) which rose 79% YoY in 2022 compared with 2021 also points to the same conclusion about ongoing recovery.<sup>12</sup> These results were achieved despite unfavorable economic conditions (looming recession, high inflation and fuel prices in most of the world) and highlight both resilience in the aviation industry and consumers' strong desire and willingness to travel.<sup>13</sup>

Our survey revealed that 49% of executives expect airline revenues to take between 12 to 24 months to recover to 2019 levels, whereas 36% expect to reach 2019 levels in the next 12 months (Figure 2).

**Figure 2: airline industry recovery outlook compared to 2019 levels**

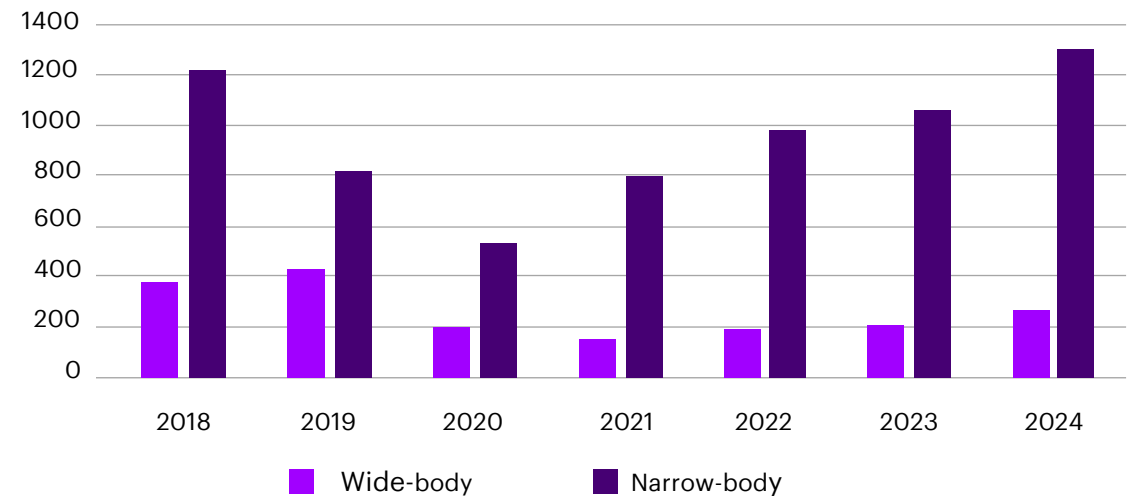


The International Civil Aviation Organization (ICAO) also points to an improving situation. Although compared with 2019 the industry is likely to witness a 25% reduction of seats in 2022, the outlook is much better than in 2021 and 2020, which saw 40% and 50% reduction, respectively. Geographic differences are also evident: estimated seat capacity for North American and European airlines will be 4% and 24% lower respectively, while Asia-Pacific will be down by 42% compared to 2019.<sup>14</sup>

Improved recovery does not necessarily mean fast recovery, with many factors contributing to a slower than expected rebound. Among these are an economic slowdown in most developed countries; a high spread between the price of jet fuel and Brent crude; the strength of the US dollar against most currencies; rising interest rates and inflation's impact on consumers' discretionary spending.<sup>15</sup>

Slower deliveries by both Airbus and Boeing contributed to a worse than expected total number of deliveries in 2022. These were down 8% compared with 2019 (1141 vs. 1243). 956 narrow-body orders accounted for the bulk of deliveries, while wide-body deliveries remained muted at 185 in 2022.<sup>16</sup> In 2023, narrow-body and wide-body deliveries are expected to grow YoY by 11% and 12%, respectively (Figure 3).

**Figure 3 : historic and expected deliveries by year (Boeing and Airbus)**



Aviation is one of the more visible contributors to global carbon emissions. This, along with changing consumer sentiment, has contributed to airlines prioritizing and promoting greener air travel – including a focus on fleet renewal and replacement, adoption of more fuel-efficient aircraft, sustainable aviation fuel and digitization of key operations.<sup>17</sup>

# What keeps aerospace executives up at night?

## Uncertainty about exchange rates remains the leading short- and long-term concern for aerospace executives.

Executives expect exchange rate changes to be their greatest concern over the next six months, as well as for the next two-years. For example, despite an overall positive outlook for 2023, MTU Aero Engines revised its revenue projections down by 5% for the year owing to changes in the USD/EUR exchange rate.<sup>18</sup> The same exchange rate issue is also adding to the burden faced by aerospace industry clients. According to the IATA, the unusual strength of the US dollar adds to airlines' operating costs,<sup>19</sup> which in turn can have a negative impact on recovery and future commercial aircraft orders.

Despite the Russia-Ukraine war and political tensions in regions such as East Asia and the Middle East, executives do not view regional armed conflicts, terrorism or political instability to be a greater cause for concern today or in the medium-term. And, as expected, over the two-year period, concerns about both the global pandemic and worsening economic conditions are waning (Figure 4).

**Figure 4: Risk factors for commercial aerospace: concern for executives (greater/same/less)**

	Next 6 months	Next 12 months	Next 2 years
Global pandemic	Same	Same	Less
Terrorism	Same	Same	Same
Political instability	Same	Same	Same
Worsening economic conditions	Same	Same	Less
Regional armed conflicts	Same	Same	Same
Interest rate changes	Same	Same	Less
Exchange rate changes	Greater	Same	Greater

Because aerospace is a US dollar-denominated industry, a strong US dollar contributes to muted revenue results in non-US manufacturers, especially in Europe. The average 2022 EUR/USD exchange rate of 1.05, compares unfavorably with the average exchange rate of 1.24 between these currencies over the last 20 years.<sup>20</sup> The Euro, therefore, at 18% weaker than the 20-year average, had a serious impact on European manufacturers' results denominated in US dollar. Although recent months indicate that the Euro is gaining strength against the dollar, reaching levels similar to the 20-year average will take time and this will influence non-US manufacturers for the next 18 months.<sup>21</sup>

OEMs can address the headwinds they face and prepare for growth by delivering on airline/customer expectations with a service-centric approach, underpinned by focused digital investments, a collaborative ecosystem strategy and a renewed focus on talent. This approach is exemplified by Leonardo's cloud-based, aftersales customer platform, which capitalizes on ecosystem collaboration and provides clear tangible benefits in terms of new services, efficiency, sustainability and internal cost reduction.<sup>22</sup>



# Business-cycle stance

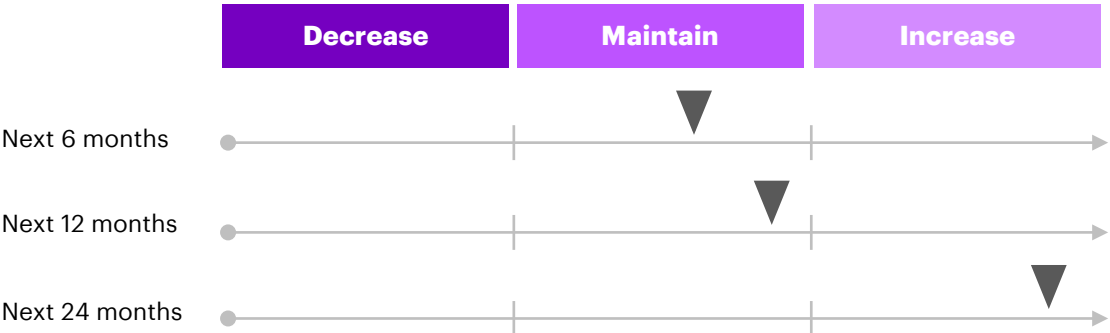
**OEMs recorded improved results in 2022, with commercial aircraft business YoY revenue growth of 15% and 33% for Airbus and Boeing, respectively. Only Airbus retained overall profitability, though marginally lower than in 2021, while Boeing recorded a 22% YoY net loss.<sup>23</sup>**

For aircraft OEMs, 2022 was another year of recovery toward pre-pandemic levels. Despite existing issues in supply chains that forced both Airbus and Boeing to reduce 2022 delivery targets, both companies have improved commercial YoY deliveries, which are up by 8% and 41%, to 661 and 480 aircrafts, respectively.<sup>24</sup> Airbus reinstated its original 2022 target to deliver 720 aircraft in 2023 with a clear focus on ramping-up production.<sup>25</sup> Boeing 2023 plans include bringing the 737 program back to health and delivering more 787s while overcoming supply chain, labor and quality issues. The company intends to deliver 400-450 737s and 70-80 787s in 2023.<sup>26</sup> This positive outlook is reflected in our survey, with 73% of executives anticipating higher deliveries of commercial aerospace products in 2023 than in 2022.

Boeing commercial aircraft business saw a 63% reduction in losses for 2022 YoY.<sup>27</sup> Airbus operating income improved by 29% during the same period.<sup>28</sup> Overall, 2022 net-new orders were very positive, with Airbus and Boeing reporting 820 and 774 net orders, respectively, clearly outpacing deliveries and reaching levels similar to those achieved pre-pandemic.<sup>29</sup>

67% of surveyed executives expect their revenues to stay at the same level over the next 12 months, but 85% expect revenues to increase over a 24-month period (Figure 5).

**Figure 5: business-cycle stance (commercial aerospace revenues) outlook**

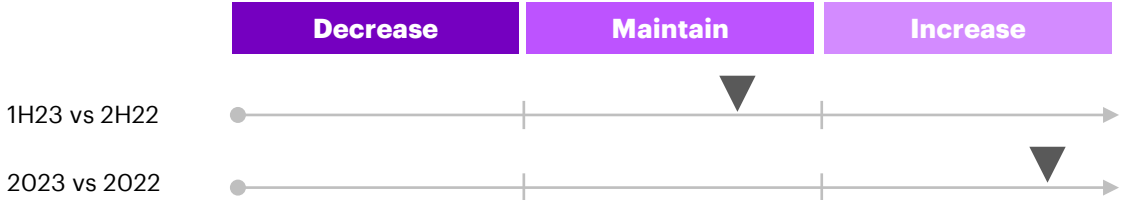


# Customer deliveries

**64% of executives expect commercial aerospace product deliveries to remain the same in the first half of 2023, compared with the same period in 2022. 73% of executives expect deliveries to be higher in 2023 compared with 2022 (Figure 6).**

In 2023, Boeing and Airbus are expected to deliver 1,266 commercial aircraft,<sup>30</sup> a higher total than in recent years (1,141 deliveries in 2022, 951 in 2021 and 723 in 2020). In the second half of 2022, Boeing and Airbus delivered a total of 630 commercial aircraft, a 27% increase YoY. As of February 2023, Boeing and Airbus had delivered 132 aircraft - one aircraft less than in the respective period of 2022.<sup>31</sup>

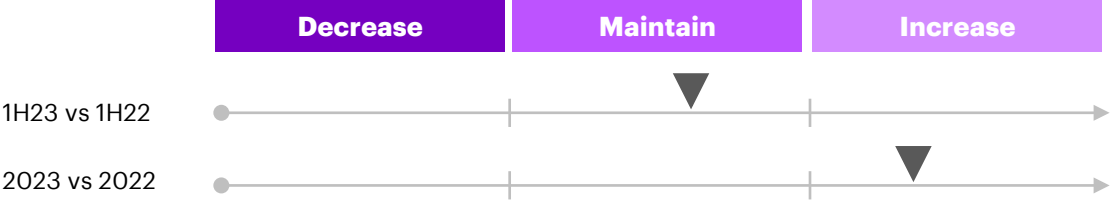
**Figure 6: Commercial aerospace products delivery outlook**



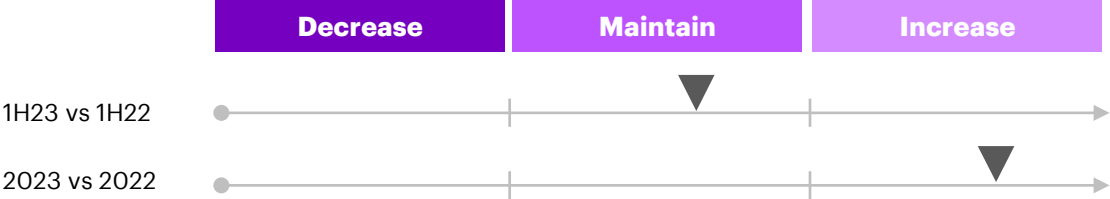
Our survey showed that 91% and 94% executives expect narrow-body and wide-body deliveries, respectively, to be at the same or higher levels in the first half of 2023 versus the first half of 2022. The outlook for wide-body remains bullish, with 70% of executives predicting higher deliveries in 2023 compared with 2022. 64% of executives expect 2023 narrow-body deliveries to be higher than 2022 (Figures 7 and 8).

Several airlines (American Airlines, Loganair, Air France-KLM, Croatia Airlines and United Airlines) have already prioritized fleet modernization plans with a focus on fuel- and cost-efficiencies. Air France-KLM, for instance, plans to cut CO2 emissions by replacing its fleet of four Boeing 747Fs with four Airbus A350F. This is one of the Group’s decarbonization plan’s key pillars - which also include the use of SAF and eco-piloting - that target a 30% reduction in CO<sub>2</sub> emissions per passenger/km by 2030 over 2019.<sup>32</sup>

**Figure 7: Narrow-body aircraft delivery outlook (unit deliveries shipped to customers)**



**Figure 8: Wide-body aircraft delivery outlook (unit deliveries shipped to customers)**





# Aftermarket

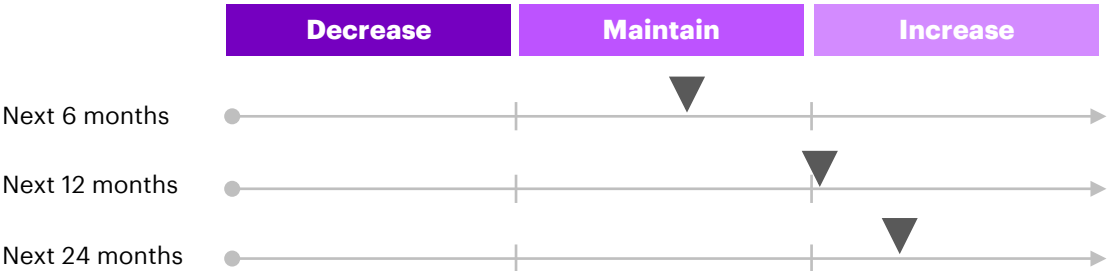
**MRO recovery is expected to remain steady through 2023, attributed primarily to increased commercial volumes on the back of travel's recovery.**

52% of executives expect MRO spend to remain stable over the next six months. This expectation becomes significantly more positive for the next 24 months, in which 64% of respondents anticipate higher MRO spend (Figure 9).

Both US and European MRO providers are bullish about their near-term growth opportunities. For example, Raytheon's Pratt & Whitney projects a 20-25% revenue bump from MRO in 2023. Strong momentum in the engine maintenance business will be supported by China's expected re-opening.<sup>33</sup> Lufthansa Technik's CEO Soeren Stark believes that his company will reach pre-pandemic activity levels in 2023, driven by soaring air traffic and longer flight hours, translating into higher demand for MRO services.<sup>34</sup> MRO providers are also collaborating with Advanced Air Mobility (AAM) OEMs to explore cooperation in aircraft maintenance, continued airworthiness, digital platforms, technical training and manufacturing. For instance, the AF KLM E&M maintenance unit collaborated with Ascendance Flight Technologies (eVTOL player) to integrate AAM craft and operations.<sup>35</sup>

MRO companies are making use of data, analytics, software and automation to achieve cost efficiencies and operational excellence. AI-powered robotic inspection, the integration of software products and the use of data science to meet functional business challenges (from the overhaul shop to aftermarket finance) are some of the key developments in the aftermarket. These businesses, like those in many other industries, are building the strong digital core they need for continuous innovation and competitive differentiation. Lufthansa Technik has integrated AMOS, AVIATAR and flydocs under its Digital Tech Ops Ecosystem to provide unprecedented digital coverage of the tech ops value stream.<sup>36</sup> China Airlines has added GE Digital's Records Management System (RMS) to its existing GE Asset Records software to facilitate digital record transfer and asset documentation.<sup>37</sup>

**Figure 9: maintenance, repair and overhaul (MRO) activity outlook**



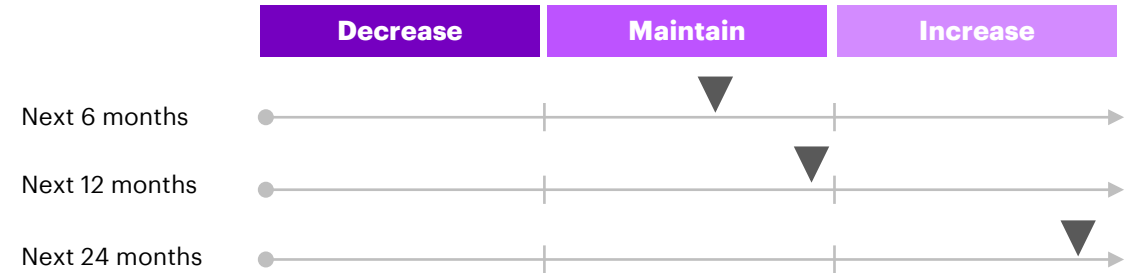
# Production Outlook

**The fourth quarter brought a higher than usual spike in aerospace companies' revenues. OEMs pushed deliveries for improved whole-year results, but the increase in production remains below expectation, plagued with supply and workforce issues.**

Despite the aforementioned problems, OEMs have increased production in the wake of travel recovery, but prior cuts continue to have a substantial negative impact on suppliers' cash flows. Nonetheless, there are indications that suppliers have a more optimistic outlook for the future. Boeing has increased new aircraft production and delivery to meet its projected free cash flow of \$3-5B in 2023.<sup>38</sup> Despite engine supply constraints, Boeing is targeting an average production rate of 38 737s per month for 2023 and plans to increase to 50 aircrafts per month by the 2025/26 timeframe.<sup>39</sup> The company also plans to open a fourth 737 MAX production line in Everett in the second half of 2024.<sup>40</sup> Elsewhere, Airbus plans to increase the number of A320-family models it produces each month from an average of 50 in 2023 to 65 by the end of 2024, rising to 75 in 2026. Both targets have been pushed back by one year from their original dates due to labor and raw material shortages. At the same time, Airbus is planning to produce more of its wide-body aircrafts. For instance, production of the A350 is expected to increase from six to nine units per month by 2025, while the A330neo should increase from one unit per month to four by 2024.<sup>41</sup>

These plans have significantly influenced production capacity outlook. In the near-term, production capacity looks to be broadly stable. 61% of executives expect their capacity to remain the same in the next six months, while 24% already predict an increase. The outlook is much more optimistic over a 24-month period, when 82% of executives expect production capacity to increase (Figure 10).

Figure 10: production capacity outlook



# Supplier delivery outlook

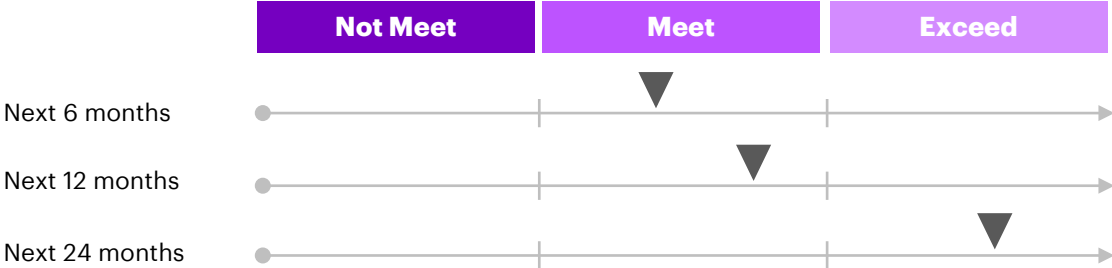
**While supplier deliveries are improving, supply chain issues persist. These are driven by higher energy prices, challenging loan repayments, talent shortages and sourcing of raw materials. Engine manufacturers expect supply issues to ease no earlier than the end of 2023.**<sup>42</sup>

Supply chains will eventually match OEM expectations as they adjust to increasing demand. Nevertheless, Tier-1 suppliers continue to suffer from supply chain difficulties and are mitigating them by fixing and recycling spare components. For example, Rolls-Royce is repairing and reusing spare parts to address its supply issues.<sup>43</sup>

Production of new aircraft has been constrained by parts shortages, including engines, raw materials and semiconductors. According to Airbus CEO Guillaume Faury, supply and labor issues are expected to last until 2024.<sup>44</sup> Boeing International President Brendan Nelson AO shares a similar view, noting supply chain will be a cause of concern for the industry for the next one to two years.<sup>45</sup> Aerospace engine providers GE, Safran and Rolls-Royce, believe supply chain concerns will continue through 2023. According to GE Aerospace CEO Larry Culp, labor shortages driven by layoffs and retirements during the pandemic are a bigger constraint for current supply chain issues, as opposed to engine shortages.<sup>46</sup>

Short-term confidence in supply chains has diminished in recent months (and compared with previous years), with 33% of executives reporting reduced confidence in their supply chain timeliness and quality over the next six months. There is, however, more optimism for the medium term, with 100% of executives expressing confidence about suppliers meeting or exceeding delivery expectations over the next 12 months. While the 24-month outlook remains positive overall, some executives anticipate some supply chain-related disruptions, with 88% expressing confidence about suppliers meeting or exceeding delivery expectations (Figure 11).

Figure 11: supplier delivery outlook



# Supply Chain Strategic Options

## Aircraft manufacturers are taking steps to mitigate the significant challenges they face in meeting the surge in demand from airlines.

Vertical integration, working closer with suppliers and M&A are all tools that can be deployed to help address supply chain challenges.

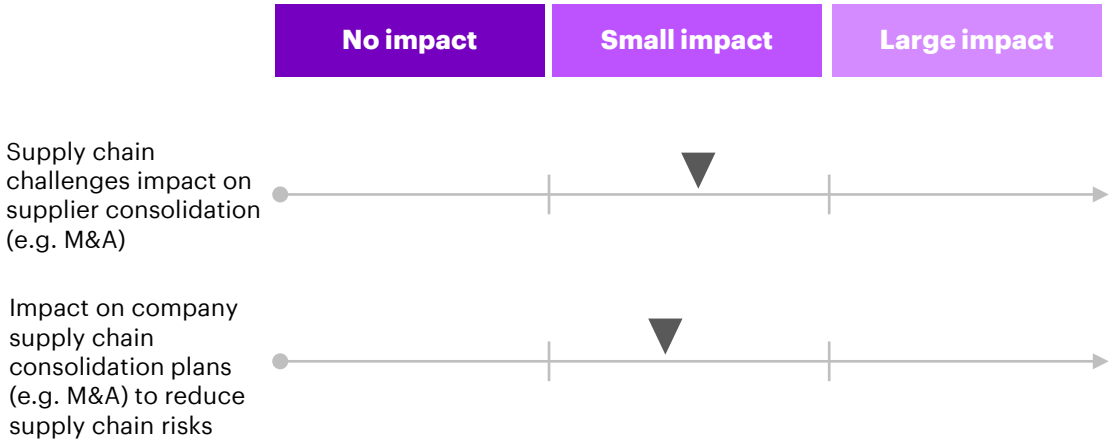
For instance, Boeing is producing more components in-house and is collaborating with its suppliers on workforce for its 737 family.<sup>47</sup> Similarly, Airbus is monitoring the supply chain problem with its "watchtower" supplier risk-assessment method and is dual sourcing for some critical parts and raw materials.<sup>48</sup>

Bombardier has implemented supply chain strategies to prevent production pressures by deploying 30+ field personnel to work directly with primary and sub-tier suppliers, insourcing manufacturing on some components and implementing a comprehensive monitoring solution that alerts the firm to any global events that may have an impact on the supply chain.<sup>49</sup>

Aerospace and defense M&A transactions in 2022 decreased by 10% in number and 57% in value YoY from 2021.<sup>50</sup> This shows that the market does not consider existing difficulties in supply as sufficient reason for large-scale industry consolidation.

Accordingly, our survey revealed that executives do not believe current supply chain challenges will result in major supplier consolidation events in the next 18 months. 79% expect that the impact will be none or small. Moreover, only 21% of executives plan taking major action to consolidate their supply chain to reduce supply risks in the same period (Figure 12).

**Figure 12: Supplier consolidation due to supply chain challenges over next 18 months**



On the other hand, aerospace industry lobbying groups, such as GIFAS in France, have been pushing for industry-wide consolidation as a way to overcome talent shortages and the financial fragility of small and medium-sized enterprises (SMEs), as well as ramp-up major OEMs' production. This policy, backed by programs to assist SMEs' CEOs in developing long-term goals as opposed to focusing on short-term tasks, has increased M&A activity and cooperation in recent years. For example, the Aresia conglomerate has achieved synergies in commercial and defense manufacturing by acquiring several aircraft equipment manufacturers: AEds Groupe, Alkan, Lace, Secapem and Thermivaland.<sup>51</sup>

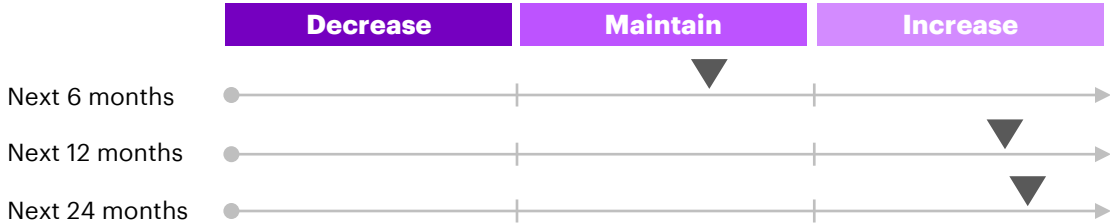
# Production input cost outlook

**Higher energy prices and pressure on wages are pushing up production costs for the whole aerospace industry. Addressing these challenges to position themselves for long-term growth, aerospace companies must examine their entire ecosystem, from lower-tier suppliers to MRO partners, in order to identify ways to reinvent the status quo.**

61% of executives expect stable raw material costs over the next six months. Longer term, 64% and 67% of executives predict raw material costs will increase over the next 12- and 24-month periods, respectively (Figure 13).

With the exception of aluminum, the costs of key aerospace raw materials appear to be on the rise—a trend that intensified by the Russia-Ukraine war. For instance, the cost of titanium is currently 21% higher than levels before the war in Ukraine and nickel prices are 28% higher. Economic data provider Trading Economics estimates that titanium prices will rise by a quarter over the next two years and nickel prices will rise by another quarter by the end of 2024.<sup>52</sup>

**Figure 13: raw materials cost outlook**

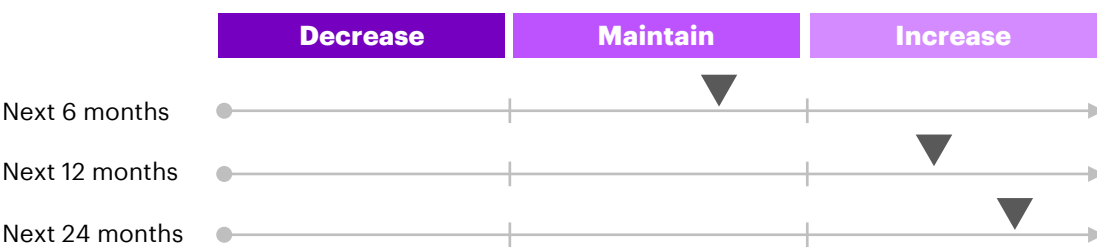


Similar to the case of raw materials, 67% of executives expect the costs of sub-systems or parts to remain stable over the next six-month period, with only 30% predicting an increase. This position changes significantly in the longer term, as 73% of executives predict cost increases over the next two years (Figure 14).

According to the most recent index on part prices and lead times, prices of less expensive parts have been the most volatile, with small elements, consumables and expendables rising 40% above late 2020 levels. SkySelect Chief Operating Officer Nauman Saeed expects further price hikes in 2023 due to rising material and labor costs.<sup>53</sup>

Larger companies, like Safran, although badly hit by rising electricity costs, are implementing hedging policies on energy prices. But many small, lower-tier suppliers are unable to respond to soaring energy costs in any other way than by simply stopping production. To respond to that, Safran is strengthening its dual-sourcing strategy by expanding its supply chain base to include two sources for each component and avoiding single points of failure.<sup>54</sup>

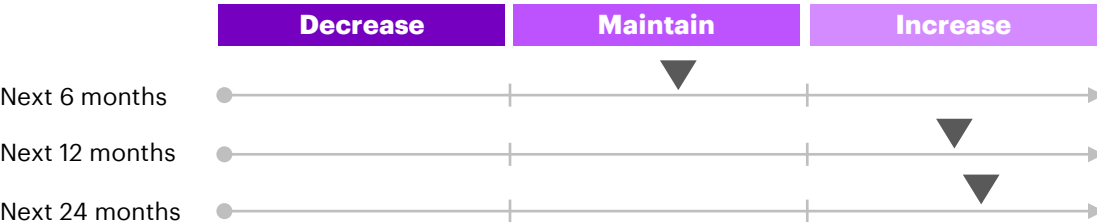
**Figure 14: Subsystem or parts cost outlook**



55% of executives expect labor-related production costs to be stable over the next six-months. Similar to other cost areas, 70% expect labor-related costs to rise during the next two years (Figure 15).

As pointed out by Derrick Siebert, vice president of commercials engine services at Lufthansa Technik, inflation is amplifying the company’s recruiting problems.<sup>55</sup> Pressure for higher wages will only increase as an additional 610,000 technicians will be needed globally in the next 20 years, according to the most recent Boeing demand forecast.<sup>56</sup>

**Figure 15: production labor cost outlook**



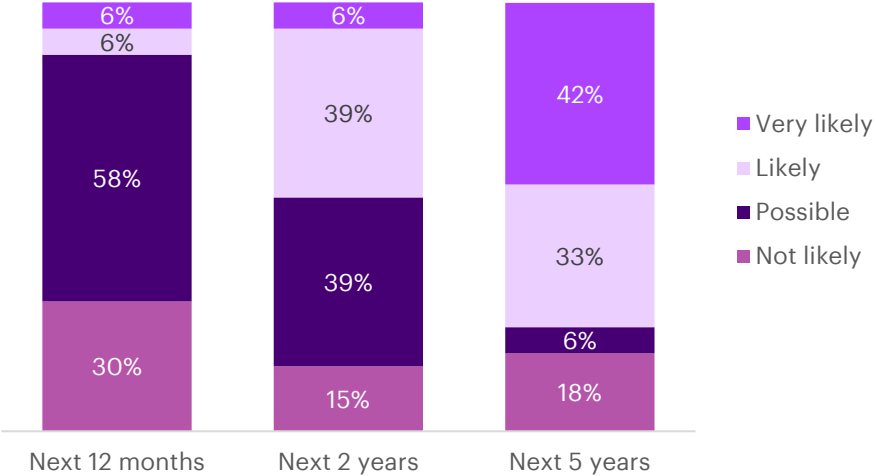
# Asia Pacific's emerging aerospace ecosystem opportunity

**88% of surveyed executives expect China's commercial aerospace aspirations to positively influence aerospace talent availability in the Asia Pacific region over the next five years. Aerospace companies should consider this region not just as an export market, but as a pillar of growth and a new force of ecosystem transformation.**

As COMAC continues to make moves in the marketplace and seeks to transform itself into a global aerospace player, industry leaders are taking notice of its ambitious efforts to ramp up C919 production and the emerging ecosystem to support China's aspirations.

As the Asia Pacific region rises in importance for the aerospace industry, and particularly in light of COMAC's emergence, our survey shows that 75% of executives are likely or very likely to change their operating strategy in China (Figure 16).

**Figure 16. likelihood of company operating strategy change in China**



This longer-term view of change is consistent with the challenges a new single-aisle aircraft will face entering a highly competitive segment. Given typical industry dynamics, several years are required to grow a significant business for downstream and aftermarket companies. Over 80% stated that their Chinese operations across supply chain, engineering manufacturing and, MRO would be impacted by the emergence of COMAC over the next five years.

We queried executives about the impact of China's commercial aerospace aspirations across the Asia Pacific aerospace ecosystem. We asked about new supplier development along with aerospace and digital talent. On average across these categories, 85% had a positive view of the Asia Pacific ecosystem's impact.

With China's emphasis on innovation-driven development in its latest five-year plan and overall focus on self-reliance in science and technology, COMAC could emerge as a key challenger to Airbus and Boeing in the future.<sup>57</sup> More importantly, however, the emergence of new platforms has the potential to become a catalyst for transforming the Asia Pacific region into a hub of sustainable aerospace growth and an ecosystem to draw upon, driven by new capabilities and talent development. Aerospace companies should consider this shift and how it might influence their growth strategies.





# Regional outlooks

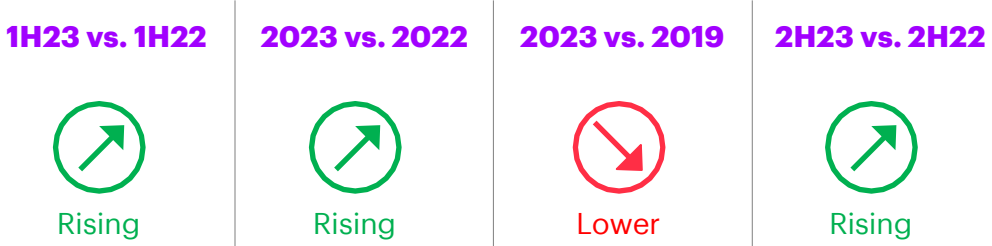
# North America: improved orders and deliveries but profitability issues persist

Boeing delivered 480 aircraft in 2022, a 41% YoY increase, with improving outlook and strong demand seen in its portfolio, including commercial aircraft.<sup>58</sup> The company recorded 808 net orders in 2022, which is close to pre-MAX grounding level of 1090 in 2018.<sup>59</sup> On top of that, in February, Air India selected 190 737s, 20 787s and 10 777Xs with an option for an additional 50 737s and 20 787s.<sup>60</sup> Overall, in 2022 the 737 production rate stabilized at 31 airplanes per month with plans to increase it to around 50 per month in 2025-2026. As for the 787, Boeing expects to improve its production rate to five per month in late 2023 and 10 per month in 2025-2026.<sup>61</sup>

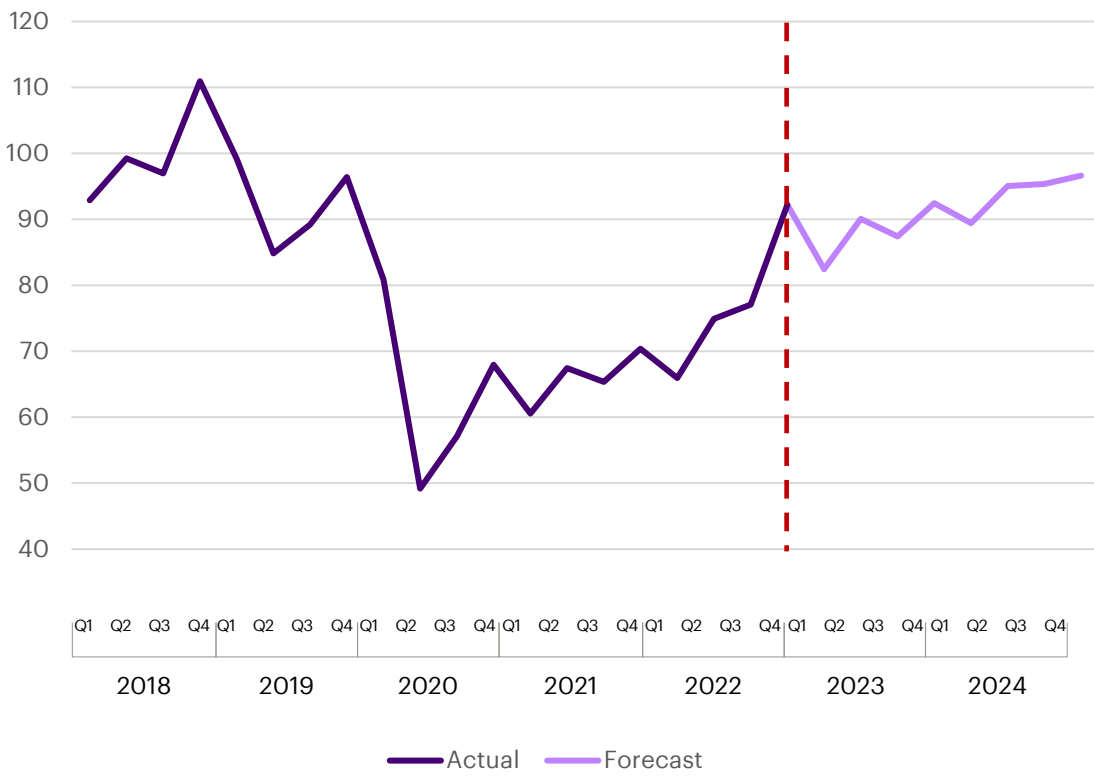
After resuming 787 deliveries, Boeing has made a total of 31 deliveries in August 2022 and the company is on track to ramp up 2023 deliveries. Taking into consideration plans to increase the 787 production rate to five aircraft per month and its 100-aircraft inventory, Boeing expects it will be able to fulfill its plan to deliver between 70 to 80 aircraft in 2023, despite additional delivery delays 1Q23 and persisting parts shortages.<sup>62</sup> The situation also seems to be improving on the narrow-body side, as the company plans to increase production capacity in Renton and start a dedicated 737 line in Everett by the end of 2024 to meet customer demand.<sup>63</sup>

Even with 2023 growth anticipated to increase 13% YoY versus last year's low base, commercial aerospace is still 4% lower compared to 2019 and 12% lower compared to 2018 levels (Figures 17 and 18). Recovery in North America is well on track to reach pre-pandemic levels, but it will take a few more quarters to reach it, with several uncertainties (e.g., 787 delivery resumption, questions about demand further demand and persisting supply chain issues) potentially affecting the pace of growth.

**Figure 17: outlook for North America**



**Figure 18: North America commercial aerospace index (USD, 2018 = 100)**





# Europe: deliveries slower than anticipated, but revenue improving steadily

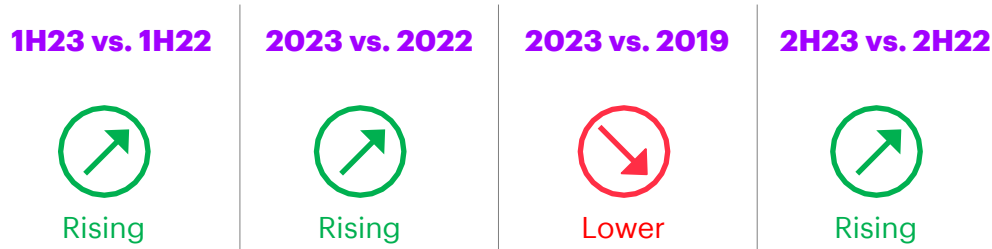
Airbus net order book stood at 820 aircraft and 661 deliveries in 2022 (vs. Boeing net order book of 774 aircraft and 480 deliveries in 2022). At the same time, Airbus overall commercial revenues increased 15% YoY in 2022.<sup>64</sup>

Airbus expects to boost its production of narrow-bodies, with A220 to reach 14 aircrafts per month by the middle of the decade, while the A320 production rate is anticipated to increase to 65 per month by late 2024 and 75 per month in 2026.<sup>65</sup> When it comes to wide-bodies, Airbus CEO Guillaume Faury announced an increase in A350 production from five to six and A330 from two to three per month in early 2023.<sup>66</sup> On the order side, following the ending of its dispute with Qatar airways, Airbus reinstated the orders of 19 A350 aircrafts and 50 A321 medium-haul aircrafts that were previously revoked. The first of 50 A321neos is expected to be delivered in 2026.<sup>67</sup> The company also secured a major commitment from Air India in February 2023 to deliver 210 of its narrow-body A320 family and 40 of its A350 wide-body aircraft.<sup>68</sup>

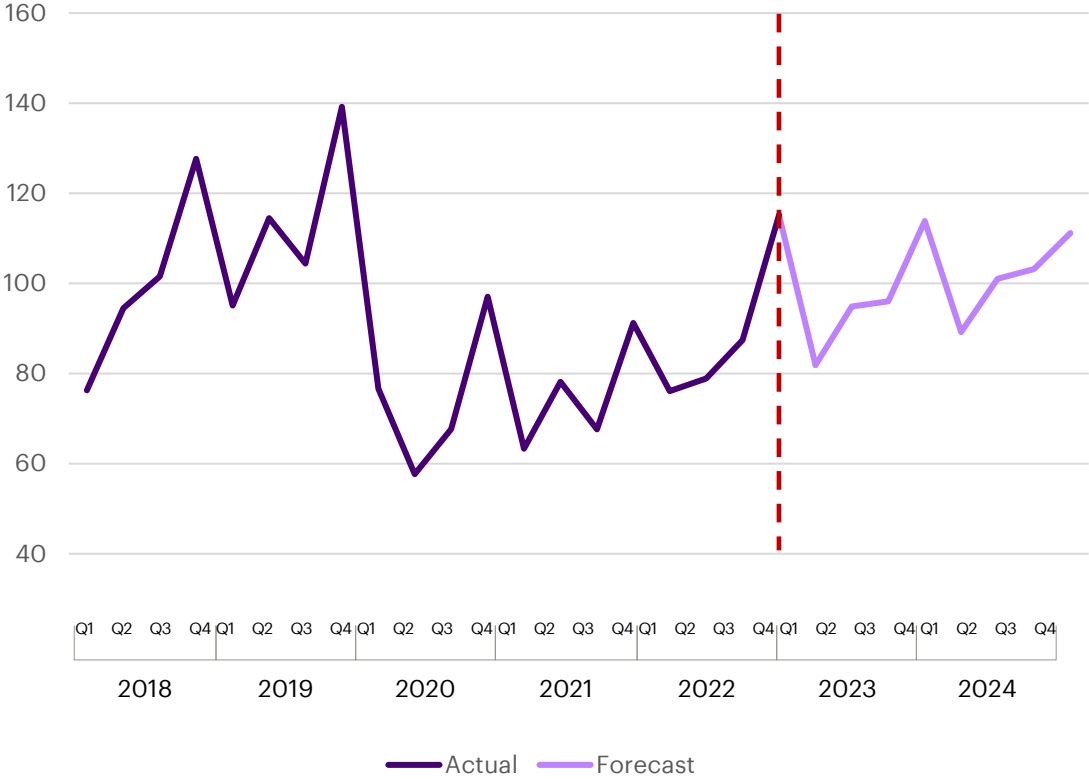
While the European aviation market saw some bankruptcies in 2022 (including Flybe and Flyr), several major carriers such as Loganair, Air France-KLM and Croatia Airlines are restructuring their fleets to include modern platforms for fuel and cost efficiencies.<sup>69</sup>

With 9% YoY recovery anticipated in 2023, Europe commercial aerospace revenues will be 14% lower than 2019 (Figures 19 and 20). Although Europe is in recovery mode, a full recovery might have a time horizon of more than two years, as supply chain issues and a volatile economic situation continue to delay progress.

**Figure 19: outlook for Europe**



**Figure 20: Europe commercial aerospace index, (USD, 2018 = 100)**



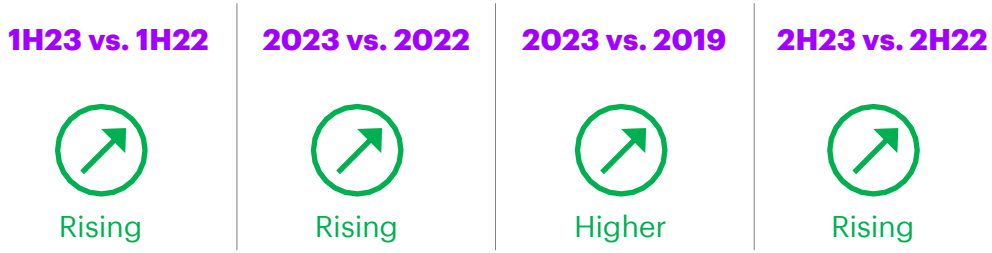
# Asia Pacific: growth continues driven by border openings in the region

Both Airbus and Boeing received a significant commitment from Air India for a total of 470 aircraft, split between 400 narrow- and 70 wide-bodied.<sup>70</sup> US and European aerospace manufacturers see Asia-Pacific market resilience and are entering into various partnerships in the MRO domain (e.g. Safran with ST Engineering<sup>71</sup> and Spirit AeroSystems with Malaysia Airlines Berhad<sup>72</sup>), as well as opening new and expanding existing facilities in the region (e.g. Collins Aerospace in India<sup>73</sup> and MTU Aero Engines in China<sup>74</sup>). Local companies are following suit and opening new MRO facilities like HAECO in Xiang'an International Airport (China)<sup>75</sup> or Asia Digital Engineering in Senai (Malaysia).<sup>76</sup>

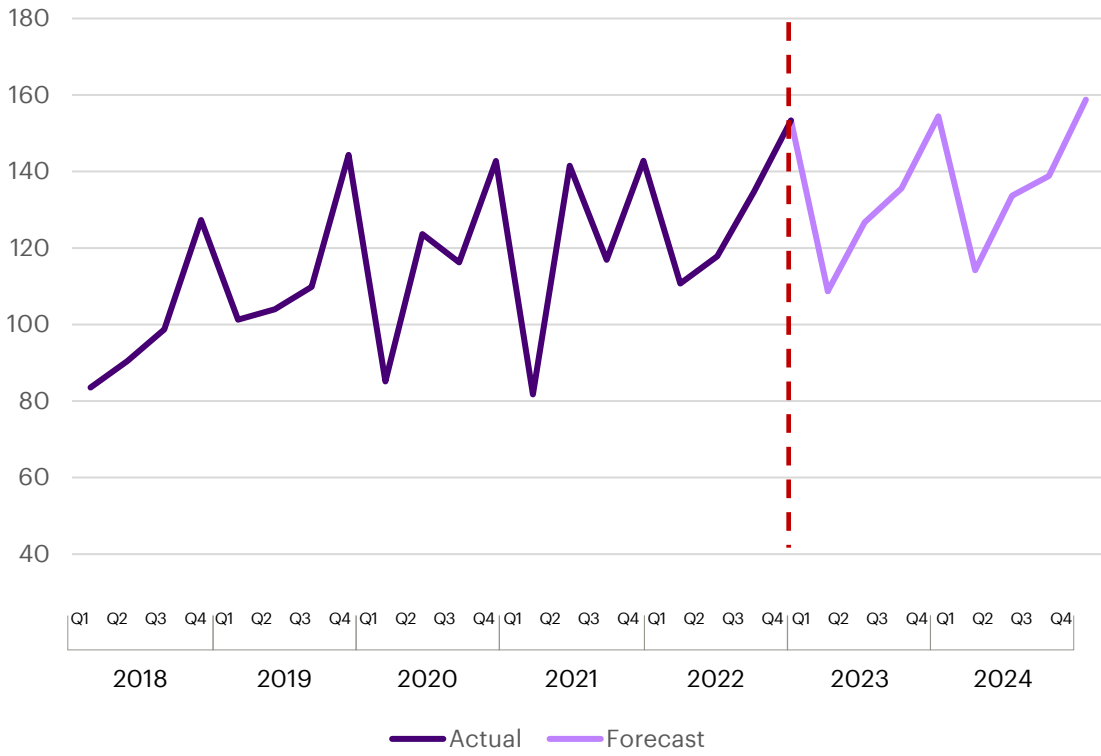
Border openings across Asia Pacific have boosted commercial aerospace recovery, with strong orders supporting MRO activities and services. Representative of this trend, ST Engineering recorded better than expected results in 2022 with 21% YoY growth in commercial aerospace revenue.<sup>77</sup>

In 2023, commercial aerospace revenue for the Asia Pacific region is expected to increase 2% YoY, driving the overall market to 14% higher than in 2019 (Figures 21 and 22).

**Figure 21: outlook for Asia Pacific**



**Figure 22: Asia Pacific commercial aerospace index (USD, 2018 = 100)**



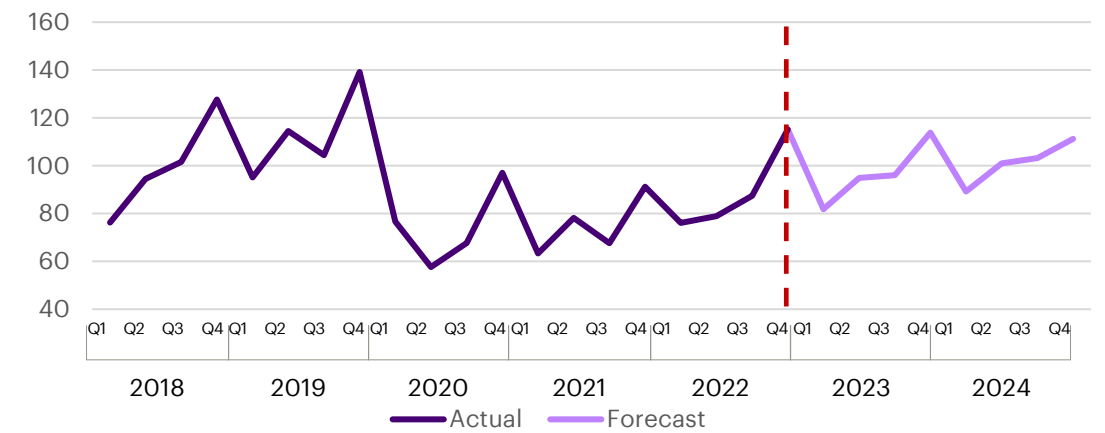
# Appendix

## Global and regional and commercial aerospace index performance (QoQ percentage change)

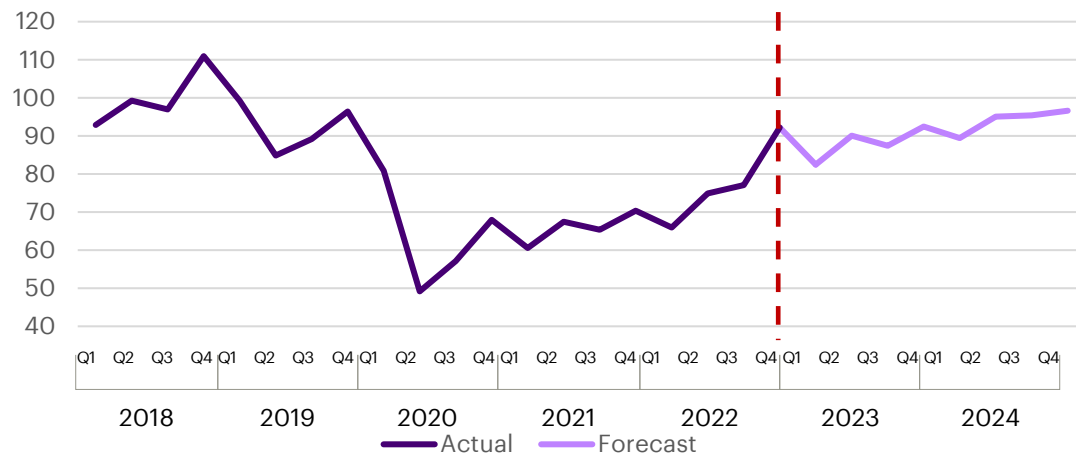
### Global



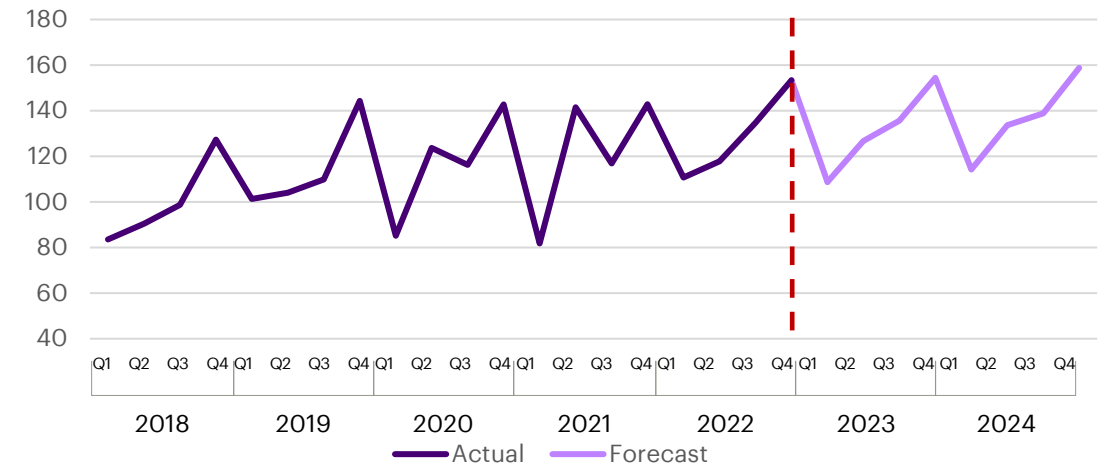
### Europe



### North America

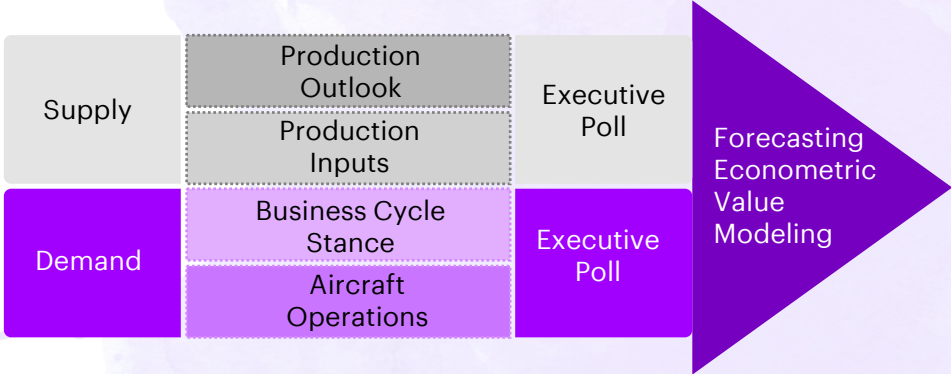


### Asia Pacific



# 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, with insights from leading aerospace executives worldwide, the Accenture Commercial Aerospace Insight Report provides a unique perspective on short- and medium-term trends and drivers in this market, covering a wide range of activities, from suppliers to MROs.



Regional forecasts are in the highest-impact regional currency, with the global index aggregated in US dollars, using current exchange rates (at the time of writing). The index baseline year is 2018, and both regional and global indices are based on this year.

To complement the econometric modeling, we polled executives at major commercial aerospace companies to gain their insights into future supply and demand outlook. The outlook indicators in this report are based on a combination of Accenture’s econometric modeling and a global commercial aerospace executive poll. We conducted our poll in February 2023 and views are subject to considerable change as conditions can rapidly evolve.

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