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AIT/OTA evolution post Thomas Cook

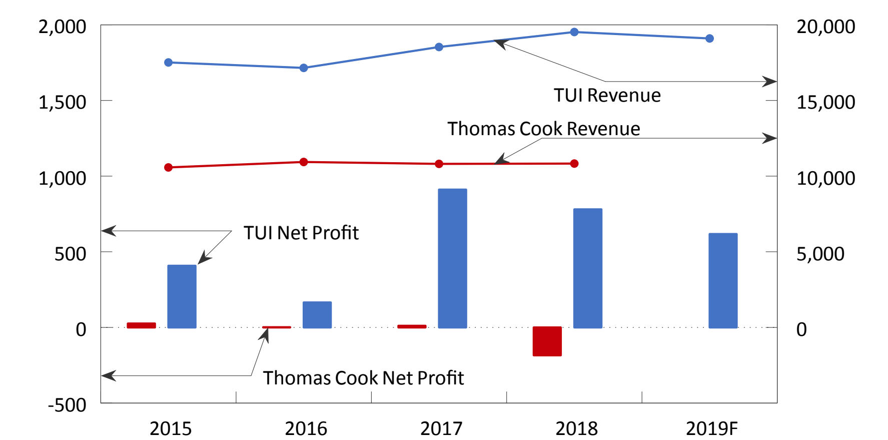
THE POST-MORTEMS for Thomas Cook, the Anglo-German tour operator and charter airline group, with a fascinating 147-year history, but which went bankrupt in September, have been written. Causes of death: failure to adapt to new technology, maintenance of high street travel agents, not outsourcing airline operations, ill-advised purchases (MyTravel), weak profitability and balance sheet, poor management and Brexit. The prognosis for Thomas Cook was apparent in a regular series of articles on the Inclusive Tour industry published in *Aviation Strategy*, the latest of which was in March this year.

In the short term, the main airline beneficiaries from TCA's demise in the UK should be TUI, Virgin Atlantic, Jet2, easyJet and Ryanair — see the summary of capacity at Thomas Cook's two main bases, Manchester and Gatwick, in the tables on the following page. The slightly larger German operation, Condor, has controversially been rescued by a cash injection from the German government. This looks like temporary palliative and eventually the Lufthansa Group (including Eurowings and Sun Express) will absorb Condor's capacity.

But taking a longer term view, how is the AIT (Air Inclusive Tour) model evolving?

The traditional model used by Thomas Cook, TUI and others basically took two different sets of expertise — hotel management and airline operation — and combined the two into a holiday package to be sold through physical travel agents or via a website. The consumer paid directly through mark-ups on the costs of running hotels or buying in hotel rooms, flying owned aircraft or chartering in capacity, plus on-site, travel agency and administration costs. At its peak the AIT industry was selling reassurance to a public that had limited ex-

THOMAS COOK AND TUI FINANCIALS (€m)



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perience of travelling abroad ("Don't just book it, Thomas Cook it").

The classic AIT business has moved from the mass market to a niche. TUI adjusted, Thomas Cook did not. But there is still important demand for these AIT products, especially among the older traveller segment, which is much more significant in monetary terms than it appears to be when measured by volume.

The OTA or OTC (Online Travel Agency/Company) model basically manufactures algorithms and uses them to market hotels, airline flights

THOMAS COOK'S MAJOR ROUTES (000 seats, 2018)

	Thomas Cook	Share	Major Competitor		Share	Total Seats
Manchester To/From						
Dalaman	443	55%	TUI	132	16%	805
Antalya	389	57%	Jet2.com	136	20%	683
Orlando	363	31%	Virgin Atlantic	800	69%	1,163
New York	352	44%	Virgin Atlantic	455	56%	807
Tenerife	274	17%	Jet2.com	411	25%	1,634
Cancun	262	43%	TUI	352	57%	615
Hurghada	259	76%	TUI	84	24%	343
Lanzarote	229	25%	Jet2.com	278	30%	927
Las Vegas	208	65%	Virgin Atlantic	113	35%	320
Fuertevenura	182	33%	Jet2.com	133	24%	545
Palma Mallorca	161	10%	Ryanair	520	32%	1,651
Total Above	***3,124***	***33%***		***3,414***	***36%***	***9,493***
London Gatwick To/From						
Antalya	409	58%	TUI	196	28%	706
Dalaman	403	52%	TUI	149	19%	771
Hurghada	257	57%	TUI	105	23%	454
Tenerife	201	14%	easyJet	472	33%	1,419
Palma Mallorca	199	12%	easyJet	882	54%	1,621
Lanzarote	162	21%	easyJet	283	37%	759
Enfidha	121	82%	TUI	26	18%	147
Orlando	121	6%	Virgin Atlantic	1,029	49%	2,084
Total Above	***1,872***	***24%***		***3,144***	***39%***	***7,961***

CONDOR'S MAJOR ROUTES (000 seats, 2018)

	Condor	Share	Major Competitor		Share	Total Seats
Düsseldorf To/From						
Palma Mallorca	648	21%	Eurowings	1,422	47%	3,053
Antalya	330	19%	SunExpress	1,034	61%	1,692
Hurghada	290	41%	SunExpress	166	24%	702
Fuertevenura	226	37%	TUIfly	197	32%	616
Tenerife	216	35%	TUIfly	233	38%	615
Total Above	***1,710***	***26%***		***3,050***	***46%***	***6,679***
Frankfurt To/From						
Palma Mallorca	532	26%	Lufthansa	537	26%	2,056
Tenerife	281	53%	TUIfly	136	25%	535
Cancun	275	77%	Lufthansa	83	23%	358
Hurghada	267	55%	SunExpress	122	25%	488
Punta Cana	265	100%				265
Antalya	241	25%	SunExpress	623	64%	971
Fuertevenura	226	45%	TUIfly	195	39%	500
Las Palmas	202	38%	TUIfly	256	48%	538
Seattle	196	28%	Lufthansa	492	72%	687
Mauritius	181	69%	Lufthansa	81	31%	262
Havana	173	100%				173
Heraklion	171	36%	TUIfly	177	37%	476
Total above	***3,009***	***41%***		***2,701***	***37%***	***7,308***

or combinations thereof directly to the consumer under multiple brands. Children of the Internet, they have no physical involvement with hotels or planes or hire cars. By far the most important revenue stream is commissions paid by the hotels or airlines when customers click through to book accommodation or flights. How much commission depends partly on how high up the page the offer is displayed — the display algorithms can rank offers by price, by customer feedback, by your own browsing history, by time or event sensitivity, by commission charged or by numerous other factors.

By far, the main customers for the OTAs are the airlines, hotels etc which pay these commissions (known as agency income), with secondary income sourced from mark-ups when, for example, individuals put together their own online packages (merchant income). There is also income generated from irritating pop-up and banner advertising.

It may seem that there are dozens of OTAs competing for travellers' business, but in reality the industry is highly concentrated around the two main US-based corporations — Expedia and Booking Holdings. Expedia has some 23 brands including Hotels.com, Trivago, Orbitz, Travelocity, etc. Bookings' brands include ebookers, booking.com, priceline.com and Kayak. Another important player is the Chinese OTA Ctrip which owns Skyscanner. There are hundreds of start-ups in this sector, each promising some new way of e-marketing travel or attacking new segments (for example, onthebeach.com, a UK-listed OTA, is keen on "destination-agnostics"). It appears, cynically, that a major part of their business plans is to use investor capital to expend huge advertising budgets to get their names widely known, then hope to be bought out, at a ludicrous price, by one of the major OTAs.

By traditional measurements, TUI is significantly larger than the leading OTAs — with 2018 revenues of about $22bn compared to $14.5bn at Booking and $11.2bn at Expedia. Net profit margin in 2018 at TUI was 4.6%, compared to 27.5% at Booking and 4.5% at Expedia (interpreting the financials of such internet companies is fraught with difficulties, because of their facility in allocating revenue or income to tax-efficient countries).

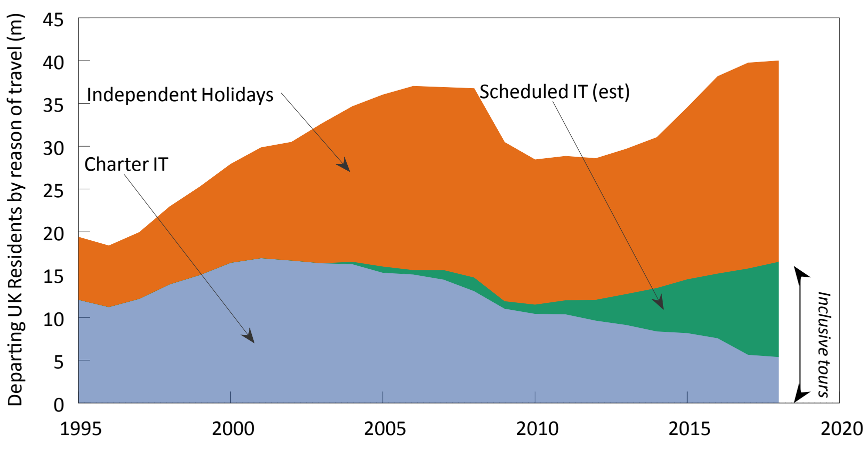
However, stockmarket valuations tell a different story: TUI was valued at $6.5bn post Tomas Cook's demise, while Expedia (and Ctrip) were valued at around $19bn, and Booking is rated at a remarkable $83bn. The investors' view is partly speculation, partly reflective of rapid growth rates, maybe anticipating that one OTA will go on to dominate the entire market, a bit like google or Amazon.

Speaking of Amazon, TUI, Ryanair and ANA, among many other airlines, have in the recent past announced ambitions to be the "Amazon of the air" or something similar. In reality, airlines cannot compete with the programming skills of the OTAs (which are surprisingly labour-intensive: Expedia has over 22,000 employees). Their AIT offering is growing (green segment below) and can provide a very important source of ancillary income — easyJet Holidays has a quality product, for example — but that's it, ancillary income.

Yet anyone who uses OTA websites must suspect that they are not optimal; they frustrate and irritate by, among other things, attempting to anticipate the users' preferences. Programmers may be technically brilliant, but they often simply do not understand the consumer.

And the suppliers frequently do not have a comfortable relationship with the OTAs. Hilton Hotels for instance goes out its way to divert bookings from the OTAs. Ryanair has just settled a lawsuit over screen-scraping with Expedia. United is threatening another lawsuit. In short, the travel agency business, having gone through a huge disruption, has more evolutionary phases to come.

UK HOLIDAYS BY AIR



Source: UK ONS International Passenger Survey. Aviation Strategy *analysis.*

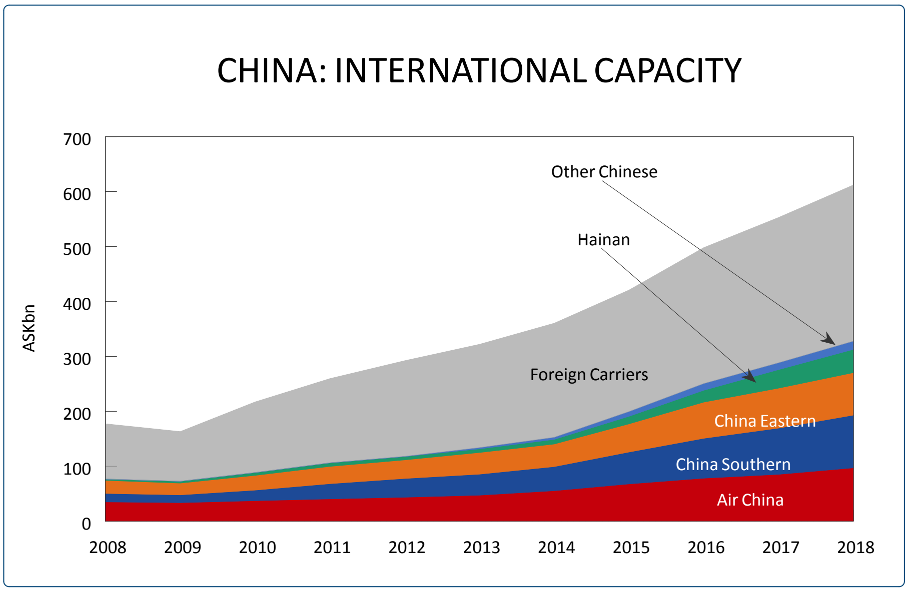
China's Big Three: Parallel airlines

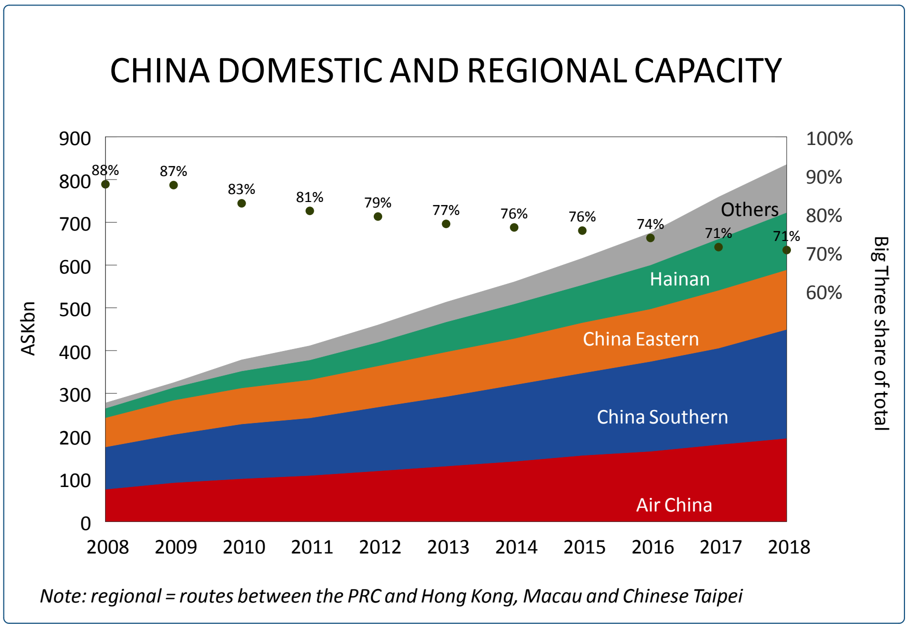
CHINA has been one of the main powers behind global air traffic growth in the last ten years. Over that period it has seen GDP increase by an annual average of 7.6%. Air traffic has trebled — an annual average growth of 13% domestically and 9% on international routes. GDP growth has been slowing recently, with additional concerns that the current trade war with the US will reduce total economic growth further. But this is probably all to plan, and may do nothing to stop the inexorable growth in the country's importance to the world's aviation industry.

The PRC is still a command economy. The current five year plan (the 13th, 2015-2020) calls for economic growth targets of 6.5% a year and a "moderately prosperous society" by 2020. It is written, it will be so.

A target for the PRC is to move the economy towards domestic consumption, away from over-reliance on export-driven growth. There are various elements that will help. The massive growth in the last decade has accelerated urbanisation: 60% of the population now live in cities up from 45% ten years ago. There has been an explosive growth in the "middle classes" — those defined variously as people with money available to spend on non-essentials. It is estimated that now 40% of the 1.4bn population (c 550m people) fall into this category, up threefold in the past decade, and that this cohort will double again in the next ten years.

Boeing in its latest *Current Market Outlook* points out that these are two factors that are likely to continue stimulating demand for domestic and international air traffic, and particularly for cities outside the megahubs of Shanghai, Beijing, and Guanzhou. It forecasts that the country will see continued strong air traffic growth over the next decade to overtake the US as the largest air traffic market by country with an annual average domestic growth of 8% and international growth of 7%. It notes that it has taken only 17 years for Chinese aviation to go from 100bn RPK to 1 trillion RPK, half the time for the same process in the US, but that this has been effected with current GDP per





Note: regional = routes between the PRC and Hong Kong, Macau and Chinese Taipei

METROPOLISES AND ACCESS TO FLIGHTS

	China					North America					Europe				
			Seats per capita					Seats per capita					Seats per capita		
	Metropolis∗	Pop (m)	Dom	Intl	Total	Metropolis†	Pop (m)	Intra NA	Intl	Total	Metropolis‡	Pop (m)	Intra Europe	Intl	Total
1	Shanghai	34.0	1.5	0.6	2.1	New York	20.0	2.8	1.4	4.2	London	13.6	5.5	2.3	7.8
2	Guangzhou	25.0	1.3	0.4	1.7	Greater Los Angeles	17.9	3.0	0.8	3.8	Paris	11.9	3.3	2.1	5.5
3	Beijing	24.9	1.9	0.6	2.5	Chicago	9.5	5.8	0.8	6.6	Madrid	6.4	4.0	1.3	5.4
4	Shenzhen	23.3	1.1	0.1	1.3	Dallas-Fort Worth	7.5	6.1	0.7	6.8	Barcelona	5.4	5.0	0.6	5.7
5	Wuhan	19.0	0.7	0.1	0.8	Houston	7.0	4.0	1.0	4.9	Rührgebiet§	5.1	4.9	0.4	5.3
6	Chengdu	18.1	1.5	0.1	1.7	Toronto	6.3	3.5	1.6	5.1	Berlin	5.1	4.1	0.2	4.3
7	Chongqing	17.0	1.3	0.1	1.4	Washington	6.2	6.4	0.9	7.3	Milan	4.3	5.9	0.9	6.8
8	Tianjin	15.4	0.8	0.1	0.9	Miami	6.2	4.4	3.0	7.4	Rome	4.2	5.7	1.4	7.1
9	Hangzhou	13.4	1.6	0.1	1.7	Philadelphia	6.1	2.9	0.4	3.3	Athens	4.1	3.2	0.4	3.6
10	Xi'an	12.9	1.9	0.1	2.0	Atlanta	5.9	9.1	1.2	10.3	Warsaw	3.3	3.3	0.4	3.8
11	Changzhou	12.4	0.1	0.0	0.2	Boston	4.9	4.3	0.8	5.1	Hamburg	3.2	3.4	0.1	3.5
12	Shantou	12.0	0.3	0.0	0.4	Phoenix	4.9	5.3	0.2	5.4	Naples	3.1	1.9	0.0	1.9
13	Nanjing	11.7	1.4	0.1	1.5	San Francisco	4.7	9.4	1.8	11.2	Budapest	3.0	2.7	0.3	3.0
14	Jinan	11.0	0.9	0.0	0.9	Detriot	4.3	4.5	0.4	4.9	Brussels	2.9	5.8	1.3	7.1
15	Harbin	10.5	1.1	0.0	1.1	Montréal	4.3	1.8	1.1	2.9	Lisbon	2.8	4.9	1.2	6.1
16	Zhengzhou	9.7	1.7	0.1	1.8	Seattle	3.9	6.8	0.6	7.4	Katowice	2.8	0.7	0.1	0.8
17	Qingdao	9.6	1.4	0.2	1.6	Minneapolis-St Paul	3.6	5.8	0.3	6.1	München	2.7	9.4	2.0	11.4
18	Shenyang	7.7	1.3	0.1	1.4	San Diego	3.3	4.3	0.1	4.4	Stuttgart	2.7	2.7	0.1	2.8
19	Wenzhou	7.6	0.9	0.0	0.9	Tampa	3.1	4.0	0.1	4.2	Manchester	2.7	4.9	1.3	6.2
20	Nanchang	7.4	1.1	0.0	1.2	Puerto Rico	3.1	1.3	0.3	1.6	Vienna	2.6	5.7	0.9	6.7

Notes: ∗Based on OECD 2010 estimates of Functional Urban Areas (FUA). † US Census definitions of Metropolitan Statistical Areas; ‡ Eurostat; § Metropolitan area in Germany's Nord-Rhein Westphalia encompassing Dortmund, Essen and Duisberg.
Big 3 "hubs": Air China China Eastern China Southern

capita (on purchasing power parity basis) of $20,000, less than a third the level in the US. It expects China to broach 1.5tn RPKs (the US's current level of activity) within the next three years.

Indeed, a large element of domestic growth in the past ten years has been created by the development of routes connecting smaller cities, and an increasing trend in the last five years has been to open new international routes from gateways away from Shanghai, Beijing, and Guangzhou. However, these "smaller" cities are enormous.

The table above attempts to compare the large metropolitan areas in China, North America and Europe with the air capacity at their respective airports. If we take the definition of a megalopolis as a metropolitan area with a population of over 10m, there are two such each in North America and Europe (New York, Los Angeles, London and Paris), but 15 in China, while the top twenty metropolises in China all have populations greater than the third largest in Europe (Madrid) and the fifth largest in North America (Houston).

The data we present do not take account of huge metropolitan areas being developed in the Pearl River Delta, combining Guangzhou, Shenzhen, Macau, Zhuhai and Hong Kong that will result in a combined area encompasing a population of over 57m — a massive $18bn bridge and tunnel network connecting Hong Kong island to Macau opened a year ago making the area development a potential reality. Or indeed the developments around Shanghai in the Yangtze delta with a combined urban population of a staggering 83m.

The population of China is huge, but the number of air trips per head is still small. But the country has now reached to a level of GDP per head where this measure of air travel activity could start to explode. It is already the largest outbound tourist travel market measured by trips and expenditure — 131m trips in 2017 expected to reach 160m by 2020 — even though only 6% of the population have passports (and half of that usable passports).

The Big Three

Air China, China Southern and China Eastern are the national flag carrier of the People's Republic. They are three companies, but perhaps only in name. Each seems to follow the same strategy, presumably under diktat from central government. (We highlighted the tangled web of state ownership of the Chinese ownership structure in *Aviation Strategy*, Jul/Aug 2019.)

The three are of a similar size and have been consistently profitable as they have grown. In revenue terms China Southern is the largest with a

BIG3 H1 RESULTS 2019

	Air China			China Southern			China Eastern		
	2019	2018	%ch	2019	2018	%ch	2019	2018	%ch
US$bn									
Revenues	9.911	10.400	-4.7%	10.750	10.605	1.4%	8.675	8.560	1.3%
Operating costs	8.917	9.357	-4.7%	10.308	10.250	0.6%	8.417	8.237	2.2%
Operating profit	0.994	1.043	-4.7%	0.442	0.355	24.6%	0.260	0.324	-19.7%
Net profit	0.516	0.613	-15.9%	0.251	0.371	-32.3%	0.314	0.393	-20.0%
Operating margin	10.0%	10.0%	0.0%	4.1%	3.3%	0.8%	3.0%	3.8%	-0.8%
Net margin	5.2%	5.9%	-0.7%	2.3%	3.5%	-1.2%	3.6%	4.6%	-1.0%
US¢/ASK									
Unit Revenues	6.99	7.77	-10.0%	6.48	7.04	-8.0%	6.60	7.19	-8.2%
Unit Costs	6.29	6.99	-10.0%	6.21	6.80	-8.7%	6.40	6.91	-7.4%
Stage length (km)	2080			1623			1503		
Traffic (RPKbn)									
Domestic	67,083	64,951	3.3%	93,468	85,924	8.8%	69,804	62,498	11.7%
Regional	43,133	38,877	10.9%	1,810	1,586	14.1%	2,810	2,560	9.8%
International	4,568	3,852	18.6%	41,932	36,769	14.0%	36,067	33,199	8.6%
Total	114,784	107,680	6.6%	137,210	124,280	10.4%	108,682	98,257	10.6%
Load factor	81.0%	80.5%	0.51%	82.6%	82.5%	0.20%	82.7%	82.5%	0.19%
Pax carried (m)	56.5	53.8	5.1%	72.8	67.4	8.0%	64.0	58.9	8.6%

turnover of $20.6bn in 2018, up from $8bn a decade ago, but Air China the more profitable achieving a 10.5% operating margin in 2018 on revenues of $19.6bn; and an average margin of 10% over the last ten years (see chart on the next page).

Their share of total domestic activity has fallen from nearly 90% a decade ago, but the three still account for two thirds of Chinese aviation.

The first half results for this year show mixed results (see table above), partly a result of a near 7% fall in the value of the remnimbi against the US $, partly a result of the introduction of IFRS16, the new standard for accounting for leases. They have each chosen not to restate prior year numbers so the year-on-year comparisons are somewhat meaningless; but they remain profitable.

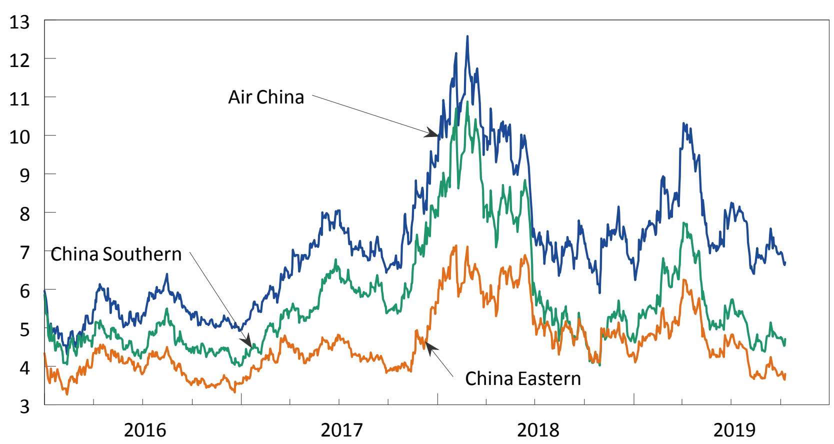
China Southern was the only one in its half year results statement to say that it would look in the second half of the year to improve returns to shareholders. But the prize for forward looking statements goes to Air China for its bravery in stating that "the Group will continuously adhere to the important instructions of General Secretary Xi Jinping on civil aviation".

Each in their financial statements emphasise their efforts on hub development: Air China a "diamond shaped hub network" based on Beijing, Chengdu, Guangzhou and Shanghai; China Southern a "dual-hub" strategy at Guangzhou and Beijing (with other major bases of operation at Shenzhen, Chongqing and Ürümqi); China Eastern at the two Shanghai airports (Pudong and the smaller Hongqiao), Beijing, Kunming and Xi'an. But it is important to emphasise that these have not been hubs in the conventional western sense. Rather these have been "bases" at what are now huge gateways.

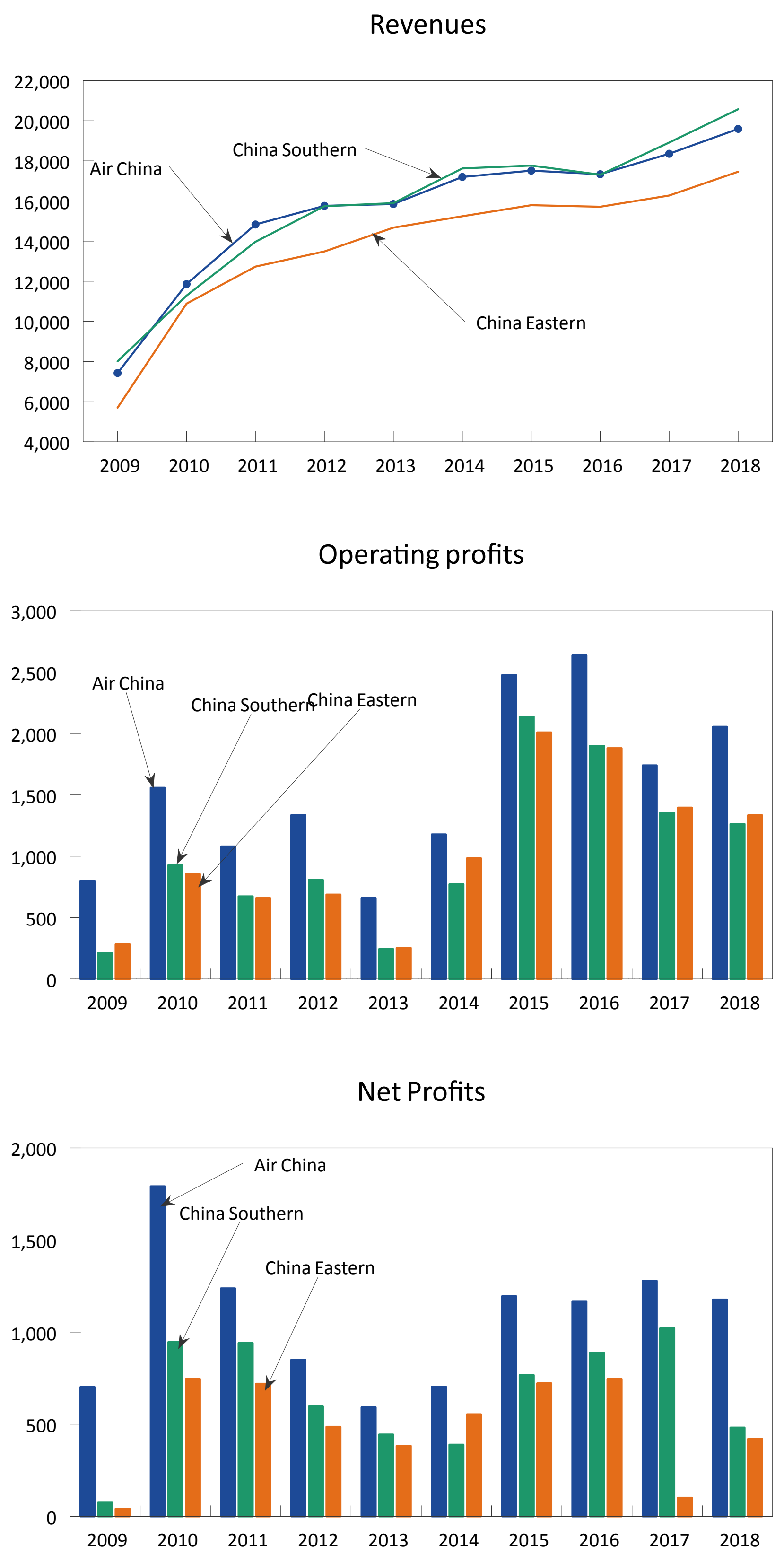
But they are targeting transfer traffic. Air China proudly states that in the first half of 2019 its transfer traffic grew by 11% (without stating the volume involved). It introduced a new "destination luggage guarantee" to allow passengers to transfer to their final destination in China without collecting bags at the first point of entry (as long as the passenger is travelling on Air China flights and signs an agreement to allow custom inspections at the port of entry).

China Southern in its first half results release mentions that the "Guangzhou hub witnessed 2.286m person-time of transfer passengers" of which 90% were international-international. Depending on what this statement really means, this may account for around 12% of its traffic. As international flights have grown, there are increasing possibilities for

SHARE PRICE PERFORMANCE (HKG)



BIG 3 FINANCIAL DATA (US$m)



long-haul to long-haul connections. A quick look at Skyscanner for flights on the traditional kangaroo route between Europe and Australasia shows China Southern as the lowest cost provider for flights between the UK and New Zealand next February.

China Eastern also states that "through the scientific matching of route capacity and optimisation of transit connection, the effect of hub network has gradually appeared", with a 12% growth in interline transits at Shanghai Pudong, and a 26% growth in domestic-international transfers at Kunming in the first half of the year.

Along with these developments the state is gradually relaxing it strategy of "one airline, one route" that has been in place for the last ten years: Air China was recently allowed to start services between Shanghai and London in direct competition with China Eastern.

Despite this apparent emphasis on hub development all three carriers seem to be actively deploying what usually are inefficient tagged routes: China Southern this year opened Guangzhou-Ürümqi-Vienna and Guangzhou-Changsha-Nairobi while Air China launched Beijing-Shanghai-Johannesburg.

A further similarity in reporting: Air China and China Southern are developing routes to fit in with the "Belt and Road" initiative, are both "ensuring development" of the Pearl River Delta, and China Eastern the Yangtze, super-megalopolis.

Beijing Daxing

The dynamics may change a little with the recent opening of Beijing's new airport. Built in a matter of five years with a first phase capacity of four runways and 75m passengers (long term plan 100mppa and 7

AIR CHINA GROUP FLEET

		Air China	Air Macau	Shenzhen Airlines	Others†	Total	Planned net deliveries 2019	2020	2021
Widebodies	747-400	3				**3**			
	747-8i	7				**7**			
	777-300	28				**28**			
	787-9	14				**14**			
	A330-200	30				**30**			
	A330-300	28		6		**34**	1		
	A350-900	10				**10**	4	5	7
	Total Widebodies	**120**		**6**		**126**	**5**	**5**	**7**
Narrowbodies/RJs	737NG	125		83	165	**373**	3	50	5
	737MAX	16		5	9	**30**			
	A319	33	2	8		**43**	-2	-2	
	A320	44	6	76		**126**	-4	-1	-1
	A321	61	10			**71**			
	A320neo	15	3	6		**24**	38	35	24
	A321neo	5				**5**			
	ARJ21							3	6
	Total Narrowbodies	**299**	**21**	**178**	**174**	**672**	**35**	**85**	**34**
Cargo	747-400F	3				**3**			
	757-200F	4				**4**			
	777-200F	8				**8**			
	Total Cargo‡	**15**				**15**			
	Total	**434**	**21**	**184**	**174**	**813**	**40**	**90**	**41**

Note: † Dalian Air (12 aircraft), Air China Inner Mongolia (7), Beijing Airlines (4), Shandong Airlines (114) and Kunming Airlines (27). ‡ Air China Cargo.

runways), it is the world's largest single terminal building under one roof. The design is extraordinary: the terminal's shape should make each gate (built on two storeys) no more that an eight minute walk to the central area, and it will have a 60 minute minimum connection time for both international-international and domestic-international transfers (compared with 120 minutes at Beijing Capital).

Originally China Southern and China Eastern were each to have been allocated 40% of the slots with Air China remaining at the old airport. In what looks like political interference to ensure that China Eastern continues to operate its Shanghai service from the more convenient Capital airport it is relinquishing a quarter of its allocation to Air China. China Southern says that will "construct a flight wave" at Daxing.

Multibranded portfolios

Each also has a multibrand airline portfolio. The subsidiary and associate airlines are usually majority owned with local authority and city participation, and sometimes with convoluted cross-ownership participation (see *Aviation Strategy*, Jul/Aug 2019).

The cleanest structure appears to be China Eastern with fully-owned Shanghai Airlines consolidating its position in the financial capital and an LCC China United, formerly based at Beijing's Nanyuan airport and now at Daxing.

Earlier this year it went further with a typically complicated cross-shareholding structure with Shanghai based Juneyao Airlines: its own state-owned parent holding company CEA Group acquired 15% of Juneyao and the latter acquired 5% of China Eastern.

(The holding company structure can be useful: last year Air China offloaded its 51% shareholding in Air China Cargo, its joint venture with Cathay Pacific, to its state-owned parent CNAHC.)

Alliances

There are three Chinese flag-carriers, three major international carriers in the US and Europe. There are three major global branded alliances. So it makes sense that the Chinese carriers should each align with one of the GBAs. Air China and its subsidiaries is firmly in the Lufthansa-United dominated Star Alliance (except for the fact that it has a close working relationship with oneworld carrier Cathay Pacific). China Eastern is firmly in the Sky Team Alliance led by Delta and Air France KLM — and Delta holds a nominal 2% equity holding in China Eastern to cement the relationship while China Eastern was persuaded to

CHINA EASTERN GROUP FLEET

		China Eastern	China Cargo A/L	China United A/L	Shanghai Airlines	Total	Planned net additions 2019H2	2020	2021
Widebodies	747-400F		3			**3**			
	777-300	20				**20**			
	777-200F		6			**6**			
	787-9	3			6	**9**	2	3	2
	A330-200	30				**30**			
	A330-300	24			2	**26**			
	A350-900	6				**6**	1	4	4
	Total Widebodies	**83**	**9**		**8**	**100**	**3**	**7**	**6**
Narrowbodies	737NG	150		49	85	**284**	6	(12)	(8)
	737MAX	3			11	**14**	10	24	12
	A318	1				**1**			
	A319	35				**35**			
	A320	180				**180**		(1)	**(6)**
	A320neo	24				**24**	16	30	
	A321	77				**77**			
	ERJ-145	4				**4**			
	Total Narrowbodies	**474**		**49**	**96**	**619**	**32**	**41**	**(2)**
	Total	**557**	**9**	**49**	**104**	**719**	**35**	**48**	**4**

take an 8% stake in Air France. Until the end of 2018 China Southern was nominally with the SkyTeam alliance, but has quit to concentrate on connections with the oneworld alliance. American has a nominal 2% equity stake while Qatar, 20% shareholder in British Airways and 10% shareholder in Cathay has a 5% equity stake.

Fleet

Strikingly none of the big three have any meaningful aircraft orders. Air China has an order for one outstanding 787 and 20 A350s; China Southern 34 737MAX and 19 A350s; and China Eastern 14 A350. All three airlines have nominal orders booked for five Comac C919s (+10 options). At the end of August all three announced orders for 30 Comac ARJ21s each. But both Air China and China Eastern published their medium term fleet plans summarised in the fleet tables above.

This is not necessarily a true reflection of the actual position. None of the Chinese carriers have full power over decision to acquire aircraft — that is left to the state's National Development and Reform Commission (NDRC).

There are existing firm orders contained within the two main manufacturers' order books that have been made subject to confidentiality agreements with a stipulation not to disclose the buyer. In Boeing's backlog of 5,705 aircraft there are orders for 950 737s, one 767, 15 777s and 56 787s allocated to "unidentified customers". Equally Airbus shows orders at the end of September with 633 allocated to "undisclosed" customers, including 22 A330s, 24 A350s, 573 A320 family and 14 A220s.

CHINA SOUTHERN: GROUP FLEET

		China Southern	Xiamen Airlines	Chongqing Airlines	Others†	Total
Widebodies	747-400	2				**2**
	777-200	12				**12**
	777-300	13				**13**
	787-8	10	6			**16**
	787-9	13	6			**19**
	A330-200	14				**14**
	A330-300	33				**33**
	A350-900	1				**1**
	A380	5				**5**
	Total	**103**	**12**			**115**
Narrowbodies/Rjs	737NG	189	145		32	**366**
	737MAX	24	10			**34**
	A319	20		8		**28**
	A320-200	117		11		**128**
	A320neo	23		9		**32**
	A321	99				**99**
	A321neo	27				**27**
	ERJ-190	15			6	**21**
	Total	**514**	**155**	**28**	**38**	**735**
	Total Fleet	**617**	**167**	**28**	**38**	**850**

Notes: † Jiangxi Airlines (10 aircraft) and Heibei Airlines (28).

Jazeera Airways: Small can be beautiful

JAZEERA Airways, the Kuwait-based LCC, is remarkable in that it has achieved consistent and very decent margins, and a stock market quotation, while operating a very small fleet of A320s, challenging the assumption that scale is a necessity for operational and financial success.

Jazeera was founded in 2004 by local investors led by the Boodai Group, Kuwait's leading private conglomerate, with interests in construction, engineering, shipping, logistical services, energy, consumer durables and media (although it is not connected to the Qatar-based Jazeera television service — Jazeera means peninsula, as in Arabian). The Boodai Group currently owns 26% of the airline, 24% by other Kuwaiti companies, with the remaining 50% traded on the Boursa Kuwait. As at the end of September the airline was valued on the stockmarket at KWD194m (US $640m).

The chairman of Jazeera is Marwan Boodai who also leads the Boodai Group. The CEO for the past three years has been Rohit Ramachandran who was formerly at Singapore Airlines and Air Arabia.

As the graph right shows, Jazeera has produced net profits in most years since 2011 and achieved an average profit margin of 17% during 2014-18. In 2018 the margin dipped to 8% in 2018 partly as the result of one-off costs associated with the opening of its new terminal. (For Jazeera net profit is very close to the standard definition of operating profit as the airline has no interest costs, nor does it pay any significant taxes; Jazeera's definition of operating profit excludes administrative and overhead costs.)

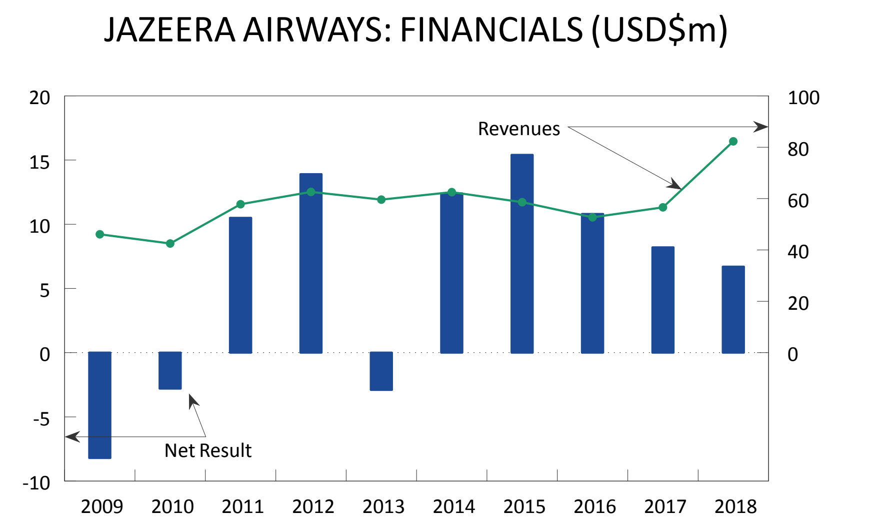
The first six months of this year saw a surge in revenue to KWD47.3 (US $156m) compared to KWD30.5m for the same period of 2018. Net profit at KWD6.2m represented a 13% margin and a quadrupling of the 2018 result.

At the beginning of this year Jazeera's fleet comprised nine aircraft, eight A320 ceos and one neo, with four more neos on order. The contrast with other Middle East LCCs is stark: Flydubai and Air Arabia (see *Aviation Strategy*, June 2019) operate fleets of 59 A320s and 55 737s respectively, and by the end of this year will have a firm order commitment of about 340 narrowbodies.

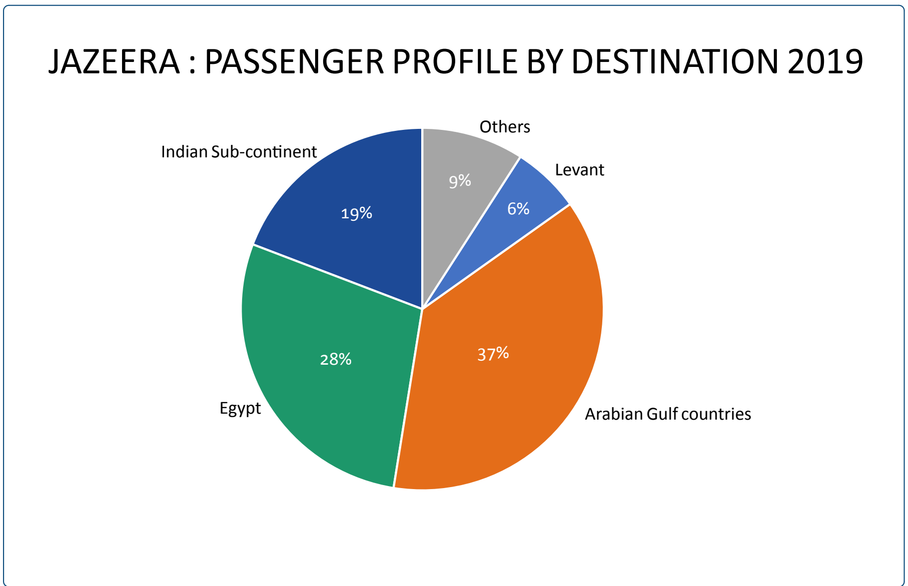
Flyadeal, Saudia's LCC subsidiary, only started operations at the end of 2017 but has already a fleet of 11 A320s and has recently announced a fleet plan that involves 30 to 50 new neos, part of an order placed by the parent airline. At least the Kuwait-based start-up, Wataniya Airlines, which had announced an order for 25 A320 neos in late 2017 appears to have gone out of business, having had its AOC suspended last year.

Jazeera itself once had similarly expansionist plans, but in 2011 cancelled its order for 25 A320s, citing the global recession, overcapacity in local markets and specifically the establishment of FlyDubai which put paid to Jazeera's strategy of developing a second base at Dubai.

Jazeera is now moving into a phase of rapid growth by its own standards — by the end of this year the fleet will have grown to 13 A320s of which four will be neos, and by the end of 2020., Jazeera will comprise 16 A320s, of which eight will be neos. However, the "mature" fleet size, according to Ramachandran, will only



Note: 1 KWD=US$3.3, Sept 2019



be around 23 units.

Kuwait is a very rich petro-economy, and GDP per capita fluctuates with the oil price; the latest estimate is US $66,000 for 2018, although it touched nearly $100,000 in 2007. Despite, or because of, this wealth there is substantial demand for low cost air travel.

The population of Kuwait is 4.3m but less than a quarter are Kuwaitis, the rest mostly foreign workers. There are more people from the Indian sub-continent in the country, 1.4m, than there are Kuwaitis, 1.1m. Egyptians account for 0.6m, Syrians and Lebanese, 0.2m, and Filipinos also 0.2m. Jazeera's geographical passenger distribution (see chart above) certainly reflects the importance of Egypt but also the under-representation of India.

The Indian market is key for all Middle East LCCs, and the problem for Jazeera is the 2007 bilateral between Indian and Kuwait which allocated a meagre number of seats (12,000 weekly) to Kuwaiti carriers. Moreover, Jazeera, Kuwait Airways and various Indian airlines together carry less than 45% of the total traffic between the two countries, the other 55% connects at Doha, Dubai, Muscat, etc. Negotiations between Kuwaiti and Indian aviation authorities are currently being held and a liberalisation of the bilateral is expected before the end of 2019.

This is critical for the deployment of Jazeera's new aircraft, although it also opens up the market to more competition from the Indian LCCs. If the bilateral isn't changed Jazeera management claims to have a Plan B which involves opening more routes to Eastern Europe.

Jazeera's traffic grew by an average of 13.6% pa between 2014 and 2018, but from a low base, 1.2m, and most of the growth occurred in 2018. Its 2m passengers represented just 13% of Kuwait Airport's total traffic in 2018. The 2019 passenger total should be about 2.5m.

The network comprises 28 destinations all served from Kuwait Airport. The strategy is not so much to serve secondary airports, which would be very difficult in this region of the world, but to avoid the main gateway airports. This year it has started service to Bodrum and Istanbul Sabiha, and plans to fly to Kathmandu, Dhaka. Karachi and London in 2019.

It is the Kuwait to London Gatwick route that has naturally attracted attention — it will be the longest A320 neo flight to date (4,600km; 6½ to 7 hours). The first flight is scheduled for October 27th with three classes on offer — Business, Premium Economy and Economy.

There are two marketing issues. First, the package of slots Jazeera has obtained at Gatwick does not allow a regular schedule: daily departure time varies from 12.30 and 16.40, with the later flights arriving at 02.00 in Kuwait. Second, Kuwait is a dry state so there will be no alcohol on board.

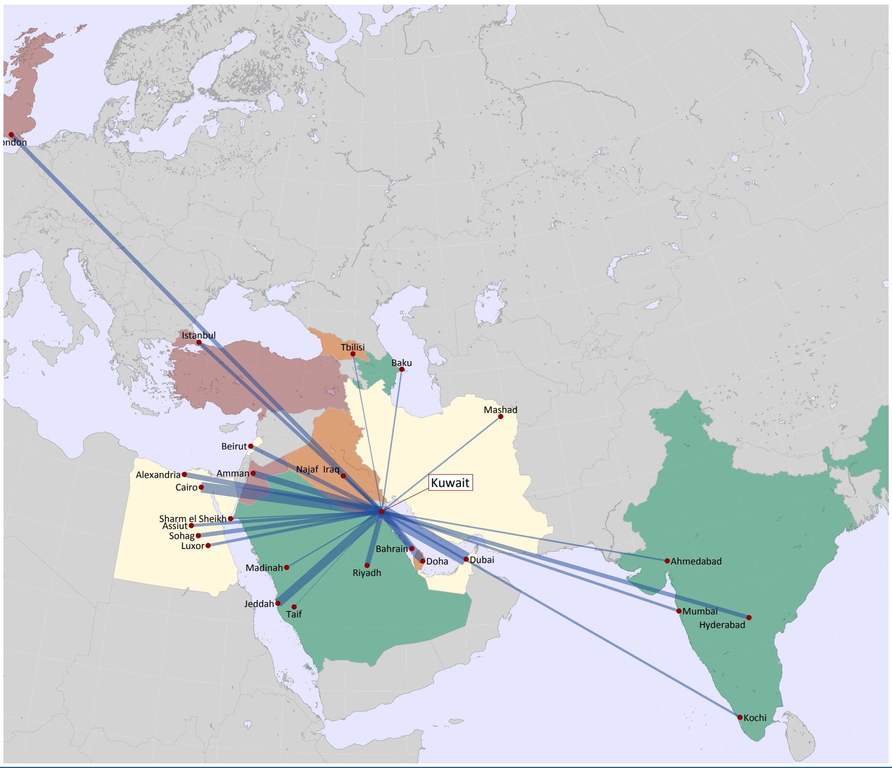
Nevertheless, there is a good opportunity to challenge the tight BA/Kuwait Airways duopoly in both the Economy and Business segments. Economy fares are being priced at around £300 return, a 25% discount on the lowest direct fares offered by the established competitors. Business Class is around £900 which contrasts with BA's £4,000-plus premium fares (although corporate discounts can be up to 50%) in a cabin which always seems to have a near 100% load factor. Unfortunately, passengers in both Jazeera's and BA's Business Classes have to pay the same passenger duty at £172.

Jazeera management intends to modify and refine the offering over the coming year. Then there is the question of the next destination if London works; Paris? If London doesn't work, one of Jazeera's strengths has been its willingness to terminate unprofitable activities.

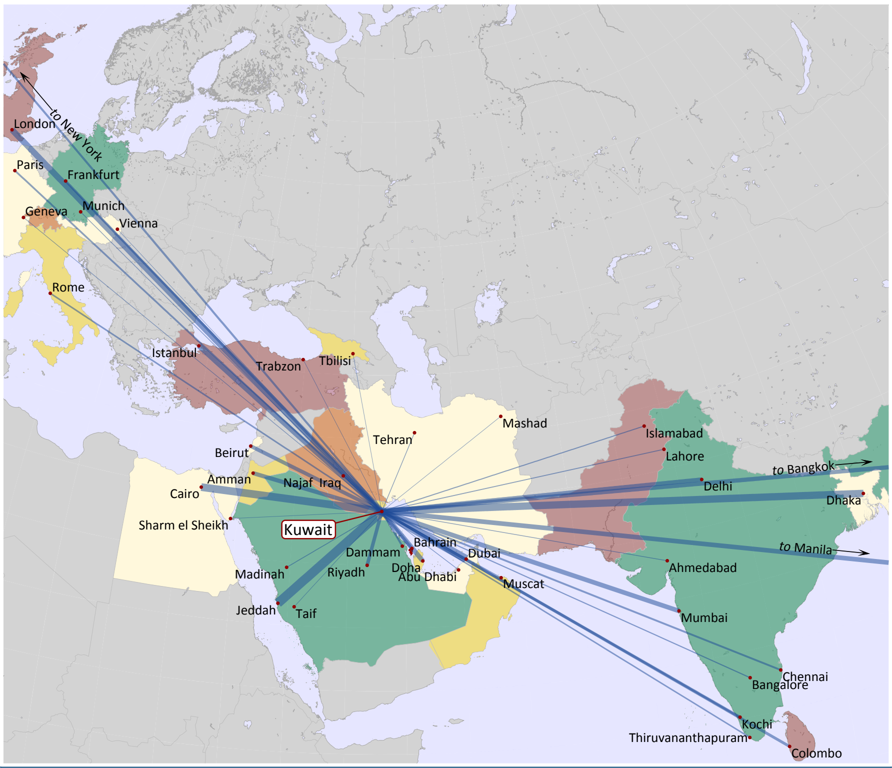
Operating model

Jazeera's operating model places much more emphasis on maximising yield than European or Asian LCCs. It highlighted that in the first half of the

JAZEERA AIRWAYS ROUTE MAP



KUWAIT AIRWAYS ROUTE MAP



year average fares were up 10% to KWD42.1 (US $139),which is roughly half way between Air Arabia and FlyDubai, but it is not clear how much of this increase was due to network changes.

Ramachandran in the half-year analysts' call talked about not relying on price-sensitive traffic; managing yields with "a bit more sophisticated algorithms"; going after corporate business; and having effective commercial teams, not just travel agents, in all of Jazeera's destinations, but particularly in India and Egypt.

A unique aspect of Jazeera's offering is its own dedicated terminal T5, at Kuwait Airport. The terminal was opened in May 2018, financed solely by Jazeera and managed solely by Jazeera. It is a profit centre in its own right, generating revenue from aeronautical charges (currently a matter of negotiation with the government) and commercial revenues from its own lounge and F&B and duty-free concessions. Capacity is currently 3.5m passengers with expansion planned for 5m. As well as internalising airport/handing costs, 14% of its total in 2018, the idea is to ensure rapid aircraft turn-rounds and a better customer experience.

Seating configuration is classic LCC standard for A320s — 165 seats — but with a Business Class which is created by cancelling six middle sears to provide 12 Business seats, plus 147 Economy. On the London route further seats will be blocked off to create a Premium Economy product.

Jazeera's load factors have been low by leading LCC standards, just 69% in 2016 but have been pushed up to over 75% this year, and the minimum target for 2020 is 76%, which compares to Air Arabia's 81%. Similarly, average aircraft utilisation was only 10.9 hours per day in 2017 but

JAZEERA AIRWAYS: PROFIT & LOSS ACCOUNT 2018

	KWDm	Revenue/Cost %	Margin
Pax	74.9	91%	
Ancillaries	6.0	7%	
Others	1.4	2%	
TOTAL REVENUE	**82.3**	100%	
Staff	12.0	16%	
Fuel	**20.1**	27%	
Engineering & Maintenance	4.6	6%	
Airport, Handling, Overflight	10.8	14%	
Lease Rental (inc maintenance)	17.6	23%	
Insurance	**0.4**	1%	
Depreciation	0.8	1%	
Marketing	**1.3**	2%	
Others	8.0	11%	
Total operating costs	75.6	100%	
Operating profit	**6.7**		**8.1%**
Net finance costs (income)	-0.3		
PBT	7.0		
Taxes/ Contributions	0.2		
Net Profit	**6.8**		**8.3%**

the target for 2020 is 14-plus hours a day, the level Air Arabia achieves. With a 24-hour operation at Kuwait Airport and an increase in longer-haul flying this target looks feasible.

Jazeera's fleet policy is to be asset-light: all its aircraft are on operating leases (from ALAFCO, Avolon GECAS, Goshawk and Park Aerospace). Consequently, rentals in 2018 accounted for 23% of its costs but the airline was debt-free. Interestingly, the management contends that operating leasing is for it the least expensive form of aircraft supply. Jazeera itself was originally a combined lessor/airline, until 2011 when as part of its restructuring, Sahaab, the leasing operation, was sold off to Chinese interests.

It applies leasing expertise to its fleet acquisition, specifically targeting distressed sales at Airbus — ie aircraft due for delivery but whose orderers, for whatever reason, cannot take the equipment. By using this strategy Jazeera claims to be able to purchase, then sell and leaseback, aircraft at prices and rates comparable to or better than larger airlines placing bulk orders. Slightly contradicting this approach, Jazeera has indicated that is also talking to the two OEMs about an order for 25 units; it may just be keeping all its options open.

IFRS 16, the new accounting standard adopted by Jazeera and most other airlines around the world, has managed to obscure the asset-light policy. This accountancy change means that aircraft under operating lease, and owned by lessors, have to be put on the airline's balance sheet as assets, technically "right to use assets" and future lease payments have to be capitalised as liabilities. Hopefully this explains why Jazeera's balance sheet (see left) changed so much between December 2018 and June 2019. (Also, the cost breakdown in the P&L is affected by this accountancy change: what simply used to be a big rentals item disappears while a small depreciation cost item increases greatly as does the finance cost line. In short, Jazeera's aircraft ownership costs, adding these three elements together went from KWD 5.7m in the first half of 2018 to KWD 7.5m in the first half to 2019.)

Average aircraft age is 8.2 years,

JAZEERA AIRWAYS BALANCE SHEET (KWDm)

	Dec 2018	Jun 2019
Non-current Assets	38.7	92.5
Current Assets	17.7	14.1
Cash etc	6.5	12.7
Total Assets	**62.9**	**119.3**
Current Liabilities	21.4	36.7
Long term Liabilities	3.7	51.3
Total Liabilities	**25.1**	**88.0**
Share Capital	24.3	24.3
Retained Earnings	13.5	7.0
Total Equity	**37.8**	**31.3**
Total Equity and Debt	**62.9**	**119.3**

which will come down as the neos enter the fleet. Much of the maintenance is outsourced to Lufthansa Technik though there are plans to bring more operation in-house.

Fuel accounts for 27% of Jazeera's costs — Jet A is consistently more expensive in the Middle East than Europe. Fuel unit costs should be substantially reduced with the introduction of more Neos to the fleet, with their claimed 16% fuel consumption advantage. Up to now Jazeera has not hedged its fuel — as the Kuwaiti petro-economy provides a kind of natural hedge — but limited hedging is planned for next year.

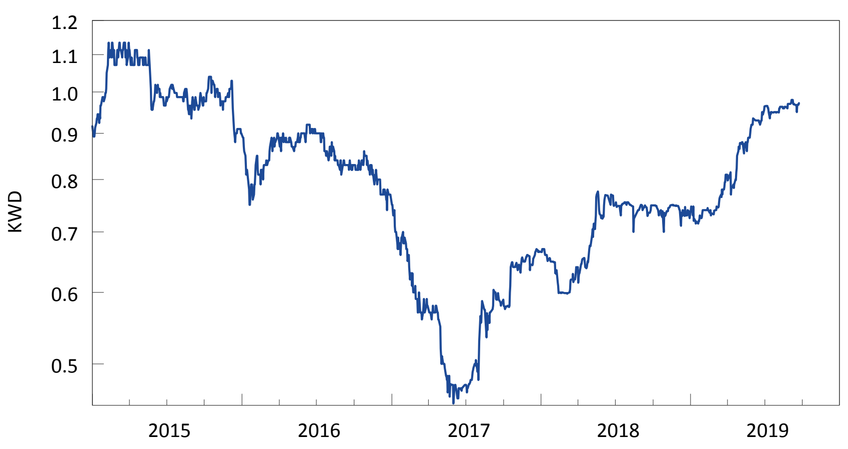
Kuwait Airways

The reality for Jazeera is that it has to live with a state-subsidised Legacy carrier, Kuwait Airways, and part of its legacy was the destruction of much of its fleet when Saddam Hussein's army invaded Kuwait in 1990.

Fully state-owned, Kuwait Airways has produced no financials in recent years though it has placed significant orders for A330neos and A320neo, bringing its orderbook up to 27 units, with an operating fleet also totalling 27 aircraft. Its 2019 plan is for 4.7m passengers. Worrying for Jazeera is the national carrier's intention of introducing six A320neos this year, the equivalent of over half of Jazeera's total capacity. And Kuwait Airways' network overlaps much of Jazeera's — see maps on page 12 above

Ramachandran's response is phlegmatic: Jazeera is so much lower cost and nimble, used to outmanoeuvring the flag-carrier. He's probably right as long as the government assures some form of fair competition, and the Boodai Group has its own political clout.

JAZEERA AIRWAYS SHARE PRICE PERFORMANCE



American Airlines Group: Destroying value?

CONSOLIDATION of the three US network carriers and Southwest into four dominant carriers is perceived to have restored profitability and financial stability. But five years after the takeover of US Airways, American Airlines Group (AAG) has a balance sheet net worth of less than zero. How has this happened?

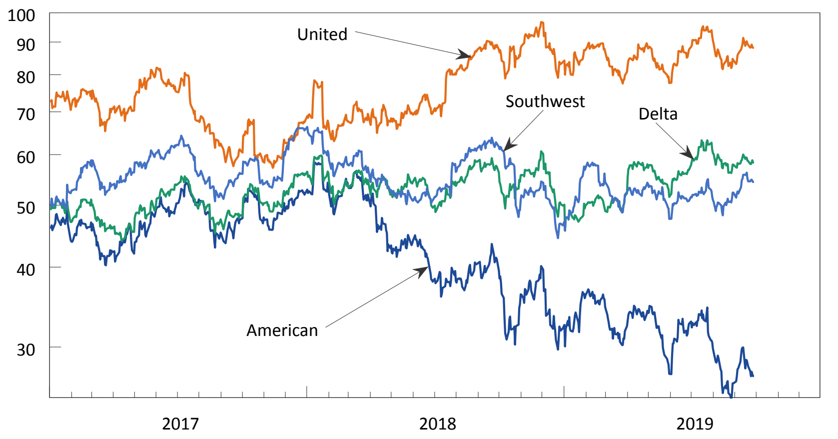
AAG was formed from the merger of US Airways and American Airlines out of Chapter 11 bankruptcy protection in 2014 to create the world's largest airline by traffic and fleet. The merger seemed to be the final stage in the consolidation of the US industry. The top three network carriers along with Southwest account for 80% of total domestic capacity, and the industry moved into significant positive earnings power for the first time since Carter's deregulation Act of 1978.

American indeed achieved its strongest ever financial results in the first year after the merger: adjusted operating profits in 2015 of $7.3bn and adjusted net profits of $6.3bn. And in the five years to end 2018 it generated $27bn in operating profits compared with a combined total of $1bn in the 25 years between 1978 and 2013.

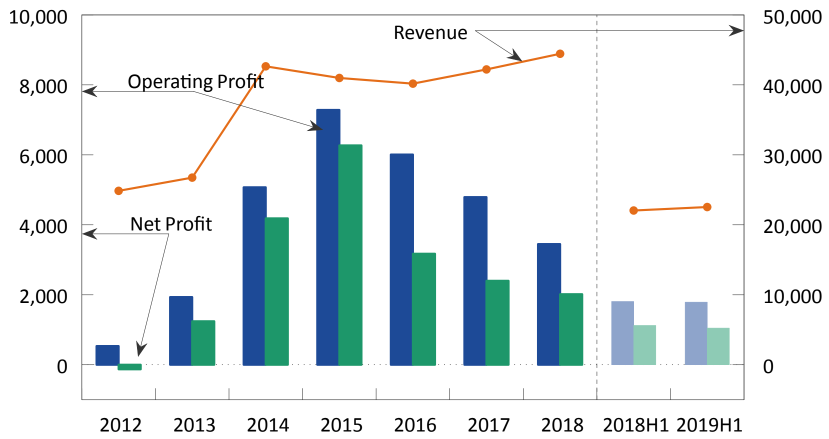
As background, it is worth looking at the management's statements and actions over the past few years. At its inaugural investor day in 2017 (see *Aviation Strategy* November 2017) the management expressed significant optimism that it could continue to provide strong returns. It pointed to targets that it would be able to achieve pretax profits of between $3bn and $7bn through the cycle, that merger synergies would continue to accrue, and the future was rosy. It could not lose money again.

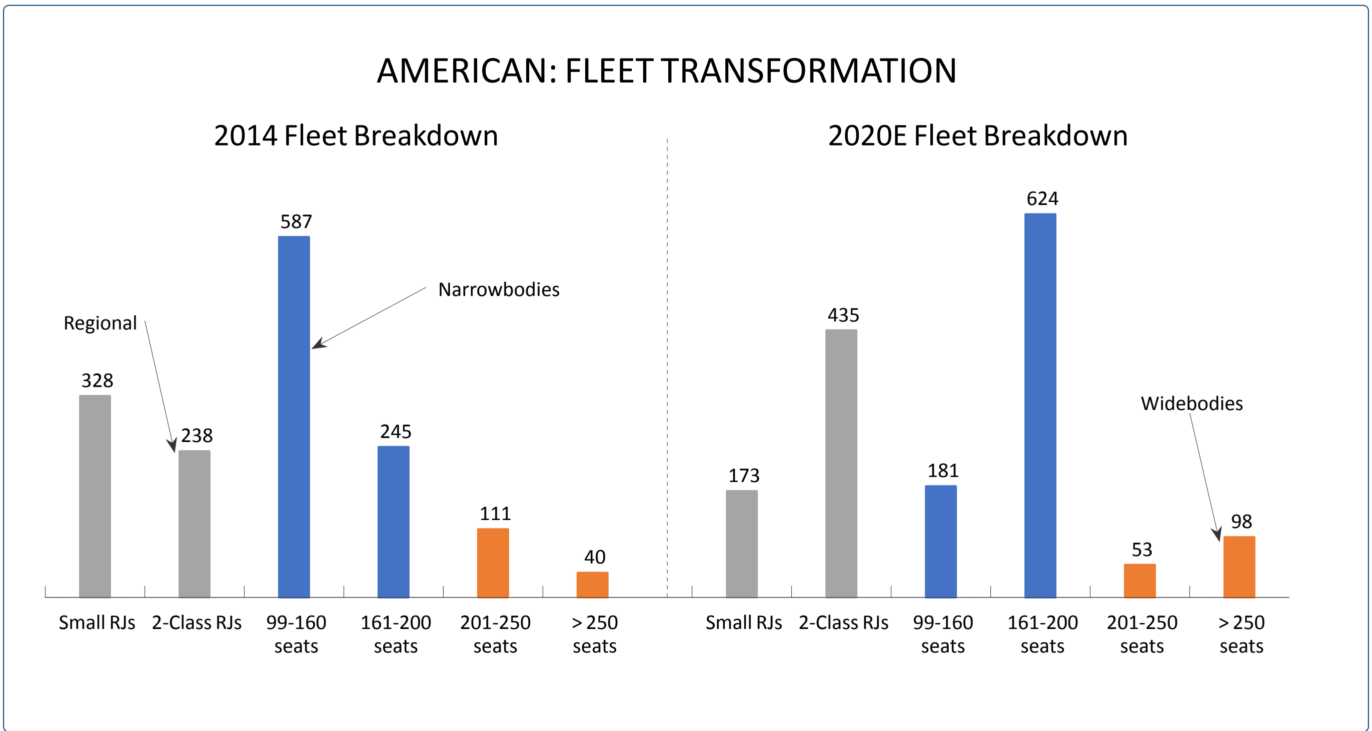
Following the merger American went through a major fleet re-equipment programme of acquiring 519 new and retiring 484 aircraft — a total of $28bn and an average annual $5.4bn in capital expenditure — that brought the fleet down to a manageable average age of 10.6 years, one of the youngest fleets in the US industry. It still has some pretty ancient equipment in the fleet — including 21 767s, 34 757s, 9 A330-300s and 47 777-200s all of which have an average age of over 18 years

US MAJOR AIRLINES SHARE PRICE PERFORMANCE



AMERICAN AIRLINES GROUP: FINANCIAL DATA ($M)





(see table on the facing page), and the fleet re-equipment programme continues (the last remaining 30 MD80s left the fleet this year).

A major element of the fleet restructuring has been increasing aircraft sizes, seat harmonisation and reduction of complex subfleet configurations. As the graph above shows, by 2020 the group will have shifted the fleet's seat size "centre of gravity" up a level: small RJs replaced by 2-class RJs; 100-150 seat jets to 150-200 seats; and 200-250 seat widebodies to over 250 seats. This the company states results in a "more efficient fleet better suited to the network"; while by 2022 it will have reduced the number of sub-fleets by over 40% from 2016 "improving customer experience and reducing operational friction".

After that splurge in spending, capex will be slowing over the next few years towards $2bn in 2021, which it states will allow it to generate "significant" levels of free cash flow in 2020 and beyond.

One airline

Five years on from the merger with US Airways, the group states that the integration of the two airlines is virtually complete, and management can turn their efforts to improving revenue management and margins. The company is aggressively pursuing growth at its most profitable hubs at Dallas-Fort Worth, Charlotte and Washington DC (where it respectively has 85%, 89% and 58% of total slots), "adding high margin flying to the network". Capacity expansion at DFW is allowing it to add 15 new gates and 100 new daily departures in 2019, while it expects to have an extra 7 gates at Charlotte in 2020 and 14 upgauged gates at Washington Reagan in 2021.

Early signs from the expansion at DFW, the company says, have exceeded expectations. In the second quarter of this year its capacity at the airport grew by 6.3% while unit revenues increased by 1.6% driving a $175m increase in revenues at the hub in the second quarter.

American has introduced other

OPERATING MARGINS BY REGION ($m)

	American		Delta		United		Southwest	
	LTM	**2015**	**LTM**	**2015**	**LTM**	**2015**	**LTM**	**2015**
Domestic	6.8%	17.0%	11.1%	18.8%	9.1%	13.0%	13.8%	20.8%
LatAm	14.8%	10.0%	14.5%	1.7%	5.0%	9.3%	13.7%	20.8%
Pacific	(18.1)%	18.1%	14.5%	23.4%	3.0%	9.1%		
Atlantic	1.8%	11.1%	20.6%	25.4%	14.9%	21.2%		
System	**6.0%**	**15.0%**	**13.0%**	**19.2%**	**9.0%**	**13.6%**	**13.8%**	**20.8%**

Source: DoT Form 41. LTM=Latest 12 months initiatives that it expects to improve revenue and margins. It has standardised the cabin configuration of the 737s at 172 seats and A321ceos at 190 seats (helping to reduce its plethora of fleet sub-types); is aiming to close a "load-factor gap" with competitors in off-peak periods; has introduced "instant upsell" allowing passengers to upgrade their seat post-purchase; introduced pre-paid bags, initially domestic only; and has introduced an automated auction process for oversold denied boarding at the gates.

At that investor day, management suggested that its strategic priorities were to complete merger integration, meet pension and debt obligations, and invest in the business. It stated that it would prepay high cost debt and would return to shareholders any cash in excess of $7bn. It implied that it was fed up with the short term attitude of the US capital markets — it stopped reporting monthly traffic, capacity and unit revenue data — maintaining that its long-term strategic focus should overcome short term negative issues. CEO Doug Parker even offered a bet of a bottle of wine to a 59 year old hedge fund analyst that the shares, then trading at below $40, would hit 60 before he did. The stock did reach $58 the following January, but has since halved in value (see chart on page 15) while those of its three main competitors — Delta, United and Southwest — have performed moderately well.

What's going wrong?

All the major US carriers have seen their margins erode since the peak of profitability in 2015, but American's have fallen faster. But American does not hedge its jet fuel, and its relatively high proportion of regional jet flights in its network naturally give it a disadvantage on unit cost fuel consumption. Oil touched a nadir in January 2016 with Brent Crude just below $30/bbl and since then nearly tripled to a recent peak of $85/bbl in November 2018. Analysis of the DoT Form 41 data (see table on the preceding page) shows that American's system margins have fallen by nine percentage points from the peak in 2015 compared with six, four and seven points respectively for Delta,

AMERICAN AIRLINES GROUP FLEET

		Avg seats	Avg Age	Current	Planned deliveries 2019	2020	2021	2022	2023	2024+	Total
Widebodies	A330-200	247	7.8	15							
	A330-300	291	19.2	9							
	767-300ER	209	20.2	21							
	777-200ER	273	18.8	47							
	777-300ER	304	5.7	20							
	787-8	226	3.9	20		12	10		6	19	47
	787-9	285	2	22							
	Total Widebodies		**11.9**	**154**		**12**	**10**		**6**	**19**	**47**
Narrowbodies	A319	128	15.5	132							
	A320	150	18.5	48							
	A321	178	7.2	219							
	A321neo		0.4	6	7	20	18	20	8	42	115
	737-800	161	9.9	304							
	737-8 MAX†	172	1.2	24	16	10	10			40	76
	757-200	180	19.9	34							
	E190	99	11.9	20							
	Total Narrowbodiesl		**10.8**	**787**	**23**	**30**	**28**	**20**	**8**	**82**	**191**
	Mainline total			**941**	**23**	**42**	**38**	**20**	**14**	**101**	**238**
	CRJ	70		272	6	4					22
	ERJ	61		323	7	15					10
	Regional total			**595**	**13**	**19**					**32**
	TOTAL FLEET			**1,536**	**36**	**61**	**38**	**20**	**14**	**101**	**270**

Source: Company reports.
Notes: † 737MAX deliveries as originally scheduled.

United and Southwest.

In absolute terms the greatest fall in profitability for American has been in the domestic market, declining from a run-rate of $4.5bn in 2015 to $2bn for the year to end June 2019.

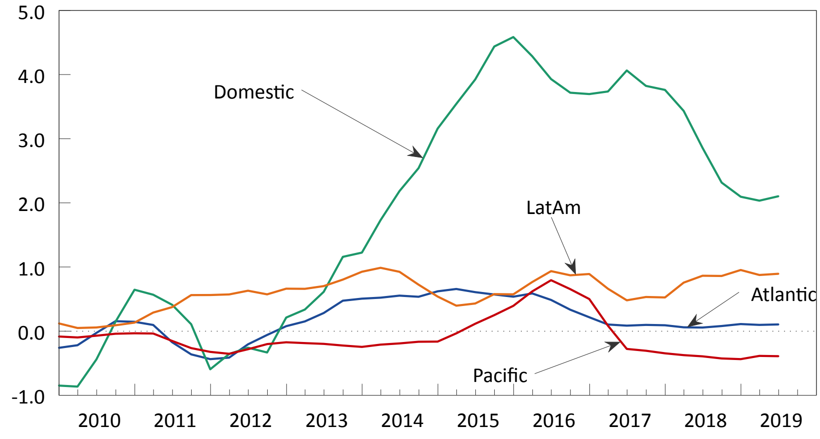
Benefiting from its strong hub in Miami, and as the largest US carrier to the region, it has tended to generate good returns from its Latin American routes (see chart above) and up to now at least has maintained a leading position (although it had to write off some $60m from intangible assets when the US signed an open skies agreement with Brazil in 2017).

Surprisingly, according to our analysis of the DoT data, it has made exceedingly poor returns on the Atlantic in the last three years. In the year to June 2019 it appears to have achieved an operating margin of merely 1.8% — a paltry profit of $105m on revenues of $5.8bn — down from a margin of 11% in 2015.

These figures do not take account of the Joint Venture accounting reconciliation with its partners in IAG and Finnair, but must be exceedingly disappointing in comparison with Delta's 20%, and United's 15% operating margin over the same period.

It is difficult to determine why this is so. But it may be that its lack of international hub presence — relative to Delta and United — in the US North East essential markets of New York and Boston and Washington preclude it from premium traffic and yield on the most important routes on the Atlantic to anywhere except London. In New York JFK It has allowed its share of slots to fall to 15% from 20% — well behind Delta (34%) and JetBlue (34%) — but capacity overall is down 7% in the number of flights and 18% in the number of seats in the past ten years.

AMERICAN: OPERATING PROFITS BY REGION ($bn)



Source: DoT Form 41. Trailing twelve month totals. (AA+US before 2014)

At the same time American's performance on Pacific routes has been lacklustre. It is the weakest operator on the region despite its joint venture with oneworld partners JAL, links with Cathay, China Southern (in which it has a modest stake) and China Eastern and its hub in Los Angeles (where it has 22% of the slots, half that of competitor Delta). It falls well behind the market leader United. It has been increasing capacity strongly in the past few years, but has recently dropped Chinese destinations out of Chicago (where it is second fiddle to United at *its* home base). According to the latest figures American generated a negative operating margin of 18% in the latest four quarters on the Pacific and has only generated an operating profit on the region in two out of the past twenty years.

Delta's LatAm coup

In a strategic coup, Delta has managed to steal LatAm — the largest player in South America — from American's influence on the South American continent. American and IAG had been trying to get an anti-trust immune joint venture with fellow oneworld member LatAm, that had recently been thwarted by the Chilean authorities. In September Delta announced it would be taking a 20% stake in LatAm, assume some of LatAm's A350 future deliveries, and ditch its 9% stake in Gol (to satisfy local competition authorities). LatAm will presumably leave the oneworld alliance.

Delta will probably not face the same regulatory censure from Chile to the establishment of a joint venture with LatAm, and has the opportunity with this deal to propel itself into a leading position on services between the US and South America through its Atlanta hub, or at least undermine American's strong position in Miami.

LatAm will leave the oneworld alliance, but may not join SkyTeam. This perhaps fits in with Delta's belief that the Branded Global Alliances have passed their sell-by-date and that its model of acquiring stakes and providing management input in partner airlines is the new way forward. (For Delta's growing portfolio of airline investments see *Aviation Strategy* June 2019.)

American brushed off concerns

AMERICAN: BALANCE SHEET

	30 June 2019 (US$m)	
Flight equipment	42,437	
Operating leases	9,102	
Predelivery payments	1,372	
Property	9,007	
Depreciation	(18,114)	
Fixed Assets		43,804
Goodwill and Intangible assets		6,196
Deferred tax and other assets		2,117
Cash	5,564	
Debtors	1,943	
Other	2,343	
Current Assets	9,850	
Debt	(3,500)	
Creditors	(2,118)	
Other	(14,505)	
Current liabilities	(20,123)	
Net Current Liabilities		(10,273)
Long term debt		(21,791)
Operating lease liabilities		(7,818)
Pension		(5,641)
Loyalty programme		(5,249)
Other liabilities		(1,367)
Net Assets		**(22)**
Represented by		
Equity	5	
Share premium	4,386	
Accumulated losses	(5,927)	
Retained profits	1,514	
Shareholders' deficit		**(22)**

AMERICAN: CASH FLOW ITEMS ($m)

	2016	2017	2018
Cash flow from operations	6,524	4,744	3,533
Capex	(5,731)	(5,971)	(3,745)
Asset sales	125	947	1,207
Investments & other		(203)	200
Inc in debt	7,701	3,058	2,354
Payment of debt	(3,827)	(2,332)	(2,941)
Stock buy back	(4,500)	(1,615)	(837)
Dividends paid	(224)	(198)	(186)
Other	(44)	(58)	(62)
Inc in cash and equiv	**48**	**(1,613)**	**(470)**

of the deal saying that the "current relationship with LatAm only provided $20m in incremental annual revenues".

737MAX and Machinists

This year meanwhile it has two additional problems. The grounding of the 737MAX8 fleet only involved 24 out of the group's 1,550 aircraft — it has 76 of the type on order, nine of which were to have been delivered in the second quarter — but with 7,600 flights cancelled has had a knock on effect on the network. For the moment the group has removed the aircraft from its schedules until November, and stated that the grounding had a negative impact on its second quarter results of $185m and that it expected a full year hit to pretax profits of $400m.

Secondly, it has failed to come to a new agreement with the machinists' union. Industrial relations have somewhat deteriorated with American management accusing the unions of orchestrating a go-slow resulting in a deleterious impact on operations. It received a temporary restraining order in the courts to stop the process and is awaiting a permanent injunction decision. Additionally, it saw a 15% increase in maintenance payments in the second quarter as the company increases the number of aircraft moving to power-by-the-hour contracts.

Balance sheet undermined

If this weren't enough, the group's balance sheet has been shot to pieces by changes in accounting reporting standards. In 2018 the group adopted the new standard of accounting for revenue from customers that among other things forced it to change the way it accounted for mileage credits in the frequent flyer programme.

Previously the liability was recorded on the basis of marginal cost of providing a free flight, but this has now moved to an average fare. The result has been to add $5bn in liabilities, $2bn in deferred tax assets and a $3bn reduction in shareholder funds.

Secondly, it has adopted the new accounting policy for operating leases. The US FASB has taken a slightly different approach from the IASB (see *Aviation Strategy* April 2016), but it results in a $9bn addition to assets and liabilities.

The result is to give American Airlines Group a balance sheet with physical fixed assets of $44bn, debt of $30bn, and negative net assets of $22m at the end of June 2019. This latter includes goodwill and intangible assets of $6.2bn, which a sceptical analyst might exclude.

And yet in the past five years it has concentrating on returning "value to shareholders". It has spent a total of $12.2bn repurchasing shares (financed mainly through debt) and paid out $1.12bn in dividends. Dividends are fine: they are physical. The concept of share repurchasing is that by redeeming equity you reduce the total number of shares in circulation, reduce your average weighted cost of capital (at negative real interest rates, equity is expensive), increase earnings per share from what it would have been, and therefore make the shares more attractive. The hope is that this will increase value. For AAG this hasn't worked. At the current price of $27 a share the group has a market capitalisation of a mere $12bn, some $24bn lower than the $36bn it enjoyed at the end of 2014 equivalent to twice the amount it has spent on stock repurchases.

It doesn't appear that Wall Street is convinced that this strategy is creating value.

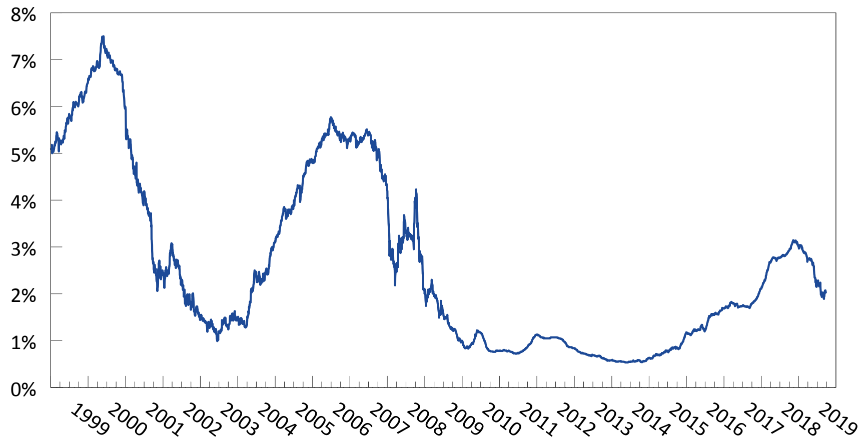
Lessor Survey: Chinese control grows, Big Two stagnate, business looks peaky

OPERATING lessors are on target to control over 50% of the global jet fleet by the early 2020s, but there are clouds on the horizon.

Financially, the aircraft leasing business continues to do well, certainly much better than the airline industry. Our sample of six leading lessors, see below, which produce more or less comparable financial statements, shows an average net margin of 26% for 2018, marginally down on the previous year.

Probably the key element in the lessors' financial performance has been the historically low interest rates in recent years, creating the profit gap between lessor finance costs and lease rates. As the graph right indicates LIBOR one-year rates did move up but are softening again. European central bank policy is for negative interest rates while the Trump Administration is pressurising the Federal Reserve to cut rates. So, absent a surge in inflation, interest rates should be restrained.

LIBOR ONE-YEAR RATES OVER LONG TERM



Lessors ultimately depend on the state on the airline industry. In Europe there has been a stream of airline bankruptcies: Air Berlin, Monarch, Germania, Thomas Cook UK, XL Airways, Wow, Flybmi, Aigle Azur, Adria; and others have teetered on the edge — Norwegian, Alitalia. The concern is that this weakness could filter through to other markets, notably Asia and South America, where Jet Airways and Avianca Brazil have already failed. Airlines like Norwegian and Lion Air which have placed mega-orders in part for leasing purposes are particularly vulnerable. Inevitably, surplus aircraft will have to be re-cycled, probably depressing second-hand prices for some types.

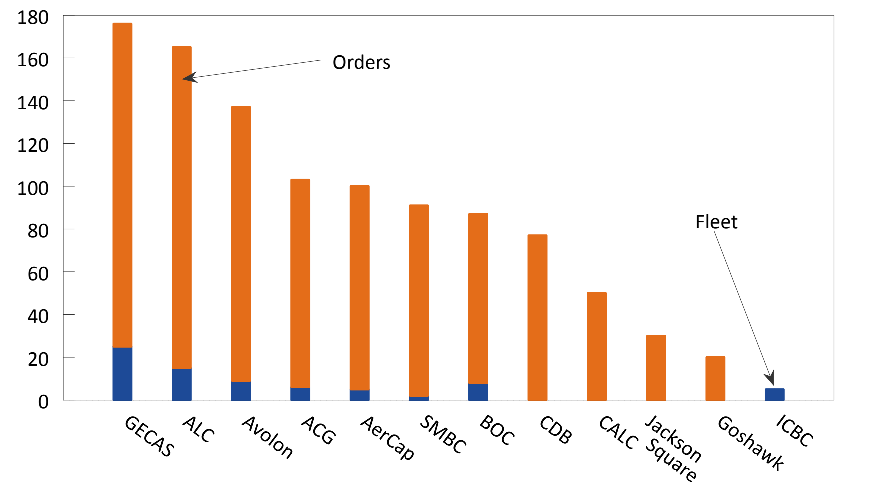
IATA's mid-year estimate of airline industry ROIC in 2019 is 7.4%, better than the historical average, but down from 7.9% in 2018, and well below the peak of 9.7% in 2015 and 2016. EBIT forecasts indicate a decline in all in regions: North American airlines' EBIT margin in 2019 is put at 8.8% compared to a peak of 14.4% in 2015; for Europe, 5.1%, compared to a peak in 7.9% in 2017; Asia/Pacific, 3.1% against 7.4% in the peak year of 2016; South America, 3.9%, against 6.2% in 2017; in the Middle East, a loss of -2.1% against an overall profit margin of 6.3% in 2015

Fuel prices are down 16% over the past year, at around \$80/bbl for Jet A, and are 40% below the 2013 peak. But this is not necessarily good news for

SUMMARY FINANCIALS (US$bn)

	2018			2017		
	Revenues	Net Profit	Margin	Revenues	Net Profit	Margin
GECAS	4.9	1.2	24%	5.1	1.4	27%
AerCap	4.8	1.0	21%	4.2	1.1	26%
Avolon	2.6	0.7	27%	2.3	0.6	24%
BOC	1.7	0.6	36%	1.4	0.6	42%
ACG	1.1	0.3	25%	1.0	0.1	12%
Aircastle	0.9	0.2	28%	0.9	0.1	17%
Total	**15.9**	**4.0**	**25%**	**14.8**	**3.9**	**26%**

LESSOR EXPOSURE TO 737 MAX



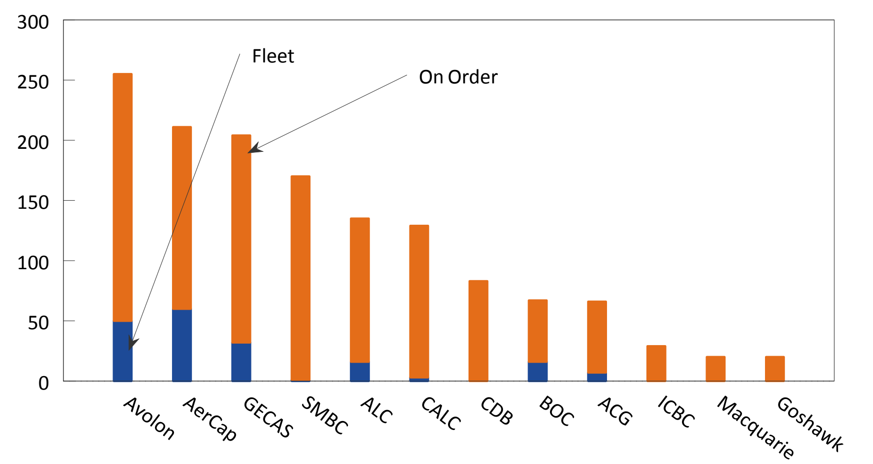
those lessors that have paid premium prices for new fuel-efficient types.

The 737 MAX situation is a major concern for lessors which have 966 units on order, about 20% of the total orderbook. The most exposed lessors are GECAS, Air Lease Corp, Avolon and Aviation Capital Group, all of which have parked aircraft as well as outstanding orders. Presumably, PDPs to Boeing will have been frozen or at least adjusted, but it is unclear whether all the airline lessees are making their payments to the lessors.

Conversely, the A320/321neo lessors appear to be well positioned, at least until the WTO judgement on US countervailing tariffs as response to Airbus alleged subsidies. Avolon. AerCap, GECAS and SBMC are the big players in the neo market.

Looking at portfolio trends, GECAS and AerCap — the "Big Two" lessors — continue to lose market share (based on our survey lessors with a portfolio of more than 100 owned or managed jet aircraft) as the Chinese lessors expand.

LESSOR EXPOSURE TO A320/321neo



GECAS and AerCap's joint share of the total 100+ lessor fleet has fallen to 29.0% this year compared with 45.6% as of five years ago. Similarly, in terms of outstanding orders from lessors, the Big Two's share has fallen yet again, to 25%, which is down 3.5% in just 12 months (and compares with a 35% share as of 2014).

This is due partly to continued trimming of the fleet by GECAS and AerCap (with the former potentially up for sale as well), and partly to aggressive growth by other, mostly Chinese, lessors.

The fastest risers in this year's table are BBAM (up by 89 aircraft year-on-year), and ICBC Leasing (up by 81), and ICBC and the other lessors controlled by Chinese interests (Avolon, BOC Aviation, CDB Leasing, BoCom Leasing, Goshawk Aviation and China Aircraft Leasing Company) continue their collective charge. Those seven Chinese lessors now account for 25.6% of the global leasing fleet, compared with just 6.6% as of 2014.

The overall fleet stands at 7,831 aircraft — some 445 units higher than a year ago (see *Aviation Strategy,* October 2018).

However, it's a different story in terms of outstanding orders (from lessors with 100+ aircraft). The overall order book has actually fallen by 78 aircraft in 12 months, to a total of 2,405 units as of today, which is due to significant reductions by the Big Two, Air Lease Corporation and a number of others.

As usual, over the following pages *Aviation Strategy* profiles all lessors that own or manage more than 100 jet aircraft, in descending order of portfolio size.

MAJOR LESSORS

	Portfolio		Orders			
Company	**Total**	**Change∗**	**Boeing**	**Airbus**	**Total**	**Change∗**
GECAS	1,230	-60	155	174	329	-46
AerCap	1,042	-18	122	151	273	-60
Avolon	530	-32	137	240	377	+68
BBAM	510	+89				
SMBC Aviation Capital	425	-6	89	169	258	+56
ICBC Leasing	386	+81		29	29	-15
Air Lease Corporation	361	+41	183	157	340	-53
BOC Aviation	337	+13	87	55	142	-18
Aviation Capital Group	310	+15	97	60	157	-18
Dubai Aerospace Enterprise	298	-4		2	2	+2
Aircastle	283	+43				
ORIX Aviation	250	+25				
Carlyle Aviation Partners	241	+41				
CDB Leasing	231	+11	77	83	160	-14
Boeing Capital Corp	200	+10	32		32	+32
Macquarie AirFinance	195	-1		60	60	
Jackson Square Aviation	195	+44	30		30	
BoCom Leasing	190	+30				
Goshawk Aviation	186	+54	20	20	40	
Castlelake Aviation	150	+30				
China Aircraft Leasing Company	145	+38	50	126	176	-12
Standard Chartered Aviation Finance	136	+1				
Total	**7,831**	**+445**	**1,079**	**1,326**	**2,405**	**-78**

Note: This table includes jet lessors with at least 100 owned or managed aircraft; we exclude entities set up solely to manage the leasing activities of a specific airline. ∗ from 12 months ago

General Electric Capital Aviation Services (GECAS)

Based in Dublin and with 22 offices around the world, GECAS is still the world's largest lessor, although its fleet has been trimmed yet again, to 1,230 aircraft — 60 fewer aircraft than 12 months ago.

The vast majority of the portfolio are narrowbodies, with only 150 widebodies that now represent around 30% of the overall portfolio value, compared with 43% a year ago.

Ominously, GECAs is the most exposed of any lessor to the 737 MAX. The current fleet includes 29 737 MAXs, of which 25 are leased to clients, but GECAS says that the 737 MAX issue cost it \$0.6bn in reduced cash flow during the first half of 2019, and the lessor estimates that if the MAX remains grounded this will hit cash by \$0.4bn in each of the two remaining quarters of the year.

Crucially perhaps, GECAS has the largest outstanding order book of any lessor for the model — for 151 units — and additionally it has commitments to acquire a further 19 through purchase and leaseback contracts with airlines.

Overall, the outstanding order book has been cut back by 46 to 329 aircraft — which means that after being overtaken in 2018 as the lessor with the most orders, it has now dropped to third in the order table.

Perhaps this is related to reports last autumn that GE had hired Goldman Sachs to carry out a strategic review of GECAS, including the option of a sale. Rumours have swirled that private equity or various other Top 10 lessors are contemplating a bid, but no-one has yet made a move (at least publicly), and for the moment GECAS is not in play.

✈ www.gecas.aero.

MAJOR LESSORS: ORDERS BY TYPE

	Narrowbody						Widebody							
	737 MAX	A220-300	A320ceo	A320neo	A321neo	Total	777-300ER	777F	787-9	787-10	A330-900	A350-900	A350-1000	Total
GECAS	151		2	126	46	325				4				4
AerCap	95			94	57	246			27					27
Avolon	128			150	55	333			9		25	10		44
BBAM														
SMBC	89			136	33	258								
ICBC				18	11	29								
Air Lease Corp	150			8	111	269			9	24	19	9	10	71
BOC Aviation	79			33	18	130	3		5		2	2		12
ACG	97			48	11	156						1		1
Dubai Aerospace												2		2
Aircastle														
ORIX														
Carlyle														
CDB Leasing	77			55	28	160								
BCC								1	22	9				32
Macquarie AirFinance		40		20		60								
Jackson Square	30					30								
BoCom Leasing														
Goshawk Aviation	20			20		40								
Castlelake														
China Aircraft Leasing Co	50			116	10	176								
Standard Chartered														
Total	**966**	**40**	**2**	**824**	**380**	**2,212**	**3**	**1**	**72**	**37**	**46**	**24**	**10**	**193**

AerCap

AerCap too has eased back its portfolio again over the last year, by 18 aircraft to a total of 1,042, of which 949 are owned and 93 managed. In the 2nd quarter of 2019 AerCap sold 22 aircraft with an average age of 16 years, and so the average age of the owned fleet also continues to fall; it now stands at 6.2 years as at the end of June.

That portfolio includes just five 737 MAXs, while AerCap is the world's largest widebody lessor, with 265 aircraft in all major types (including 83 owned 787s).

The lessor is also headquartered in Dublin, with offices in Abu Dhabi, Amsterdam, Los Angeles, Seattle, Singapore, Shannon, Shanghai and Toulouse.

AerCap is having a good 2019 so far; in the second quarter of the year net income rose 30.4% to $331.5m, and it has been buying back equity; up to July 24th it bought 7.2m shares for $337m.

AerCap's outstanding orders have fallen even faster than GECAS's — down 60 in 12 months to stand at 273 today, though that includes a hefty 95 737 MAXs.

✈ www.aercap.com.

Avolon

70% owned by China's Bohai Leasing (part of the Chinese conglomerate HNA Group) and 30% by Japan's ORIX Corporation, Avolon's portfolio of 530 owned and managed aircraft is some 32 units lower than 12 months ago, thanks to ongoing sales. The fleet is placed with 149 clients in 60 countries.

Although lease revenue rose 7% to $678m in the second quarter of 2019, profit fells 26% to $185m, due partly to charges for amending debt facilities and refinancing activities.

Based in the world's leasing capital, Dublin, Avolon also operates from New York, Florida, Dubai, Shanghai, Singapore and Hong Kong.

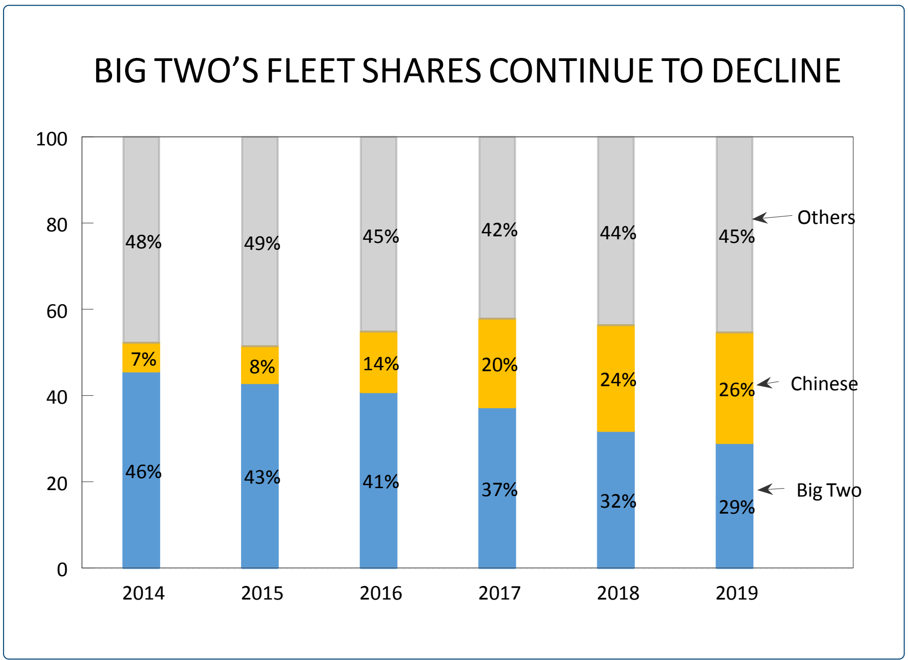
The lessor owns just nine 737 MAXs, but has a significant 128 on order, out of a total order book of 377 — some 68 units higher than 12 months ago, and now making it the lessor with the largest amount of outstanding orders.

✈ www.avolon.aero.

BBAM

The largest fleet increase in our table comes from BBAM, with 89 aircraft added over the last 12 months, to a total portfolio of 510 (all of which are managed) that are leased to more than 90 airlines around the world.

The increase was due largely to a $1.2bn deal by BBAM-managed entities (FLY leasing, Incline B Aviation and Nomura Babcock and Brown)



to acquire Asia Aviation Capital, the leasing arm of AirAsia, in 2018, which included 84 aircraft (79 of which are leased by AirAsia).

BBAM's portfolio covers no less than 26 different models, including 10 A321neos and 13 737 MAXs, but — for the moment — it remains the largest lessor not to have any aircraft on outstanding order.

BBAM's head office is in San Francisco and the lessor also has offices in New York, Santiago, Dublin, Zurich, Singapore, Puerto Rico, and Tokyo. BBAM is owned 35% by the Onex Corporation — a Canadian private equity company — 35% by its management and 30% by GIC, Singapore's sovereign wealth fund.

✈ www.bbam.com.

SMBC Aviation Capital

SMBC Aviation Capital's fleet has nudged back by six aircraft over the last year, to a portfolio today of 265 owned and 160 managed aircraft (of which 12 are 737 MAXs and two A321neo models).

The lessor's strategy is to "invest in the most liquid, investor friendly assets with continuous trading through the cycle", and as a result the portfolio has an average age of under 4.5 years.

In its last full financial year (the 12 months ending March 2019), the lessor saw an 8% increase in profit before tax, to a record $344m.

SMBC is owned by the Sumitomo Mitsui Banking Corporation and in based in Dublin, with other offices in Tokyo, New York, Amsterdam, Hong Kong, Beijing, Shanghai, Singapore, Toulouse and Miami.

In December 2018 SMBC placed an order for 65 A320neo family aircraft, for delivery between 2023-2025, and its current order book stands at 258 (56 higher than a year ago), including 89 737 MAXs.

✈ www.smbc.aero.

ICBC Leasing

Owned by the Industrial and Commercial Bank of China, ICBC Leasing's charge up the leasing table continues as an extra 81 aircraft in 12 months now gives it a portfolio of 386.

The majority of its fleet are narrowbodies (mostly A320 family and 737 aircraft), although it also has 57 widebodies.

ICBC Leasing is based in Beijing and has other offices in Tianjin and Dublin. It has outstanding orders for 29 aircraft (15 less than last year).

✈ www.icbcleasing.com.

Air Lease Corporation

Air Lease Corporation continues its strategy of growing the portfolio, adding 41 aircraft in 12 months and bringing its portfolio to 361, of which 297 are owned and 64 managed. The owned fleet includes eight 737-8 MAXs and 23 A321neos.

ALC is based in Los Angeles, Dublin and Hong Kong, and in the first six months of 2019 its revenue rose by 20% to $937m, with net profit up 16% to $262m.

The average owned fleet age is well under four years, and the total portfolio is placed with 100 airlines in 57 countries. By net book value the largest market for ALC continues to be the Asia/Pacific region, at 41.5% (with 17.3% coming from Chinese airlines), followed by Europe with 28.7% and the Middle East and Africa with 12.5%.

In June 2019 ALC signed an MOU with Airbus to launch the A321 XLR aircraft and to order the A220 aircraft, giving it the right to purchase 27 A321 XLRs and 50 A220s. ALC has converted orders for 15 737 MAXs to five 787-9s, but still has a whopping 150 737 MAXs on order. Its order book now stands at 340 — 53 fewer than 12 months ago.

✈ www.airleasecorp.com.

BOC Aviation

BOC Aviation increased its portfolio by 13 units over the last year, and it now owns 314 aircraft, with another 23 managed.

The portfolio has an average age of less than four years and it's placed with 92 airlines in 40 countries. The owned portfolio includes six 737 MAXs, but 79 more are on order, and the lessor says that "some or all of our 23 remaining 737 MAX aircraft that are scheduled for delivery in the second half of 2019 will be delayed out of this year, and we are working with Boeing on a revised delivery timeframe". Altogether it has 142 aircraft of all types on order, some 18 fewer than last year.

The most important market for BOC is — of course — China (defined as the mainland, Hong Kong, Macau and Taiwan), which accounts for 31% of its portfolio by net book value, followed by Europe (27%), Asia-Pacific excluding China (22%), the Middle East and Africa (12%) and the Americas (8%).

In the first half of 2019 BOC's revenue rose by 13% to US $930m, with net profit up 8% to $321m. Owned by the Bank of China, BOC Aviation has a head office in Singapore and offices in Dublin, London, New York and Tianjin.

✈ www.bocaviation.com.

Aviation Capital Group

Majority-owned by US insurance group Pacific Life, Aviation Capital Group's portfolio totals 310 — an increase of 15 aircraft over the last 12 months.

In H1 2019 ACG's revenues increased by 18% to $558m, with net profits up 8% to $145m. By book value, the Asia-Pacific region is by far its most important market, accounting for 41.6% of the portfolio, and followed (by some distance) by Europe with 20.2%.

ACG is somewhat exposed to the 737 MAX; prior to the model's grounding in March it had seven of the model on lease to four airline customers, but also has outstanding orders for 97 of the type.

ACG is based in Newport Beach, California and also has offices in Dublin, Beijing, Shanghai, Singapore, Santiago and Seattle. Its order book has fallen by18 aircraft in a year, to stand at 157 units today.

✈ www.aviationcapitalgroup.com.

Dubai Aerospace Enterprise Capital

Dubai Aerospace Enterprise Capital (DAE) has a fleet of 249 owned and 49 managed aircraft; just four fewer than a year ago. The owned fleet has an average age of less than six years, and all but 57 are narrowbodies.

The overall portfolio is placed with 110 customers in 56 countries. The most important market is Asia-Pacific, accounting for 29% of the fleet, followed by the Middle East with 27%, and the single largest customer is Emirates, which on its own accounts for 12% of DAE's fleet.

DAE is based in Dubai and has offices in Dublin, Singapore, Miami, Seattle and New York, and in the first half of 2019 the revenue of its parent — the DAE Group (which also has an engineering division) — rose by 16% to US $727m, with net profit up 2% to $197m. It has outstanding orders for just two aircraft.

✈ www.dubaiaerospace.com.

Aircastle

Aircastle's portfolio grew again over last 12 months, by 43 aircraft to a total of 283 aircraft, of which 268 are owned and 15 are managed.

In the first half of 2019 Aircastle acquired 24 narrowbodies for $770m, and is committed to buying another 16 narrowbodies in the second half of 2019, for around $404m. Those 40 aircraft have an average age of approximately 8.7 years, and underlines the lessor's continuing strategy of specialising in older aircraft; as at the end of June 2019 the owned portfolio had an average age of 9.5 years. However, in its latest update Aircastle says that the "fleet has shifted towards the most liquid, in-demand aircraft", which significantly reduces fleet risk.

The lessor is based in Stamford, Connecticut, with offices in Dublin and Singapore. In the first half of 2019 Aircastle posted revenue of $390m — 4.4% up on H1 2018 — but net profits of $66m were down 39% year-on-year, due to a combination of lower gains from the sale of aircraft, higher depreciation and higher interest expense. It has no outstanding orders.

The portfolio is leased to 89 customers in 47 countries globally. By net book value, India is now its largest market (13.2%, with 31 aircraft placed there), followed by Chile (7.6%, 10 aircraft); Indonesia (6.4%, 15) and Russia (6.1%, 12).

✈ www.aircastle.com.

ORIX Aviation

Based in Dublin and with offices in Hong Kong and Tokyo, ORIX Aviation is owned by the Japanese financial services group Orix Corporation.

Over the last 12 months it has added 25 aircraft, bringing its owned and managed portfolio to 250 (the majority of which are narrowbodies), and continued growth is a clear strategy. In March this year James Meyle, ORIX Aviation CEO, said the lessor was targeting a portfolio of between 300 and 400 aircraft by March 2021, although it has no aircraft on order.

✈ www.orixaviation.com.

Carlyle Aviation Partners

After the Apollo Aviation Group was bought by giant US private equity company The Carlyle Group in December 2018, the lessor changed its name to Carlyle Aviation Partners.

The Apollo strategy of growth appears not to be changing under the Carlyle regime, with 41 aircraft added to the portfolio over the last 12 months, to 241 aircraft.

Based in Miami and with offices in Dublin and Singapore, the lessor's portfolio of mostly narrowbodies is placed with more than 100 airlines in 57 countries. No aircraft are on order.

✈ www.carlyle.aero.

CDB Leasing

CDB Leasing has added 11 aircraft to its fleet in the last year, bringing its portfolio total to 231 aircraft, of which 226 are owned and just five managed. All but 38 are narrowbodies, and the total fleet has an average age of less than five years

The portfolio is leased to 56 customers in 29 countries. most of which are in the Asia/Pacific region. CDB is based in Dublin and with offices in Hong Kong and Fort Lauderdale, and is owned by the China Development Bank.

It has 160 aircraft on order, including 77 737 MAXs.

✈ www.cdbaviation.aero.

Boeing Capital Corporation

Based at Renton, Washington, Boeing Capital Corporation (BCC) is a lender of last resort finance for all Boeing equipment.

We estimate BCC's portfolio of fully- and partially-owned aircraft stands at around 200 aircraft — 10 higher than 12 months ago.

At the end of June 2019, the net value of BCC's portfolio's value was \$2.9bn — some \$600m lower than the value a year previously, while in the first six months of 2019 BCC's revenues rose 2.9% year-on-year to \$141m. Boeing lists BCC as having 32 aircraft on order, all of which are widebodies.

✈ www.boeing.com.

Macquarie AirFinance

Macquarie AirFinance's portfolio has been trimmed by just one aircraft in 12 months, to stand at 195 today — all of which are owned.

Although most of the portfolio are narrowbodies. the lessor has no exposure to the 737 MAX,

The portfolio is placed with 88 customers in 48 countries, with the largest market being the Asia/Pacific region (where 69 aircraft are leased), followed by Europe (60 aircraft) and Central and South America (23).

Macquarie AirFinance is based in Dublin and has offices in London, Singapore and San Francisco. The lessor is a subsidiary of the finance giant Macquarie Group, although Dutch pension fund PGGM bought a 25% stake in the lessor in May this year. It has 60 aircraft on outstanding order.

✈ www.macquarie.com.

Jackson Square Aviation

Jackson Square Aviation is growing fast, with its portfolio of 195 growing by 44 aircraft over the last year. The fleet's average age is less than four years, and 90% of the portfolio are narrowbodies. Aircraft are placed with 49 customers in 28 countries. It has 30 aircraft on order, all of which are 737 MAX-8s.

JSA is based in San Francisco, with other offices in Dublin, Toulouse and Singapore, and the lessor is a subsidiary of Tokyo-based Mitsubishi UFJ Lease & Finance Company. Earlier this year Mitsubishi agreed a deal to buy Deucalion Aviation Funds, the aviation arm of Germany's troubled DZ Bank, which has a portfolio of just under 100 narrowbodies and widebodies. The deal is expected to close in the second half of 2019, and these aircraft are not in our table.

✈ www.jsa.com.

BoCom Leasing

BoCom Leasing is a subsidiary of the Bank of Communications (one of China's largest banks). Headquartered in Shanghai and with an office in Beijing, its portfolio of mostly narrowbodies has increased by an estimated 30 aircraft over the last year to 190 units. It has no orders.

✈ www.bocommleasing.com.

Goshawk Aviation

Goshawk Aviation continues its rapid growth as it moves towards its goal of an IPO, adding 54 aircraft over the last year, most of which came from the acquisition of the Irish subsidiary of San

Outstanding orders from smaller lessors

	Boeing	Airbus	Total
Alafco	40	70	110
Timaero Ireland	20	20	40
Lease Corporation International		20	20
Accipiter Holdings		20	20
Ilyushin Finance		14	14
Hong Kong International Aviation Leasing	6	1	7
GTLK		6	6
Novus Aviation Capital	4		4
	70	**151**	**221**

Francisco-based Sky Leasing last year, which added 51 aircraft.

Its current portfolio of 186 (most of which are narrowbodies) is placed with 63 airlines in 33 countries. Owned by Hong Kong-based shareholders, Goshawk is based in Dublin and has offices in Hong Kong, Shanghai, London and Miami. It has 40 aircraft on order, including 20 737 MAXs.

✈ www.goshawk.aero.

Castlelake Aviation

Castlelake Aviation now has a portfolio of 150 narrowbodies and widebodies — an increase of 30 in 12 months. The lessor is based in Minneapolis and has offices in Dublin, London, Singapore and Luxembourg, and its portfolio is placed with 80 customers. It has no orders.

✈ www.castlelakeaviation.com.

China Aircraft Leasing Company

Hong-Kong based China Aircraft Leasing Company (CALC) is also growing fast, with an extra 38 aircraft bringing its owned and managed portfolio of mostly narrowbodies to 145 — which have an average age of under four years.

Listed on the Hong Kong stock exchange and with eight offices across the word (only one of which is outside Asia — in Dublin), CALC has an ambition of a 365-strong portfolio by 2023. Most of the additions will come from a 176-strong order book (including 50 737 MAXs), which is 12 down on last year.

✈ www.calc.com.hk.

Standard Chartered Aviation Finance

Standard Chartered Aviation Finance's fleet has grown by just one aircraft in a year, to 136 units — all but 10 of which are narrowbodies.

The lessor is headquartered in Dublin, has offices in New York, Hong Kong, London and Singapore, and its portfolio is leased to more than 30 customers. It has no orders.

✈ www.sc.com.

Other lessors

Lessors with portfolios of less than 100 aircraft but with outstanding orders include **Alafco** (majority owned by the Kuwait Finance House), which has orders for 40 737 MAXs, 58 A320neos, 10 A321neos and two A350-900s.

Waiting for outstanding deliveries in Dublin are **Timaero Ireland,** with orders for 20 A320neos and 20 737 MAXs and **Lease Corporation International,** with 17 A220-300s and three A220-100s on order.

Dublin-based **Accipiter Holdings** (owned by Hong Kong's CK Asset Holdings) ordered 20 Airbus A320neos at this year's Paris air show, for delivery from 2024

Russia's **Ilyushin Finance** has 14 A220-200s on order, while **Hong Kong International Aviation Leasing** has six 777Fs and an A330-300 on order.

Russian state-controlled leasing company **GTLK (**based in Dublin) has six A220-300s on order, while in November 2018 Dubai's **Novus Aviation Capital** ordered four 777-300ERs.