Challenges of high growth: Global aviation outlook

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To represent, lead and serve the airline industry
Challenges of high growth

- Meeting demand for air travel
- Attracting capital
- Wider economic benefits
- Climate impacts
Demand for air travel to double over 20 years

Outlook for worldwide O-D passenger trips, million

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Largest rise in numbers forecast in China

Drivers of additional passenger numbers, million

- Living standards
- Demographics
- Price and other
- Overall growth

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Living standards are one key driver

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Countries becoming ‘middle’ or ‘high’ income

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Demographic change dramatically different

Demographic change, 2014-2034

Population change

'Flying' population change

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Emerging market population much younger

Old-age dependency ratio, %
(65+/15-64)

Japan
Germany
US
China
Brazil
Turkey
Indonesia
India

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Trend in cost of travel is still downwards

Unit cost and the price of air transport, adjusted for inflation

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Scope for lower fares on a number of markets

Passenger yields and average trip length

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Resulting in much change over next 20 years

Rank by size of O-D passenger flows in, out & within country

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Passenger journeys by route (2014 & 2034, million)

Within North America
- Trans-Pacific: 43m (2014), 83m (2034)
- Trans-Atlantic: 542m (2014), 1,007m (2034)
- North-South America: 20m (2014), 44m (2034)

Within Europe
- Within Europe: 618m (2014), 1,003m (2034)

Within Asia-Pacific
- Within Asia-Pacific: 952m (2014), 2,541m (2034)

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
Growth and change in passenger journeys by route (% and million, 2014-2034)

Legend:  
+123m = the additional number of annual passenger journeys by 2034 (example)  
5.0% = the corresponding average annual growth rate (2014-2034)

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
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Airlines will need to raise $5 trillion capital

Airlines will need nearly 36,800 new airplanes valued at $5.2 trillion

Source: Boeing current market outlook
Airlines are not most attractive to investors!

Source: McKinsey

1 ROIC after-tax, excluding goodwill; For charting purposes, ROIC values are cut off if beyond (-5%, 50%)
Is the problem a result of liberalization?

Airline industry profit margin, after debt interest and tax

Source: IATA, ICAO
Is the problem a lack of scale?

Average invested capital and return on capital 1997-2011

Source: IATA, McKinsey
Is the problem legacy business models?

ROIC for worldwide average legacy and LCCs versus WACC

Source: IATA, McKinsey
Is the problem with airlines’ supply chain?

Return on invested capital in the air transport value chain, 2002-2009

Source: IATA, McKinsey
Supplier ‘excess’ profit not large in $ terms

Source: IATA, McKinsey
Costs typically passed through to prices

Unit cost and the price of air transport

US$ in 2013 prices to fly a tonne kilometer

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 1950 1960 1970 1980 1990 2000 2010

US$ in 2013 prices per tonne kilometer

0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0

Boeing 707

1973 oil crisis

US deregulation

EU deregulation

Source: IATA/Tourism Economics ‘Air Passenger Forecasts’
In fact yields have fallen faster than unit costs.

Breakeven and actual load factors

Breakeven load factor
Load factor achieved

Source: IATA, ICAO

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Inadequate returns on invested capital

Return on capital invested in airlines

Cost of capital (WACC)

Return on capital 
(ROIC)

Source: IATA, McKinsey
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This is aviation’s unique economic benefit

Source: SRS Analyser
City-pairs doubled – transport costs halved

Unique city-pairs and real air transport costs

Source: IATA, ICAO, OAG

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Global Value Chains

Dell's global supply chain, made possible by air transport

1. Ram chips and CD-ROM drives from Japan
2. Power supplies from China
3. Monitors and cooling fans from Taiwan
4. Video cards and microprocessors from Hong Kong
5. SCSI cards and disk devices from Singapore
6. Sound cards from France
7. Keyboards from Mexico

Source: ATAG
How do we measure air connectivity?

IATA air connectivity measure, seats to weighted destinations as % GDP

Source: IATA, World Bank, SEO
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CO$_2$ up despite strong efficiency gains

Worldwide RTKs, CO$_2$ and fuel efficiency

Indexed to equal 100 in 1994

RTKs $2.7x$

CO$_2$ $1.5x$

Fuel use/RTK $0.4x$

Source: IATA, Datastream
Carbon neutral growth policy key for aviation

Global vs aviation CO$_2$ emissions

Aviation CO$_2$ after pillar 1-3 measures, inc. 12% biofuels +2.5% p.a.

Current climate policies +1.4% pa
New policies +0.7% pa
450ppm scenario -1.7% pa

Source: IEA 2013 World Energy Outlook, IATA Aviation Carbon Model
But further cost-effective CO₂ cuts possible

215 million tonnes CO₂ cuts cost-effective in 2030

Source: McKinsey, IATA
Challenges of high growth

• Meeting demand for air travel
  – OD pax flows on US markets likely to double in next 20 years
  – Fastest growth on N-S American and trans-Pacific markets
  – Largest increase in numbers within N America and trans-Atlantic

• Attracting capital
  – $5 trillion new capital needed by airlines over 20 years but returns inadequate
  – Mergers/JVs driven by network economics and the need to pay capital providers

• Wider economic benefits
  – Connecting US to markets/cities worldwide is the unique economic value
  – Bigger markets, access to efficient resources, specialization, competition
  – How does a measure of connectivity best capture this (generalized costs?)?

• Climate impacts
  – One of best fuel efficiency improvement records of all industries
  – But success with Carbon Neutral Growth policy will more surely enable growth
  – ATM improvements can offer some of the largest cost-effective CO₂ reductions