

4 Short stories in air transport demand

Patrick Lucas Head, Airport Business Analytics ACI World



Session overview

Where were we and where are we now? (Global and regional)

- i. Passenger traffic
- ii. Air cargo
- iii. Aircraft movements

Where are we going?

(Global and regional)

iv. A glimpse into the future of pax traffic









Pax: resilience animal spirits good short run economics...uncertainty

<u>Air cargo:</u> mode shifts cyclical recovery e-commerce boom trade wars

Movements: efficiency consolidation hubbing and de-hubbing

Growth prospects: Intl traffic Emerging markets Demography



\sqrt{Pax} : Where are we now?

Global passenger traffic 2017 : 8.3B (+7.5%)





Global uncertainty – Geopolitical tensions and trade wars







Dow Jones Industrial Average (DJIA)

 Leading indicator of economy – High volatility is a signal of risk and increased uncertainty



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US UNEMPLOYMENT RATE

SOURCE: TRADINGECONOMICS.COM | U.S. BUREAU OF ECONOMIC ANALYSIS







Business confidence index (BCI) 102 nited Kingdom 101 ECD - Total Aug-2018 101.24 Long-term average = 100 100 China (People's Republic o 99 The BCI is based on enterprises' assessment of production, 98 orders and stocks, as well as its current position and expectations for the immediate future. Opinions compared to a "normal" state are collected and the difference between positive and negative answers provides a qualitative index 97 on economic conditions. 2013 2014 2016 2017 2018 2015

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Market demand (conventional wisdom from +10 years ago)



~**85**%

~15%





Besides strong macroeconomic fundamentals.....

What are some "Price" related factors that have stimulated demand?





Jet fuel and crude oil price



Source: Platts, Oanda



Case study – North America

Downward slope to fares





"No frills" low cost carrier business model stimulates demand through competitive fare offerings





Now Everyone Can Fly

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Cheap credit....



Darker blue higher positive interest rates; red countries are negative



Passenger traffic growth by region – year to date August 2018 versus 2017



2017 YTD August 2018



| | Rank | Metropolitan area | Country | Airports | Passengers 2017 | % Change |
|--|------|----------------------|-------------------------|--|--------------------|-------------|
| 6 airports close to or within close range of urban agglomeration | 1 | London | United Kingdom | LHR, LGW, STN, LTN, LCY, SEN | 171,074,403 | 4.7% |
| | 2 | New York NY | United States | JFK, EWR, LGA | 132,194,965 | 2.1% |
| | 3 | Tokyo | Japan | HND, NRT, IBR | 126,695,836 | 5.7% |
| | 4 | Shanghai | China | PVG, SHA | 111,885,296 | 5.1% |
| | 5 | Los Angeles CA | United States | LAX, [®] GB, BUR, SNA, ONT | 108,062,905 | 5.3% |
| | 6 | Paris | France | CDG, ORY, BVA, XCR | 105,269,615 | 3.9% |
| World's busiest airport | 7 | Atlanta GA | United States | ATL | 103,902,992 | -0.3% |
| | 8 | Chicago IL | United States | ORD, MDW | 102,288,419 | 1.6% |
| | 9 | Beijing | China | Pek, Nay | 101,740,325 | 1.8% |
| November-18 Source: ACI World, 2018 | 10 | Dubai | United Arab Emirates | DXB, SHJ, DWC | 100,512,627 | 5.2% |
| | | | | | | |

Busiest city markets (2017)



What markets have contributed the most to global passenger traffic growth over the last decade?





Contribution to global passenger traffic growth by country share (2007–2017 %)



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Top 10 fastest-growing airports with over 15 million passengers by CAGR (2007-2017)

| ⊕ Rank | City, Country | Code | Passengers 2017 | CAGR % 2007-2017 | Region | World rank 2017 |
|-----------|----------------------------|------|--------------------|---------------------|--------------|--------------------|
| 1 | Istanbul, Turkey | SAW | 31 316 772 | 23.5% | Europe | 64 |
| 2 | Bangkok, Thailand | DMK | 38 299 376 | 23.1% | Asia-Pacific | 53 |
| 3 | Surabaya, Indonesia | SUB | 20 128 017 | 19.2% | Asia-Pacific | 120 |
| 4 | Zhengzhou, China | CGO | 24 299 073 | 17.1% | Asia-Pacific | 91 |
| 5 | Ha Noi, Viet Nam | HAN | 23 824 400 | 14.1% | Asia-Pacific | 94 |
| 6 | Chongqing, China | CKG | 38 715 210 | 14.1% | Asia-Pacific | 51 |
| 7 | Xi'An, China | XIY | 41 857 406 | 13.9% | Asia-Pacific | 46 |
| 8 | Sanya, China | SYX | 19 389 936 | 13.8% | Asia-Pacific | 124 |
| 9 | Denpasar Bali, Indonesia | DPS | 21 051 094 | 13.6% | Asia-Pacific | 114 |
| 10 | Ho Chi Minh City, Viet Nam | SGN | 35 996 014 | 13.3% | Asia-Pacific | 57 |

21 of the 30 fastest-growing airports are located in the Asia-Pacific region

Istanbul's Sabiha Gökçen International Airport (SAW), the sister airport to Istanbul Atatürk Airport (IST)







Summary

- From an international perspective, good but uncertain "economic" times for aviation
 - Protectionist policies
 - Fast microeconomic changes to air transport
- Over 10 year period Contribution to growth largely comes from Asia-Pacific region ~47%
 - (~19% is attributed to China)
- In North America, west coast airports are among the largest contributors to the region's growth





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Concentration of air cargo traffic by city market - top 20 (2017)





Air cargo (metric tonnes) growth by region 2018 versus 2017

Moderating of growth in 2018 but still high historically.....



2017 YTD August 2018



Cyclical recovery in global trade and industrial production....

Taiwan's industrial production grows for 3rd straight month (update)

2017/08/23 21:57:56



Taipei, Aug. 23 (CNA) Taiwan's industrial production rose year-on-year for the third consecutive month in July on the back of strong global demand for electronic gadgets as the world's economy remained on a recovery track, statistics from the Ministry of Economic Affairs (MOEA) showed Wednesday.



Growth in the volume of world merchandise trade is expected to rebound this year from its tepid performance in 2016, but only if the global economy recovers as expected and governments pursue the right policy mix, WTO economists reported.



Maritime shipping: A brief history

- Competing mode of delivery
- Excess capacity of containerships in the past
- Huge bankruptcies and consolidations occurring

4500

4000 3500





2017: Substitution effect away from ocean to air

• Two forces market forces at play:







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iPhone example:

• Shipped by air because of huge demand despite higher cost

China's air exports of mobile phones, 2011-2016 (Aug)

• Opportunity cost of capital: cash is tied up on a containership for 30 days



Factories in Zhengzhou and Shanghai are largely contributing to year-end export peaks



Evolution of air cargo traffic – major exporting countries (2000–2017)





Loaded and unloaded international freight for selected airports (2017)





Express delivery and the growth of e-commerce (B2C).....

• Major express carriers, including UPS, DHL, and FedEx with increased competition of new entrants Alibaba, SF Express in China and Amazon in US

Fastest-growing airports handling >250,000 metric tonnes of air cargo (2017)

| Rank | City, Country | Code | Cargo 2017 | CAGR % 2007-2017 | |
|------|------------------------------|------|------------|---------------------|--|
| 1 | Cincinnati OH, United States | CVG | 944 995 | 37.3% | |
| 2 | Leipzig, Germany | LEJ | 1 131 382 | 29.5% | |
| 3 | Zhengzhou, China | CG0 | 502 715 | 22.6% | |
| 4 | Ha Noi, Viet Nam | HAN | 712 677 | 19.1% | |
| 5 | Doha, Qatar | DOH | 2 020 942 | 18.9% | |
| 6 | Istanbul, Turkey | IST | 1 159 102 | 13.0% | |



- Vertical integration Amazon setting up hub at Cincinnati/Northern Kentucky Airport
- Instead of being a client of UPS and FedEx, it will be their competitor
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eCommerce and airports: Vertical integration continued.....

- Alibaba's Cainiao invested 15.6 Billion USD in smart logistics and selected 5 airports to be their global hubs:
 - Hangzhou, Dubai, Kuala Lumpur, Liege and Moscow





Summary: Air cargo market in one slide

Demand

Supply

- Huge jump in air cargo demand in 2017 across almost all commodity categories and trade lanes;
 - Growth in trade, industrial production on the back of sound economic fundamentals



- eCommerce and mail parcels experience a huge surge...
- Increase in express shipments but at a lower weight per shipment

- Short term substitution effect away from ocean freight (industry bankruptcies) to air freight (reliability factor)
- Widebody belly capacity expansion:
 - Significant increase as compared to freighter capacity
 - International **Dubai (DXB)** largest gains in capacity via Emirates
 - Domestic Chinese airports (CAN and CTU) largest gains in capacity via China Southern and Air China limited
- **Middle East** and **Asia** are top contributors for both belly and freighter capacity





REVIEW OF 2017 OPERATING YEAR AND A

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Growth prospects: Intl traffic Emerging markets Demography


Growth in movements, passengers and air cargo traffic





Consolidation

Evolution of monthly movements traffic in North America (2006–2017)





Efficiency and consolidation

Contribution to global aircraft movement growth by major country share (2007-2017)





Number of airports with >40 mppa - world (2007–2017)





Consequences of hubbing and consolidations (the dark side)

- Airline consolidation (oligopolistic in certain markets / market power)
- Bigger get bigger but some smaller airports lose out (reduced air service)





Proportion of airports that that experienced a loss in passenger traffic volume by region for airports with less than 5 mppa (2007–2017)







Growth in passenger traffic and share of contribution to growth by airport size (2017/2016)

These two categories of 24.8% airports contributed 43% of 24.1% the entire global traffic increase from 2016 to 2017 19.0% 16.2% 10.9% 10.2% 9.2% 8.9% 8.4% 6.2% 5.3% 4.9% <1m 1–5m 5–15m 15-25m 25-40m >40m % Contribution to growth in 2017 2017/2016 %



Case study - USA

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Smaller mid-sized airports have their day in the sun...



ULCCs - Frontier, Spirit aggressive capacity expansions

Legacy - United expanding domestically to smaller airports

LCC - Southwest expands internationally

| Rank | City | IATA Code | August 2018 YTD - Passengers | YTD % Change - Passengers |
|------|-------------------|--------------|---------------------------------|------------------------------|
| | | | | |
| 1 | San Jose CA | SJC | 9,455,104 | 16.91 |
| 2 | Cincinnati OH | CVG | 5,982,557 | 15.83 |
| 3 | Austin TX | AUS | 10,511,663 | 15.51 |
| 4 | Jacksonville FL | JAX | 4,244,489 | 13.6 |
| 5 | Nashville TN | BNA | 10,383,744 | 11.96 |
| 6 | Sacramento CA | SMF | 7,870,867 | 11.4 |
| 7 | Raleigh-Durham NC | RDU | 8,486,228 | 10.69 |
| 8 | New Orleans LA | MSY | 8,757,201 | 10.65 |
| 9 | San Antonio TX | SAT | 6,598,427 | 10.39 |
| 10 | Pittsburgh PA | PIT | 6,421,062 | 8.81 |

November-18 Source: ACI World, 2018



Middle of the pack carriers achieve highest growth

US' top 12 domestic airlines -Change in seat capacity S17 v S16 (Departing seats in S17)



US' top 12 international airlines – Change in seat capacity S17 v S16 (Departing seats in S17)





Summary: Movements and dynamics of airport size

• Continued rise in pax but less gains in movements



- Consolidation, larger aircraft and increased load factors
- Bigger get bigger but.....
- Smallest airports suffer the greatest loss
- Shifting airline strategies hubbing to some de-hubbing
 - Mid-sized airports have their day in the sun





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Source: World Bank

"Demographic dividend":

- Child dependency ratio <u>falls</u>
- Working-age population <u>rises</u>





Forecasted evolution of global passenger market shares % 2017 (inner circle) vs 2040 (outer circle)





What about North American passenger traffic?



Forecasted international and domestic passenger traffic in North American airports

AIRPORTS COUNCIL

INTERNATIONAL



3.25 billion by 2040



2017-2022 (medium term)

2017-2040 (long term)



Summary: Key drivers of global pax demand

- **High population** countries are experiencing higher living standards (greater disposable income)
- Working age population has peaked in many populous emerging markets in tandem with a fall in child dependency
- **Cost of travel is decreasing** (e.g. historically low jet fuel prices, LCC business model, efficient aircraft economics, etc.)
- Liberalization of air transport among States to reduce barriers and increase competition



- ✓ Aviation is shifting eastward;
- ✓ Passenger traffic x2 in less than 17 years;
- ✓ Majority of traffic from emerging economies by 2022;
- Asia-Pacific is a major contributor to forecasted global growth



Capacity of Asian Hubs



Source: IATA, Strategy& analysis





Choose your own adventure story:

How will supply (fleet, pilots, infrastructure) keep up with demand?





