



Commercial Market Outlook

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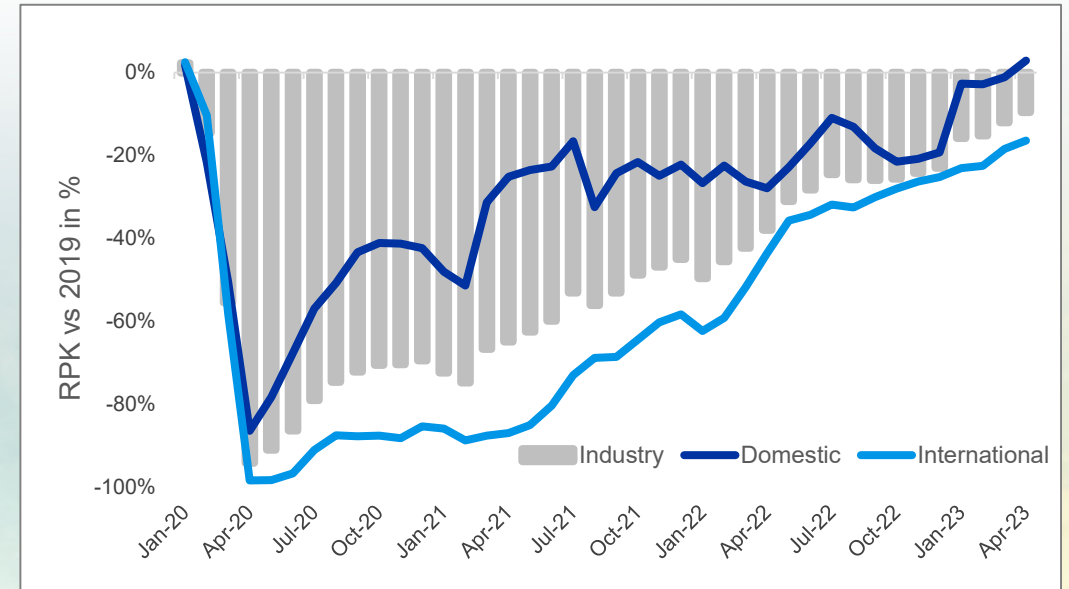
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Industry recovery progressing broadly as anticipated

CMO 2020



Recovery through April 2023



2020

50%

25%

2023/2024

~4%

Accelerated (4-5%)

Industry metric

Passenger flights

Passenger traffic

Passenger recovery

Long-term traffic growth

Airplane retirement outlook

2023

97%

90%

2023/2024

~4%

Delayed (1-2%)

Passenger market nearing pre-crisis levels of activity

Passenger
fleet (active)

97%



Passenger
capacity

92%



Passenger
flights

97%

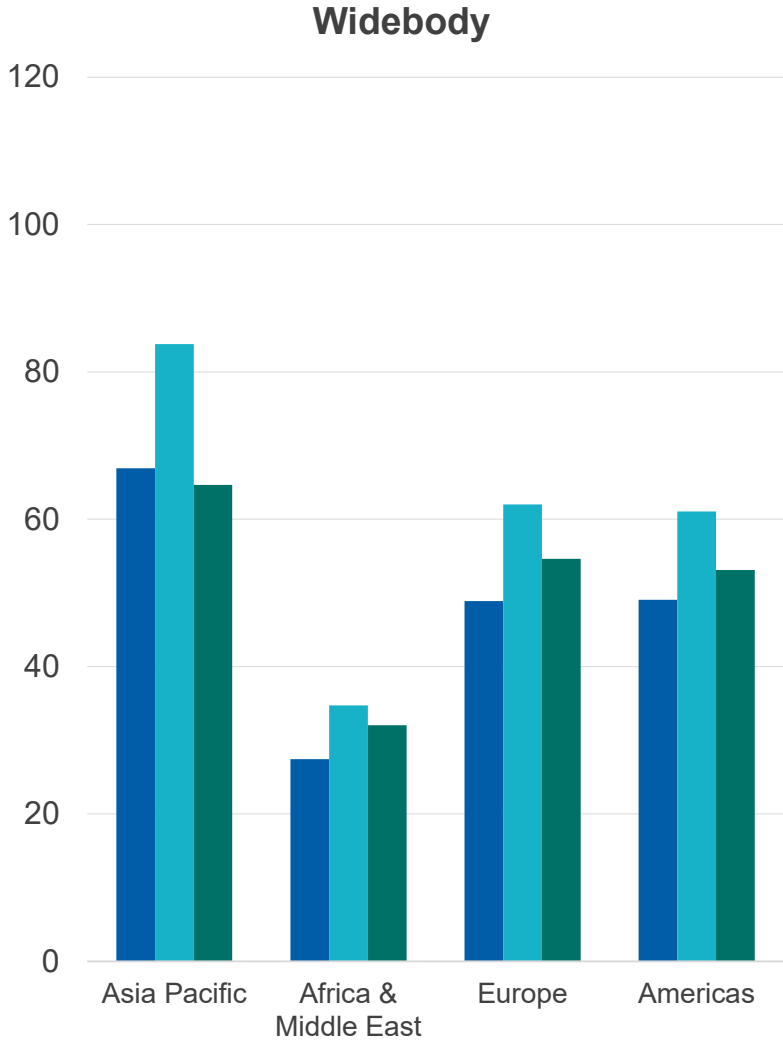
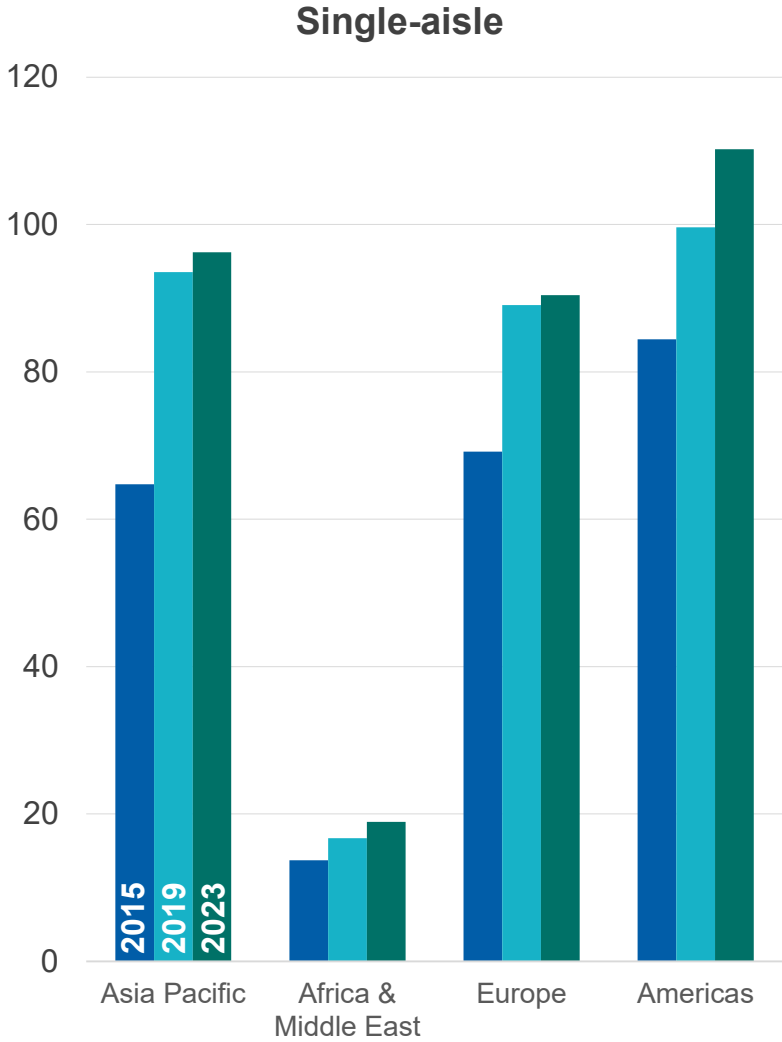


Passenger
traffic

90%



Single-aisle back to growth, widebody recovery at 85%

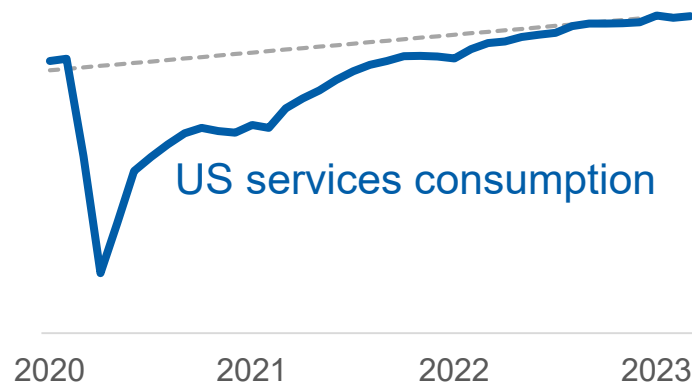


SOURCE: Cirium Diio, ASMs in billions for June of each year

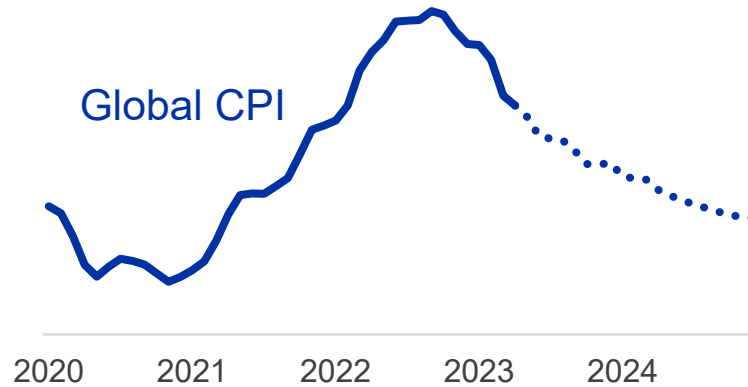
Economic fundamentals steady despite slowing growth



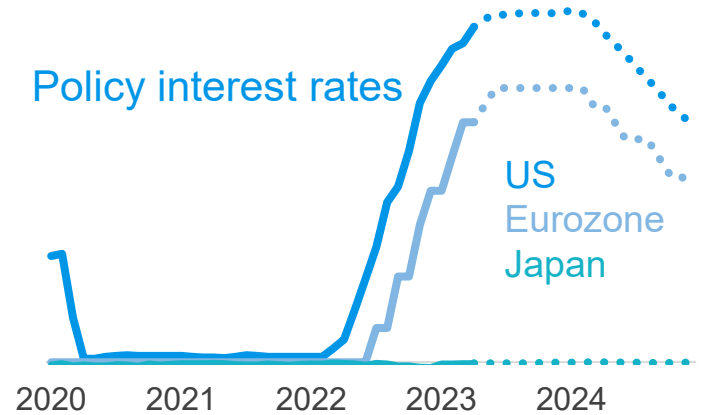
Consumption... resilient



Inflation... improving



Financial sector... sound





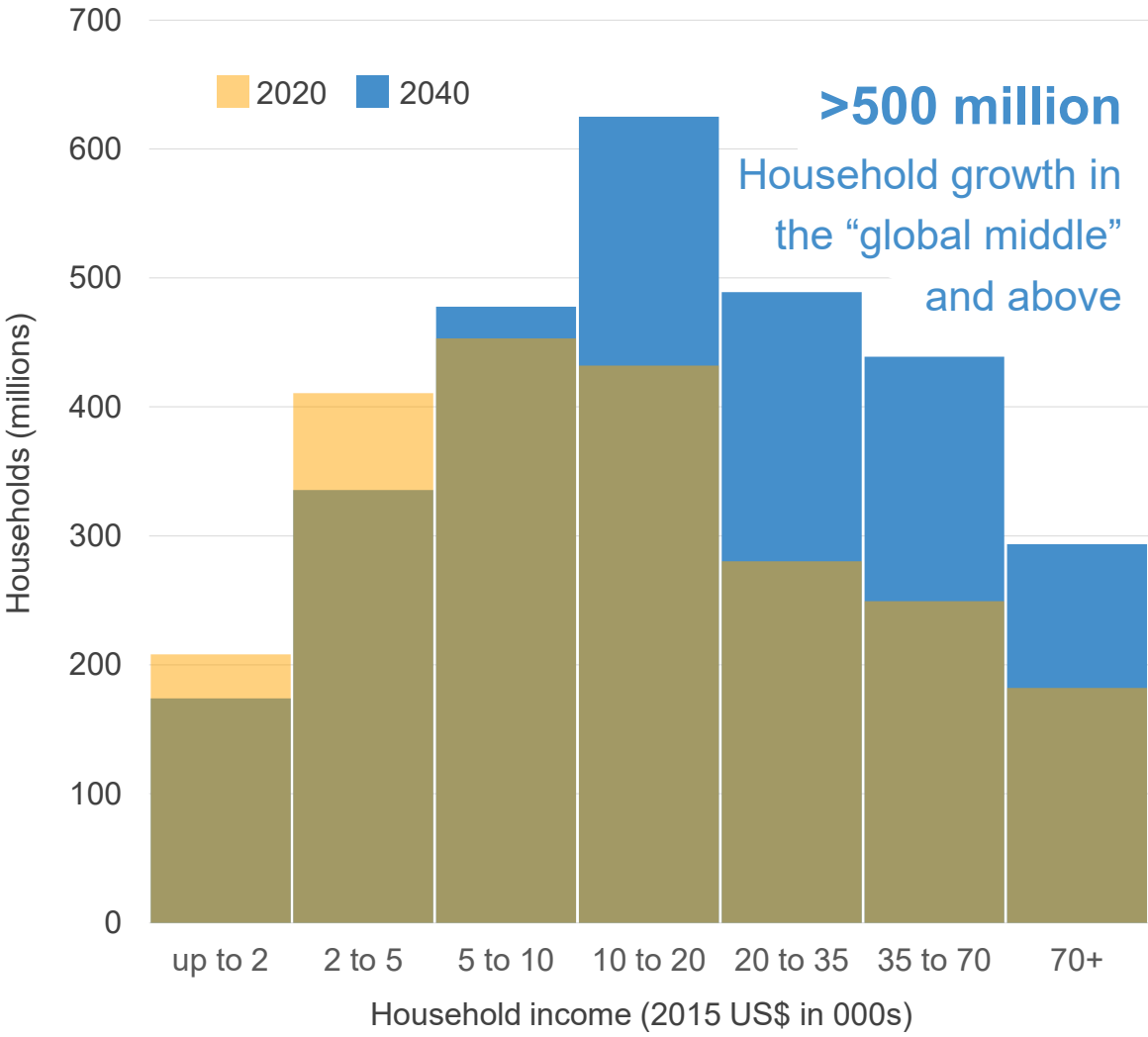
Demand not constraining recovery

**Policy
harmonization**

**Labor
availability**

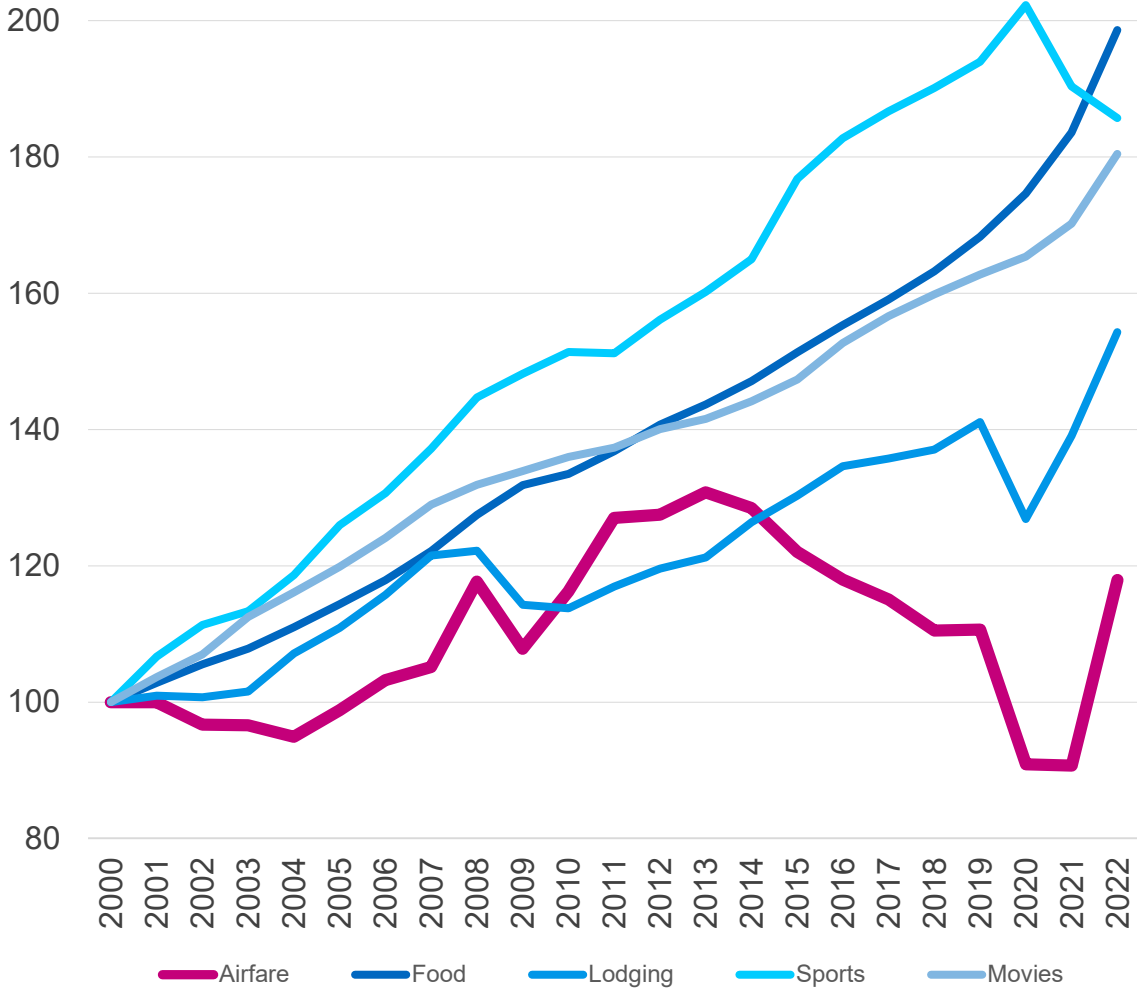
**Supply chain
stability**

Global middle income household growth supports air travel demand



SOURCES: Oxford Economics, Boeing Analysis

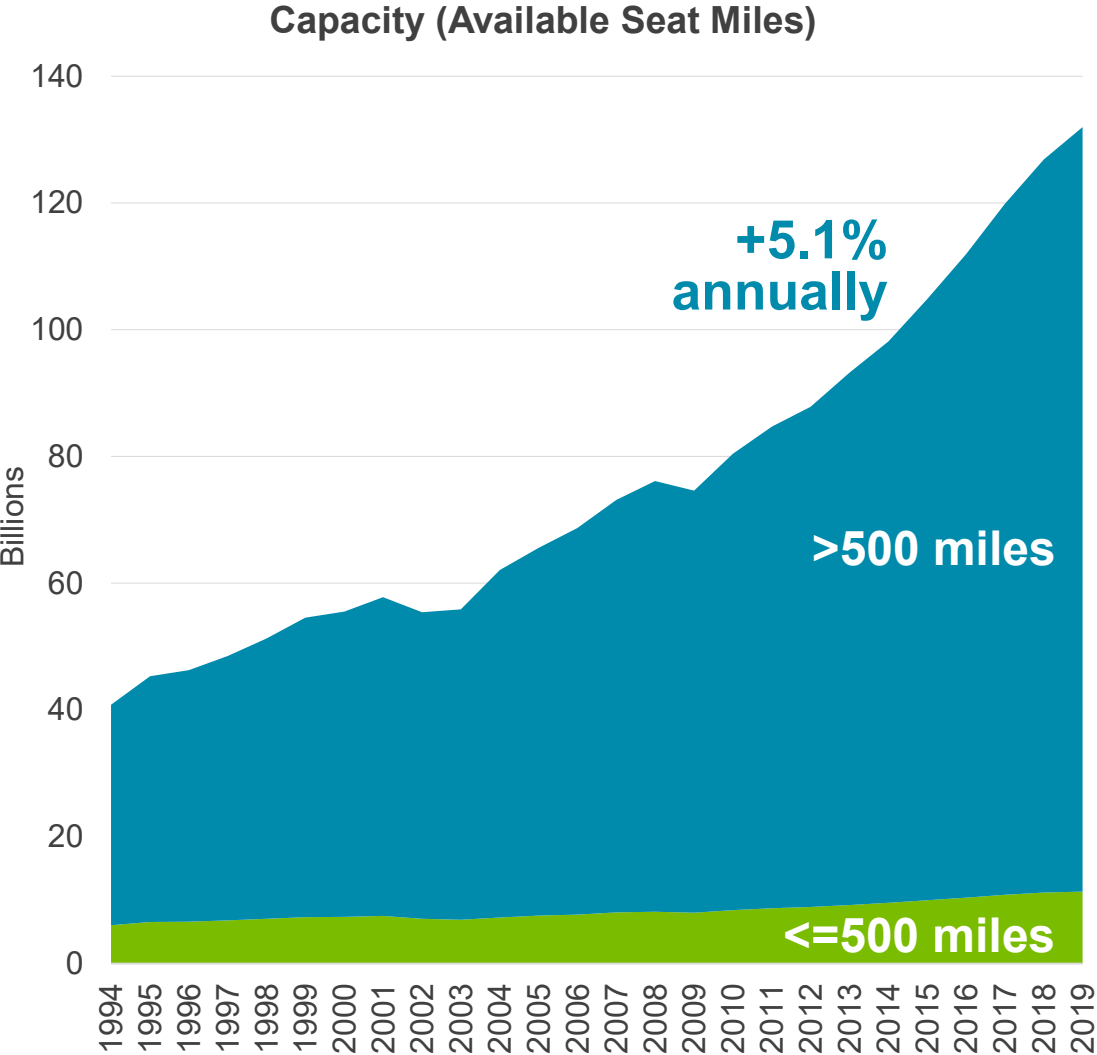
Airfares are rising but less than other leisure and travel categories



Index (2000 = 100)
SOURCE: US BLS



Air travel adds value on longer trips



SOURCES: OAG & Cirium Diio

Airline and network trends



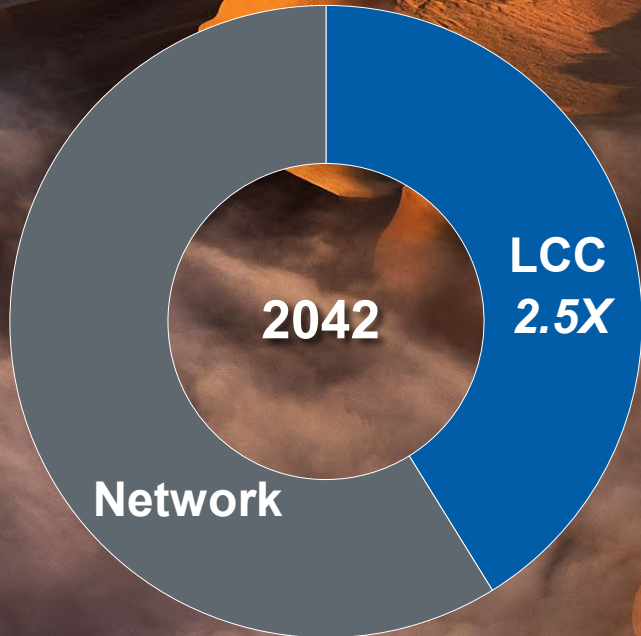
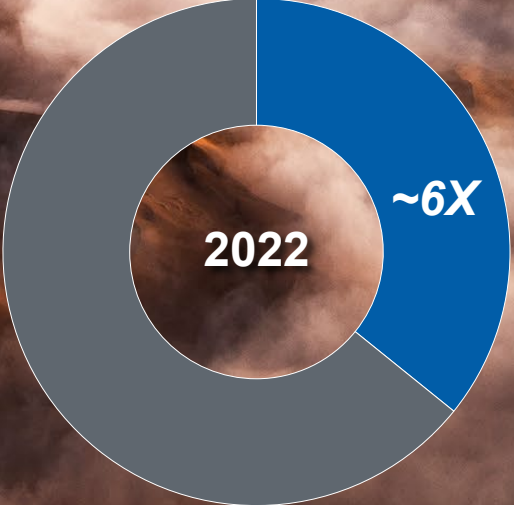
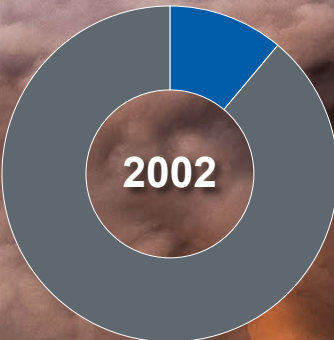
**LCC
growth**

**Network
flexibility**

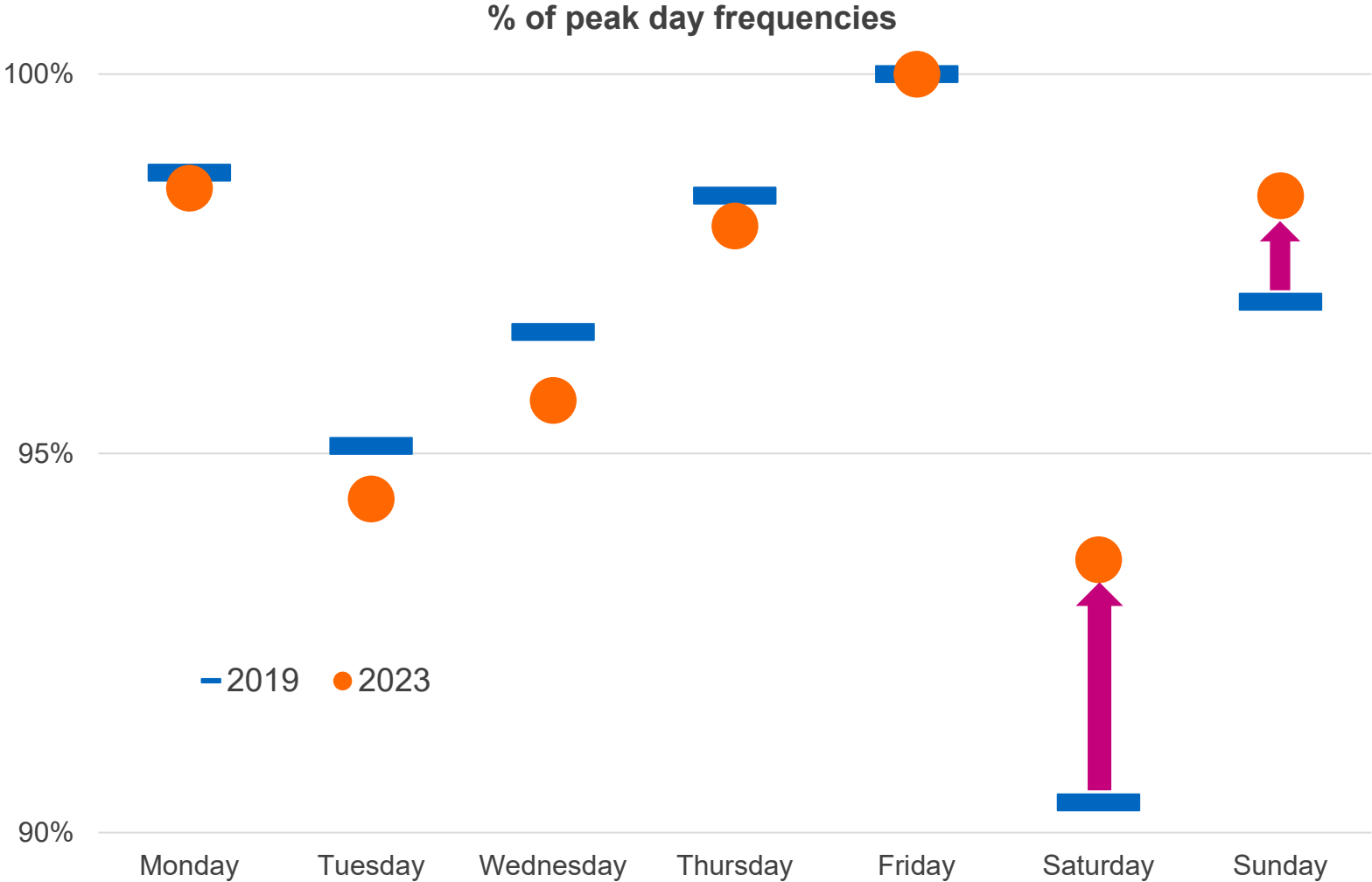
**Cabin
optimization**

**Net
zero**

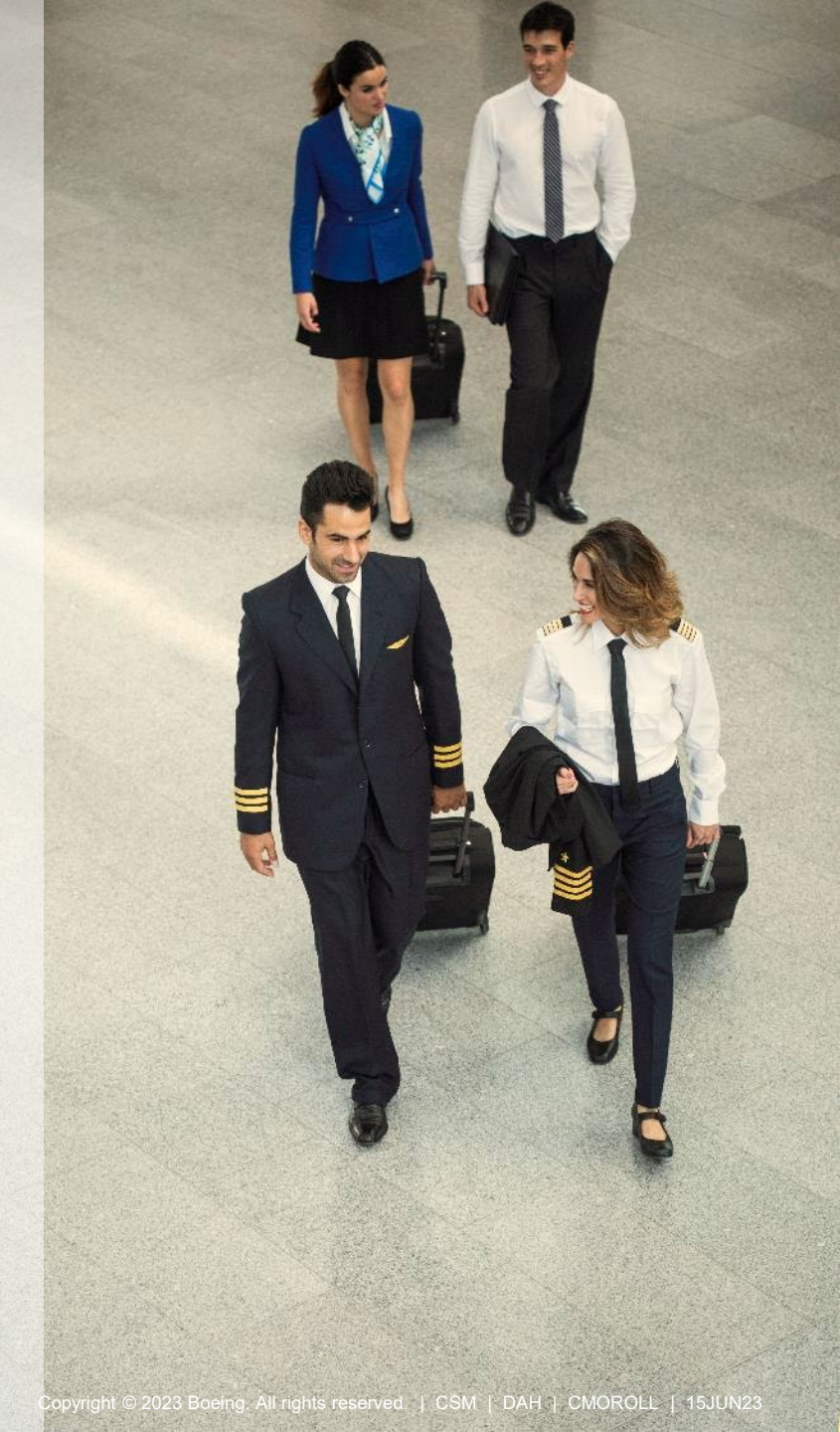
Low cost carriers leading single-aisle fleet growth



Airlines adapting to evolving demand

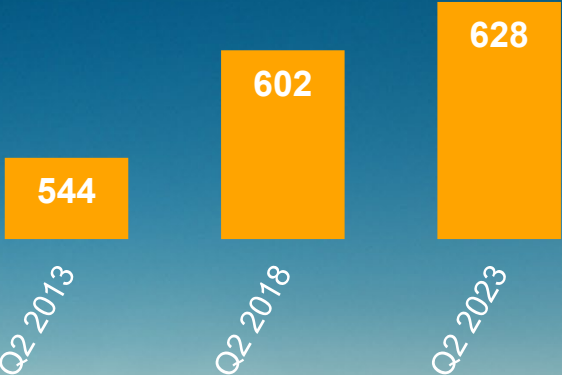


SOURCE: Cirium Diio, average seat share of week 3 of each month

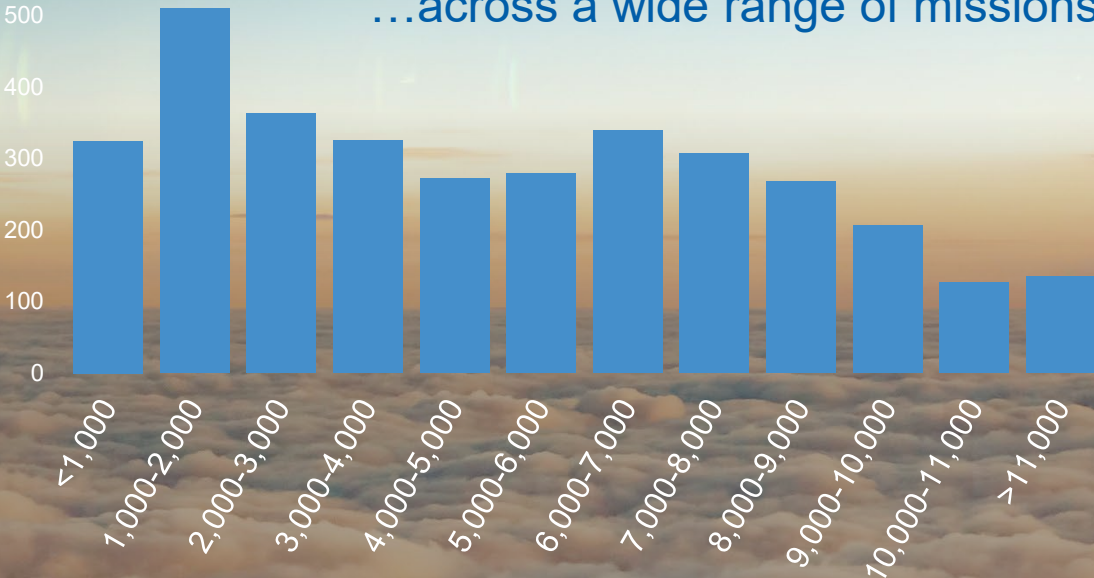


Versatility broadening passenger widebody networks

More widebody airports...

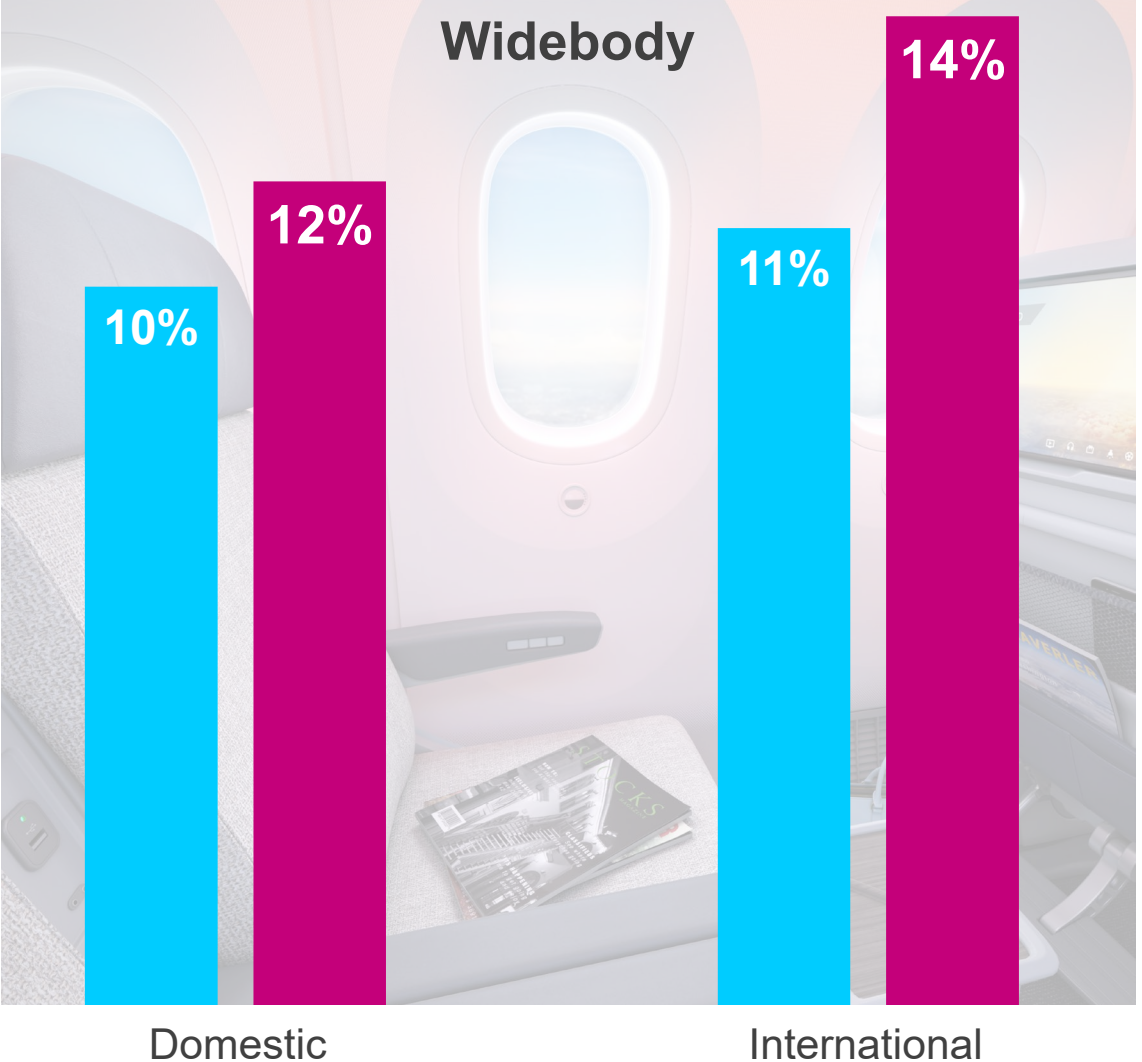


...across a wide range of missions



SOURCE: Cirium Diio, mission distances in kilometers

Airlines deploying more premium cabin seating

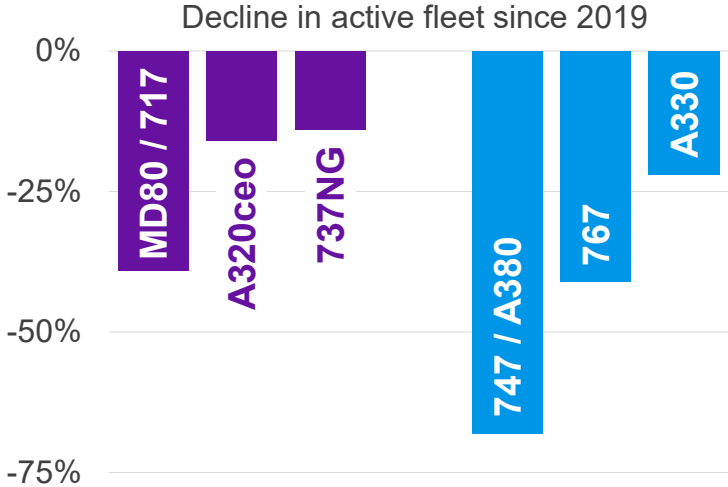


SOURCE: Cirium

Airlines prioritizing sustainability initiatives



Fleet renewal



SOURCE: FlightRadar24, June 2023

Increased SAF sourcing

- 300+** million liters produced in 2022
- 130+** renewable fuel projects announced
- 57** offtake agreements announced since 2022

SOURCE: IATA

Technology investment





Fleet trends

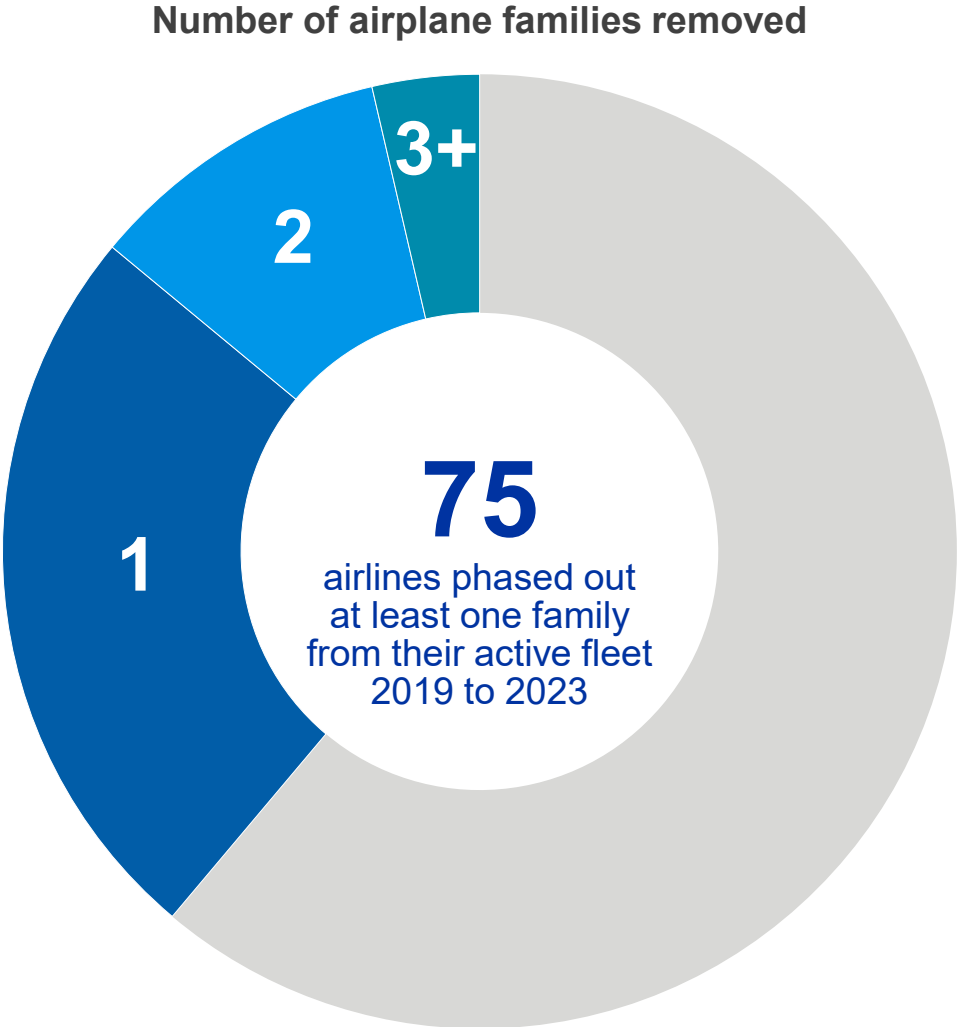
Simplification

Pent-up replacement

Regional jet headwinds

Disruptive technology

Airlines simplifying fleets



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

Fleet renewal underway



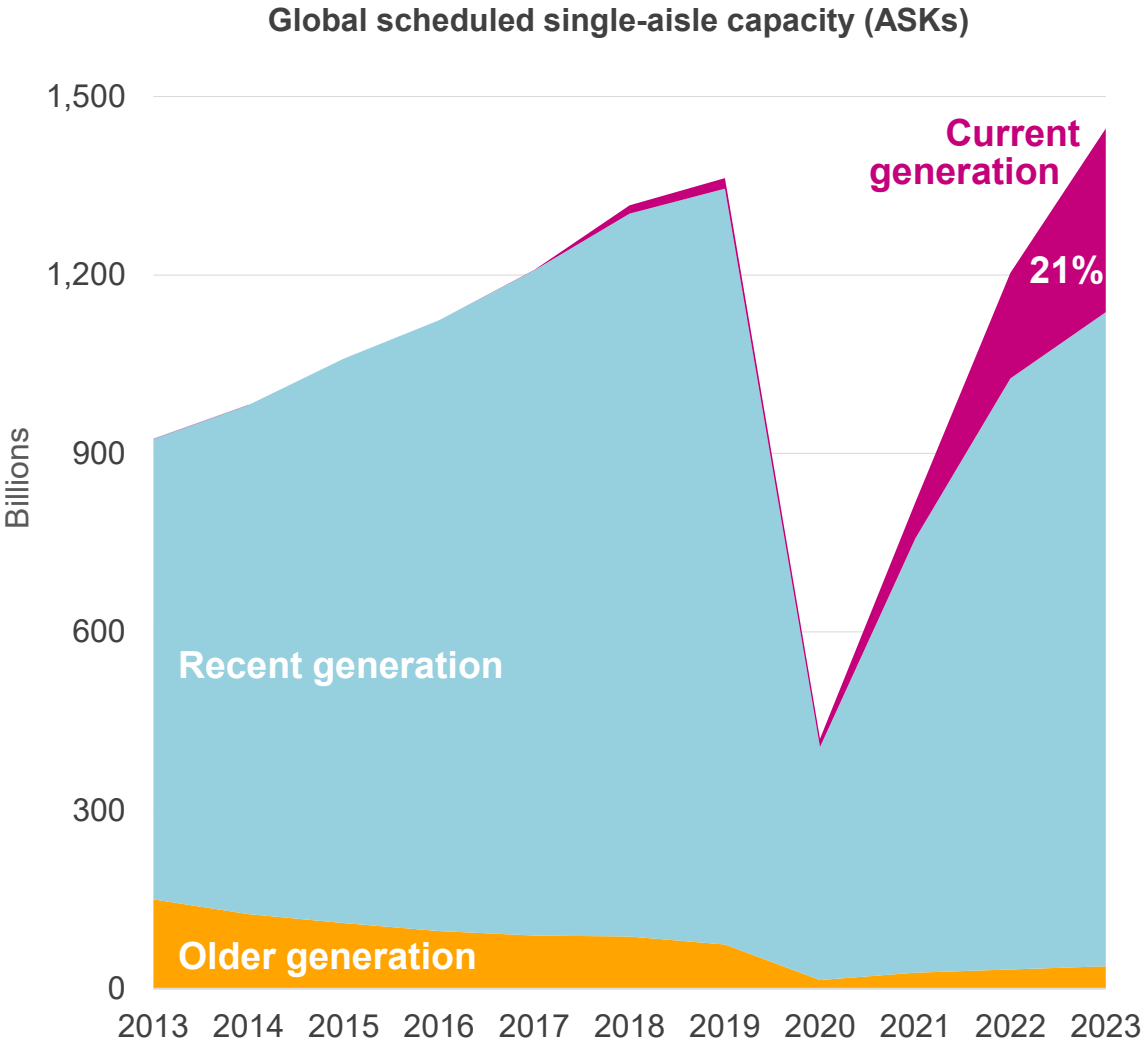
SOURCES: Cirium Fleets Analyzer and Boeing Analysis
*1% of 2019 has been converted to freighters



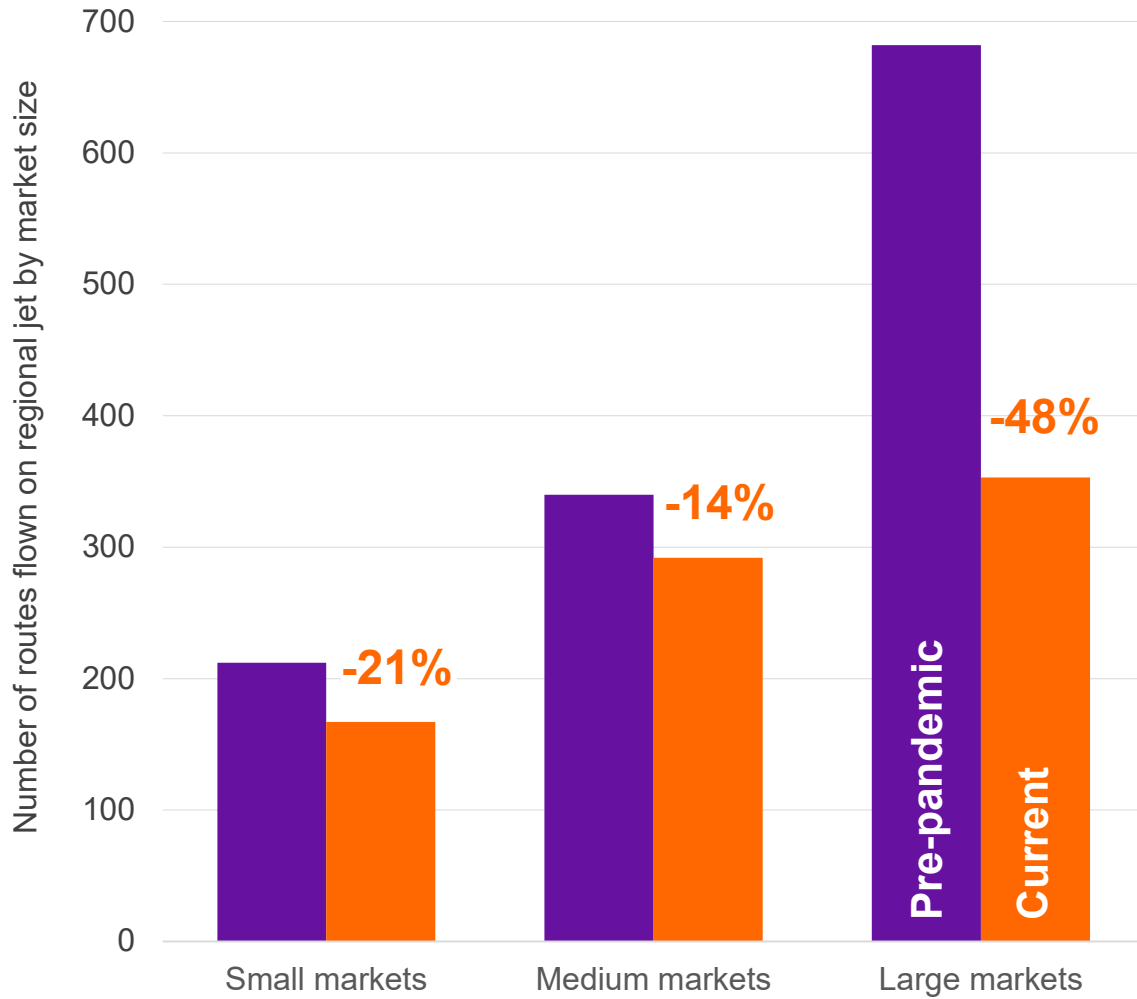
Single-aisle fleet renewal gaining momentum



SOURCE: Cirium Diio, ASKs =Available Seat Kilometers



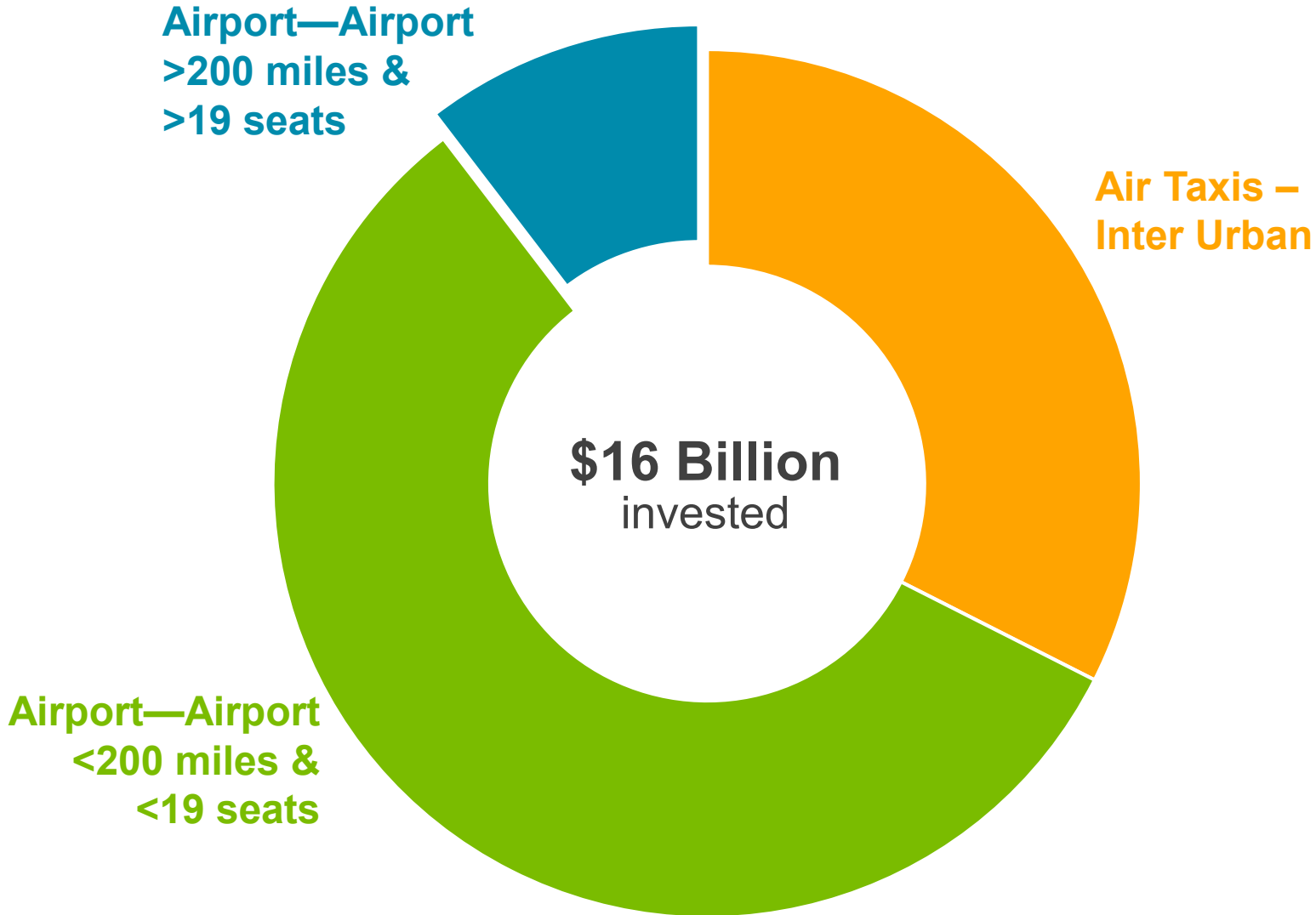
Regional jet capacity challenges



SOURCES: Cirium Diio, US airline majors



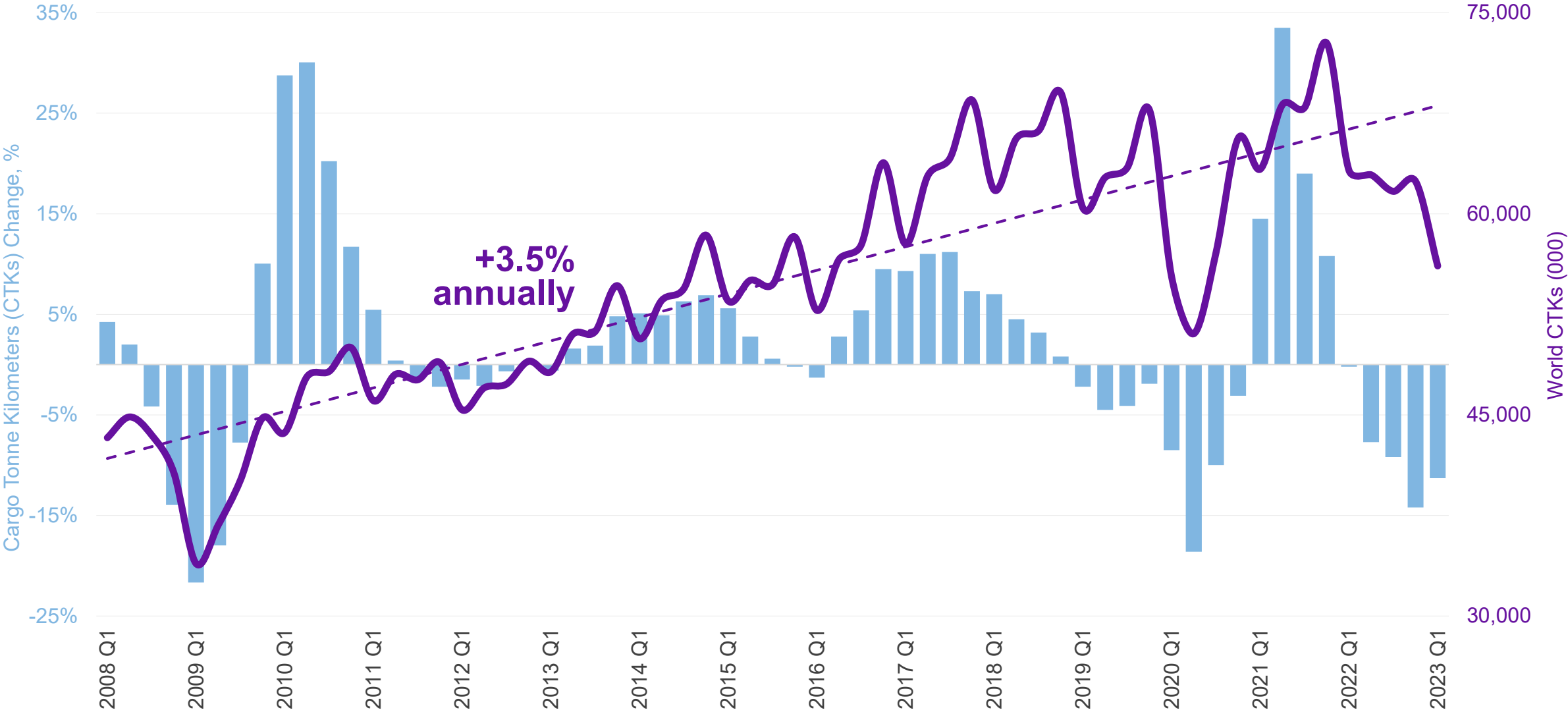
Disruptive investment below jet markets



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

Air cargo: long-term growth amid cyclical volatility



Trade growth volatile near-term, outperforming GDP over time



Trade +90-95%
3.0% annual growth

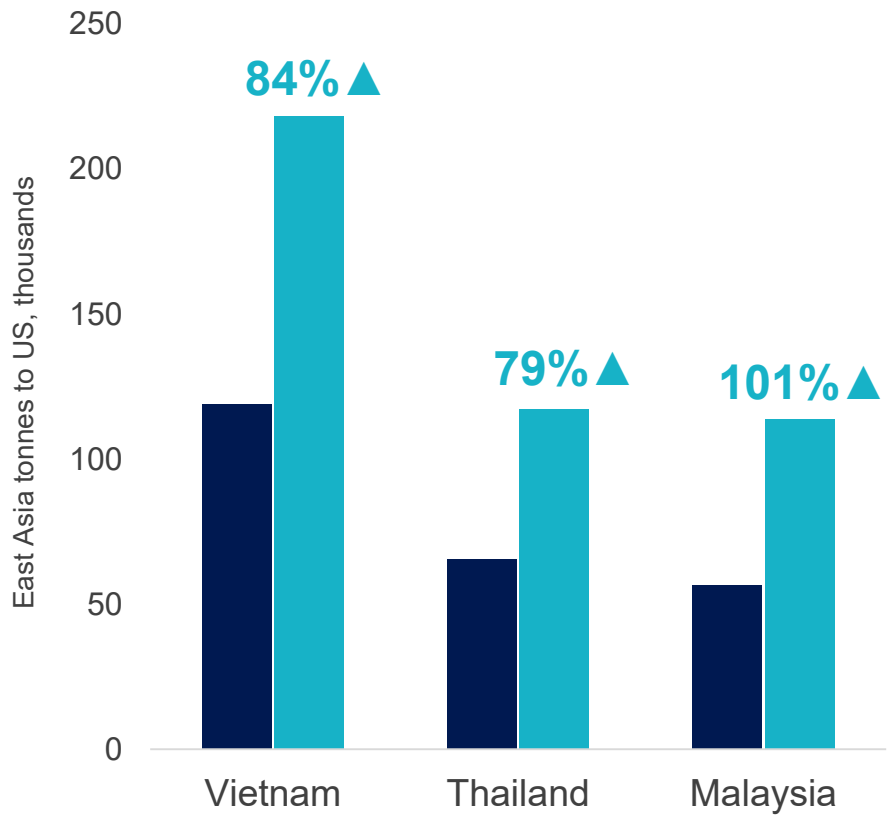
GDP +70%
2.6% annual growth



SOURCES: S&P Global GTAS Forecasting, Boeing Analysis

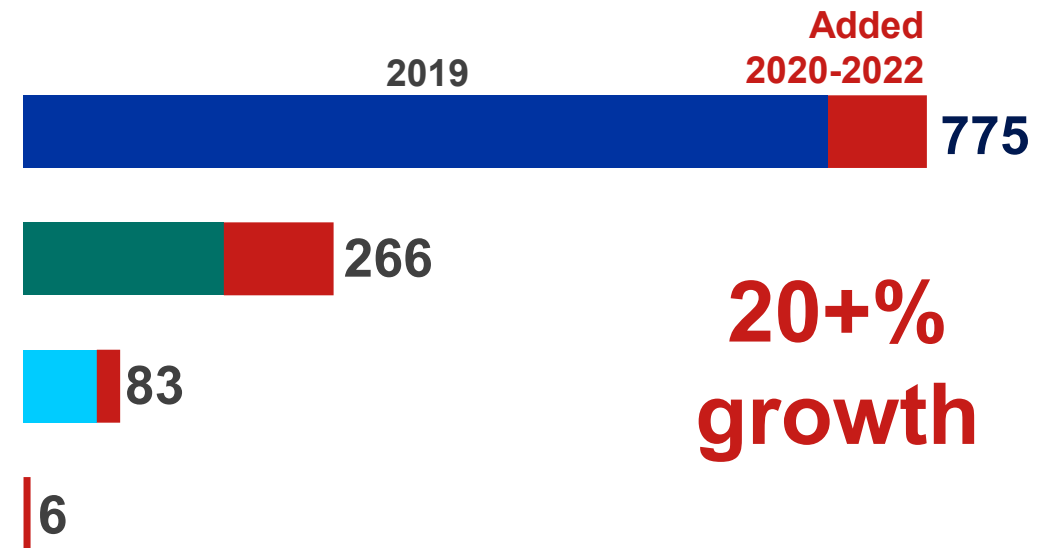
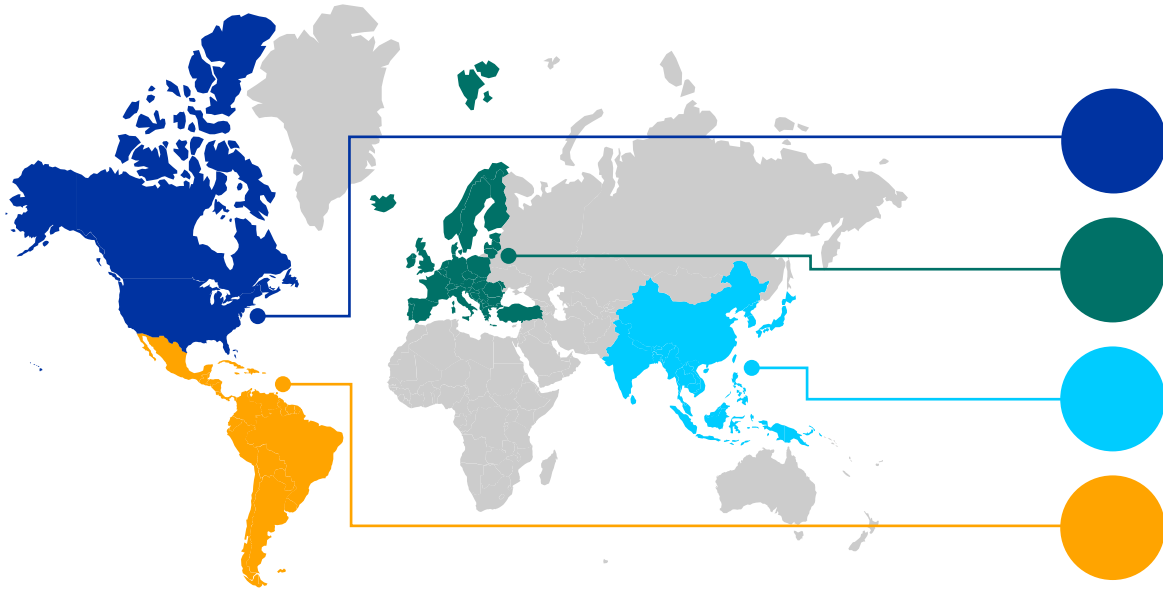


Evolving supply chains support air cargo growth



SOURCE: US Department of Commerce

E-commerce boosting express freighter fleets



**20+%
growth**

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

SOURCE: Cirium Fleet Analyzer

Steady long-term forecast driven by fundamentals



World economy (GDP)

US\$92T
2022

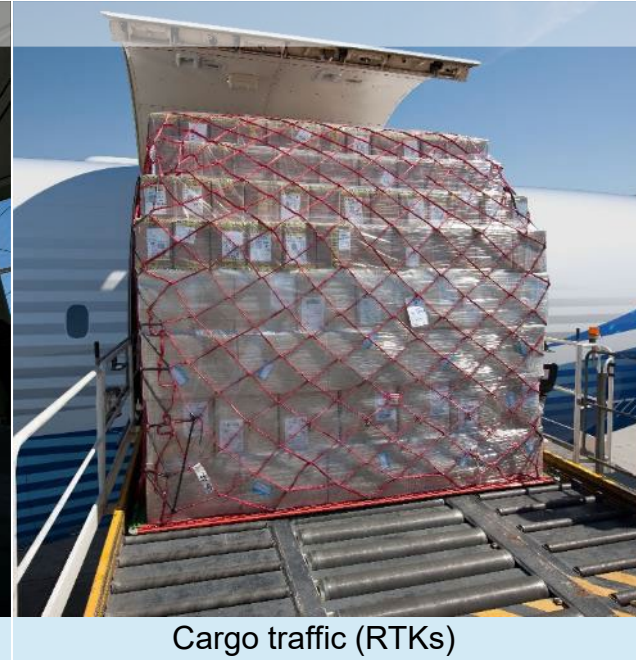
US\$155T
by 2042



Passenger traffic (RPKs)

6 trillion
2022

20 trillion
by 2042



Cargo traffic (RTKs)

260 billion
2022

630 billion
by 2042



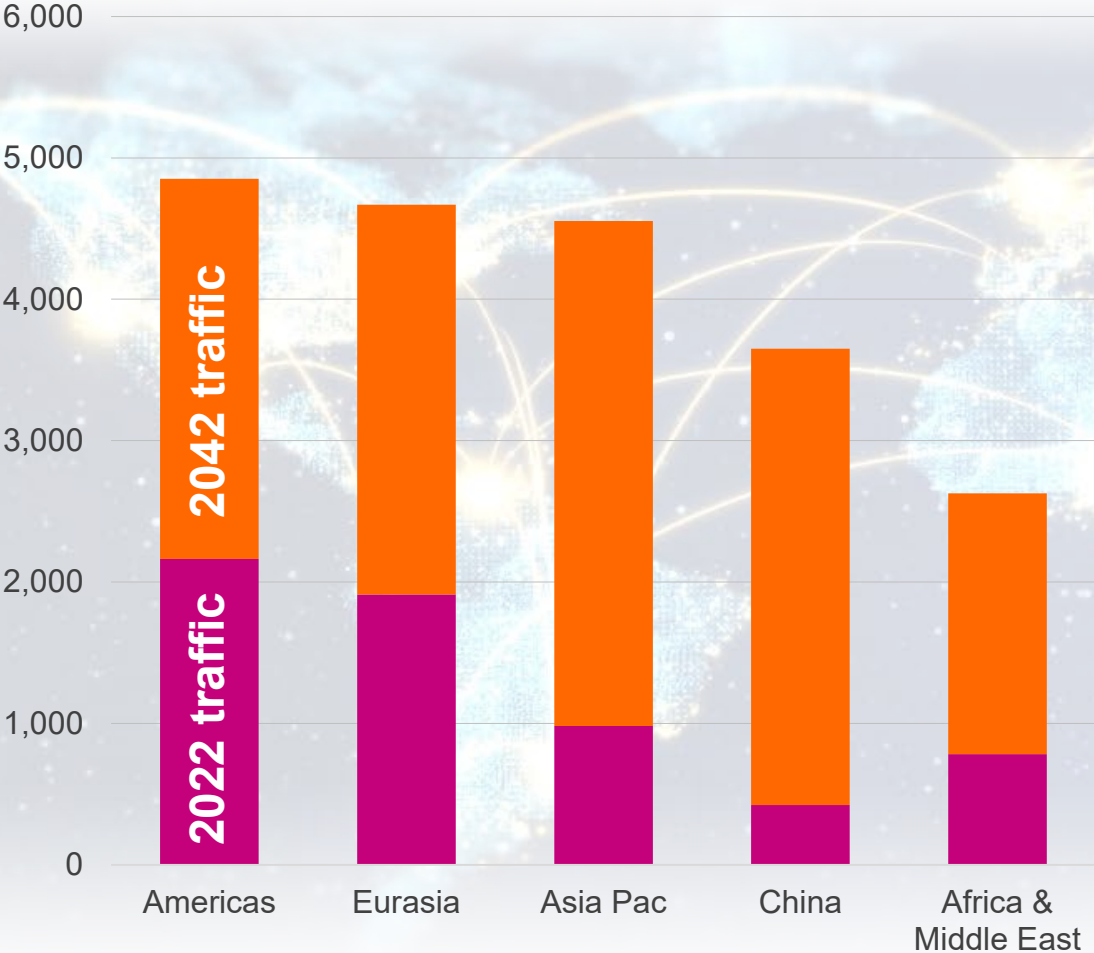
Fleet (jets)

24,500
2022

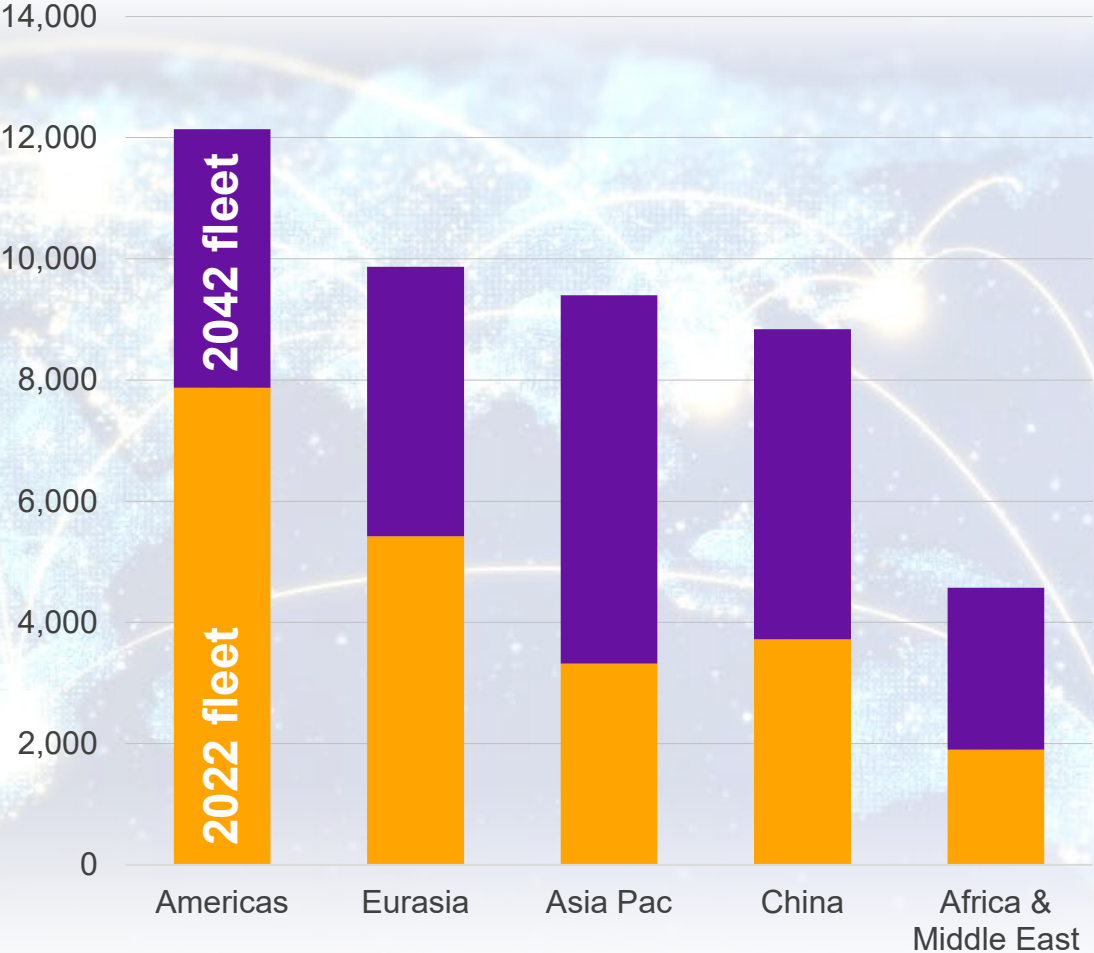
48,600
by 2042

Air travel demand drives passenger fleet needs

Increasing regional traffic balance



Diverse growth / replacement needs



SOURCE: Boeing CMO
 NOTE: Eurasia includes Europe, Russia and Central Asia



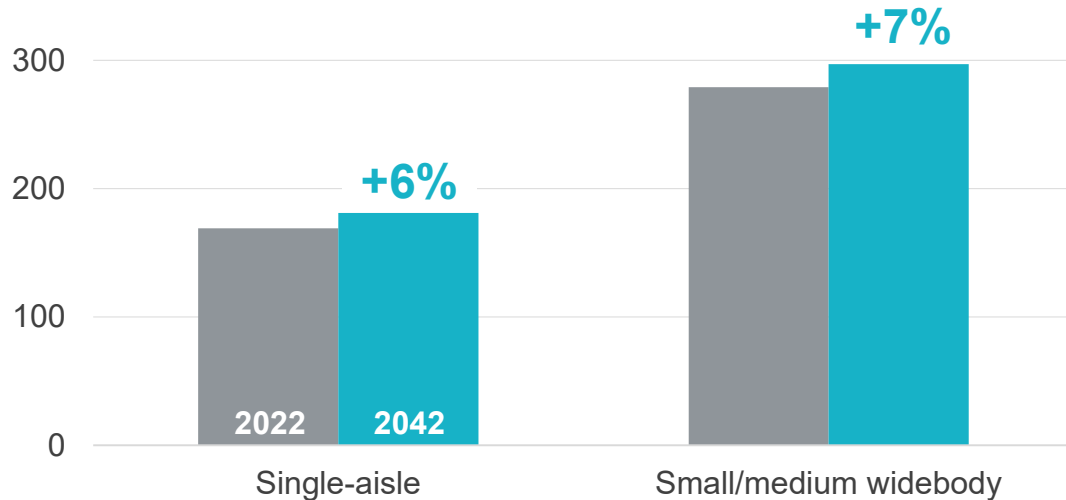
Airlines will need 42,595 new airplanes over 20 years



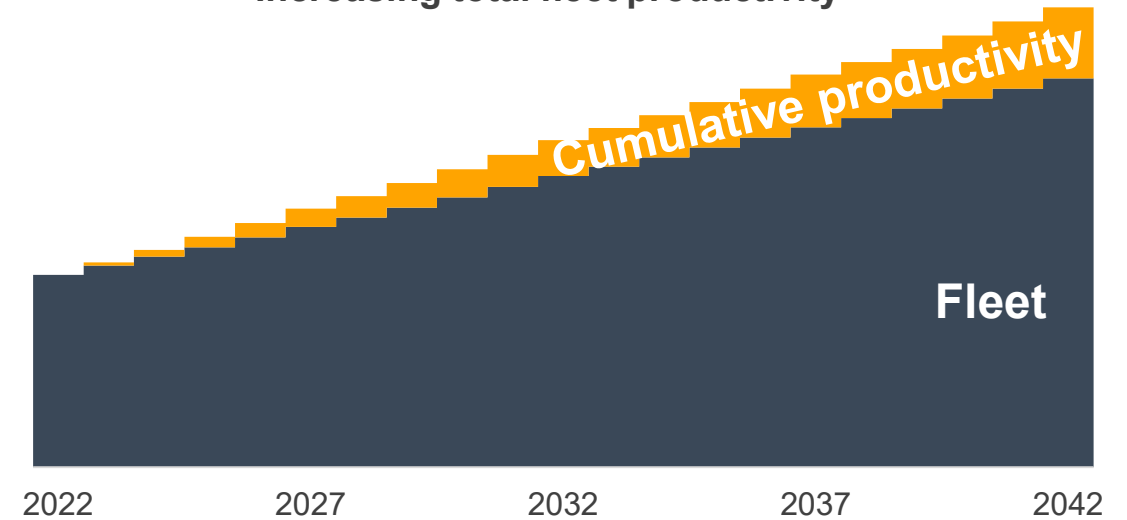
Future fleet would be ~20% larger without productivity improvements



Higher average seating



Increasing total fleet productivity



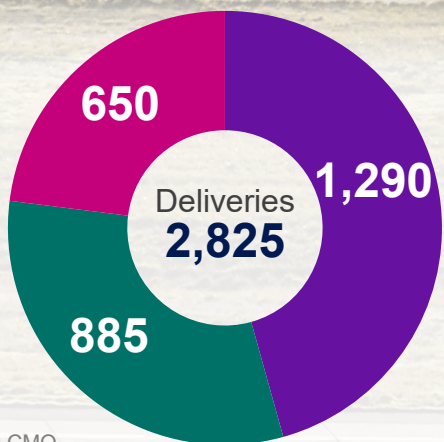
Global fleet will double, with half of deliveries for replacement



SOURCE: Boeing CMO



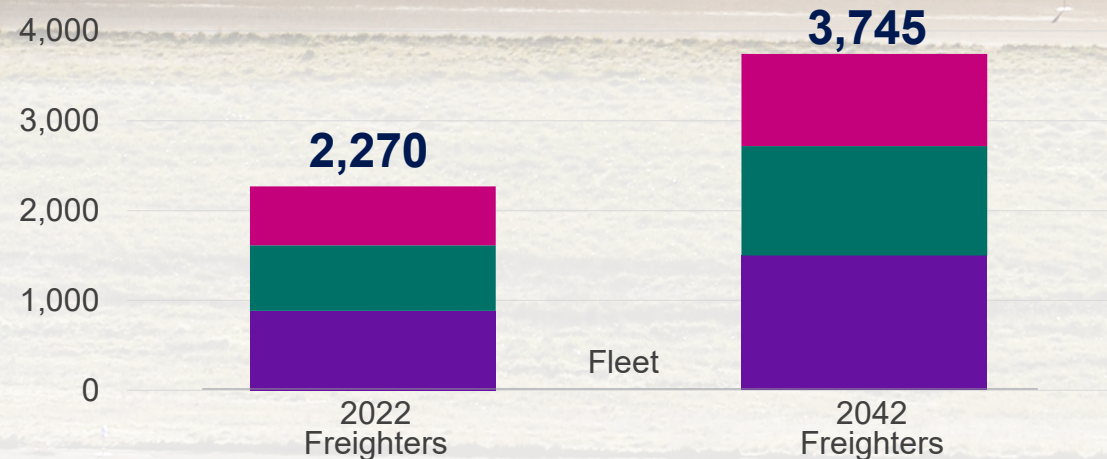
Growing freighter fleet supporting supply chains, express demand



Large widebody

Medium widebody

Standard-body

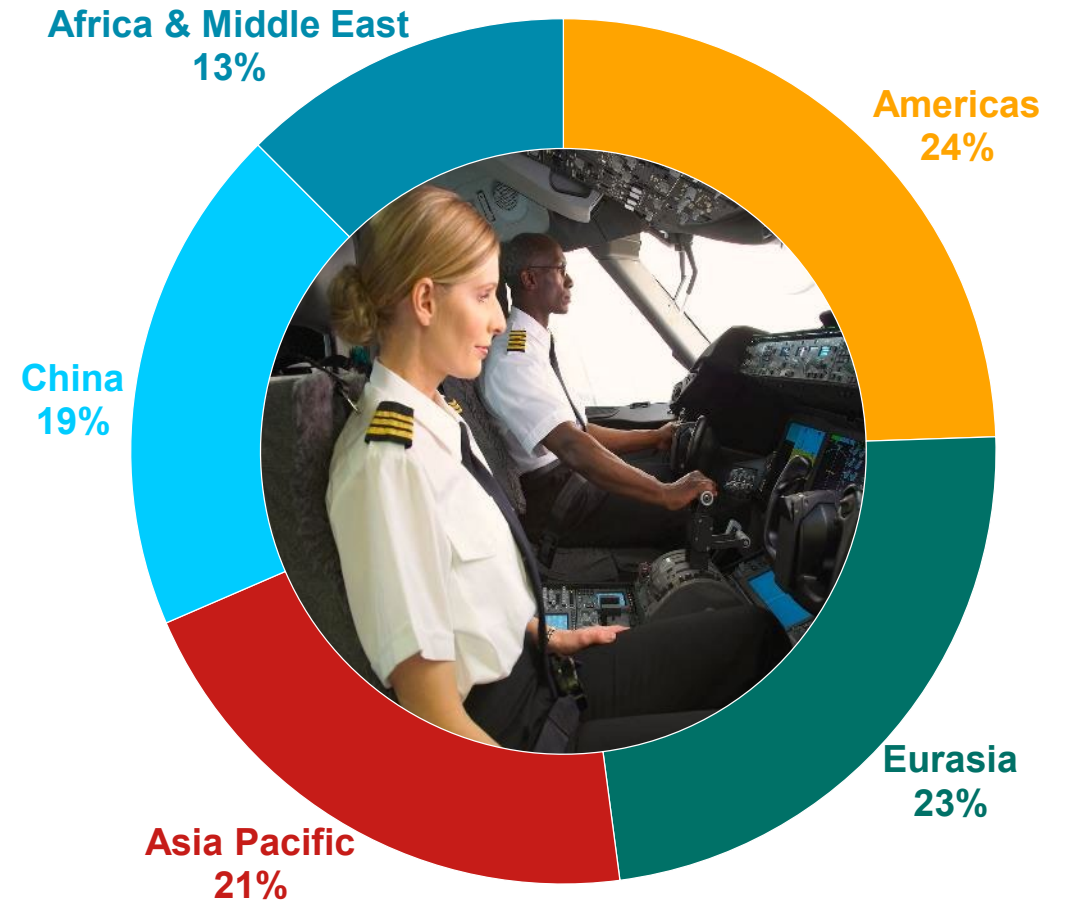


Growth and replacement drive services and labor needs

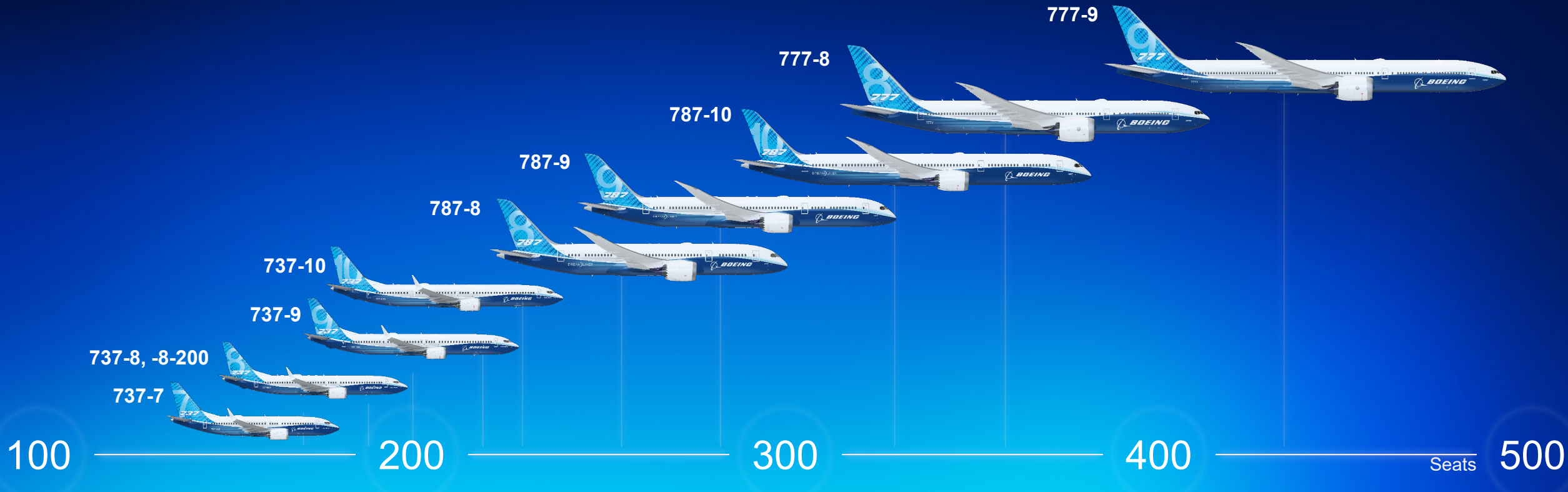
\$3.8T in Services



2,277,000 New Personnel



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**

