Commercial Market Outlook

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The statements contained herein are based on good faith assumptions are to be used for general information purposes only. These statements do not constitute an offer, promise, warranty or guarantee of performance.
Industry recovery progressing broadly as anticipated

CMO 2020

Aviation proven resilient over and over again

Recovery through April 2023

Source: IATA data through April 2023, compared to April 2019 levels

<table>
<thead>
<tr>
<th>2020 Industry metric</th>
<th>2023 Industry metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% Passenger flights</td>
<td>97% Passenger flights</td>
</tr>
<tr>
<td>25% Passenger traffic</td>
<td>90% Passenger traffic</td>
</tr>
<tr>
<td>2023/2024 Passenger recovery</td>
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</tr>
<tr>
<td>~4% Long-term traffic growth</td>
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</tr>
<tr>
<td>Accelerated (4-5%)</td>
<td>Delayed (1-2%)</td>
</tr>
</tbody>
</table>

SOURCE: IATA data through April 2023, compared to April 2019 levels
Passenger market nearing pre-crisis levels of activity

Passenger fleet (active) 97%
Passenger capacity 92%
Passenger flights 97%
Passenger traffic 90%

SOURCES: Cirium Fleets Analyzer, FR24, IATA; all values for April 2023 vs. April 2019
Single-aisle back to growth, widebody recovery at 85%

SOURCE: Cirium Diio, ASMs in billions for June of each year
Economic fundamentals steady despite slowing growth

Consumption… **resilient**

Inflation… **improving**

Financial sector… **sound**

**US services consumption**

**Global CPI**

**Policy interest rates**

SOURCES: US BEA, S&P Global Market Analysis, Boeing Analysis
Demand not constraining recovery

Policy harmonization  Labor availability  Supply chain stability
Global middle income household growth supports air travel demand

Household growth in the “global middle” and above

SOURCES: Oxford Economics, Boeing Analysis
Airfares are rising but less than other leisure and travel categories
Air travel adds value on longer trips

Capacity (Available Seat Miles)

+5.1% annually

SOURCES: OAG & Cirium Diio

>500 miles

<=500 miles
Airline and network trends

- LCC growth
- Network flexibility
- Cabin optimization
- Net zero
Low cost carriers leading single-aisle fleet growth
Airlines adapting to evolving demand

% of peak day frequencies

- 2019
- 2023

Monday Tuesday Wednesday Thursday Friday Saturday Sunday

SOURCE: Cirium Diio, average seat share of week 3 of each month
Versatility broadening passenger widebody networks

More widebody airports…

…across a wide range of missions

SOURCE: Cirium Diio, mission distances in kilometers
Airlines deploying more premium cabin seating

Single-aisle

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>2023</td>
<td>5%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Widebody

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic</th>
<th>International</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10%</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>11%</td>
<td>14%</td>
</tr>
</tbody>
</table>

SOURCE: Cirium
Airlines prioritizing sustainability initiatives

Fleet renewal

Decline in active fleet since 2019

-75%
-50%
-25%
0%

MD80 / 717
A320ceo
737NG
747 / A380
767
A330

Increased SAF sourcing

300+ million liters produced in 2022

130+ renewable fuel projects announced

57 offtake agreements announced since 2022

Technology investment

SOURCE: FlightRadar24, June 2023

SOURCE: IATA
Fleet trends

Simplification

Pent-up replacement

Regional jet headwinds

Disruptive technology
Airlines simplifying fleets

Number of airplane families removed

- 1 airline phased out at least one family from their active fleet 2019 to 2023
- 2 families phased out
- 3+ families phased out

SOURCE: Cirium, in-service aircraft for airlines with >30 active airplanes
Fleet renewal underway

Status 2019

- In Service 90%
- New
- Storage 10%

Status 2023

- In Service 84%
- Long storage 10%
- Retired
- Short storage 6%

Sources: Cirium Fleets Analyzer and Boeing Analysis

*1% of 2019 has been converted to freighters
Single-aisle fleet renewal gaining momentum

Global scheduled single-aisle capacity (ASKs)

Billions

- Current generation
- Recent generation
- Older generation

SOURCE: Cirium Diio, ASKs = Available Seat Kilometers
Regional jet capacity challenges

![Bar chart showing the number of routes flown on regional jets by market size, with pre-pandemic and current data.](chart)

**Number of routes flown on regional jet by market size**

- Small markets: -21%
- Medium markets: -14%
- Large markets: -48%

**Sources:** Cirium Diio, US airline majors
Disruptive investment below jet markets

$16 Billion invested

Airport—Airport
>200 miles & >19 seats

Airport—Airport
<200 miles & <19 seats

Air Taxis – Inter Urban

Complementary applications to airline business models and travel experience

Jets and turboprops <90 seats = ~2% of global, so minimal impact to single-aisle jet forecast

METRIC: Share of projects
SOURCES: Roland Berger, McKinsey
Air cargo: long-term growth amid cyclical volatility

Cargo Tonne Kilometers (CTKs) Change, %

World CTKs (000)

+3.5% annually
Trade growth volatile near-term, outperforming GDP over time

Trade +90-95%
3.0% annual growth

GDP +70%
2.6% annual growth

SOURCES: S&P Global GTAS Forecasting, Boeing Analysis
Evolving supply chains support air cargo growth

SOURCE: US Department of Commerce
E-commerce boosting express freighter fleets

Freighter aircraft operated by or for express carriers and e-commerce companies

SOURCE: Cirium Fleet Analyzer

2019

2020-2022

775

266

83

6

20+% growth

SOURCE: Cirium Fleet Analyzer
Steady long-term forecast driven by fundamentals

<table>
<thead>
<tr>
<th>World economy (GDP)</th>
<th>Passenger traffic (RPKs)</th>
<th>Cargo traffic (RTKs)</th>
<th>Fleet (jets)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US$92T</td>
<td>6 trillion</td>
<td>260 billion</td>
<td>24,500</td>
</tr>
<tr>
<td>2022</td>
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</tr>
<tr>
<td>US$155T</td>
<td>20 trillion</td>
<td>630 billion</td>
<td>48,600</td>
</tr>
<tr>
<td>by 2042</td>
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SOURCE: Boeing CMO
Air travel demand drives passenger fleet needs

Increasing regional traffic balance

![Graph showing traffic balance between 2022 and 2042 for different regions: Americas, Eurasia, Asia Pac, China, Africa & Middle East.]

Diverse growth / replacement needs

![Graph showing fleet requirements for 2022 and 2042 for different regions: Americas, Eurasia, Asia Pac, China, Africa & Middle East.]

NOTE: Eurasia includes Europe, Russia and Central Asia

SOURCE: Boeing CMO
Airlines will need 42,595 new airplanes over 20 years

By type:
- Regional jet: 1,810 (4%)
- Single-aisle: 32,420 (76%)
- Widebody: 7,440 (18%)
- Freighter: 925 (2%)

By region:
- Asia Pacific: 15,310
- Eurasia: 8,635
- North America: 6,875
- China: 5,515
- Middle East: 4,030
- Latin America: 3,665
- Africa: 825

SOURCE: Boeing CMO
Future fleet would be ~20% larger without productivity improvements.

Higher average seating:
- Single-aisle: +6% from 2022 to 2042
- Small/medium widebody: +7% from 2022 to 2042

Increasing total fleet productivity:
- Cumulative productivity over time

SOURCE: Boeing CMO
Global fleet will double, with half of deliveries for replacement

- 2022 Fleet: ~2,500 excess parked
- 24,500 (active)
- Retained Fleet: 6,000
- Replacement: ~21,000
- Growth: ~21,000
- 2042 Fleet: 48,575

SOURCE: Boeing CMO
Growing freighter fleet supporting supply chains, express demand

Fleet

Deliveries 2,825

650

Large widebody

Medium widebody

Standard-body

2,270

3,745

2022 Freighters

2042 Freighters

Fleet

SOURCE: Boeing CMO
Growth and replacement drive services and labor needs

$3.8T in Services

- Parts & Distribution Services: 39%
- Digital Solutions & Analytics: 26%
- Maintenance, Repair, Overhaul & Modifications: 30%
- Training & Pilot Services: 5%

2,277,000 New Personnel

- Americas: 24%
- China: 19%
- Eurasia: 23%
- Asia Pacific: 21%
- Africa & Middle East: 13%

SOURCE: Boeing; forecast period 2023-2042
Versatility key to future aircraft market needs

- **737**
  - the most versatile single-aisle family

- **787**
  - the only complete widebody family

- **777X**
  - the next long-haul market leader