Aviation Strategy

Issue no. 245

April 2019

JetBlue to make a Mint on the Atlantic?

LONG-AWAITED as the next logical development, JetBlue finally in April announced it would start services on the Atlantic. It has converted 13 of its order for 85 A321neos to the long range version and aims to serve a handful of destinations in Europe from its focus cities of New York and Boston. The hybrid low cost carrier has been a disruptive but successful force in the US market: could it have a similar impact on the oligopolistic Atlantic?

Passengers will still have to wait a bit more before before bookings become available: the new aircraft will not be delivered until 2021; the airline will have to get ETOPS certification; JetBlue will have to decide on the destination airport, and get the slots to be able to operate a reasonable service.

The long range version of the A321neo has been described as a game-changer: offering narrow-body operational efficiency at seat costs similar to new generation widebodies. Airbus' specifications show a maximum range of 4,000nm with typical capacity of 200 seats — slightly longer range than the older generation 757 — which nominally would bring most of Western Europe within range from Boston and New York. And it would do so with trip costs some 27% lower than the 757.

However, in practical terms on the Atlantic the realistic range for year round operations is likely to be somewhat shorter. The additional range is achieved by the use of an additional auxiliary fuel tank in the belly of the aircraft the modifications for which which adds weight and removes space available for passenger bags and cargo. In addition, the aircraft cruises at mach 0.78, some 10% slower than an A330 or 787.

A321LR RANGE FROM BOSTON AND NEW YORK

This issue includes

As part of the testing process Airbus proudly announced last year that the aircraft achieved the longest single-aisle flight of 4,750nm from Mahé to Toulouse — albeit with 162 dummies on board and taking over 11 hours.

Getting the necessary

Robin Hayes, CEO of JetBlue, speaking at the UK Aviation Club on the day of the announcement, was fairly confident that the airline will get the ETOPs certification by the time the aircraft are delivered in 2021. He was less certain about sharing which destinations on this side of the pond he would target.

In a presentation at the com-

Aviation Strategy

ISSN 2041-4021 (Online)

This newsletter is published ten times a year by Aviation Strategy Limited Jan/Feb and Jul/Aug usually appear as combined issues. Our editorial policy is to analyse and cover contemporary aviation issues and airline strategies in a clear, original and objective manner. Aviation Strategy does not shy away from critical analysis, and takes a global perspective — with balanced coverage of the European, American and Asian markets.

Publisher:

Keith McMullan
James Halstead

Editorial Team

Keith McMullan
kgm@aviationstrategy.aero

James Halstead
jch@aviationstrategy.aero

Tel: +44(0)207-490-4453

Subscriptions:

info@aviationstrategy.aero

Aviation Strategy Ltd
Registered No: 8511732 (England)
Registered Office:
137-149 Goswell Rd
London EC1V 7ET
VAT No: GB 162 7100 38
ISSN 2041-4021 (Online)

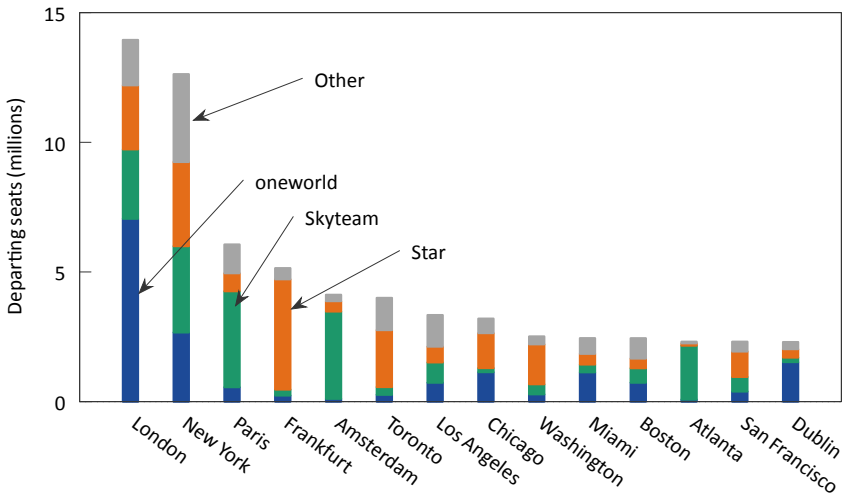
A321LR RANGE FROM DUBLIN

pany's Investor day in 2016 the company had highlighted that it was present in 39 out of the top 50 domestic and international destinations from Boston with London, Paris and Dublin marked as "not currently served". Given that London and New York are by far the largest gateways on the Atlantic it would be surprising not to try services to London.

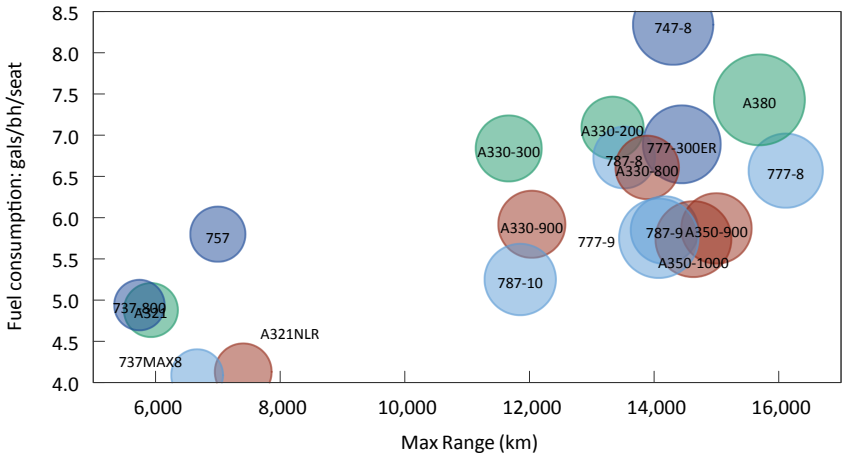
On the company's Q1 results conference call, Hayes described London as "the biggest metropolitan area we don't serve" from its main hubs and said that the decision to launch service to the UK capital was "really about making our focus cities in Boston and New York more relevant." He characterized the move into transatlantic service as "developing mature focus city markets" rather than just adding more destinations to JetBlue's network, and added, "The investment community should be pleased about that."

Somewhat more difficult may be the ability to acquire the relevant slots. He stated that "we're keeping details under our hat for now in terms of where exactly we're thinking of flying into in London, but we're very confident that we have a path into more

TOP ATLANTIC GATEWAYS



AIRCRAFT OPERATING COMPARISON

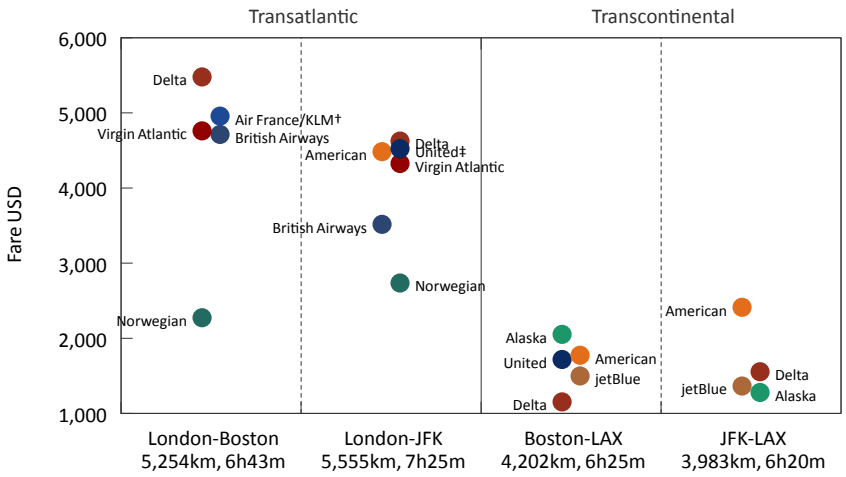


Source: Airline Monitor. Notes: Area of bubble directly related to number of seats ("Standard" three class configuration). Consumption figures estimated for A330-800/900, A350-900/1000, 787-10, 777-8/9.

than one London airport".

However, Heathrow — the airport of preference — is full, and Gatwick virtually so, and because of the 1992 EU slot allocation rules (which have been "high" on the agenda for review since 2013) it may be take some time to acquire the necessary portfolio of year round slots: if the company were to use all 13 A321s on London it may imply a need for six daily slot pairs. "We'll bring the airplanes", he said, "we'll bring the low fares, we'll bring the service. We'll bring everything else. The thing we can't bring are the slots. But make those slots available to new entrants like JetBlue, and you will see a profound and dramatic effect with lower fares in the market."

BUSINESS CLASS RETURN FARE SAMPLE



Notes: Non-stop return fares in business class for travel end May 2019. †Operated by Delta. ‡To Newark
Source: Skyscanner.net, 26 Apr.

As well as London he mentioned that Paris was of interest and that Amsterdam also on the radar, although he said that for the Dutch capital he had been told that there would be no slots available there "for the foreseeable future". Just to keep everyone guessing what the real plans are, he also mentioned that the A321 could also ideally be used to access routes to regional airports in the UK and Europe, saying: "There's gonna be a bunch of regional airports both in the UK and in Europe that this airplane will work in and we haven't even started thinking about it yet, because we want to start with the larger airports where our customers in Boston and New York are telling us where we need to prioritise."

In his speech to the Aviation Club, Hayes railed somewhat at the joint ventures on the Atlantic highlighting the oligopolistic nature of the regulatory-inspired market concentration. JetBlue should be used to this environment, battling as sixth largest carrier in the US against the 80% market control by the big three and Southwest. He pointed out, however, that JetBlue had been particularly successful in targeting premium markets with its Mint product on transcontinental services, almost halving competitor business class fares in doing so.

The current Mint service JetBlue operates on transcon services is operated on 159-seat A321s: 12 full lie-flat bed seats (7ft6in bed length) and 4 closed "suites" in the front cabin, 41 standard seats in "Even More Space" cabin (37in-41in seat pitch) and 102 standard seats in the "Core" cabin (33in seat pitch); complimentary food service; seat back IFE with TV and films; AC power at each seat; relatively high speed wi-fi internet access. The company stated that it plans

to reimagine the product offering for the European market.

Will JetBlue's entry onto the Atlantic be disruptive, and more importantly will it be successful? The Atlantic has been a graveyard for many wannabees from the all-business class operations of MaxJet and Silverjet at the top of the last cycle to recent casualties such as Primera (who would have been the launch customer for the A321neoLR), while financially-challenged Norwegian is struggling to make sense out of its foray into long haul low cost.

However, JetBlue is embarking on the venture focused on its strong bases at JFK and Boston; its model is based on point-to-point O&D demand (only 10% of its passengers connect, while New York-London is the strongest O&D market on the Atlantic); and it is planning to operate low capacity aircraft — with only 159 seats to fill it may even be able to make money on a wet Tuesday in February; and the routes will reflect only a small part of its network.

With the currently planned 13 aircraft it could achieve a modest 1.3% share of the seats into London. The Mint product is high quality and has been priced aggressively domestically in the US. Robin Hayes suggested that JetBlue would price similarly on Atlantic routes at around the $590 one way level ($1,180 return) — although there are some higher natural costs on the route.

In the chart on the preceding page we show a snapshot of the lowest business class return fares between Boston and New York and London and Los Angeles for travel at the end of May. To generalise, the fares out of London are more than twice those of the transcon routes. If JetBlue can make inroads into the corporate and SME markets it could be able to offer a highly attractive proposition.

The outlying offer in the chart is the price of tickets in the premium cabin of Norwegian's 350-seat 787-9, which is not really comparable (seven-abreast reclining seats with 40in seat pitch) — but may go some way to explain market leader BA's slightly more competitive offering. (It is somewhat amusing that different members of each joint venture alliance have different price points even on the same aircraft.)

Meanwhile, while JetBlue will have to wait for a couple of years before this becomes a reality, Aer Lingus — with 14 A321neoLR due in on lease from Air Lease Corporation (to be configured with 16 lie-flat business class seats and possibly 135 economy seats) — aims to be starting *its* Atlantic operations using the aircraft this year. It will initially be using them to replace its four wet-leased 757s (which it uses for services from Dublin and/or Shannon to New York, Boston, Philadelphia, Hartford CT and Washington). The remainder it will use for further network expansion (and it boasts the advantage of preboarding immigration controls in Dublin and that there are ten times as many Irish in the US as there are on the island of Ireland).

There are currently some 2,144 A321neos on order (see tables above). Airbus does not distinguish in its order book quite how many of these are for the Long Range variant, but we estimate it to be something around 5% of the total. Other airlines will no doubt convert.

A321neo AIRLINE ORDERS

Airline	In service	On Order
Wizz Air	2	182
Indigo	1	149
Vietjet	7	116
AirAsia		100
Delta		100
American	2	98
THY	5	87
jetBlue		85
Lion		65
Qantas		54
Qatar		50
Lufthansa†		48
Pegasus		43
Viva Aerobus		41
Volaris	5	34
Frontier		34
Cathay		32
Cebu Pacific	1	31
Korean		30
Norwegian		30
Avianca	2	26
Etihad		26
easyJet	5	25
Asiana		25
TAP	6	22
LATAM		19
Gulf Air		17
IAG‡	4	16
Philippine	6	15
Middle East		15
Spring		15
Jetsmart		14
All Nippon	11	11
Aegean		10
Air New Zealand	4	9
Hawaiian	12	6
Others (16)	40	8
Total*	**113**	**1,680**

Source: Airbus.
*Notes: † Lufthansa 40, Swiss 8; ‡ BA 10, Vueling 6, Iberia 4, excludes Aer Lingus 14 to be leased from ALC; * excludes 76 orders and 4 in operation by undisclosed purchasers*

A321neo LESSOR ORDERS

Lessor	In service	On Order
Air Lease Corp	18	121
Aercap	33	59
Avolon		56
GECAS	11	44
SMBC		31
CDB Leasing	2	29
BOC Aviation	3	20
Aviation Capital	10	11
ICBC	2	11
ALAFCO		10
CALC	1	
CIT Leasing	1	
Total	**81**	**392**

THY: Exposure to local and global politics

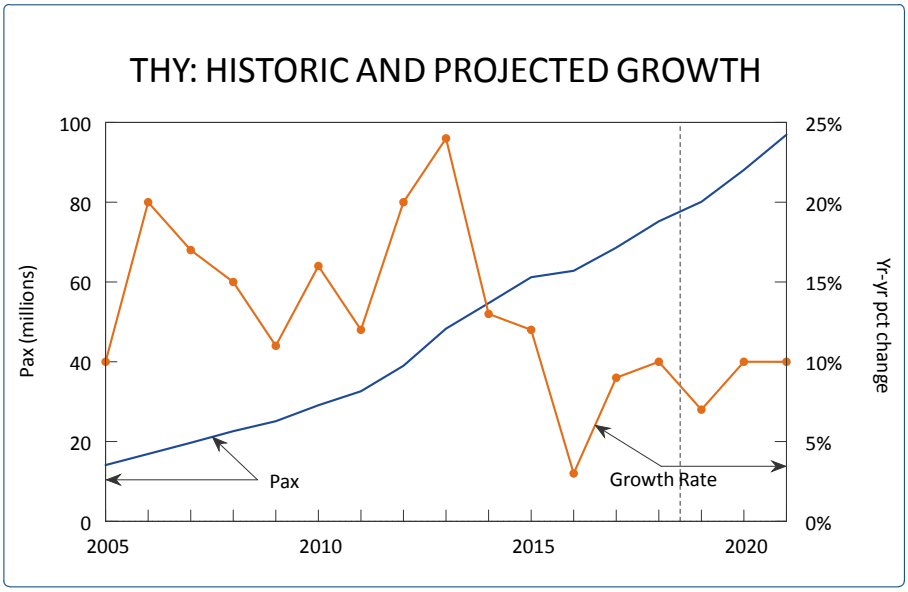
TURKEY has gone through difficult times since the 2016 attempted coup against President Recep Tayyip Erdoğan and the subsequent clamp-down, arrest and sacking of those deemed responsible. THY was itself thrown a little off course: it lost the architect of its development as a global carrier, Temel Kotil, who was transferred to run Turkish Aerospace Industries; it sacked its CFO Coskun Kilic among some 200 other staff; it saw traffic growth plunge from the 15%-20% annual growth in passenger numbers of the previous ten years to a mere 6% in 2016 in which year it registered its first loss for a decade.

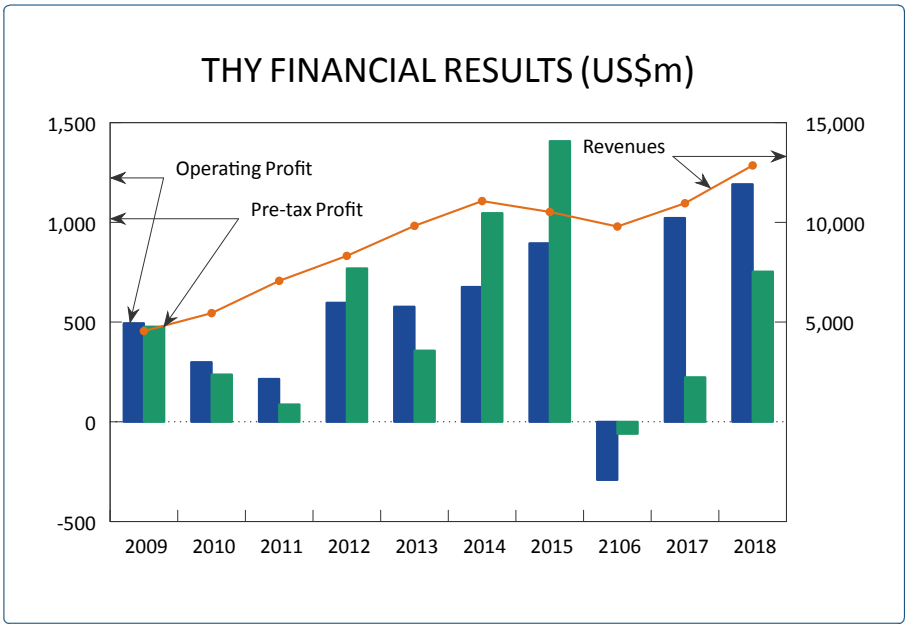
Then there was a constitutional referendum in 2017 which resulted in a material change from Mustafa Kemal Atatürk's secular parliamentary democracy into an executive Presidential system, confirming Erdoğan's grip on the political environment. This severely unnerved international investors and political neighbours — particularly in the EU which at one time had been building towards the idea of Turkey joining the bloc.

Given the events of the last three years, the EU's relationship with the country has deteriorated and Turkey can no longer be regarded as a candidate for inclusion within the EU, even in the remotest sense. This may be damaging for the country's long-term economic prospects.

Equally Turkey's relations with the USA soured badly following the arrests firstly of a US consulate employee and then of an American pastor. There was a tit-for-tat indefinite suspension of non-immigrant visas. In August last year the US Treasury's Office of Foreign Assets Control imposed sanctions on Turkey's Minister of Justice Abdulhamit Gul and Minister of Interior Suleyman Soyluand; and then President Trump imposed punitive tariffs on Turkish exports to the US.

Since 2016, however, THY's fortunes have recovered: in the last two years passenger growth has returned to an annual increase of 10% and it has recorded record levels of operating profit. Its apparently inexorable path to become one of the largest





THY LONG HAUL ROUTE NETWORK

Notes: Equidistant azimuthal projection based on Istanbul: great circle routes appear as straight lines; thickness of lines directly related to annual seat capacity.

global European carriers seems unstoppable.

Indeed, the company's results for 2018 were respectable, despite increases in fuel costs and lira weakness. Total revenues were up by 17% to $12.9bn (with a 15% increase in passenger revenues and a 25% growth in cargo). This was on the back of a modest 5% increase in capacity in ASK terms, 10% growth in the number of passengers and a 9% rise in demand in RPKs giving a 2.8 point improvement in annual load factors to a record 81.9%.

Passenger unit revenues were up by 8.4% (and 10.9% on a like-for-like currency basis) while unit costs increased by 9%. Excluding the impact of a 32% jump in the fuel bill, unit costs grew by 3%.

Given that the company has a substantial 25% of its cost base and only 13% of revenues in Turkish Lire it is strongly cash flow positive in foreign currencies, which in 2018 had the result of boosting profits by over $500m. Total operating profits came in at $1.2bn up by 47% from the prior year's $794 giving a reasonable 9% margin. Net income meanwhile more than trebled to $753m up from $223m in 2017 reflecting a 6% margin.

İstanbul's new airport

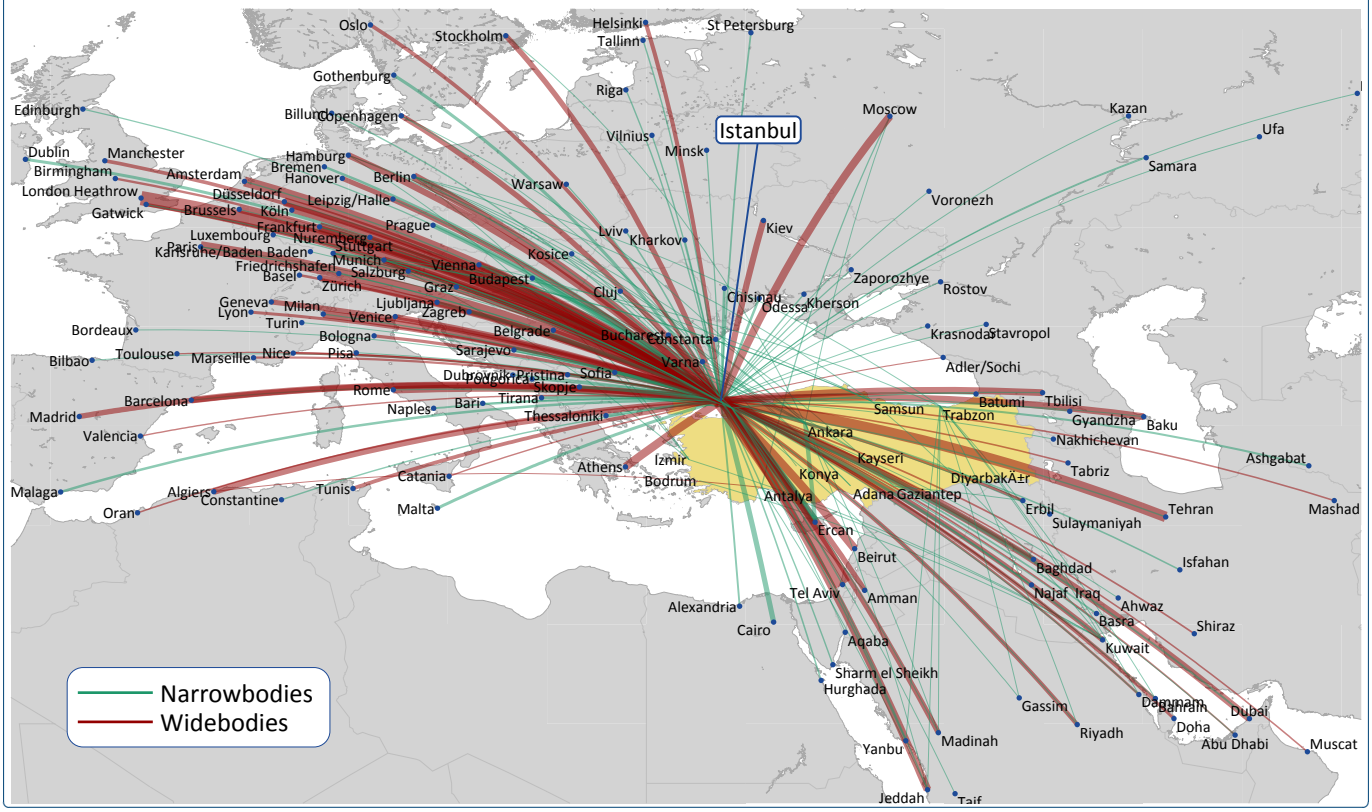
At the beginning of April, THY moved its entire operations in a single day from the old İstanbul Atatürk airport to the newly built İstanbul Grand Airport (İGA).

Atatürk Airport (based at Yeşilköy on the European Aegean coast 24km from the old centre of the city) was full and had limited opportunities to expand. Its throughput in 2018 was nearly 68m passengers, three times the volume a decade earlier, making it the tenth largest international airport and 17th largest airport for total traffic in the world. İstanbul's second airport Sabiha Gökçen (50km from the centre of the city on the Asian side of the Bosphorus) had also been constrained: with a single runway and nominal terminal design capacity of 25mppa it dealt with over 34m passengers in 2018 up from 4m in 2008. A new domestic terminal opened in 2018 and a second runway is due to open this year to enable it to deal with up to 63mppa.

İGA, İstanbul's new airport, is 50km north-west of the city centre on the European side of the Bosphorus near the Black Sea town of Arnavutköy. In its initial phase it has a capacity of 90mppa with a single terminal and two sets of parallel runways. By 2027 it is expected it will be able to expand to encompass eight runways and a second terminal to build capacity to 150mppa, with an ultimate potential envisaged of over 200mppa. On 6th April the IATA code IST was transferred to the new airport and the old, redesignated, limited to charter and cargo flights.

However, this move has come at a time when the Turkish economy is facing a classic debt and currency crisis. Various strange economic attempts from the Erdoğan government, and a distinctly unconvincing Finance Minister Berat Albayrak (who just happens to be Erdoğan's son-in-law), has led to extreme volatility in the exchange rate — at one point last year the lire had halved in value to ₺6.9 to the dollar — while the Central Bank raised interest rates to 24% to

THY SHORT HAUL ROUTE NETWORK

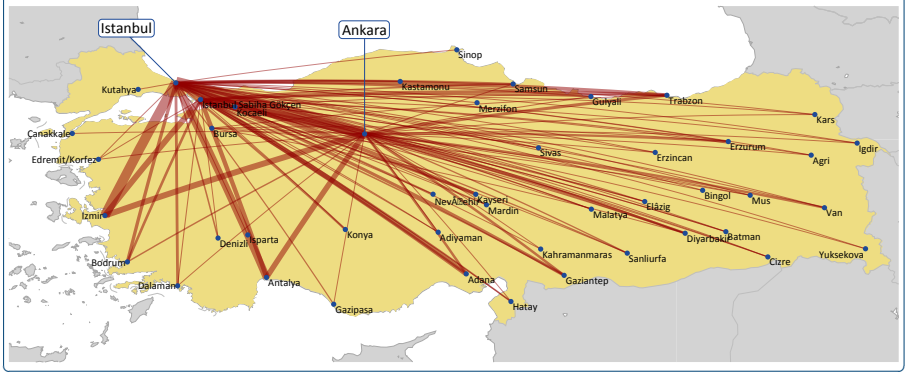


try to stem the weakness. Inflation has been cruising ahead at 20% a year.

In the last two quarters the economy contracted by 1.6% and 2.4% respectively giving annual GDP growth of 2.6%, down from 7.4% in the previous year. The IMF is forecasting a continuing recession for 2019 with GDP expected to fall by 2.5%.

In an attempt to shore up the exchange rate and avoid bank failures Central Bank net foreign reserves have apparently slumped from $35bn in March to $15bn (excluding some $12bn somewhat dubious "off-balance sheet" swaps according to analysis from the *Financial Times*).

THY DOMESTIC ROUTE NETWORK

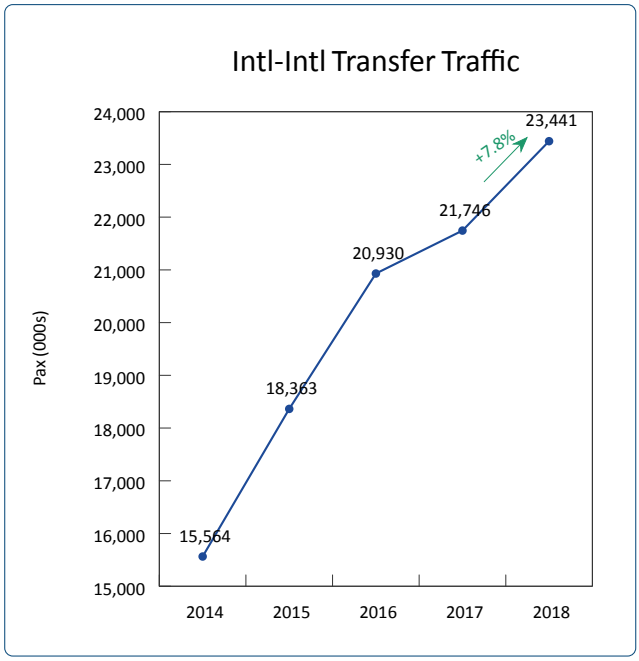


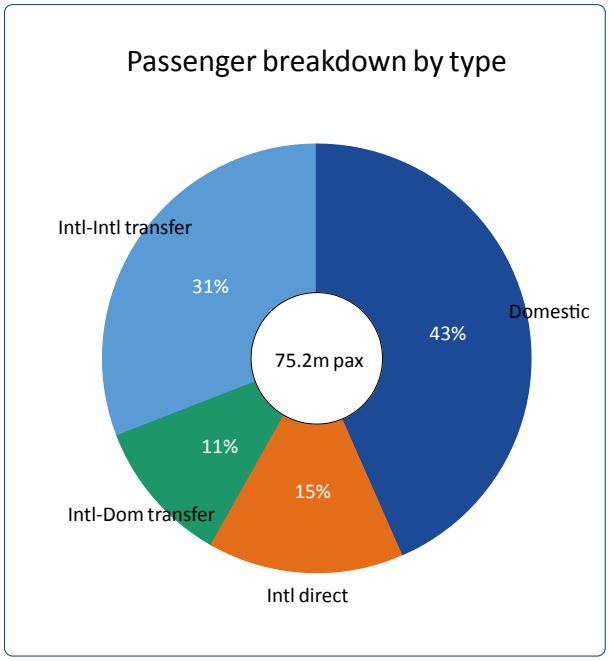
Meanwhile, although Erdoğan's ruling AKP party won the majority of the vote in recent nationwide municipal elections, it lost control in the capital Ankara among other cities and, after multiple contested recounts, in the most populous İstanbul.

But does this matter at all to THY? It does have a large domestic system: 43% of its 75m passengers are carried on domestic routes, but we doubt that it makes any real money operating domestic services (many of the routes operated to the East of the country have a socio-political role and are public obligation routes).

Its *raison d'être* is in building İstanbul as a global super-connector hub to rival the Gulf 3 and 57% of its traffic by passenger numbers are international. As shown in the graphs on the next page, 75% of that international traffic transfers and 56% of

THY: THREE QUARTERS OF INTERNATIONAL PASSENGERS TRANSFER





the international traffic by passenger numbers transfers at İstanbul between international flights.

Unlike the other super-connectors (primarily Emirates) THY's model is based on feed to/from short haul narrowbody flights. It can connect all the airports in Europe, Western India and much of Africa through İstanbul within range of its narrowbody fleet (see map on page 6). It boasts that it flies to 240 cities in 124 countries (excluding the 49 domestic destinations). Unlike Emirates it is not limited in the number of cities it can serve in Europe, and has access to 14 destinations in Germany, 10 in Italy and six in France. It can use narrowbody aircraft into many of the 55 cities it serves in Africa.

Because of this it prides itself on providing the best connectivity respectively from Europe, the Middle East, Africa and the Far East to the rest of the world (see table right).

Fleet

The key to THY's future development is the aircraft fleet (see table on the facing page).

In 2018 it operated a total of 332 aircraft: 92 widebodies incorporating 55 A330s, 4 A340s and 33 777-300s; 218 narrowbodies equally split between 737s and the A320 family; and 22 freighters.

It will be retiring the last of the A340s this year and has in place orders for 25 A350s and 25 787s for delivery over the next five years, partially to replace the older A330s but mostly for growth.

On the short haul fleet it expects to take delivery of 68 737MAX and 90 A321neos over the same period.

It expects its total fleet to reach 476 units by the end of 2023, up by 50% from the 2018 level, and that this fleet growth will generate an annual average increase in seat capacity approaching 10%pa.

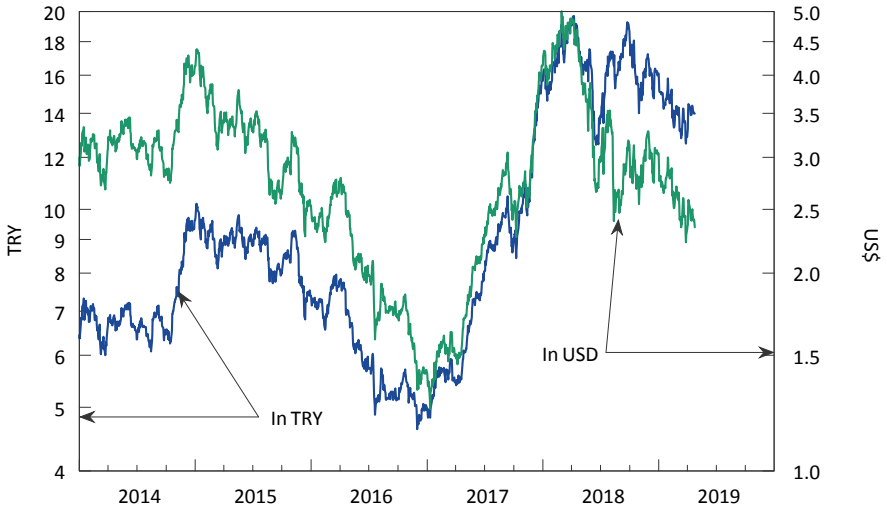
A challenge for the company may be that as it introduces more A350s and 787s it comes into increasing direct competition with established

AIRLINE CONNECTIVITY: TOP THREE BY AREA

	O&D Pairs
Europe to the world	
THY	22,356
British Airways	9,588
Lufthansa	8,004
Middle East to the world	
THY	9,044
British Airways	2,208
Qatar	1,980
Africa to the world	
THY	12,699
Air France	4,585
British Airways	3,043
Far East to the world	
THY	9,504
United	8,700
Air China	5,115

Source: THY presentation

THY SHARE PRICE PERFORMANCE



THY FLEET PLAN

		2016	2017	2018	2019	2020	2021	2022	2023
Widebodies	A330-200	20	18	18	18	13	13	8	5
	A330-300	31	37	37	39	39	39	38	31
	A340	4	4	4					
	777-300ER	32	33	33	33	30	30	30	30
	A350-90					5	9	17	25
	787-9				6	15	21	25	25
	Total	**87**	**92**	**92**	**96**	**102**	**112**	**118**	**116**
Narrowbodies	737-900ER	15	15	15	15	15	15	15	15
	737-9MAX				5	10	10	10	10
	737-800	110	108	99	96	88	86	82	78
	737-700	1	1	1	1				
	737-8MAX			7	19	38	53	65	65
	A321 neo			2	21	39	59	77	92
	A319	13	7	7	6	6	6	6	6
	A320	29	22	19	14	12	12	12	12
	A321	66	68	68	68	66	64	64	64
	Total	**234**	**221**	**218**	**245**	**274**	**305**	**331**	**342**
Cargo	A330F	8	9	10	10	10	10	10	10
	777F		2	5	6	8	8	8	8
	Wet Lease	5	5	7	4				
	Total	**13**	**16**	**22**	**20**	**18**	**18**	**18**	**18**
	TOTAL	**334**	**329**	**332**	**361**	**394**	**435**	**467**	**476**
Seat Capacity % change			0%	-1%	10%	10%	11%	8%	2%

Source; Company reports.

long haul players. The risk is that this undermines its niche position of attacking low volume routes with its narrowbody aircraft that are substantially under the radar of competitors' ambitions.

Competitor objections absent

Somewhat surprisingly, despite THY's phenomenal growth and its positioning as a super-connector leaching traffic from established global international hubs, it has avoided opprobrium from the world's largest airlines.

It has attacked Lufthansa's hinterland to siphon traffic away from Frankfurt and Munich through İstanbul and yet the two carriers have a seemingly fruitful joint venture charter operator in Sun Express and through wet lease arrangements in Eurowings.

However the US major three (American, Delta and United), while they have set up a major campaign through the Partnership for Open and Free Skies to argue that the operations of Emirates, Qatar and Etihad are blatantly unfair, have seemingly ignored the fact that THY is following exactly the same operational model: providing global services that bypass traditional hubs as a government-supported airline. But unlike the Gulf three, while THY is still 49% government owned (and controlled), its shares are listed on the İstanbul exchange and it appears to be run profitably and commercially.

As THY grows along its destined path to global domination, and while Turkey continues to antagonise its trading partners in the EU and the US, the benign attitude towards its growth strategy may change.

Boeing and Airbus: Some financial realities

Fall-out from the 737 MAX crashes has intensified over the past month, with Boeing being subjected to a wide range of criticism, plus speculation about the financial implications, both for Boeing and Airbus.

Some of the financial damage suffered by Boeing was revealed with the first quarter results which saw a 13% fall in net earnings compared to the same period of 2018, though revenues were only down 2%. A relatively modest $1bn was attributed to the 737 MAX grounding but this number relates principally to the cost of reducing the output of the type from 52 to 42 a month while maintaining the previous level of resources at the Renton plant. It did not include compensation claims nor the retraining programmes at the 50 airlines that operate the MAX.

The technological criticism levied is that of over-reliance on the 737 design, which goes right back to 1967, that the 737 MAX was somehow a rushed response to the A320neo, and that the MCAS software was a "patch" to adapt the existing 737 NG airframe to the more powerful LEAP engines installed on the MAX. Some experts have opined that Boeing should, for example, have re-designed the wings of the 737MAX, and the MAX should have been certified as a new type.

Although, as pointed out in the March issue of *Aviation Strategy*, there appears to be a consensus among technical experts that three inter-related factors — one hardware, one software and one human — contributed to the crashes, but the exact causes, and the correct remedies, have yet to be finally determined.

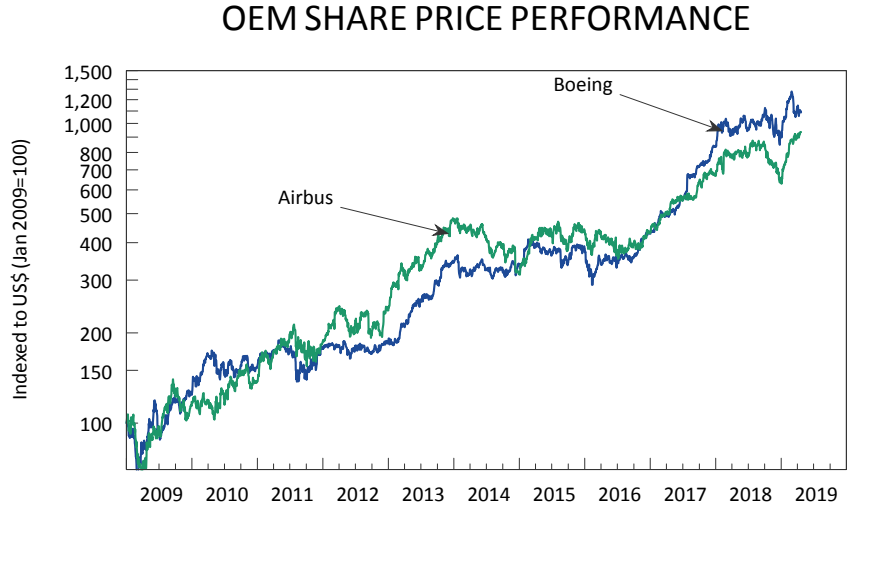
Chairman and CEO David Muilenburg has started to repair the reputational damage, simply by drawing attention to the company's history and re-emphasising its commitment to safety.

Importantly, Boeing has stated that extensive testing of the modified MCAS has taken place as have new transition programmes for flying crews. The date of re-certification by the FAA and other civil aviation authorities is unknown, but the timescale is generally referred to in terms of months.

The technology arguments have morphed into a criticism of Boeing's investment and financial strategy, and some questionable comparisons with Airbus. The narrative is that while Airbus has invested in developing innovative types like the A320 neo (and the A380, it should be added), Boeing's attention was diverted away from technological innovation (which certainly understates the importance of the 787 programme) to focus excessively on profitability and dividends. Richard Aboulafia of TEAL Group, who is a high-profile aerospace analyst and lover of a snappy soundbite, was quoted in *The Economist* as describing Boeing as a "legacy jet manufacturer and distributor of shareholder returns"

The Economist commented further: "Airbus' shareholders are clamouring for it to follow Boeing in handing back more cash through dividends and buy-backs …. Airbus will be tempted to move in the same direction [but] the European firm would be wise to resist this urge and instead consider ploughing money back into the business".

Among the many law suits that Boeing is facing is a class action from



BOEING FINANCIAL DATA

US$bn	2018	2017	2016	2015	2014	2013	2012	Total 2012-18
Total Revenue	101.1	94.0	93.4	96.1	90.7	86.6	71.2	**633.1**
Net Result	10.5	8.4	5.0	5.2	5.4	4.6	3.9	**43.0**
Operating Cashflow	15.3	13.3	10.4	9.4	8.8	8.2	7.5	**72.9**
Capex/Net Investments	-4.6	-2.1	-3.4	-1.8	2.5	-5.1	-3.7	**-18.2**
Free Cashflow	10.7	11.2	7.0	7.6	11.3	3.1	3.8	**54.7**
Increase/Decrease in Debt	1.3	1.4	0.2	1.3	-0.4	0.1	-2.2	**1.7**
Share Buy Backs	*-9.0*	*-9.3*	*-7.0*	*-6.7*	*-6.0*	*-2.8*	*0.0*	***-40.8***
Dividends	*-4.0*	*-3.4*	*-2.8*	*-2.5*	*-2.1*	*-1.5*	*-1.3*	***-17.6***
Total financial Flows	-11.7	-11.3	-9.6	-7.9	-8.5	-4.2	-3.5	**-56.7**
Net Change in Cash	**-1.0**	**-0.1**	**-2.6**	**-0.3**	**2.8**	**-1.1**	**0.3**	**-2.0**
Net Profit Margin	10.4%	8.9%	5.4%	5.4%	6.0%	5.3%	5.5%	**6.8%**
Cashflow margin	15.1%	14.1%	11.1%	9.8%	9.7%	9.5%	10.5%	**11.5%**
Capex/Investments as % of Operating Cashflow	30.1%	15.8%	32.7%	19.1%	-28.4%	62.2%	49.3%	**25.0%**
Share Buy Backs/ Dividends as % of FCF	121.5%	113.4%	140.0%	121.1%	71.7%	138.7%	34.2%	**106.8%**

Source: Company financial statements. Aviation Strategy analysis.

AIRBUS FINANCIAL DATA

€bn	2018	2017	2016	2015	2014	2013	2012	Total 2012-18
Total Revenue	63.7	59.0	66.5	64.5	60.7	57.8	56.5	**428.7**
Net Result	3.1	2.4	1.0	2.7	2.3	1.5	1.2	**14.2**
Operating Cashflow	2.3	4.4	4.4	2.9	2.6	1.8	3.8	**22.2**
Capex/Net Investments	-1.6	-2.5	-0.8	-3.5	-3.2	-1.6	0.0	**-13.2**
Free Cashflow	0.7	1.9	3.6	-0.6	-0.6	0.2	3.8	**9.0**
Increase/Decrease in Debt	-2.0	1.3	1.7	1.5	1.3	-0.6	3.6	**6.8**
Share Buy Backs	*0.0*	*0.0*	*-0.8*	*-0.3*	*0.0*	*0.0*	*0.0*	***-1.1***
Dividends	*-1.2*	*-1.0*	*-1.0*	*-1.0*	*-0.6*	*-0.5*	*-4.0*	***-9.3***
Total financial Flows	-3.2	0.3	-0.1	0.2	0.7	-1.1	-0.4	**-3.6**
Net Change in Cash	**-2.5**	**2.2**	**3.5**	**-0.4**	**0.1**	**-0.9**	**3.4**	**5.4**
Net Profit Margin	4.9%	4.1%	1.5%	4.2%	3.8%	2.6%	2.1%	**3.3%**
Cashflow margin	3.6%	7.5%	6.6%	4.5%	4.3%	3.1%	6.7%	**5.2%**
Capex/Investments as % of Operating Cashflow	69.6%	56.8%	18.2%	120.7%	123.1%	88.9%	0.0%	**59.5%**
Share Buy Backs/ Dividends as % of FCF	171.4%	52.6%	50.0%	-216.7%	-100.0%	250.0%	105.3%	**115.6%**

Source: Company financial statements. Aviation Strategy analysis.

shareholders claiming that Boeing's safety lapse caused them an unfair loss. While Boeing share price has fallen about 15% from it early 2019 peak, the longer term escalation in Boeing's, and Airbus', stockmarket valuation is remarkable. The graph on page 10 shows a 1,200% increase in Boeing's share price over the past ten years, while Airbus' stock has tracked very closely.

Comparative cashflows at the OEMs

To return the Boeing/Airbus financial discussion to a more objective plane, we have carried out a high-level analysis of the published cashflow accounts of the two OEMs, both constructed under IFRS, for the period 2012-18. The picture that emerges is rather more complex than a trade-off between investment/capex and shareholder returns, and the alleged contrast between Boeing's and Airbus' financial priorities is not really sustainable.

The following comments relate to the numbers presented in the tables on the preceding page opposite (note that Airbus's results have not been converted from euros to dollars, avoiding exchange rate distortions), which summarise the two OEMs' cashflows since the depth of the global recession in 2012. The numbers may seem dry but they reveal an interesting story.

✈ In terms of total revenues, Boeing is by some margin the bigger company, with 2018 turnover reaching a record $101bn, 42% higher than Airbus' (€64bn or $71bn). Also, Boeing's top line has been growing a faster rate than Airbus' — 6% pa against 2% pa during 2012-18. This is slightly surprising given Airbus' reputation for super-aggressive salesmanship under the direction of John Leahy (who retired in 2018). The relatively modest growth in turnover of both companies is indicative of the discounting that both OEMs have used to win orders.

✈ Boeing has been a significantly more profitable company than Airbus, with a net margin averaging 6.8% during 2012-18, more than twice that of its European rival. The last two years have seen a marked improvement in Airbus profits — its 2018 net result was €3.1bn ($3.5bn), a margin of 4.9% but Boeing's reached $10.5bn or 10.4%.

✈ Commercial aircraft account for 75% of Airbus revenues compared to 60% for Boeing. The Commercial EBIT margin at Airbus was 8.9% in 2018 while Boeing achieved 13%. It should be noted that these margins do not correspond to the profitability that might be expected from a profit-maximising duopoly.

✈ The major difference between the two OEMs lies in Boeing's superior ability to generate cash. Operating Cashflow — ie, profits plus depreciation and amortisation, changes in inventories, creditors and debtors, etc — is huge at Boeing — $15.3bn in 2018, a margin on revenues of 15.1% in contrast to just €2.3 ($2.6bn) or a margin 3.6% at Airbus. Over the 6-year period under review Boeing produced almost three times as much cash as Airbus. It would appear that the "normalisation" of Airbus into a streamlined, commercial company from a complicated, heavily politicised, national work-sharing entity — the strategy instigated by Tom Enders — has some way to go. His successor as CEO, Guillaume Faury, took over in April, with a mandate to accelerate this strategy.

✈ Capex and investments include new and replacement manufacturing equipment, R&D, investments on other companies, such as Airbus' purchase of a controlling stake in Bombardier and Boeing's joint venture with Embraer, minus divestment income. This is where Airbus is supposed to have concentrated more than Boeing. In relative terms this appears to be the case: Capex/net investment as a proportion of Operating Cashflow at Airbus was 70% in 2018 and 60% over the 6-year period, against 30% and 25% respectively at Boeing. But this was because Boeing has been able to generate much more cash than Airbus in the first place. In absolute terms, Airbus' expenditure during 2012-2018 was €13.2bn ($14.7bn) compared to $18.2bn at Boeing; in 2018 Airbus spent a net $1.8bn while Boeing spent $4.6bn.

✈ Subtracting Capex/investments from Operating Cashflow gets us to Free Cashflow, which for Airbus last year was only €0.7bn ($0.8bn) dwarfed by Boeing's $10.7bn. And over the 6-year period the comparison is: Boeing $55.4bn, Airbus €9.0bn ($10.1bn). The basic question then is: what to do with this cash? Which proportions to return to shareholders or pay down debt or add to reserves?

✈ Boeing has been very generous to its shareholders, paying out $4bn in dividends in 2018 and more importantly carrying out a $9bn/year share buy-back exercise in recent years, all of which goes to support or boost the share price. Boeing, in fact, paid more in dividends and spent more share repurchases last year than it generated in Free Cashflow. It partly funded the shortfall through an increase in borrowing — the Increase/Decrease in Debt line ($1.3bn increase) is in effect is the balancing line between Total Financial Flows and shareholder

returns.

✈ Airbus, working with a much lower Free Cashflow ($0.8bn against $10.7bn), paid $1.3bn in dividends along with a $2.2bn reduction in debt, by using some reserves.

✈ What this means is that both OEMs have been returning cash to shareholders at close to their limit to do so. It could be argued that the duopoly has not produced super-normal profits, but it has created super-normal shareholder return — as is reflected in a five to six-fold surge in the share price during 2012-18. During this period Boeing's outflow on dividends and share repurchases was in total 6.8 % above the amount generated by its Free Cash Flow. For Airbus the difference was higher: dividends exceeded Free Cashflow by 15.6%. The two OEMs, according to their own accounts, have been borrowing money to help them meet dividend and share buy-back outflows.

Boeing now is facing a difficult, but not critical, problem. Its Operating Cashflow will inevitably be dented by, at least, $2bn-plus per year this year and perhaps over the next two years, as the result of the MAX crisis, compensation payments and re-certifying costs. Which means that Free Cashflow for dividends and share buy-backs may well be depleted, as capex/investment will not be cut back in the current situation. Yet it is apparent that shareholders expect a continuation of the type of returns that have become the norm over recent years. A safety valve may be its cash reserves — unrestricted cash was $7.6bn at the end of 2018.

For Airbus, the issue is not so much capex/investment versus distribution of funds to shareholders as the management's commitment to commercial normalisation of the company — to improve its net profitability, or rather its Operating Cash Flow, in order to generate the funds to return to shareholders. Having said that, its unrestricted cash balance by the end of last year was €9.4bn ($10.5bn), 35% higher than Boeing's, and its shareholders might focus on that number.

OEM duopoly: No alternative?

Boeing management in the Q1 results presentation were confident that there would be no long-term impact on the 737 MAX backlog nor future orders. Indeed, the impact of the 737 MAX grounding will probably not be perceptible in the long-term perspective.

The charts on the next page colourfully illustrate projected global deliveries and fleet structure for narowbodies and widebodies out to 2029. The graphs have been compiled from Airline Monitor's annual supply/demand forecast for jet aircraft (Feb 2019). The reason for using this particular forecast is that Ed Greenslet (ESG) has been using essentially the same logical successful methodology for decades, and has generally proved to be right. The forecasts are genuinely objective and provide the necessary level of detail.

Looking at narrowbody deliveries to begin with, there is a clear cut-off point around 2020 when the final deliveries of A320ceos and 737NGs are phased out and are replaced completely by MAX and neo deliveries. ESG has built in a business cycle to the forecast (which was made before the Ethiopian crash) but there is a clear upward trend in deliveries of both types, while the A220 (formerly the Bombardier C series) starts to play a minor role.

The total delivery chart shows Airbus outperforming Boeing, but the market is fairly evenly split between the two OEMs. The grey shading tentatively indicates a small incursion by other manufacturers.

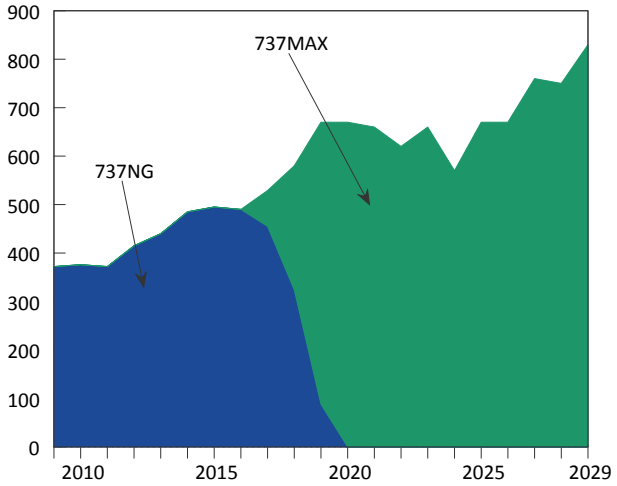
The projected fleets show the NGs and ceos still having a major role in the Boeing and Airbus fleets up to 2029 while older types gradually disappear.

The widebody picture is more complex. Types like the A330-200 and the 777-200/300 are coming to the end of their production runs, with deliveries from the early '20s being dominated by A330neos, 787s and 777Xs. The 747 and 767 gradually disappear, except for freighter versions, and the A380 is reduced to a trickle of deliveries to, essentially, Emirates. Overall, Airbus and Boeing share the global operating fleet of widebodies, though Boeing has the edge. There is a minuscule number of widebodies from other manufacturers shown at the end of the '20s.

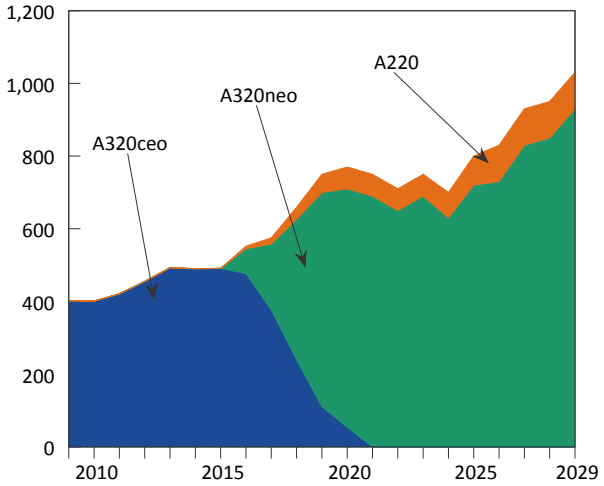
One simple and obvious observation from the delivery and fleet

NARROWBODY DELIVERIES

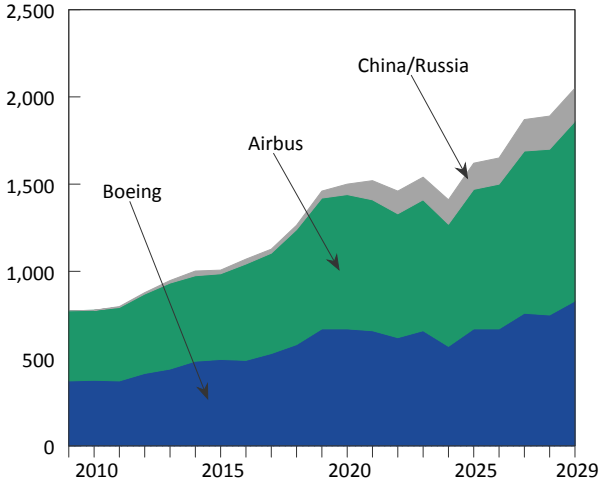
Boeing



Airbus

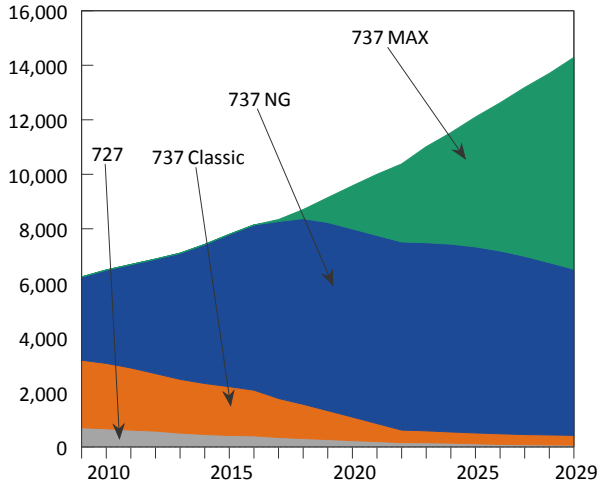


Total

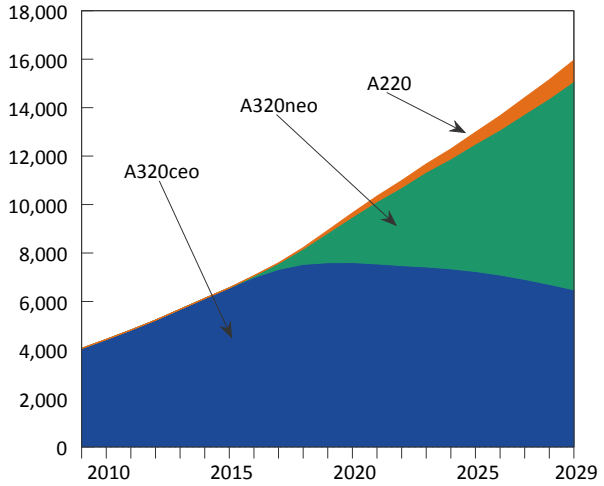


NARROWBODY FLEET

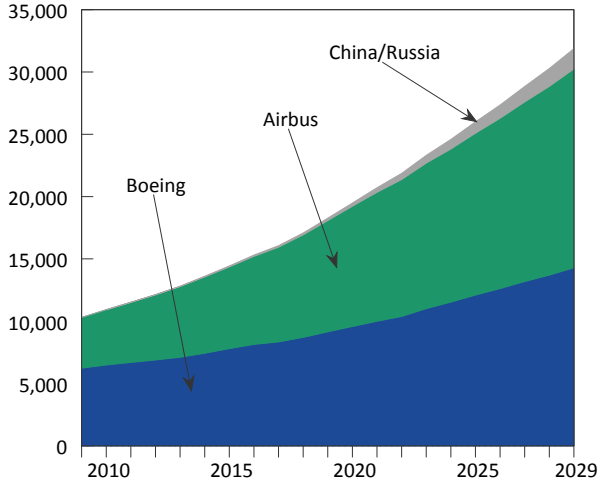
Boeing



Airbus

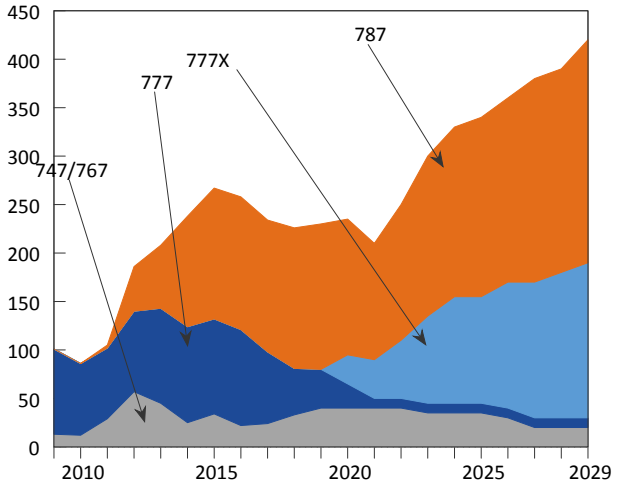


Total

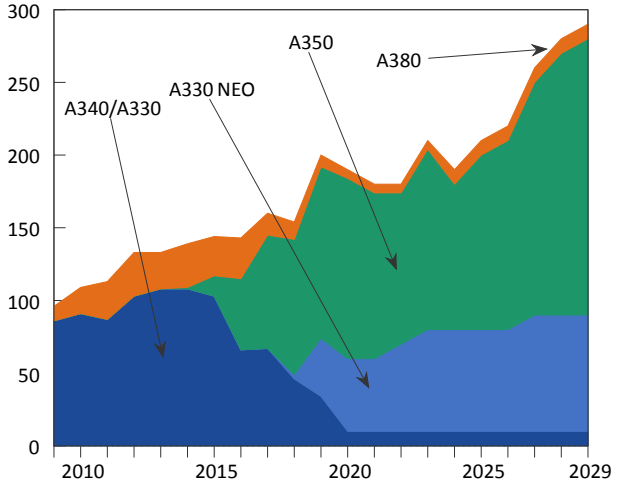


WIDEBODY DELLIVERIES

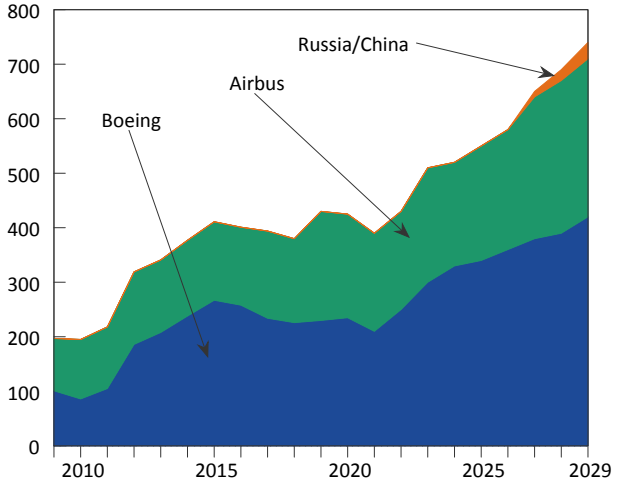
Boeing



Airbus

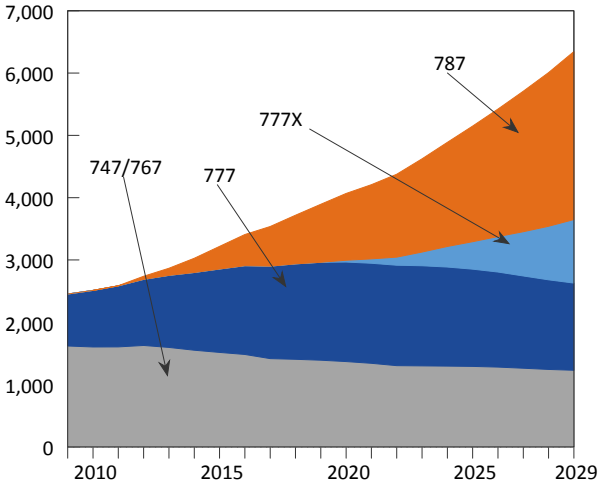


Total

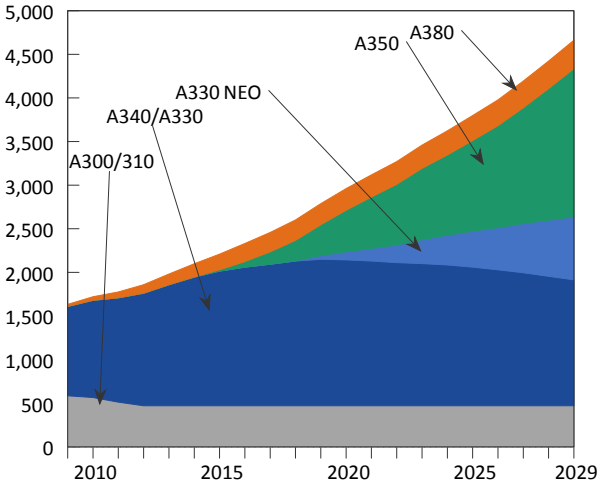


WIDEBODY FLEET

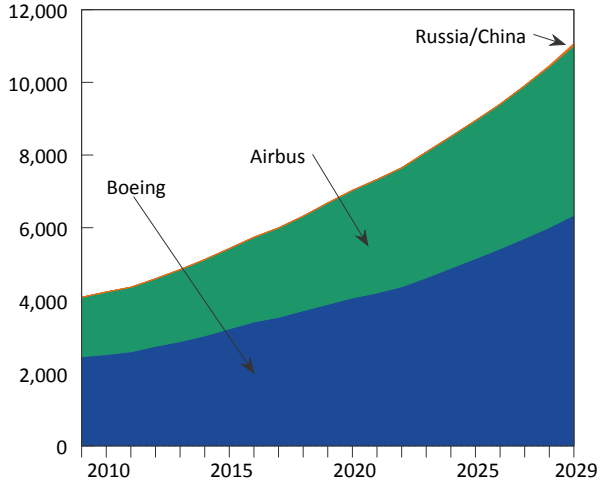
Boeing



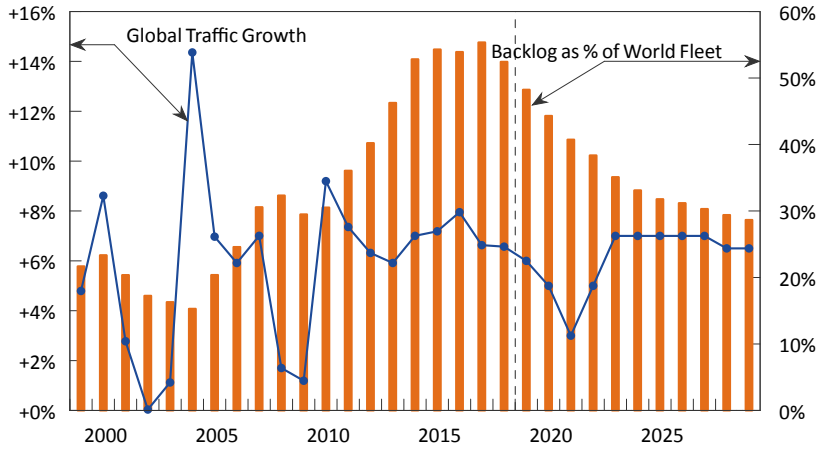
Airbus



Total



GLOBAL TRAFFIC AND BACKLOG OUTLOOK



Source: Airline Monitor, Feb 2019

graphs is that there are only two options — buy Boeing or buy Airbus. Or maybe buy Chinese; there are two possibly viable models available from Comac.

The 150-170 seat C919 is officially due to start Its commercial deliveries in 2021, with China Eastern as the launch customer. The aircraft can be powered by LEAP engines as an alternative to ACAE (Aero Engine Corporation of China) units. Comac claims that it has 300-plus firm orders plus another 700 odd options, mostly from Chinese leasing companies or airlines, though GECAS has also made a commitment.

The C929, which is a 250-350 seater widebody, very tentatively predicted to come into commercial production in the late '20s. The C929 is being developed by a joint venture between Comac and UAC, the Russian manufacturer. No engine choices have yet been decided.

The Chinese types do not have much credibility in the West, dismissed as overweight and inefficient. But there is a reasonable prospect that the C919 at least will find a niche in the internal Chinese market, which might just worry the two OEMs, as China is the key driver of new aircraft demand.

The Tactics of Duopoly

In this respect the annual chase to outdo each other in announced orders seems little more than a PR exercise. Commercial aircraft manufacturing is a duopoly, and an apparently impenetrable one (especially after Airbus' investment in Bombardier and Boeing's joint venture with Embraer). Yet, as noted in the previous article, it is a duopoly which continues to discount heavily to win orders.

But there is logic behind this pricing strategy. In a duopoly probably the worst tactic is to collude to push up prices as this will attract the attention of regulators and antitrust enforcers. It may in effect lower the barriers to entry as the potential returns on investment to newcomers entering the manufacturing market are improved. Still the technological barriers will remain very challenging.

From an airline perspective, playing off the two OEMs against each other can normally result in good discounts, product support and guarantees that the aircraft will actually meet the operating criteria promised in the sales presentations. Operating lessors can inject a further element of competition.

Network carriers usually have mixed fleets so neither OEM can expect brand loyalty. Traditional flag carriers, which used to split orders between the US and Europe for political reason have largely faded out of the mainstream.

The positioning of LCCs may be changing. These short-haul carriers have made operation of a single-type or model a key feature of their low cost strategy as it enables maximum flexibility and reduces training and maintenance costs; most importantly, bulk ordering minimises unit capital costs. But there comes a point in the development of an LCC where it is large enough, with multiple bases, to ensure operating economies with two different aircraft types. Ryanair bought Lauda specifically to obtain a new A320 fleet and gain experience operating Airbuses in addition to its core fleet of 737s, and so further enhance its negotiating strength with Boeing. Gary Kelly, CEO of Southwest, has recently stated that although Southwest has always been a sole Boeing operator, that might not necessarily be the case in the future.

Aviation Strategy

The Principals and Associates of Aviation Strategy apply a problem-solving, creative and pragmatic approach to commercial aviation projects.
Our expertise is in strategic and financial consulting in Europe, the Americas, Asia, Africa and the Middle East, covering:

- Start-up business plans
- Due diligence
- Antitrust investigations
- Credit analysis
- IPO prospectuses
- Turnaround strategies
- Privatisation projects
- Merger/takeover proposals
- Corporate strategy reviews
- Antitrust investigations
- State aid applications
- Asset valuations
- Competitor analyses
- Market analyses
- Traffic/revenue forecasts

For further information please contact:

James Halstead or **Keith McMullan**

Aviation Strategy Ltd

e-mail: info@aviationstrategy.aero

Subscription Form

Enter my Aviation Strategy subscription for: 1 year (10 issues – Jan/Feb and Jul/Aug are combined)

- UK: £475 + VAT
- EU: €610 + VAT (unless valid VAT number supplied)
- USA and Rest of world: US$780

starting with the _____ issue.

- ❑ I enclose a Sterling or Euro cheque made payable to Aviation Strategy Ltd
- ❑ Please invoice me
- ❑ I wish to pay by credit card or PayPal.
- ❑ I am sending a direct bank transfer of the the relevant sum net of all charges to Aviation Strategy's bank account:
  Metro Bank Ltd, 1 Southampton Row, London WC1B 5HA
  IBAN: GB04 MYMB 2305 8013 1203 74
  Sort code: 23-05-80 Account no: 13120374
  Swift: MYMBGB2L

Delivery Address

Name _____
Position _____
Company _____
e-mail _____
Telephone _____
VAT No _____

Invoice Address

Name _____
Position _____
Company _____
Address _____
_____
_____
Country _____
Postcode _____

DATA PROTECTION ACT

The information you provide wil be held on our database and may be used to keep you informed of our products and services or for selected third party mailings

PLEASE RETURN THIS FORM TO:

Aviation Strategy Ltd, Davina House, 137-149 Goswell Road
London EC1V 7ET, UK
e-mail:info@aviationstrategy.aero
Tel: +44(0)207-490-4453
VAT Registration No: GB 162 7100 38