

# The Disruption of the Western Aviation Duopoly

## Introduction

The aerospace industry has long been a highly competitive and technologically advanced sector, with the production of commercial aircraft serving as its centrepiece. For decades, this market has been effectively controlled by two major companies: Airbus [EPA: AIR], based in Europe, and Boeing [NYSE: BA], headquartered in the United States. These titans have set the benchmark for aircraft manufacturing, consistently delivering innovative, reliable, and efficient models that power the majority of the world's airline fleets. Aircraft like the Airbus A320 and Boeing 737 have become household names, shaping the way people travel and underpinning the growth of global aviation. Their dominance has created a Western duopoly, where competition between the two companies drives the pace of technological advancements and sets the standards for safety and fuel efficiency in the commercial aviation industry.

However, this duopoly is now facing a serious challenge from an emerging competitor: China's state-owned Commercial Aircraft Corporation of China, or COMAC. Over the past few years, COMAC has made significant strides in developing the C919, a narrow-body aircraft designed to rival the popular Airbus A320neo and Boeing 737 MAX. The C919 is China's most ambitious attempt to break into the global aviation market, where demand for commercial planes is booming, particularly in Asia. With its first deliveries already underway, the C919 signals China's intent to reduce reliance on Western manufacturers and assert itself as a major player in the aerospace industry. As COMAC strengthens its position with government support and competitive pricing, we are expecting to see a potential shift in the industry landscape. The emergence of this new competitor poses a potential threat to Airbus and Boeing, raising questions about how the duopoly as well as regulatory authorities will respond to the growing pressure from the East and whether COMAC will succeed in securing a significant foothold in this global market.

## About Boeing

The Boeing Company, an aerospace manufacturer of commercial jetliners and defence, was founded in 1916 in Seattle, WA, and later transferred its headquarters to Arlington, VA.

Boeing operates under 3 business units, including Commercial Airplanes (43% of revenue); Defence, Space & Security (32%); and Global Services (25%). The Commercial Airplane business is subject to the highest risk driven by consumer trends and cargo traffic, while the Defence business is affected by changes in levels of US government spending. In FY23, total revenue reached \$77.8bn, with an operating loss of \$773mn. Operations are global, with the largest markets being the United States, China, and Europe. Enterprise clients include airline operators, government, and military organizations.

In early January 2024, a door on an Alaska Airlines-operated Boeing 737 MAX 9 jet blew off mid-air. Since then, the issue has snowballed as more stakeholders revealed safety issues. The slump in MAX deliveries (-34% vs. 1H 2023) caused earnings of customers to suffer, as well as additional induced costs for Boeing. The MAX parts were

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manufactured by Spirit AeroSystems [NYSE: SPR], including the plug that replaced an operational door at the site of the blowout. This incident caused Boeing to report a \$355mn loss for the first quarter.

In July 2024, Boeing announced an all-stock acquisition of Spirit AeroSystems. The merger has an equity value of \$4.7bn, or \$37.25 per share. Total transaction value is ~\$8.3bn. Spirit AeroSystems manufactures fuselages, wings, and wing components of commercial/defence aircrafts. Synergies include supply chain stability, aviation safety, and spin offs of certain struggling segments. The acquisition is likely made in an attempt to address safety concerns and enforce stricter manufacturing standards within the company.

## About Airbus

Airbus SE is a pan-European aerospace company based in Leiden, the Netherlands, with its main production facilities located in Toulouse, France. Since 2019, Airbus has become the world's largest manufacturer of both helicopters and aircraft.

Airbus was initially founded as a European coalition of aerospace companies to compete with the leading American companies of the time, in particular Boeing, McDonnell Douglas and Lockheed Martin. Indeed, in Europe, although design was innovative and efficient, there was a need for collaboration in the aerospace industry to overcome the scale and engineering problem needed to advance not only in commercial aviation, but also in the production of military aircraft.

The main players in this initial consortium were the French Aérospatiale, which later became Aérospatiale-Matra, the German DASA and the British Hawker Siddeley which initially rejected the offer but later agreed to step into the consortium as the wings' producer. In 1972, Airbus flew its first A300 flight, which marked a significant milestone in Europe's presence in the global aerospace market, which has grown year after year since then.

In 2001, Airbus was transformed from a consortium to a joint-stock company following the merger between EADS and BAE and was renamed Airbus in 2017. Over the years, Airbus has expanded its product range and pointed towards more sustainable and more efficient aircrafts, consolidating its position as a global leader in the aerospace industry. The company continues to drive innovation in commercial aviation and defence, positioning itself as Boeing's leading competitor in the global market. In the FY 2023, Airbus generated total revenues of €65.5bn, with an operating profit of €3.6bn. Its operations are global, with significant markets in Europe, Asia and North America. Long-standing customers include major airlines such as Deutsche Lufthansa AG [ETR: LHA] and EasyJet plc [LSE: EZJ], as well as the armed forces and governments.

In the last months of 2023, Airbus faced delays in the delivery of the A320neo due to persistent supply chain disruptions that happened both in its European and Chinese factories which affected the production schedules. In June 2024, Airbus announced the acquisition of European aerospace technology company Thales Aerospace for €3.2bn. The agreement's improvement in the relationship with Leonardo S.p.A. [BID : LDO] has 33 % of Thales Alenia Space, a Thales Aerospace subsidiary, will help Airbus improve its position in avionics, cockpit systems, and digital solutions.

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## **Enter the Scene: Comac**

In May 2008, the Chinese government announced the formation of Comac (Commercial Aircraft Corporation of China, Ltd.) China's first-ever producer of commercial aircraft. Since then, Comac has received somewhere between \$49 and \$72bn in government aid which enabled Comac to produce the C919 aircraft, the first jet-type trunk liner independently developed by China by international airworthiness standards and owning independent intellectual property rights. The C919 aircraft has a layout of 158 to 192 seats and a range of 4,075 to 5,555 kilometres. This type of plane can cover lots of domestic and intercontinental routes, accounting for more than half of the global passenger aircraft fleet and competing with the Boeing 737 MAX and Airbus A320Neo, the two most used passenger aircraft.

### **Technological Complexity and Western Influence**

Designing and building a successful commercial airliner is very technologically advanced and requires a lot of intellectual property to develop. Thus, China has been eyeing Western designs and in particular the US constructions. Indeed, as an example both 737 Boeing and C919 Comac are not that different, and their engines are both produced by the joint venture between General Electric and Safran of France with roughly similar levels of technology and components. Both engines are models from the LEAP-1 series from CFM. LEAP-1B is used in Boeing, and LEAP-1C is used in Comac.

### **Global Aspirations and Regulatory Hurdles**

The Beijing government hopes that its model could compete with Western giants and become the main carrier in Asia and eventually, one day, take on the global airspace. As of 2024, C919 has received permission to fly domestic flights within the Asian continent and has sent a formal request to the FAA (Federal Aviation Administration) and EASA (European Union Aviation Safety Agency) to receive regulatory permission which would allow them to become an international success and export aircrafts to a number of countries and increase its clients. Both the FAA and EASA have responded that the C919 is not able to join the skies due to its lack of miles and time on flights but a new request is set to be put forward again at the beginning of 2025 according to the Chinese government.

### **Production plans and competitive pricing**

Moreover, COMAC has increased sales and production plans and has been marketing the C919 abroad, especially within Southeast Asia and also to the growing aviation market in Saudi Arabia whilst also currently receiving some new book orders that have not been disclosed publicly yet. Comac is forecasted to be able to produce around 100 airplanes per year by 2030. Whilst Airbus and Boeing together have delivered 1263 planes in 2023, they both have their booking list full of orders for the next two years and the recent interruption in the pipeline is not helping them catch up, which could create space to the Chinese competitor. Furthermore, the list price - net of discounts - is \$120m for the A320neo, \$121.6m for the Boeing 737 Max, and \$99m for the C919 which could mean less initial outflow for the airline companies in a market that is always more cost driven.

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## Headwinds for Comac

Comac faces significant challenges in competing with industry giants Boeing and Airbus in the international aviation market. Comac struggles with technical inefficiencies, particularly in range and performance KPIs, which currently lag behind the more advanced models from Boeing and Airbus. The global aircraft market is highly saturated, with established players having strong brand recognition, vast customer bases, and well-established supply chains, making it difficult for newcomers to penetrate without a distinct competitive advantage or "moat." In addition, escalating geopolitical tensions between the US and China add another layer of complexity, with Western countries increasingly prioritizing domestic manufacturing and "reshoring" efforts, reducing the likelihood of U.S. airlines or allies opting to purchase Chinese aircraft.

## Hard Tech

The C919's components heavily rely on Western technology, including CFM Leap-1 engines (Franco-American consortium CFM International), avionics (Honeywell and Parker Aerospace), cockpit instrumentation (Eaton), tires (Michelin), wing anti-icing system (Liebherr), and many more. C919 has 48 suppliers from the US, 26 from the EU, 6 in APAC, and 14 within China. This raises supply chain complexity – Comac currently have backlogs of thousands of aircraft yet to be delivered.

With respect to performance, C919 struggles to compete in fuel efficiency, seating capacity, and range. The C919's range of 5,500 km is much lower than the A320neo (6,300 km) and the 737 MAX 8 (7,130 km). This is primarily due to heavier airframes and less advanced aerodynamic design. The maximum seating capacity of C919 is 192 passengers, slightly less than the 737 and A320 (~210 passengers).

A lack of fuel efficiency means additional need for offsetting Scope 1 and 2 emissions. Many airline and manufacturing companies are working towards achieving net zero operations. These companies would need to spend additional capital to fund sustainability projects such as forestry, methane capture, hydropower, and peatland restoration to earn carbon credits.

## Aerospace Market Penetration

The global market in commercial aerospace is relatively saturated – unless the C919 exhibits economic or technological moat that outcompetes Boeing and Airbus, entrance into new markets would be an uphill battle. Domestic airlines in both the US and EU will face strong opposition from their current supplier to purchase and operate a competitor's aircraft. Maintenance and overhaul are also the biggest cost components, contributing ~46% of total operating expense. Airlines in US/EU regions would have to build new supply chains for parts and maintenance infrastructure, particularly for Chinese manufactured parts, which could be seen as a strategic vulnerability. Boeing has international partnerships with Japan, Italy, France, Britain, Germany, Canada, and many more. Some foreign suppliers have been reluctant to provide C919 with state-of-the-art components, due to concerns over IP.

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## The US-China Manufacturing War

The rhetoric of US-China relations has long been co-dependent on supply chain yet highly competitive in technological advancement. Historical eras of developing nations have been an exchange of capital and goods– the developed nation’s capital and the developing nation’s goods. The US and China defies this relationship, with the US borrowing capital from China, in exchange for China’s goods. The growing sentiment of the US becoming a weaker consumer society will inevitably raise geopolitical tension.

The feasibility of US adoption of the C919 could face high levels of political opposition, given the geopolitical tension and concerns of over-reliance on Chinese technology. The C919 is designed to compete with Boeing 737 and Airbus A320. One can argue that Huawei is designed to compete with US telecom giants leading to Huawei now being banned in the US due to national security concerns, cybersecurity risks and intellectual property theft. The C919 poses similar risk levels, even more so concerning consumer data.

The US incentive to reshore manufacturing is also driven by a dire need for efficiency, job creation and more domestic manufacturing. The US federal debt currently stands at \$35.7tn, where \$10tn is coming up for refinancing at ~4%, adding \$300bn in new interest expense next fiscal year. To address the national deficit issue, political administrations proposed tariff and tax raises for both corporates and foreign countries. In other words, corporations will have a harder time increasing spending to invest in new plane models due to raised taxes. The economic advantage that C919 offers will also be offset by tariffs.

## Conclusion

The introduction of COMAC as a viable competitor marks a significant shift in a market historically dominated by Airbus and Boeing. While the Western incumbents maintain an edge in terms of technology, brand recognition, and supply chain infrastructure, COMAC's government-backed efforts with the C919 represent a strategic challenge. The C919, though facing hurdles in performance metrics, regulatory approvals, and geopolitical tensions, is well-positioned to capture a growing portion of the aviation market, particularly in Asia and emerging economies. As competition intensifies, the aerospace landscape could see a broader range of players emerge, but for now, COMAC still has a long journey ahead before it can fully disrupt the well-established Airbus-Boeing duopoly. China has successfully entered several markets once dominated by other countries, such as the automobile and mobile phone industries. Time will tell whether this success can be replicated with commercial passenger aircraft.

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