

The Business and Finance  
of the Aviation Industry

항공산업의 재무와 비즈니스 전략

한국항공대학교 경영학과  
송운경

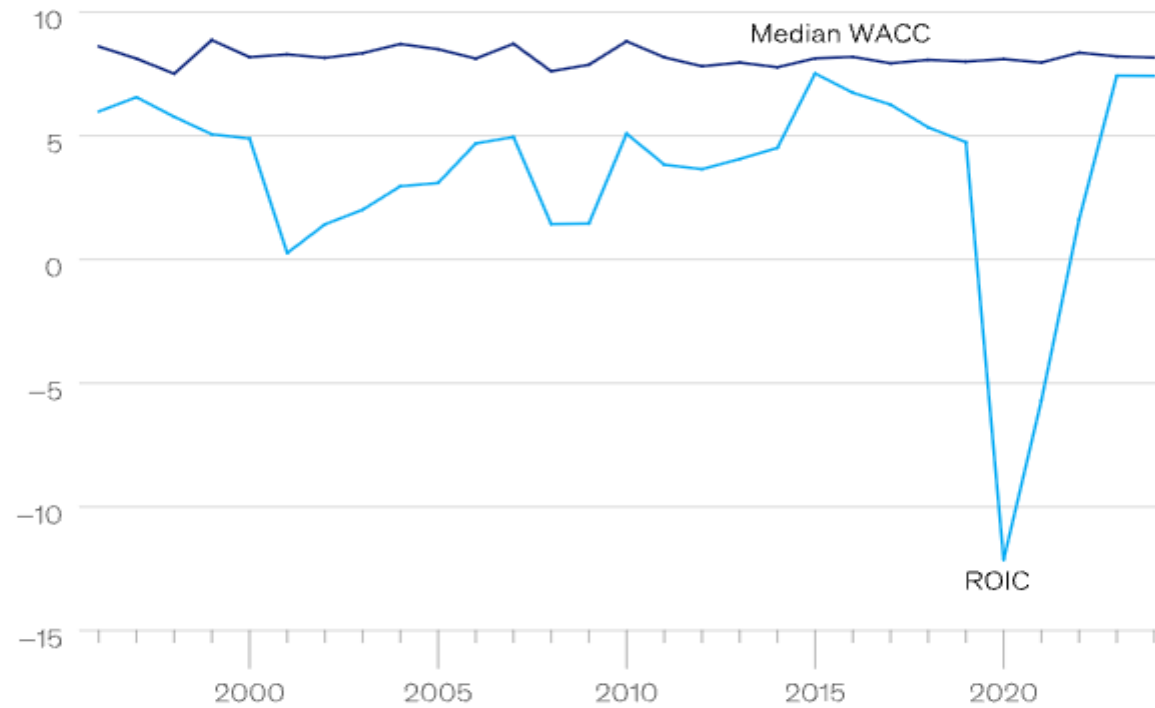
# Introduction

- Air transport's financial performance has continued to improve, but returns remain below the overall cost of capital (IATA, 2025)
  - Operating margin: 3.7% (3.4% in 2024; 5.7% in 2018)
  - Net profit per passenger: \$7.20 (\$6.40 in 2024, \$6.85 in 2018)
  - ROIC has continued to improve  
but is still estimated to remain below the industry's WACC
  - The airline industry has now achieved two consecutive years of profitability since the post-pandemic recovery
  - Rising costs: labor, fuel, and infrastructure charges
  - Aircraft delivery delays (limiting capacity)
  - Weakening of global trades and geopolitical uncertainty  
(cargo, passenger traffic)

# Introduction

The global airline industry's ROIC approached its cost of capital in 2023 and 2024.

Global airline industry ROIC<sup>1</sup> and median WACC,<sup>2</sup> %



Note: 2024 figures based on airlines that have reported financial data at the time of publishing.

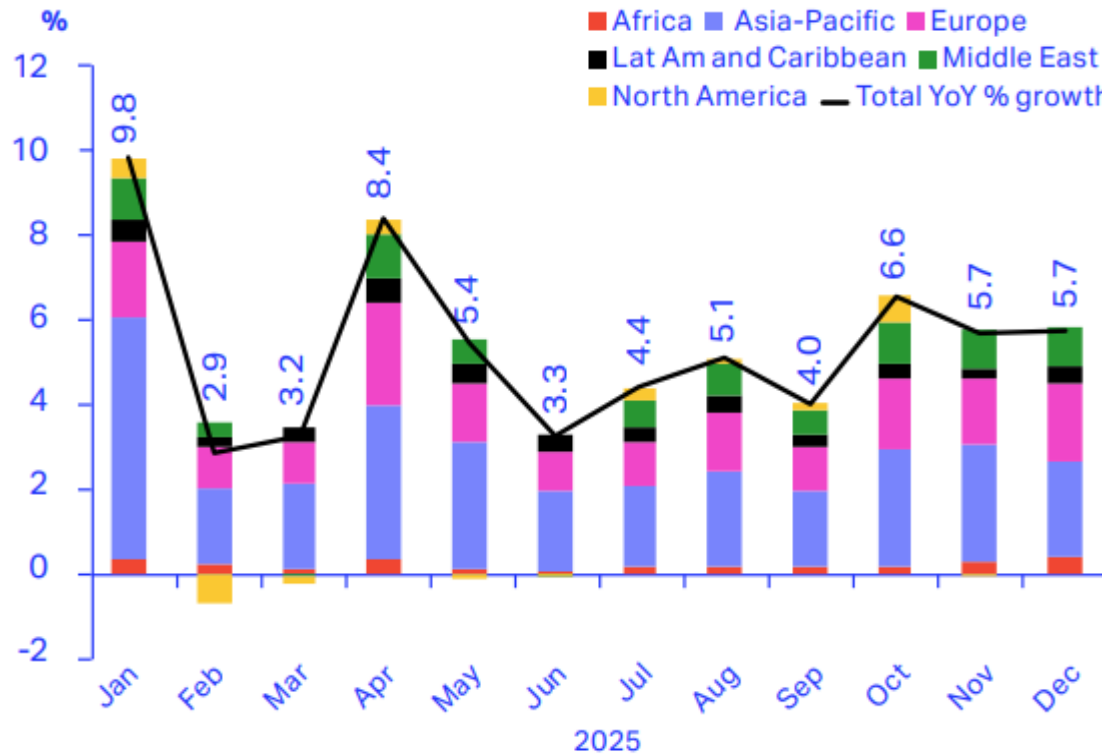
<sup>1</sup>Including goodwill.

<sup>2</sup>Weighted average cost of capital.

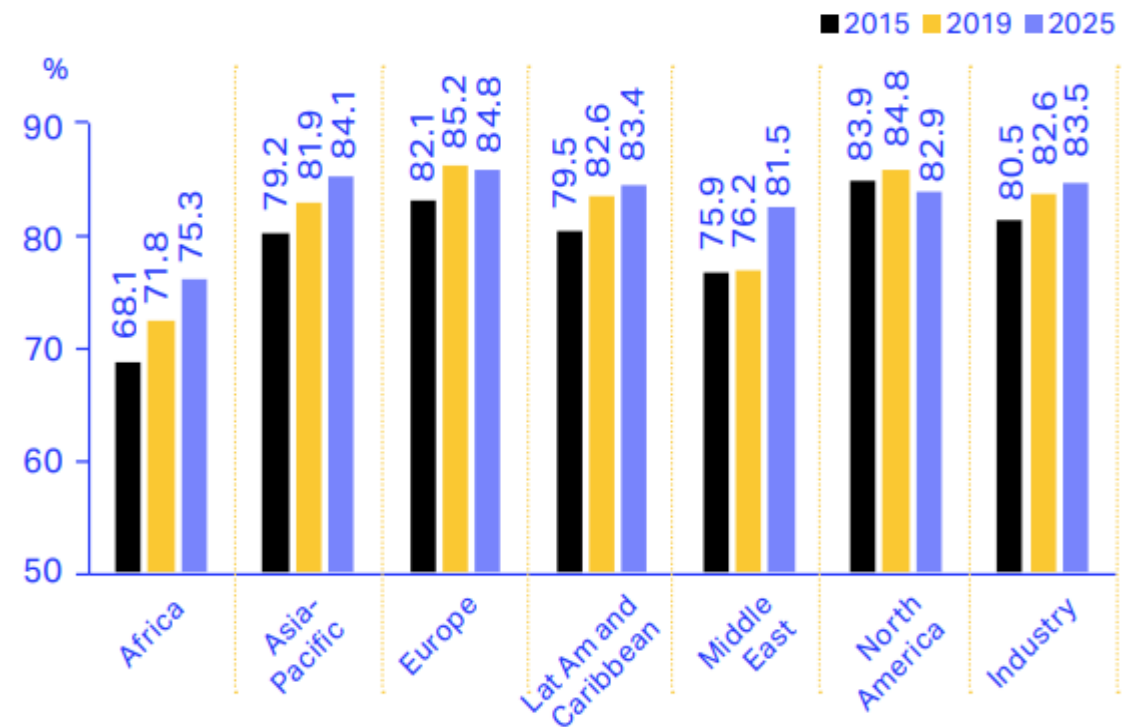
Source: Bloomberg; Company reports; IATA; S&P Capital IQ; The Airline Analyst; McKinsey aviation value chain model

# Introduction

**06: RPK growth by airline region of registration**



**07: Industry-adjusted PLF by airline region of registration**

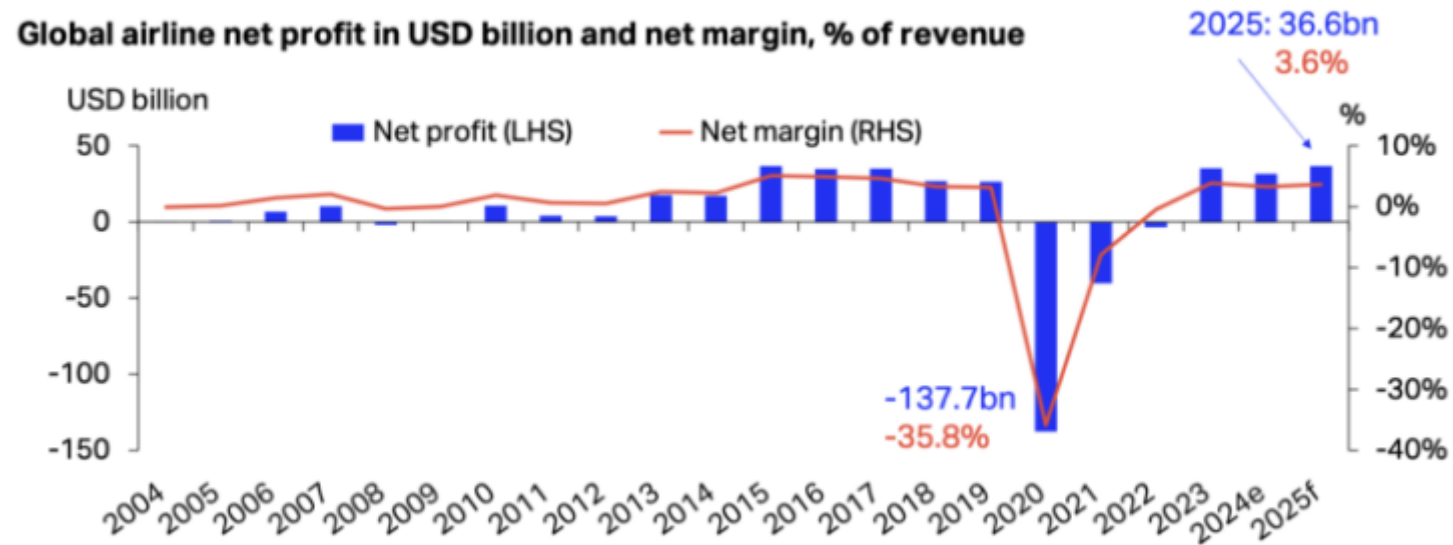


Sources: IATA Sustainability and Economics, IATA Information and Data - Monthly Statistics Sources: IATA Sustainability and Economics, IATA Information and Data, Monthly Statistics.

Asia-Pacific led passenger growth; Load factors reached a record high (IATA, 2026)

# Introduction

Net profit in 2025: USD 36.6 billion



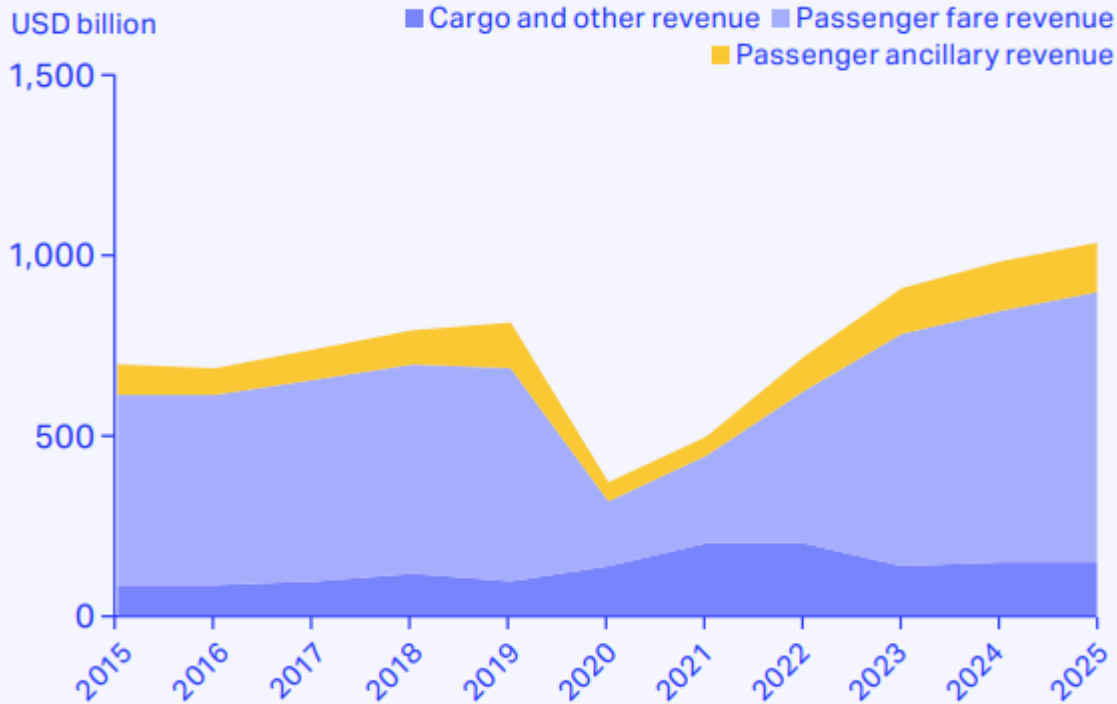
Source: IATA Sustainability and Economics using data from Airfinance Global



\* EBIT margin, Net post-tax profit

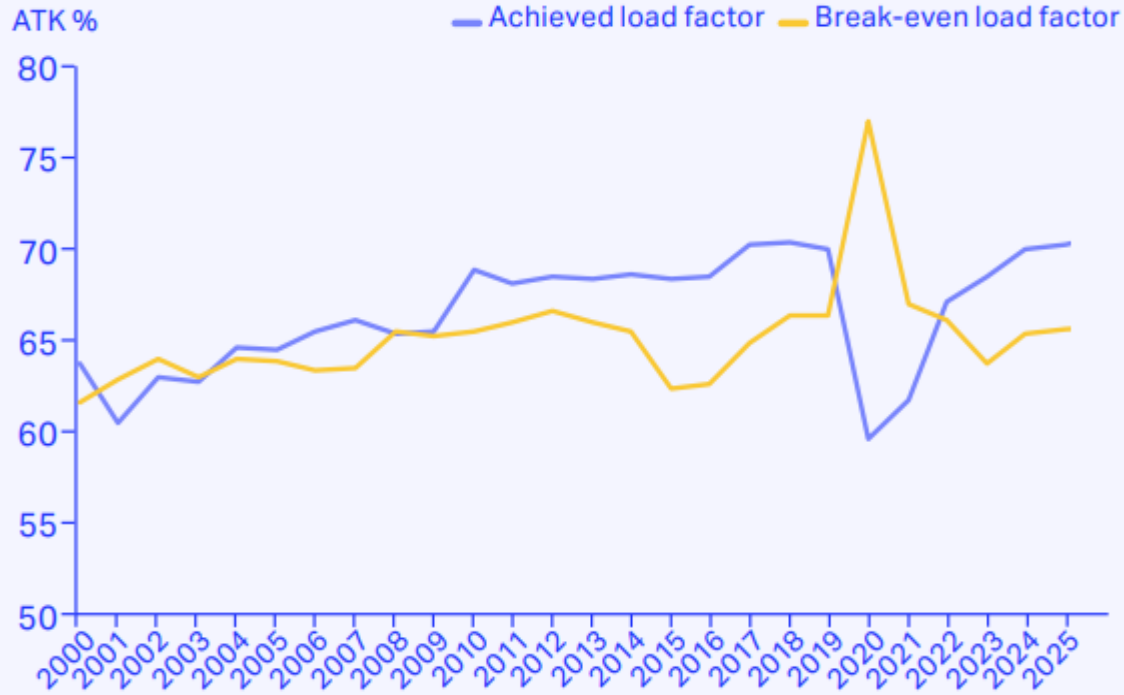
# Introduction

15: Revenue split



Sources: IATA Sustainability & Economics and Airfinance Global.

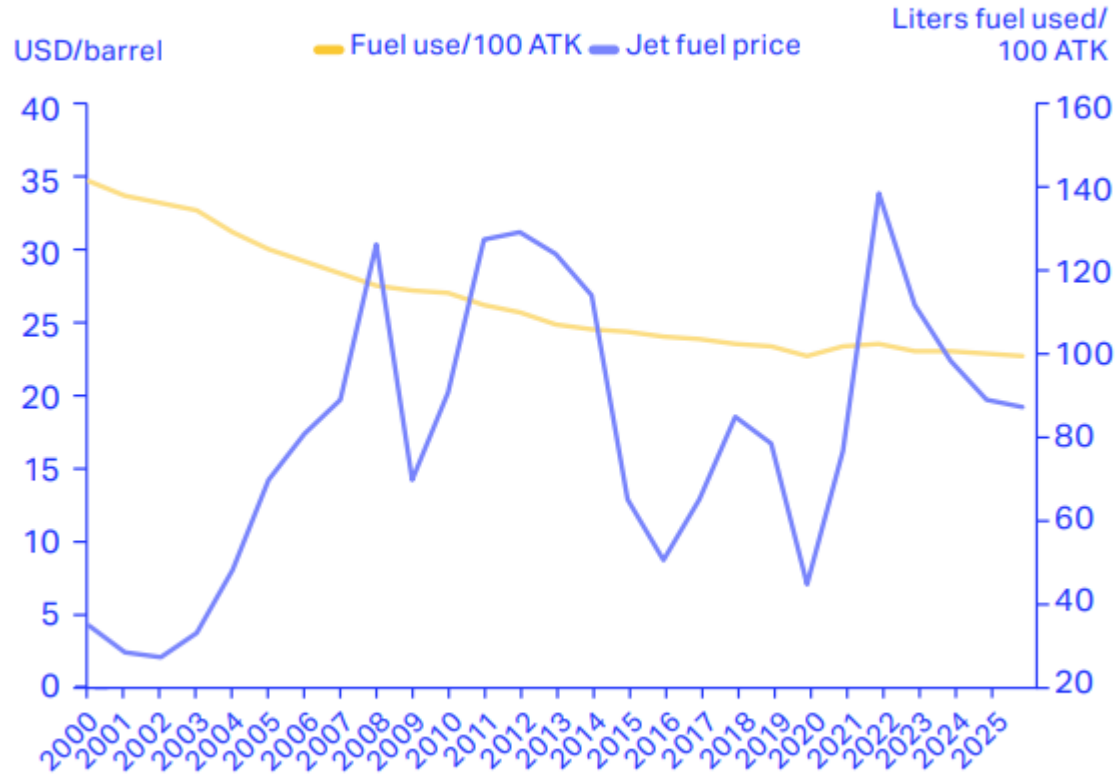
16: Break-even versus achieved load factor



Sources: IATA Sustainability & Economics and Airfinance Global.

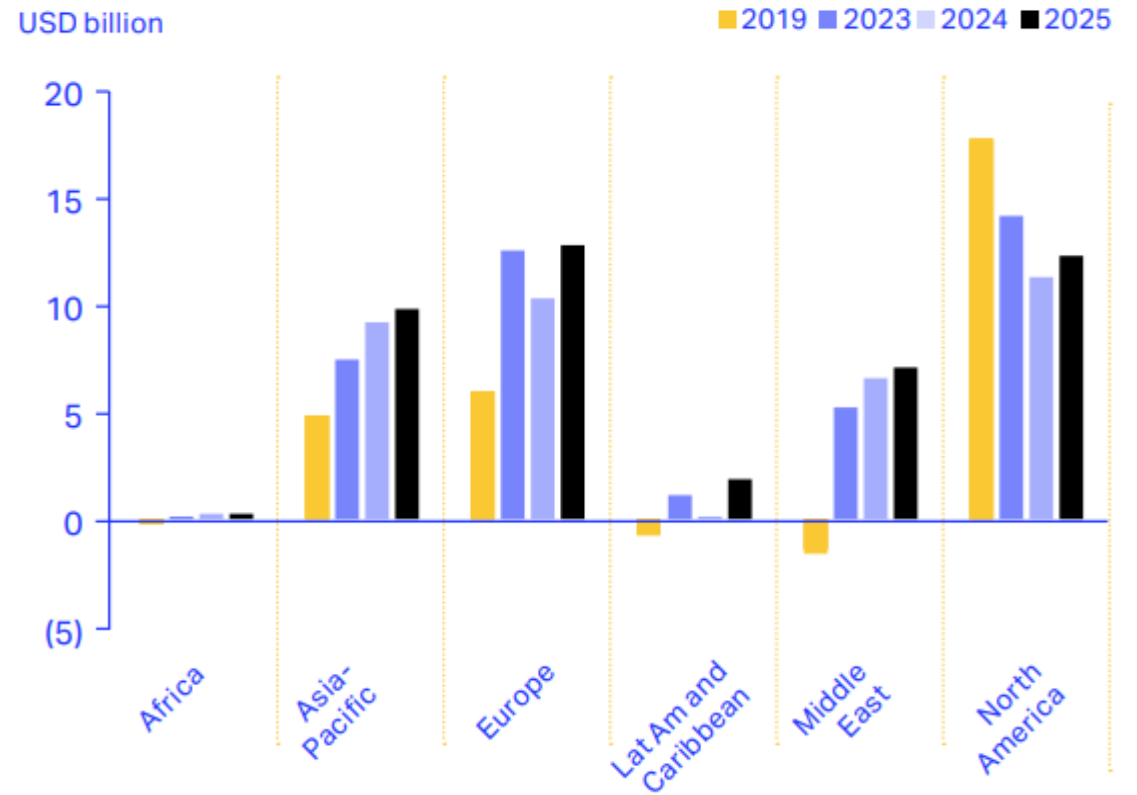
# Introduction

**17: Fuel efficiency, liters per 100 available tonne kilometers (ATK), and jet fuel price, USD per barrel**



Source: IATA Sustainability & Economics, using data from Platts.

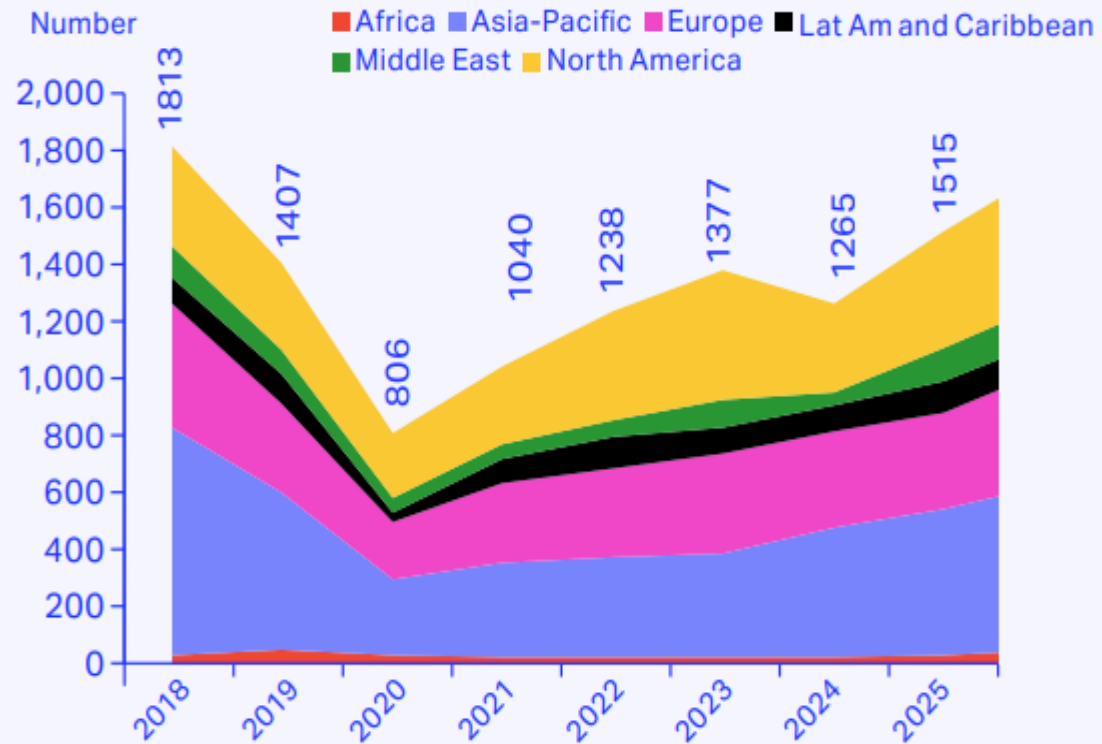
**18: Airline net profits by airline region of registration**



Sources: IATA Sustainability & Economics and Airfinance Global.

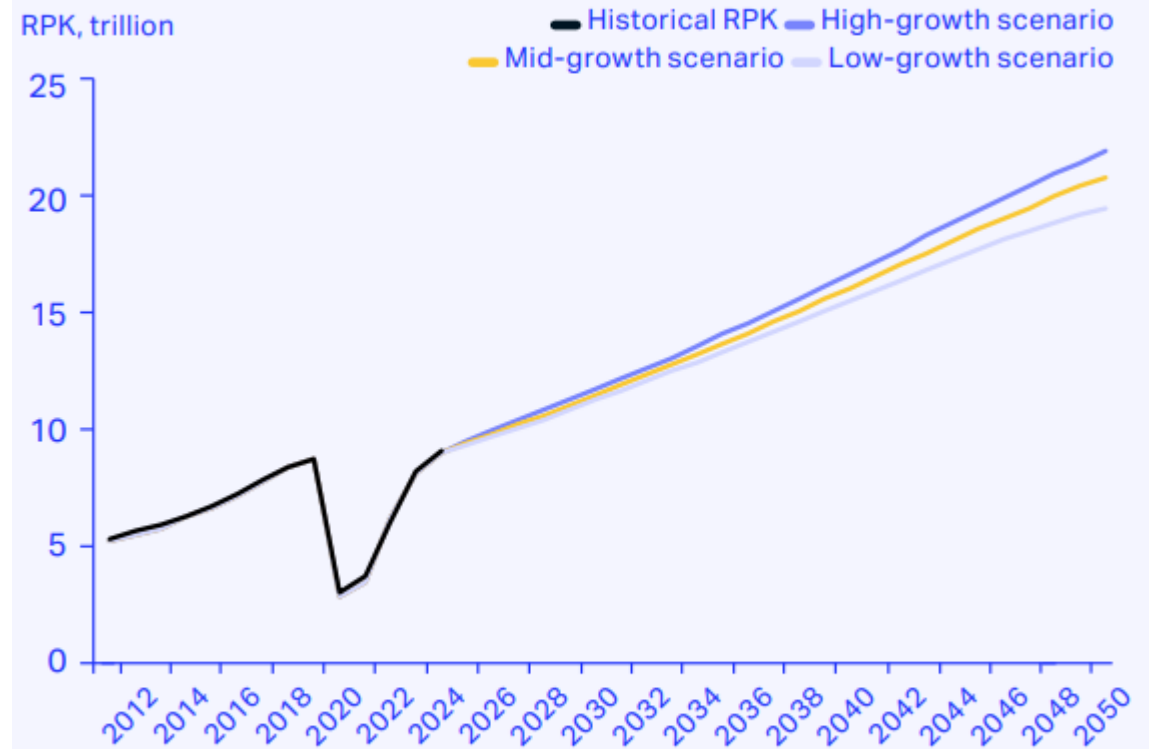
# Introduction

19: Aircraft deliveries by region



Source: IATA Sustainability & Economics, using data from Cirium.

20: IATA Long-Term Demand Projections



Source: IATA Sustainability & Economics.  
Note: RPK from 2011 to 2024 are for model validation, and RPK from 2025 to 2050 are projections.

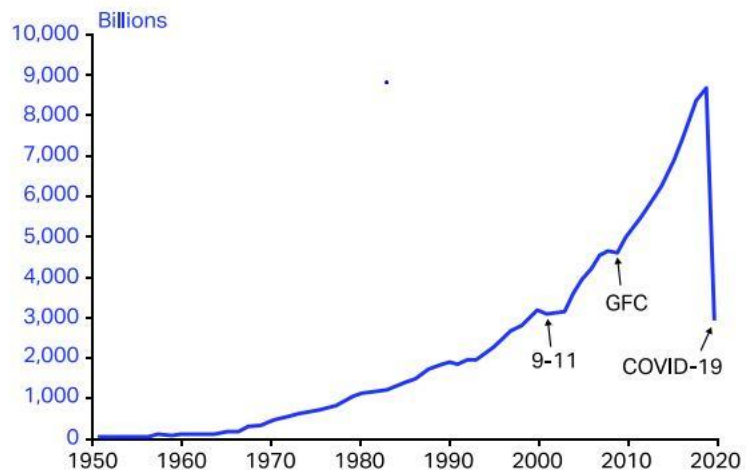
# COVID-19 Pandemic

- COVID-19 is the largest shock to commercial air travel and aviation since WWII
  - 66% decline in global revenue passenger kilometers(RPKs) in 2020
- Air connectivity collapsed in April 2020
  - Majority of scheduled intercontinental connections between cities disappeared
  - Freight continued to fly, but since arnd half of air cargo is carried in the holds of passenger flights the near cessation of passenger flights caused a serious problem for the global supply chains
- Air cargo traffic has fallen little because it remains essential; the problem for air cargo is capacity shortage

# COVID-19 Pandemic

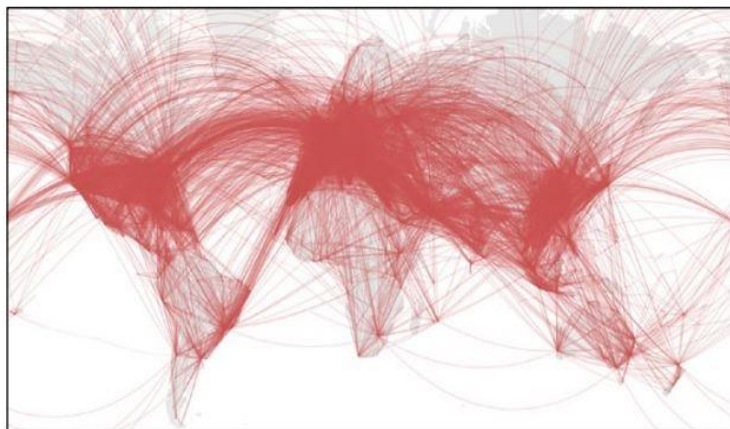
## Worldwide revenue passenger kilometers (RPKs) flown annually

Source: IATA Economics, using data from IATA and ICAO



## City pair connections in April 2019

Source: IATA Economics, using data under license from Flight Radar 24



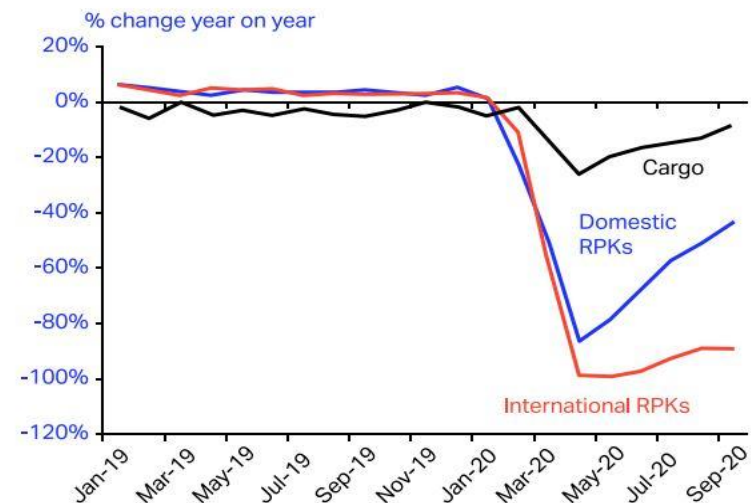
## City pair connections in April 2020

Source: IATA Economics, using data under license from Flight Radar 24



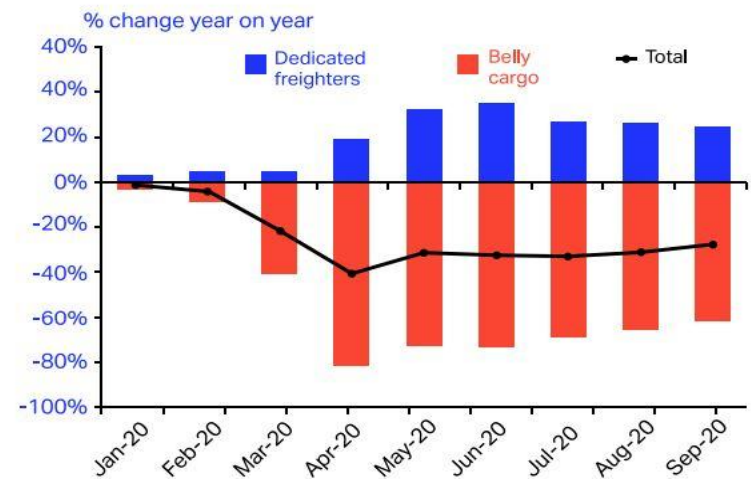
## Global passenger and cargo tonne km growth

Source: IATA Economics, using data from IATA Statistics



## International CTKs

Source: IATA Economics, using data from IATA Statistics

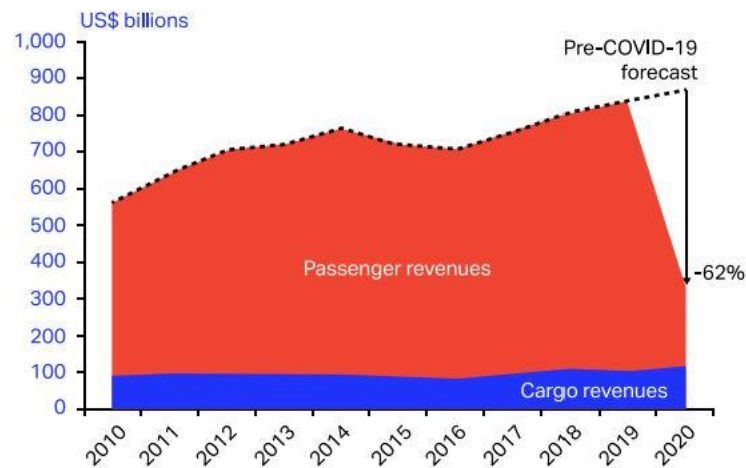


# COVID-19 Pandemic

- The impact on airline finances is devastating
  - Overall operating revenues for the air transport industry have so far declined more than 60% in 2020
  - Operating margin -31.3%, ROIC -17.7%
  - IATA estimates that loss will exceed \$118 billion at the post-tax net level in 2020

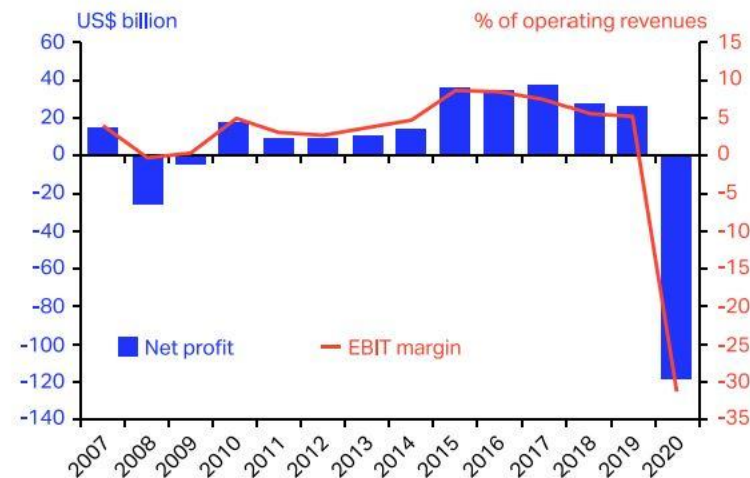
## Airline revenues more than 60% below precrisis forecast

Source: IATA Economics



## Airline losses to exceed \$118 billion this year

Source: IATA Economics Economic Performance of the Airline Industry, Midyear 2020



# COVID-19 Pandemic

- Gov aid: wage subsidies, equity financing, and tax relief/subsidies
- Government aid has kept airlines on life support in 2020
  - Failures or restructurings under bankruptcy in Latin America where gov support was minimal
  - Airlines received substantial cash injections from gov (North America, Europe, and parts of Asia)
  - Total aid for airlines in 2020 amounts to about \$173 billion and came in various forms
  - More than half is deferred debt or payments that will need to be reimbursed as the industry tries to recover

# COVID-19 Pandemic

- In response to the liquidity crisis triggered by the Covid-19, the Korean gov provided policy-based financial support to airlines
  - *KRW 40 trillion Key Industry Stabilization Fund (KISF)*  
40조 기간산업안정기금
  - Temporarily financed by the Korea Development Bank and backed by a gov guarantee
  - Additional liquidity support through low-interest loans, payment deferrals, and credit guarantees

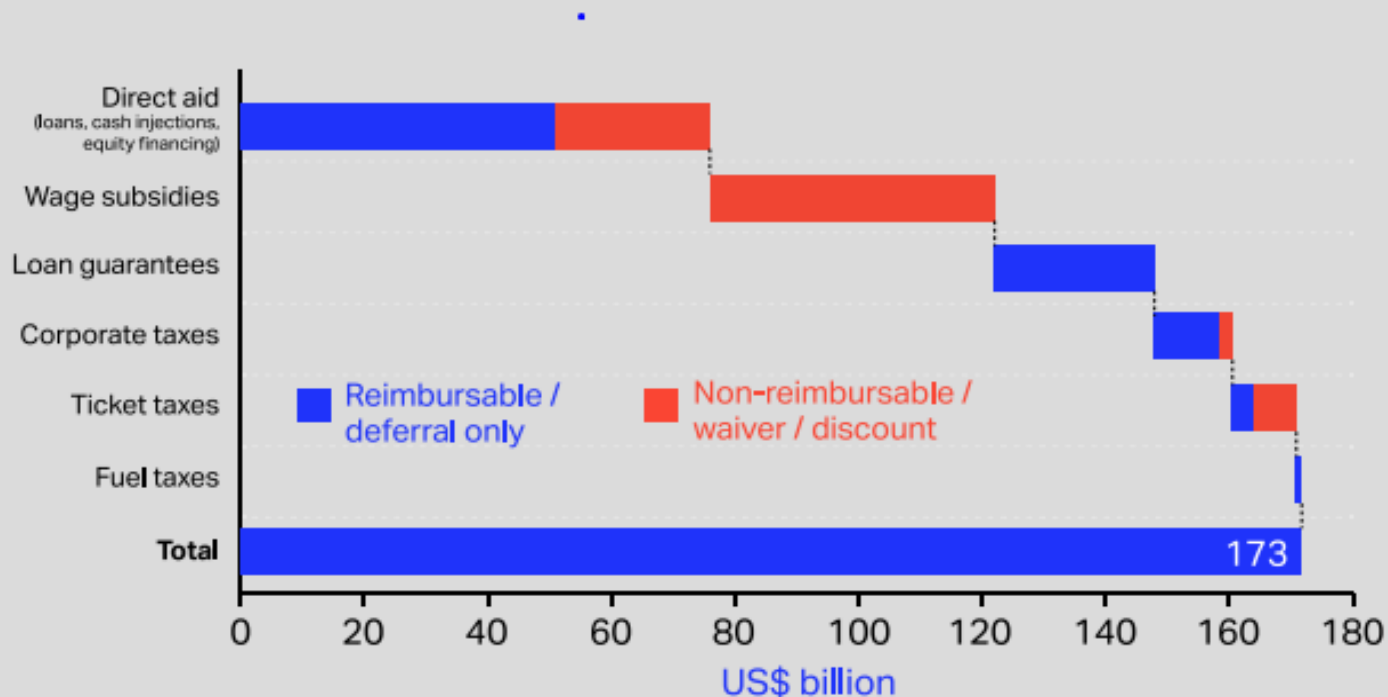
# COVID-19 Pandemic

- **Air Transport Industry Support and Recovery Plan ('21.3 MOLIT)**
  - *Employment protection measure*: extending the special employment support scheme and improving the employment retention subsidy program;
  - *Operational relief to encourage corporate self-help efforts*: airport fee waiver (KRW 45.7bil), tax reductions for aircraft acquisition and property, a temporary suspension of slot/traffic right withdrawals, and simplified approvals for passenger-to-freighter aircraft conversion
  - *Tailored support by carrier type*: full-service (facilitating the launch of a major full-service carrier with a global network via consolidation), LCC (financial assistance), partial easing of licensing requirements for new entrants
  - *Post-COVID strategic measures*: introduction of no-landing international sightseeing flights, step-by-step route reinstatement based on travel bubbles and travel passes.

# COVID-19 Pandemic

## Government aid to airlines, by type

Source: IATA Economics, using public information and data from SRS Analyser, DDS, FlightRadar 24, TTBS, ACIC, *The Airline Analyst* annual reports regarding government measures



## Latest Industry Status (IATA, ICAO, CAPA, 2025)

- Global passenger traffic (RPK) reached 105% of the 2019 level; Available seat capacity (ASK) recovered to 103% of pre-pandemic levels
- Cargo demand has largely stabilized arnd pre-pandemic levels
- Airfares remain above pre-pandemic levels
- Aircraft delivery delays continue to constrain industry growth; Boeing and Airbus combined deliveries are set back 10 years
- Fuel costs account for 25-28% of airline operating expenses
- The COVID-19 pandemic wiped out 80% of all-time profit (since 2000)
- More than USD 250 bil in gov aid went to airlines btw 2020-2022
- There are 715 global airlines post-pandemic- vs. 702 3 yrs ago (536 in May 2020 at the peak of disruption)

## Latest Industry Status (IATA, ICAO, CAPA, 2025)

- The Middle East (resilient despite geopolitical tensions) and Asian-Pacific (China and India) continued to drive global aviation growth
- Low-cost carriers (LCCs) continue to expand worldwide (1/3 of global seat capacity)
- To some extent, trends in the aviation industry are generally regional rather than global  
Ex. The African aviation industry differs significantly from that in Asia
- However, similarities do exist between regions and these are usually based on the level of maturity of the industry  
Ex. Mature aviation industries in Europe and North America have a high degree of commonality, as do the aviation sectors within several Asian markets
- Industry is strongly tied to the general economy: cyclical pattern

# The Largest Airlines (2025)

## Revenue [\[edit\]](#)






























2025 rank <sup>[8]</sup>	Airline group	Country	Revenue (in US\$ billion)
1	<a href="#">Delta Air Lines</a>	United States	63.3
2	<a href="#">United Airlines</a>	United States	59.0
3	<a href="#">American Airlines Group</a>	United States	54.6
4	<a href="#">Lufthansa Group</a>	Germany	45.7
5	<a href="#">International Airlines Group</a>	United Kingdom / Spain	38.3
6	<a href="#">Air France–KLM</a>	France / Netherlands	35.5
7	<a href="#">Southwest Airlines</a>	United States	28.0
8	<a href="#">China Southern Airlines</a>	China	24.4
9	<a href="#">Air China</a>	China	23.4
10	<a href="#">China Eastern Airlines</a>	China	18.7

## Earnings [\[edit\]](#)

2025 Rank <sup>[9]</sup>	Airline Group	Country	Earnings (US\$ billion)
1	<a href="#">Delta Air Lines</a>	United States	6.8
2	<a href="#">United Airlines</a>	United States	5.4
3	<a href="#">International Airlines Group</a>	United Kingdom / Spain	5.2
4	<a href="#">Lufthansa Group</a>	Germany	2.9
5	<a href="#">Ryanair Group</a>	Ireland	2.9
6	<a href="#">Singapore Airlines</a>	Singapore	2.2
7	<a href="#">LATAM Airlines</a>	Chile / Brasil	2.2
8	<a href="#">American Airlines Group</a>	United States	1.9
9	<a href="#">Air France–KLM</a>	France / The Netherlands	1.7
10	<a href="#">Qantas</a>	Australia	1.6

- Emirates (\$37.4 bil); Qatar Airways (\$22.2 bil)  
Korean Air (#11 by revenue; #16 by earnings)

# Leading Airline Groups based on operating margin (2025)

Rank	Name	Operating Margin	Price	Today	Price (30 days)	Country
1	 <b>Bangkok Airways</b> BA.BK	25.05% <span>ⓘ</span>	\$0.56	▲ 0.54%		 Thailand
2	 <b>Air Arabia</b> AIRARABIA.AE	24.23% <span>ⓘ</span>	N/A	▲ 0.00%		 UAE
3	 <b>Copa Holdings</b> CPA	21.43% <span>ⓘ</span>	\$155.57	▲ 0.03%		 Panama
4	 <b>Cargojet</b> CJT.TO	20.98% <span>ⓘ</span>	\$59.61	▲ 1.69%		 Canada
5	 <b>EVA Air</b> 2618.TW	17.38% <span>ⓘ</span>	\$1.38	▼ 2.23%		 Taiwan
6	 <b>LATAM Airlines</b> LTM	16.73% <span>ⓘ</span>	\$58.27	▼ 0.73%		 Chile
7	 <b>InterGlobe Aviation (IndiGo)</b> INDIGO.NS	16.68% <span>ⓘ</span>	\$57.00	▲ 0.57%		 India
8	 <b>Ryanair</b> RYAAY	16.65% <span>ⓘ</span>	\$64.75	▲ 0.67%		 Ireland
9	 <b>Pegasus Airlines</b> PGSUS.IS	15.61% <span>ⓘ</span>	\$3.79	▲ 0.97%		 Turkey
10	 <b>Spring Airlines</b> 601021.SS	15.56% <span>ⓘ</span>	\$6.95	▲ 3.60%		 China

# Airline Industry Transformation: Deregulation

- Because of regulation, stable and healthy profits  
Financial analysis was not of utmost importance to airlines
  - Prior to 1987 in the U.S., and Before 1999 in the E.U., Regulated Environment (Government Control)
  - Government-owned carriers
- Post-deregulation airline industry has become much riskier!
  - Increased competition
  - Declining unit revenue
  - Highly volatile fuel prices
  - Global economic recession (cyclical and perpetual financial crisis)

# Industry Financial Performance

- Airline financial results are highly sensitive to small changes in costs or revenues because of the historically *high level of operating gearing*
  - The fixed nature of operating expenses and relatively small margins on sales; this results in large swings in operating results
  - *The medium term*: once the schedule has been determined, the costs associated with operating flights are relatively fixed, i.e. aircraft related costs (capital), flying, technical and other skilled staff and general overheads
  - *The short term (variable cost)*: airport charges, fuel, ATC and certain flight related variable costs (e.g., wear and tear on landing gear and tyres)
  - *The very short term (marginal cost, incremental cost)*: ticket materials, in-flight food, agent commissions and fuel required to lift extra payload

# Industry Financial Performance

- Intense competition and excess capacity put downward pressure on airfares and yields
- Persistent overcapacity often leads to consolidation, restructuring, or market exit
- Airlines improve profitability by retiring inefficient aircraft and optimizing fleet utilization
- Since the Covid-19 pandemic, many older aircrafts (Boeing 747-400, Airbus A380, and older A320/B737 models) have been permanently retired to reduce operating costs and improve fuel efficiency
- Overcapacity (2000s) – Demand shock (2020) – Supply constraints (2025)
- Unlike previous downturns, today's challenge is not excess aircraft but supply shortages. Aircraft delivery delays at Boeing and Airbus have constrained capacity expansion and increased aircraft utilization

# Industry Financial Performance

- The airline industry appears to be a relatively ***labour intensive*** one in terms of the share of labour cost in total operating costs
  - 27~30% for the major scheduled airlines in North America and Europe (IATA, 2025)
- But also ***capital intensive***
  - Capital costs (depreciation, rentals and interest charges) 15%-17%
  - Airbus A350-1000 exceeds U\$ 366mil; Boeing 787-9 U\$292 mil
- Strong growth in labour productivity, Fuel efficiency, Aircraft productivity
  - Reduced staff members, increasingly expensive aircraft, and investment in new technology
  - Outsourcing of the more labour intensive airline activities (ground handling and catering) to reduced fixed labour costs and improve operational flexibility

# Industry Financial Performance

- Airline suppliers
  - Airlines
  - Maintenance
  - Airports
  - Flight catering
  - Travel Agents
  - Aircraft Manufacturers
  - Fueling
  - Freight Forwarders
  - Aircraft lessors
  - Ground Handling
  - CRS (Reservation system)

# Industry Financial Performance

- Little evidence of much vertical integration between the different members of the value chain; Most airlines now outsource catering services
- Exception  
The Lufthansa Group = Airline + MRO + Cargo + IT+ Training
  - Passenger Airlines: Lufthansa, Swiss, Austrian, Brussels, Eurowings, ITA Airways
  - MRO (aircraft maintenance, repair, and overhaul): Lufthansa Technik
  - Logistics (air cargo service)
  - Aviation Training
  - Systems (IT Solution and digital services)

# Industry Financial Performance

- The key financial issues of access to capital markets and provision of finance at reasonable cost remain high
- Cash balances have been growing in importance
- Ratios (debt/equity) have been improved by many airlines
  - Financiers impose stricter loan covenant
- Hedging is widely practiced by airlines
  - Covering mostly fuel price, foreign exchanges and interest rate risks
- Formation of alliances
- Merger and Acquisition (regulatory obstacles)
- Minority stakes or airline cross-investments to re-affirm alliance commitments

# Bankruptcies and Consolidations

*American was the only US legacy airline that had not yet filed for bankruptcy, but on November 29, 2011, the airline joined a long list of airlines that have filed for bankruptcy protection (Koenig and Bomkamp, 2011). Several airlines have filed multiple times, including US Airways, Continental, Delta, and Northwest. There are almost 190 US airlines that have gone out of business since 1990.*

영남에어, 한성항공, 에어필립, 플라이강원

# Bankruptcies and Consolidations

- Consolidation remains a key strategy for improving profitability, achieving economies of scale, and enhancing network competitiveness
- In the US, “Big Four” (American, United, Delta and Southwest)
  - Together, account for 75-80% of the US domestic market
  - Consolidations reduce domestic competitive pressures, control capacity, push up prices, and improve operational efficiency
  - In recent years, to avoid competition in the domestic market, the majority of US network carriers increased their proportion of international flying (ex. Delta)

# Bankruptcies and Consolidations

- Airlines have merged over years within countries, but cross-mergers have, until recently been rare.
  - Within the US, mergers have often been rescues of failing airlines, which were subsequently incorporated into the acquirer's operations
  - Cross-border mergers have been rare because, until recently, too many traffic rights would be put at risk under challenges to the requirement in the air services agreements that the new airline no longer is controlled by the nationals of its country of business and legal domicile (home country of the target)

# Bankruptcies and Consolidations

- In theory, mergers are beneficial in rationalizing the air transport system, introducing more dynamic management to the combined airlines
- Unions would argue otherwise; but mergers can save some jobs where the alternative of bankruptcy would be worse
- Mergers can eliminate major competitors, prevent alliance partners being swallowed up by competitors
- Benefits are presented in terms of synergies, both on the revenue and cost
  - Revenue benefits (strategic alliance agreements): Degree of route overlap; Opportunities for increasing hub transfer traffic;
  - Cost savings: Procurement, Aircraft maintenance; IT
- Integrating IT and pilot seniority can cause significant problems
- Salaries and wages often creep up to the higher levels

# Bankruptcies and Consolidations

- US: American/US Airways(2013); Delta/Northwest(2008); United/Continental (2010)
- UK: EasyJet/Go (2002), Ryanair/Buzz (2003)
- Cross-border acquisitions have so far resisted total incorporation and maintained separate brands and subsidiaries for its mergers
  - Air France/KLM (2004)
  - Lufthansa/Swiss and Austrian (2009), Brussels (2017), ITA (2025)
  - International Airlines Group (IAG, 2011): British Airways, Iberia, Vueling, Aer Lingus  
Holding company structure (multi-brand and multi-hub)
  - Fewer problems with route and traffic rights, and it reduces or postpones the problems of IT and staff integration;
  - Reduces potential synergies

# Bankruptcies and Consolidations

- Korean Air- Asiana Airlines (in 2024, 2026)
- Lufthansa – ITA Airways (Alitalia) (in 2025)
- Air India (Tata) – Vistara (Tata and Singapore Airlines JV) (in 2024)
- Jet Blue – Spirit (Failed in 2024)
  - Jet Blue wanted larger scale, more aircraft, and stronger east coast presence
  - Removing Spirit would reduce competition and increase fares  
(Spirit was the country's largest ultra-low-cost carrier)
  - Federal court blocked the merger in 2024

# Airport Operating Environment

- With the evolution of the airline industry (deregulation and competition), the way in which airports are owned and operated has changed (providing a greater incentives to be more innovative and proactive with airline customers)
1. Privatization (or Corporatized)
    - new source of funding and far greater consideration to the non-aeronautical aspects (shops, f&b, other commercial facilities)
    - Emergence of international airport companies
  2. Sustainability (reduce noise, emission, energy/water use) and its financial implications
    - Difficult to expand airport operations or build new airports
  3. Security is costly
    - Can negatively affect the passengers' airport (and commercial) experience
  4. Technology developments
    - Require short-term investment but can result in long-term cost reductions.
- Trade off btw lower airport costs (lower aeronautical charges) and max non-aeronautical revenues and satisfying customers.

# International Airport Companies

1. Growing need for private capital and expertise
2. Globalization and the business model shift
  - European operators were early movers, offering management services abroad
  - later bidding for concessions, equity stakes, and full ownership of foreign airports
3. Long-term concessions and investor-owned operators
  - P3 (Public-Private Partnership) model dominant in Latin America and Asia
  - Long-term concession contracts (20-99 yrs)
  - Private equity and infrastructure funds became significant (higher efficiency)

# International Airport Companies

- Fraport (Germany): 29-airport-portfolio including FRA, 14 Greek regionals, Indira Gandhi International Airport (DEL) (10% stake), Lima International Airport (LIM) (80.01%)

Group ADP (France): 26 including CDG

46.1% stake in TAV Airports operating in Asia

51% stake in Airport International Group (AIG)

Royal Schiphol Group (Netherlands): Direct Operation, Airports with equity stakes, International partnerships and ownership interests

Corporacion America Airports (Argentina): one of the largest, operating 50+ Argentina (35+), Uruguay (8), Brazil, Ecuador, Italy, Armenia

GMR Group (India): major in India growing presence in Southeast Asia  
Operating DEL

# Airport Financial Characteristics

1. Fixed infrastructure which involves long-term investment  
(physically and financially lumpy with no alternative use)  
High fixed costs (capital intensive, operating costs-safety and security fixed)  
Revenue increases with traffic volume
2. Aeronautical and non-aeronautical revenue source  
serving both passengers and airlines (positive interdependence)
3. Relatively healthy profit margins but smaller airports  
< 1mil passengers: hard to cover operating and capital costs  
3-5 mil passengers: should be able to cover all their costs  
> 5 mil passengers: should be profitable  
80% of airports have traffic < 1mil passengers (ACI estimation)

Groups of airports in a certain region operated as a system,  
profitable larger airports cross-subsidizing the losses of smaller airports  
Ex. AENA, operating over 46 airports, only 14 reported positive operating margins

# Airport Financial Characteristics

- Top 20 Airports by revenue (2023-2024 latest from multiple sources)

Rank	Airport operator	Country	Total revenues (US\$ mil)	Operating margin (%)
1	Aena	Spain	6300	43
2	Groupe ADP	France	6050	28
3	VINCI Airports	France	4200	32
4	Fraport	Germany	4000	25
5	Airports of Thailand	Thailand	3800	48
6	GAP	Mexico	2400	45
7	ASUR	Mexico	2300	47
8	TAV Airports	Turkey	1900	31
9	Zurich Airport	Switzerland	1700	34
10	CAAP	Luxembourg	1600	29

- Incheon Airport (#19)

# Airport Traffic

- Top 10 Airports by traffic (ACI, 2024)

	Airport	Passengers (million)		Airport	Cargo (thousand tons)
1	ATL Atlanta	104	1	HKG Hong Kong	4300
2	DXB Dubai	87	2	PVG Shanghai Pudong	3400
3	HND Tokyo Haneda	85	3	MEM Memphis	3300
4	LAX Los Angeles	75	4	ANC Anchorage	3000
5	ORD Chicago	73	5	ICN Incheon	2900
6	LHR London Heathrow	72	6	LAX Los Angeles	2500
7	PVG Shanghai Pudong	70	7	NRT Narita	2400
8	CDG Paris CDG	67	8	DOH Doha	2300
9	DFW Dallas	65	9	CDG Paris CDG	2200
10	CAN Guangzhou	63	10	FRA Frankfurt	2100

# Airport Financial Characteristics

Why is Atlanta not #1 in revenue despite highest traffic?

1. Atlanta is a U.S. public airport model (lower revenue)
  - owned by City of Atlanta (not privatized, publicly owned)
  - not profit-maximizing
  - regulated airport charges
  - strong airline influence on pricing
  - focus on cost recovery rather than profit
2. European airport groups are more commercialized
  - privatized, listed
  - strong focus on commercial revenue
  - higher airport charges
3. US regulation limits airport revenue: Many US airports operate under residual or compensatory agreements with airlines
  - airport fees are kept low, limited flexibility in pricing
  - airlines influence capital investment decisions
  - lower operating margins compared to Europe

# Airport Financial Characteristics

- Passenger  $\neq$  Revenue

Passenger volume alone does not determine airport financial performance

- ownership structure
- regulatory environment
- commercial revenue strategy
- degree of privatization
- international expansion

(additional revenue sources, risk diversification, higher growth opportunities-  
access to emerging markets, higher passenger growth, new infrastructure projects,  
economies of scale and expertise)

(political risk, currency risk, demand uncertainty, high initial investment)

# Airport Financial Characteristics

## AENA vs. Groupe ADP

- Spain vs. France
- Both Gov majority and listed
- AENA is national network operator with 46 domestic airports, Groupe ADP is global airport group with extensive global network
- Higher margin for AENA
- Tourism heavy passenger base for AENA, Hub + International for Groupe ADP

## AENA model

- national airport network, scale efficiency, high commercial income, strong tourism traffic

## Groupe ADP model

- Hub airport operator, global concessions, partnership model, investment driven growth

# Airport Financial Characteristics

## VINCI vs. Fraport

- France vs. Germany
- Private vs. Public-private
- VINCI is concession operator with global portfolio, Fraport is Frankfurt-centered hub-based operator

## VINCI model: Portfolio strategy

- operates airports under concession contracts, focuses on international expansion, limited dependence on one airport, strong commercial development

## Fraport model: Hub strategy

- Frankfurt is the core hub, overseas airports are secondary, strong dependence on home airport