August/September 2017

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All eyes on the E2

John Slattery discusses the market for the latest Embraer family

FLYBONDI INTERVIEW | ENGINE LEASING IN CHINA | AIRLINE TOP 50

Ryanair stays on top despite Brexit fears

This year's Airline top 50 features a larger sample of 150 airlines, up from last year's 137.

This summer issue features our sixth annual Airline Top 50, which is backed by data supplied by *The Airline Analyst*. For the third year running, Ryanair is the top-rated airline despite concerns that the United Kingdom's decision to leave the European Union would knock the low-cost carrier from the top spot.

This year's sample swelled to a total of 150 airlines, up from 137 last year, and is made up of airline financials that are available in the public domain for the periods ending between March 2016 and March 2017.

It is no surprise that low cost carriers (LCCs) topped our rankings, with Ryanair securing top place, followed closely by Air Arabia and Jazeera Airways. Investors now fully understand the low-cost model and realise that LCCs are increasingly successful and profitable.

This time last year we reported that many of the world's airlines had enjoyed a stellar 12-18 month run of improving profitability. Revenues had reached close to $600 billion. More noticeable was the 30.7% increase in EBITDAR (earnings before interest, tax, depreciation, amortisation and rental costs) and the 261% increase in net income to a record $40.6 billion.

Airline financial performance in 2016/17 was positive. Revenues grew 4.5% and EBITDAR by 6.7% leading to EBITDAR margin edging upwards to 21.5%. So far so good, but net income fell 17% to $33.8 billion. A closer look at the data confirms that the decline is almost entirely accounted for by tax credits at American and United and hedging gains at Delta in 2015 that were not repeated in 2016. So, 2016 clearly can be considered as good a year as 2015 from a profitability perspective.

No sleep for the lessors

For lessors, the last couple of months have been unusually busy. Surprisingly, there has been a lot of activity in the market since the Paris air show, especially in the way of unsecured issuances.

In July, DAE issued $2.3 billion in bonds to fund its AWAS acquisition. The three-tranche offering features $500 million 4% notes due in 2020, $800 million 4.5% bonds due in 2022 and $1 billion 5% bonds due in 2024.

In the same month, Goshawk Aviation placed $567 million in unsecured notes. The transaction was the largest private placement from an aircraft lessor. The average tenor is more than 8.5 years, with four tranches split between seven-, eight-, nine- and 10-year tenors.

Nordic Aviation Capital took advantage of positive market sentiment and debuted a $200 million senior unsecured private placement issuance, with proceeds being used to refinance aircraft within its portfolio.

At the same time, AerCap issued $1 billion of 10-year unsecured notes, with a coupon of 3.65% while in August, Jackson Square Aviation closed its debut private placement, raising $300 million. The deal was split over one seven-year and one 10-year tranche.

It looks like the private placement market will continue to be active in aviation for the foreseeable future, not just on the secured side, but on the unsecured side too. Private placements can be useful for lessors that want to do bespoke transactions that are smaller in size than a typical public transaction. Speaking on a panel at the 37th Annual North America Conference in New York in May, Michael Dickey Morgan, executive managing director, Burnham Sterling & Company, said that if the export credit agencies stay closed, it would likely create a higher volume of private placements. Burnham Sterling has closed several secured private placements for Avianca and Delta.

Similar trends can be observed in the unsecured debt markets. As one leasing source puts it: "A lot of lessors now borrow unsecured because they have a rating. But one of the constraints of that is that they have to keep a young fleet – by selling mid-life aircraft on a regular basis."

If lessors want to continue issuing unsecured bonds as opposed to private placements and secured debt, they need to maintain a strong credit rating and, if they want to do this, they need to keep their fleet young. As a result, portfolios need to be sold.

As such, there are several portfolio deals in the market. *Airfinance Journal* reported in May that Avolon was looking to shed several portfolios of aircraft that had been absorbed by the CIT Aerospace acquisition. It is understood that these deals have not yet closed. FPG Amentum is looking to sell a portfolio of 17 mid-life aircraft, with interest predominately coming from US investors.

Another leasing source adds: "I think at the moment it is possible to sell and it will keep going for a while. But there's been a disconnection in the market – the risk is not being priced into these deals." In other words, it seems that there are a lot of portfolios in the market at the moment and no shortage of money to pay slightly over the odds for them.

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Tan rejoins **Stephenson Harwood**

Aviation lawyer Ethan Tan has rejoined Stephenson Harwood as a senior associate in the firm's Singapore office after leaving in 2015 for a two-year stint at Allen & Overy.

Tan tells *Airfinance Journal* that he will focus on three areas in his new role: private equity firms looking to invest in aviation; structured finance transactions; and deals in the Chinese market.

"I think private equity is always looking for places to put its money and Asian aviation has grown over the last couple of years. And it is an opportunity for them to make a decent amount of returns with a reasonable amount of risk," says Tan.

He adds that he also expects South-East Asia to generate plenty of work.

"Lion Air and Airasia are two of our biggest clients so we are always seeing a lot of activity in terms of sale and leaseback and lessors trading amongst themselves," he says.

Tan rejoined Stephenson Harwood Singapore at the beginning of August. His previous role was as a senior associate at Allen & Overy Singapore. Before that, he worked as an associate at Stephenson Harwood Singapore between 2012 and 2015.

Ethan Tan, senior associate, Stephenson Harwood

Island Air hires finance vice-president

Hawaiian carrier Island Air has hired Christopher Gossert as its vice-president of finance.

Gossert will oversee all finance functions of the airline and will be part of Island Air's leadership team.

He most recently worked as audit senior manager at Ernst & Young and was one of the leading members of the firm's assurance practice.

Gossert was responsible for the management, coordination and oversight of financial statement audits for various public and private companies. He also handled management and execution of other non-audit projects, including assessment and evaluation of internal controls over financial reporting, system implementations and process improvements.

He has more than 12 years' experience within Ernst & Young's airline industry practice, where he was involved in accounting and operational areas, including revenue recognition and sales programmes, lease accounting standards, derivatives, debt and equity financing transactions, frequent-flyer programmes and maintenance. His airline clients have included Hawaiian Airlines, Virgin America, Avianca Holdings and Virgin Australia.

Tigerair Taiwan appoints new CFO

Tigerair Taiwan has appointed Erin Shih as its new chief financial officer (CFO), sources indicate.

The sources say that Shih replaces Hansen Lin, who has moved to China Airlines in Qingdao. Shih was the former general manager, finance and treasury department, at China Airlines. Shih and Lin could not be reached for comment.

In December 2016, China Airlines took full ownership of Tigerair Taiwan as Tiger Airways Holdings divested its 10% stake in the carrier.

Erin Shih, CFO, Tigerair Taiwan

Faak leaves **Nord/LB**

Oliver Faak, global head of shipping and aircraft at Nord/LB, has left the bank. His role will be divided between global heads for each of the two sectors. Harald Brauns, Nord/LB's head of aircraft, is retiring after 40 years with the German financier. He will step down at the end of September.

Frank Wulf, the previous managing director and regional head of aviation for Europe, Middle East and Africa at DVB Bank, will succeed him. Wulf will start his role as aviation head at Nord/LB in October.

Faak had been global head of ship and aircraft finance since July 2014 after holding two separate shipping roles at the bank between January 2011 and June 2014. Before that, he was head of transport and export finance at Deka Bank.

Fly Leasing names Ruehl as CFO

Fly Leasing has appointed Julie Ruehl as its chief financial officer (CFO), succeeding Gary Dales, who served as the lessor's financial chief for 10 years.

Before joining Fly, Ruehl previously served as the vice-president and chief accounting officer for Big Heart Pet Brands and its predecessor, Del Monte.

Before that, she was in a senior financial position with Sanmina, a provider of electronics manufacturing services.

Colm Barrington, chief executive officer of Fly, says: "Julie is a seasoned finance professional whose deep knowledge of accounting and background working with industry-leading corporations make her the right choice as our new CFO.

I look forward to working closely with her as we continue to execute on our strategy."

SAA appoints latest CEO

Vuyani Jarana will become South African Airways' eighth chief executive officer (CEO) in five years when he takes over from acting chief executive, Musa Zwane, who has been acting chief executive officer of South African Airways (SAA) since November 2015

Jarana is the chief officer for Vodacom Business at Vodacom, a position he has held since 2012.

"Given that Mr Jarana has turned around a loss-making subsidiary of the Vodacom Group, Vodacom Business Africa, into profitable and growth business, we believe he will be key in turning around SAA," says South Africa's finance minister, Malusi Gigaba.

Glass to be CFO of DAE

Simon Glass, the former chief financial officer (CFO) of AWAS, has been named the chief financial officer of DAE following the Dubai-based lessor's acquisition of AWAS on 20 August.

Glass joined AWAS as CFO in February 2011. He was previously deputy group finance director at both Royal Bank of Scotland Group and Standard Chartered.

Karl Griffin, the former chief operations officer (COO) of AWAS, has been named the COO of DAE Capital, the newly-formed aircraft leasing division made up of DAE's existing fleet and AWAS. Dan Stone, the former chief financial officer (CFO) of DAE Capital has assumed a newly created position of executive vice president responsible for managing and building the third-party asset management business.

DAE's combined aircraft leasing division will operate under the name DAE Capital and will go to market from six locations: Dubai, Dublin, Singapore, Miami, New York and Bellevue, Washington. All of these are existing offices of DAE and AWAS, allowing DAE Capital to have technical, commercial and legal capabilities in these locations.

Firoz Tarapore, chief executive officer of DAE, tells Airfinance Journal that growing the lessor's third-party asset management business from under $1 billion today to $5 billion in the next three to five years will be one of DAE Capital's priorities. Tarapore also adds that DAE Capital's new senior management team is in place and operational as of today.

Virgin Atlantic Cargo hires MD

Virgin Atlantic Cargo has promoted Dominic Kennedy to managing director.

This comes after changes to the airline's senior management team that mean David Geer, who was due to take up the post in mid-August, will now assume the role of senior vice-president revenue management and digital distribution at Virgin Atlantic.

Phil Maher, executive vice-president operations at Virgin Atlantic, says: "As an airline we are extremely fortunate to have such a big talent pool and one of our biggest challenges is to always find the right opportunities to enable our best people to progress their careers with us. While I am confident David would have been a great asset to our cargo division, the sequence of events since this announcement has created another opportunity where his experience will be even more suited. This also means we are able to give Dominic this well-deserved promotion, knowing he brings a wealth of cargo knowledge and experience to the role, having been a key member of our cargo leadership team since 2008."

Kennedy took up the role of managing director of Virgin Atlantic Cargo on 14 August when John Lloyd, who has held the post since 2001, stepped down after 30 years with the airline.

Dominic joined Virgin Atlantic in 2005 and began his career in the fleet and network planning team before moving to cargo in 2008. He has held a number of leadership positions in the Virgin Atlantic Cargo team over the past nine years and was most recently director, commercial planning.

McQueen to join **Chorus** from LCI

Rory McQueen is leaving his post at Lease Corporation International (LCI) to join Chorus Aviation Capital in the autumn in a structured finance role, sources indicate.

Since June 2015, McQueen has served as vice-president of capital markets at LCI. Before that, he was head of treasury at Vistajet.

Separately, Chorus Aviation recently agreed to acquire two additional Embraer 190 aircraft, with leases attached to Mexican carrier Aeromexico Connect.

The acquisitions are expected to close in the third quarter and are subject to customary conditions precedent to closing, including novation of the existing leases.

Neither LCI nor Chorus was available for comment.

Natixis hires new Americas aviation head

Natixis has hired Gareth John as its new aviation Americas head, market sources tell *Airfinance Journal*.

John was previously head of transportation finance, Americas, at Deutsche Bank, based in the company's New York office. Sources say he left the bank in June. In his new role, he will be working in Natixis's New York office.

Before working at Deutsche Bank, John was a director at UBS Investment Bank for four years. Before that, he was a senior vice-president at GECAS and was an assistant vice-president at Nomura Securities.

It is understood Louis Douady, the former aviation Americas head at Natixis, has moved back to Paris to take up another role at the bank that is non-aviation related.

Natixis declined to comment on the move.

Alaska Air names Beer for board of directors

Alaska Air has appointed James Beer, executive vice-president and chief financial officer of McKesson, to the company's board of directors.

Since 2013, Beer has led the financial functions of McKesson, a San Francisco-based health services and information technology company. Previously, he was executive vice-president and chief financial officer of Symantec.

Beer was also with American Airlines for 15 years. He first joined the airline in 1991 as a financial analyst and later became chief financial officer at AMR and its American Airlines subsidiary.

Avolon lists Boeing's Max mistakes

In its recent white paper, the Chinese-owned lessor has been vocal about the shortcomings of the Max 7 and 9, but praises the 8 and 10 models. **Jack Dutton** reports.

Boeing has been too "reactive" with its 737 Max programme and has made too many variants of the aircraft type, resulting in a lower market share in the segment, according to Steve Mason, senior vice-president, strategy, at aircraft lessor Avolon.

In a white paper on the Max, Mason wrote: "Boeing's Max product strategy decisions have been reactive, resulting in lower market share and a plethora of variants that do not all replace actual market demand."

Max 10 success

Nonetheless, Mason adds that the recent launch of the Max 10 has strengthened the family, having already doubled Boeing's market share in the large narrowbody segment. Although the A321neo will remain the seat-cost leader in high-density configurations, the Max 10 is a much improved competitor compared with the Max 9, according to Mason.

Dick Forsberg, Avolon's head of strategy, agrees. In an interview with *Airfinance Journal*, he says that Boeing could not afford to miss out on launching the aircraft.

"We have always taken the view that the A321 was a great airplane that was going to dominate a large piece of the market, but for a good many years the capacity upsizing to underpin this did not happen to the extent expected."

Forsberg says that this has now changed and many airlines are migrating to bigger aircraft.

"In turn, Airbus have responded brilliantly as they have been able to increase capacity across the family by up to 20 seats in the existing airplane. Boeing hasn't been able to match this flexibility. These capacity changes positively affect the operating cost dynamic without changing anything else," he says.

Forsberg adds that it was "no surprise" that Boeing's response at the Paris air show was to launch the Max 10 because "they couldn't afford not to launch it" and "they were never going to roll over and accept a 40% share of the single-aisle market".

Forsberg anticipates a rebalancing between the family members, with airlines and lessors likely to switch Max 8 and 9 orders to Max 10 orders in the future.

Other variants

In the white paper, Mason states that the Max 8 remains the most popular aircraft in the family for investors.

"The Max 8 remains the heart of the Max family and a key target for investors. The aircraft has maintained its cash operating cost (COC) advantage over the A320neo, albeit only by a small margin."

Mason says that "a well understood, cost efficient and timely reconfiguration package to convert the Max 200 aircraft to the Max 8 model is required to increase investor appetite for the type in the event that sales pick up".

He states that the Max 7, the smallest member of the family, is a niche product. A market shift away from smaller variants has been driven by several factors, including unit price and the focus of the low-cost carriers on larger models, adds Mason.

The white paper states: "The value proposition of the Max 9 has been severely impacted by the launch of the Max 10. It is unclear what role remains for the aircraft but it is expected to have a very limited future."

Paris order

Avolon signed a memorandum of understanding (MOU) for 75 737 Max 8 aircraft at the Paris air show in June. The MOU includes an option for a further 50 737 Max 8 aircraft.

Speaking to *Airfinance Journal* at the air show, Avolon's chief commercial officer, John Higgins, said: "Our deal today was anchored around the Max 8 but we have negotiated the flexibility to be able to adjust that order into other variants of the Max. The Max 8 is an airplane we understand very well – it's already in our orderbook; it's an airplane we've already placed; it's an airplane we have already done sale leasebacks with."

He adds that Avolon's first Max 8 would not arrive until the fourth quarter of next year, but the Max 8s have already been placed from then into the first quarter of 2019.

The 737 Max 10 stole many of the headlines at the Paris air show earlier this summer, racking up some 240 orders.

Although Avolon has not made a direct order for the Max 10, Higgins did not rule it out at the air show, saying: "We've anchored the investment around an airplane we understand very well and we've retained the flexibility to reposition that investment into, say, the Max 10, which looks to be a very interesting airplane."

He adds that, although Avolon was not ready to commit to the aircraft at the air show, it had the contractual benefit of being able to choose it in the future.

"The Max 8 remains the heart of the Max family and a key target for investors. The aircraft has maintained its Cash Operating Cost advantage over the A320neo."

Steve Mason, senior vice-president, strategy, Avolon

Kenya Airways' restructuring shows substantial equity dilution

The "pre-transaction" shareholders will now represent 5% of the new company.

Source: Kenya Airways

Kenya Airways submitted a restructuring plan to shareholders in July to help it stay afloat after years of losses.

The West African carrier, whose key shareholders are the Kenyan government and KLM Royal Dutch Airlines, has a debt ratio of 11 times its net debt of 2017 EBITDAR (earnings before tax, depreciation, amortisation and rental costs).

Kenya Airways is heavily indebted and servicing that debt has proven difficult. Fixed-charge coverage (FCC), which represents EBITDAR divided by net interest expense and aircraft rent, has languished below the 1.0 mark over the past three fiscal years, according to *Airfinance Journal*'s Financial Ratings.

This means that Kenya Airways' interest and rents are in excess of cash earnings from operations.

The Kenya Airways, which had KES $242.5 billion ($2.3 billion) of outstanding debt at 31 March 2017, hopes to reduce its gross debt exposure by $486 million through the restructuring plan.

The restructuring plan includes a significant dilution of the existing equity.

Effective end of August, the "pre-transaction" shareholders will represent 5% of the new company.

The Kenyan government, which currently owns 29.8% of Kenya Airways, will see its stake increase to 46.5%, while KLM Royal Dutch Airlines is set to almost halve its shareholding to 13.7%.

The government has moved to convert its existing $264 million in loans and interest into equity. Treasury will guarantee long-term loans totalling $750 million that the carrier owes to the Export-Import Bank of the United States of America ($525 million) and local lenders ($225 million).

These guarantees are in exchange for "material concessions", including extension of debt tenures, which will improve the airline's repayment obligations.

In May 2012, Kenya Airways mandated the African Export-Import Bank (Afreximbank) to arrange the financing for 10 Embraer 190s, nine Boeing 787-8s and one 777-300ER aircraft. The Cairo-based institution acted as the global co-ordinator in the transaction, which comprises a senior US-Exim guaranteed tranche and a commercial tranche. Afreximbank acted as the arranger and underwriter of the commercial tranche, while Citigroup Global Markets and JP Morgan Chase Bank were the arrangers for the senior US-Exim guaranteed tranche.

KLM in-kind contributions

The restructuring plan also includes the provision of investment of up to $76.5 million of cash and in-kind contributions from KLM, which owns 26.7% of the carrier.

The Dutch carrier will subscribe to additional new ordinary shares through $26.5 million of in-kind contributions, principally the lease of slots at London Heathrow airport and the provision of IT systems and support investments.

KLM will receive additional new ordinary shares through a $25 million cash injection, less advance cash. It will also subscribe for additional new ordinary shares through $25 million of in-kind contributions.

According to the circular, Kenya Airways will obtain cash-flow relief of approximately $360 million through restructuring the timing and form of payment from operating and finance lessors for the fleet over a period of up to five years.

This includes $189 million of relief from the first and second liens from the secured finance lessors involving two financings: six 787-8s, one 777 and a spare engine in one; 10 E190s in the other.

Cash flow relief from the amendments and deferral payments to secured operating lessors will be approximately $171 million, which will be paid thereafter.

Creditors deal

As part of the restructuring Kenya Airways will convert $221 million worth of loans from certain Kenyan banks into equity. As a result debt lenders will own approximately 35.7% of Kenya Airways on completion of the restructuring.

It has also secured a $175 million financing facility with a number of Kenyan banks.

The facility will be structured as a revolving credit facility with a period of 10 years, with a five-year initial term and annual renewals thereafter.

Once implemented, the restructuring should result in the company's debt service obligations falling below the expected level of operating cash flow from operations, says Kenya Airways.

Company liquidity will improve thanks to the cash flow and new facilities provided by the various stakeholders.

Kenya Airways says liquidity will also be enhanced by savings on interest, amortisation and maturity payments on the debt that is being converted into equity.

Stellwagen spots export credit gap

The Dublin-based aircraft financier launches its first fund to take advantage of the appetite for aircraft investment in the absence of the export credit agencies.

Stellwagen Capital believes its first fund can exploit an air finance gap to grow its business by delivering new financing structures both to airlines and leasing companies.

"The effective closure of the European and US export credits agencies, along with the retrenchment of the commercial aviation banks post-Lehman Brothers, has created a real opportunity to grow our business," says Stellwagen Group's chief executive officer, Douglas Brennan.

The company recently launched a new fund, Stelloan Investment Company I, and closed its first loan transaction with operating lessor CALC.

The initial size of the fund is $200 million, according to Stellwagen Capital's chief executive officer, Howard Millar.

"We plan to issue $200 million by the end of September and be close to $1 billion in the first half of 2018," he says.

Millar adds that he hopes to be "north of $500 million by end of this year".

Investors will be a mix of insurance companies, pension funds, banks and family office investors, he adds.

The senior loan investment vehicle will target Airbus A320-family and Boeing 737 narrowbodies.

The fund has already unveiled its first commercial debt transaction: two new A321s for CALC.

The 10-year loan has a balloon structure, which is an attractive financing option for many leasing companies and airlines because it lowers cash outflows during the tenor of the loan.

The transaction is part of a two-aircraft financing between the parties. The first aircraft delivered earlier this year. A second A321 will be financed for CALC in late September.

Stellwagen Finance originated and structured the transaction.

"This new senior loan product delivers innovative and bespoke financing to airlines and lessors, secured against high quality and liquid aircraft collateral, like the Airbus A321. We have a pipeline of similar opportunities, which we will execute over the coming months," says Millar.

In May 2016, Millar told *Airfinance Journal* that he intended to raise $5 billion to provide airlines with "an alternative" to operating leasing.

He says he is agnostic to whether Stellwagen works more with airlines or leasing companies in the fund, adding: "We've had some very interesting discussions with the leasing companies that see this as a another source of funding to add to their revolver facilities."

Millar adds that he wants to close "if not one, then two" new deals with airlines by the end of September.

He adds that the company has "a strong pipeline of deals with airlines and lessors".

"Looking forward, CALC will continue to explore a variety of financing channels in the global capital markets to ensure flexibility for its sustainable development and business expansion plans globally," says CALC's managing director, finance, Christian McCormick.

Recent transactions

In July, Stellwagen Finance closed a commercial loan for ALAFCO to finance the first of four Airbus A320neos on operating lease to Air India.

The company was the sole arranger sourcing financing from an Asian financial institution as senior lender.

ALAFCO will also lease 14 A320neos to Air India with deliveries between 2017 and 2019, for a lease period of 12 years, ending in 2031.

Stellwagen acted as the overall arranger of a Japanese operating lease with call option structure covering an Airbus A320 delivery for Air France.

The aircraft delivered to the carrier on 8 July. National Australia Bank is the sole debt arranger in the transaction, while Fuyo General Lease is the equity provider.

Stellwagen Finance closed a pre-delivery payment (PDP) financing facility for AWAS relating to five Boeing 737 Max 8 aircraft, which are expected to be delivered to the lessor through a sale and leaseback transaction.

The financier was the sole arranger sourcing funds from institutional investors for the facility.

Stellwagen Finance indicates it has found new sources of capital for $1.2 billion-worth of predelivery payments (PDPs) for lessors and airlines.

Simon Glass, the former AWAS chief financial officer, says: "Over the last few years, Stellwagen has arranged a number of innovative non-bank financing solutions for AWAS and this new PDP deal is another great example of how they are able to provide customised structures that support AWAS's goal to have a diversified financing strategy."

"This new senior loan product delivers innovative and bespoke financing to airlines and lessors, secured against high quality and liquid aircraft collateral, like the Airbus A321. We have a pipeline of similar opportunities, which we will execute over the coming months."

Howard Millar, chief executive officer, Stellwagen Capital


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Sky Aviation Leasing issues first ABS

The young lessor makes its debut in the asset-backed securitisation market with a portfolio of 21 aircraft, reports **Laura Mueller**.

Sky Aviation Leasing has made its debut in the asset-backed securitisation market, with a $780.8 million offering.

The deal, which is backed by 21 aircraft, was expected to close on 22 August.

It comes as deal volume for the sector this year approaches issuance levels for the whole of 2016. The $780.8 million transaction adds to the $2.5 billion spread over six other aircraft ABS deals, which priced in the first half of 2017.

Bank of America Merrill Lynch (BAML) indicates Sky's A notes priced at 4%, on top of guidance. The B notes priced at 5.75%, at the lower end of guidance of 5.75-6%, while significant oversubscription (4+ times over) allowed the C notes to price at 7.125%, or inside of guidance of 7.25%.

The transaction, which is a Rule 144A private placement transaction, features 34 unique investors, according to the bank.

The Class A, B, and C notes have received preliminary ratings from Kroll Bond Rating Agency (KBRA).

The $657.8 million Class A notes, with a 66.3% loan-to-value (LTV) ratio, have been rated "A". The $81 million Class B notes have been rated "BBB" and have an LTV of 74.5%, and the $42 million Class C notes, with an LTV of 78.7%, have been rated "BB". The notes mature in August 2042.

Credit Agricole Corporate and Investment Bank is providing the liquidity facility. Deutsche Bank is sole structuring lead and joint lead. BAML and Credit Agricole also acted as joint leads.

Phoenix American Financial Services is the managing agent.

Sky Aviation is the servicer for the portfolio.

The portfolio is younger relative to several other recent aircraft ABS transactions, notes KBRA, with an initial weighted average age of approximately 3.4 years, as of 1 August.

KBRA views the aircraft portfolio as "attractive" due to its young age, broad user base, and strong marketability for re-leasing to other operators beyond the expiration of the initial leases.

Moderate widebody exposure

Three of the 21 aircraft in the ABS are twin-aisle units and represent "moderate widebody exposure" at approximately 30.9% of the portfolio by value.

KBRA notes that while there can be higher future costs and potential re-leasing risks associated with widebody aircraft, the largest such exposure in this portfolio, a Boeing 787-8 on lease to Ethiopian Airlines that represents approximately 13.3% by value, is less than one year old as of the closing date.

The portfolio's initial weighted average remaining lease term of approximately 7.5 years is "longer" compared with most other KBRA-rated aircraft ABS transactions. It has an initial value of approximately $991.7 million, based on the average of the half-life base values provided by three appraisers and adjusted for maintenance conditions. Morten Beyer & Agnew, Collateral Verifications and IBA Group provided the appraisals.

The portfolio has an aggregate maintenance-adjusted current market value of approximately $973.3 million.

KBRA notes the transaction includes "higher lessee and emerging market concentrations" as compared with recently issued aircraft ABS transactions. Emerging markets represent 10 out of 16 lessees and approximately 71.8% of the portfolio by value.

The transaction permits 85% of the portfolio by value to consist of lessees located in emerging market countries. Other recent aircraft ABS transactions do not have a limit on emerging markets, rather a limit on individual regions.

The three largest lessees include Ethiopian Airlines (13.3%), Beijing Capital (10.8%) and Aeroflot (10.6%) and comprise approximately 34.7% of the portfolio by value.

The concentration limits permit 60% of the portfolio by value to be comprised of the three largest lessees, which is higher than a majority of recent aircraft ABS transactions, notes KBRA.

"Initially, the portfolio's concentration by lessee is comparable to, or less than, other KBRA-rated aircraft ABS transactions; however, it is difficult to predict the migration of the portfolio's three largest lessees over time due to the higher concentration limit."

KBRA accounted for the possible significant lessee concentration risk by examining various default patterns for the three largest lessees as part of its cash flow analysis.

New ATR unit to support lessors and residual values

The turboprop manufacturer creates a new company to oversee leasing, asset management and freighter activities.

ATR is confident that its new leasing and asset management arm will help lessors in their efforts to market ATR turboprops.

The Franco-Italian manufacturer has created a new unit to oversee leasing, asset management and freighter activities. It will be headed by Karine Guenan, ATR's vice-president of customer and structured finance.

In an interview with *Airfinance Journal*, Guenan says the leasing community is "thankful" for ATR's move.

"We have finished a roadshow and the news was well received. Lessors are grateful because they want a neutral entity to lead this initiative," she says.

Lessors own a quarter of the ATR fleet, but it was not until 2010 that they placed speculative orders for the turboprops. This came after a flurry of orders from airlines in the mid-2000s, which gradually attracted new investors to the turboprop market.

"Leasing companies are part of our market. We have sold lots of aircraft to lessors over the past few years," notes Guenan.

Air Lease placed the first lessor order in 2010, and then more followed from GECAS, Nordic Aviation Capital, Avation and DAE.

Before being capable of attracting those orders, however, ATR needed to offload its inherited used aircraft portfolio from the 1990s.

"Not only were those aircraft a burden to our balance sheet, but they were a barrier to entry to lessors," says Guenan.

"In each lessor campaign approach, we faced the same question: how could lessors take speculative orders when ATR had such a presence in the second-hand market?"

The gradual sale of the portfolio since the mid-2000s under the manufacturer's asset management arm bred confidence in the leasing community, she says, adding that it was a strategic move, designed to convince third-party lessors to enter the market.

From that point, ATR could step back from the leasing market.

"Today, our approach is different. Lessors represent a quarter of the ATR programme and are part of our market," she says.

"ATR will become a facilitator in transactions involving leasing companies."

Karine Guenan, ATR's vice-president of customer and structured finance

"We have no ambition to become a player in leasing or trading aircraft. We are more focused on selling our brand new aircraft to airlines interested in purchasing ATR aircraft and on providing support to the leasing community for the smooth placement of ATR aircraft when leasing solutions are requested by the market."

The new unit is geared as a "one-stop shop" for the definition, development and proposals of ATR's leasing, asset and freighter solutions. Its twin aims are to foster efficiency and cooperation with lessors, and to improve asset investment performance.

Another goal is to concur to an ideal balance demand and supply in a turboprop market that, as a result of lessor orders, has become very competitive in recent years.

"There are different types of customers and we need to make sure that we address operators' and investors' expectations," says Guenan.

"Until now, we were too dispersed to address this; we have geographical sales, marketing involved depending on the geographical area where the lessors are headquartered. It makes sense to have a single team dedicated to this activity."

The new unit will include two personnel covering asset management and freighters, while another two will work directly with operating lessors.

These staff will support the placement by lessors and airlines of their new and used aircraft. Additionally, lessors will receive support in finalising lease and sale and leaseback deals if need be, and in effecting the smooth transition of their ATR aircraft.

"ATR will become a facilitator in transactions involving leasing companies," confirms Guenan.

Her leasing unit also could be involved in Iran. "This is an option," she says.

The -500 series could also provide work.

"Currently, supply and demand in the -500 market is balanced, but we need to prepare ourselves for more activity in the future," says Guenan.

She highlights the -500 aircraft delivered during a ramp-up in production from the mid-2000s to early 2011, when production

switched to the -600 series.

"We need to identify second- and third-party operators to facilitate transactions in the second-hand market," she says.

"Our aim is to communicate those opportunities to the leasing community," she adds.

In this respect, Guenan does not see any conflict with the trader and broker community because those companies "work on a mandate basis".

She says: "Traders and brokers source aircraft for third parties. We are not competing with them.

"In a way, I see some similarities with our ATR financing activity, which facilitates financing between parties. We don't finance aircraft – we ensure that liquidity is there and that transactions can be closed.

"We have to ensure there is as wide a market as possible for used aircraft in our segment in order to protect residual values."

Nonetheless, ATR may have to take some units back onto its books, in which case Guenan says the manufacturer wants interim exposure to no more than a dozen aircraft in the coming years.

"Some operators have requested a buyback on older aircraft as part of the sale campaign. ATR can provide marketing assistance to operators but our objective is to sell down to investors and lessors the aircraft returned to us.

"In an ideal scenario we want to identify the parties that will take the commitment and collaborate in order to place an aircraft before its return."

Another option, particularly for the -500 series, will be freighter conversions.

About 10% of the ATR fleet is in the freighter market, but those models are exclusively ATR42-300/320- and ATR72-200-series freighters.

Likewise, it could become a middleman in transactions.

"We aim to transition some aircraft for freighter purposes," says Guenan.

Switzerland-based IPR Conversions has begun converting its first ATR72-500 after a contract with Cebu Pacific that could cover up to seven aircraft.

Guenan says: "We see great opportunities in Asia for the -500 freighter model as there are no equivalents in this market."

Norwegian pays price of aggressive expansion

Low-cost carrier sees unit cost per ASK reach highest level since 2010.

Norwegian is clearly disrupting the long-haul market, where its introduction of transatlantic services has prompted other airlines to launch their own low-cost, long-haul operations.

But the Scandinavian carrier's unit costs have surged as it struggles to maintain cost discipline across a rapidly expanding fleet.

Norwegian Air reported its second-quarter results in July and the headline figure appears encouraging: Net profit jumped 45% from the same period last year, to NOK 1.08 billion ($131 million), while operating revenue increased 17% to NOK 7.77 billion.

However, earnings before tax, depreciation, debt and rental costs (EBITDAR) for the period were NOK 1.19 billion, 21% lower than in the second quarter of 2016.

Even worse, Norwegian's first-half EBITDAR totalled NOK 382 million, a huge drop from NOK 2.02 billion a year ago. As a result EBITDAR margin was 2.9%, compared with 17.5% a year ago.

Operating expenses, meanwhile, jumped 45% to NOK 6.78 billion as the low-cost carrier expanded rapidly.

Fuel was the biggest expense at NOK 1.74 billion, a 38% rise on last year, as jet fuel prices increased by 15% in the quarter.

Labour cost of NOK 1.26 billion was up 34% as staff numbers rose to handle increased flying. Maintenance expenses rose by 56% to NOK 647 million due to the airline's bigger fleet.

Norwegian flew 8.62 million passengers in the quarter, up from 7.72 million in last year's corresponding quarter. RPK (revenue passenger kilometre) traffic rose 19%, as did the airline's ASK (available seat kilometre) capacity.

Results for the first half to the end of June were less positive as the first quarter's NOK 1.5 billion loss outweighed second-quarter profit. Interim net loss amounted to NOK 412 million, compared with a NOK 54.7 million loss in the first half of 2016.

Norwegian added four leased Boeing 787s and 19 leased 737-800s to its fleet over the 12 months to 30 June. At the end of June it also received its first two 737 Max aircraft, which took its fleet total to 133.

"Fuel was the biggest expense at NOK 1.74 billion, a 38% rise on last year, as jet fuel prices increased by 15% in the quarter."

Norwegian is aggressively investing in transatlantic services. The carrier will increase long-haul capacity by 60% this year and growth will double next year, according to broker firm Davy.

"Not for the first time, the main takeaway from Norwegian's quarterly results is a negative ex-fuel cost surprise - this time down to additional leasing/maintenance and personnel costs," writes the firm.

"While Norwegian's rates of growth make the scaling process difficult, the continuing scope for negative cost surprises is a concern for investors and will limit the stock's multiple potential."

According to its latest forecast, Norwegian expects a 25% growth in ASKs in the third quarter and a 30% growth in the final quarter of this year.

Unit revenues down, unit costs up

Norwegian says unit revenue was NOK 0.32 for the first half while unit cost reached NOK 0.44. A year ago unit revenue was NOK 0.36 for the first half while unit cost was NOK 0.41.

The carrier says second-quarter unit cost excluding fuel rose 7% year-on-year, while it was up 9% with fuel. Staffing cost climbed 12% due to the ramp up of international operations.

Norwegian has now reached its highest second-quarter cost per available seat kilometre (CASK) since the second quarter of 2010.

More expensive fuel, a 16% increase per ASK, was driven by spot prices and a weaker Norwegian crown against the US dollar, says the carrier.

Leasing cost, up 22% per ASK, was due to a higher proportion of leased and wetleased aircraft, says the Scandinavian carrier.

The carrier was also hit by a higher technical cost (31% increase per ASK) due to price escalation on engine maintenance, a higher proportion of leased aircraft and ground damages.

Cost guidance for 2017 is now at NOK 0.42 per ASK versus the airline's previous guidance of NOK 0.39-0.4.

Norwegian's mounting costs weigh on cash flows and therefore its debt-encumbered balance sheet.

Shareholder equity represented only 8.7% of its total liabilities at the end of the second quarter. At the end of 2016 it represented 12% of its total liabilities.

Equity at the end of the second quarter was NOK 3.54 billion compared with NOK 4.05 billion at the end of last year. Equity decreased mainly due to net losses in the period of NOK 412 million and exchange rate losses from subsidiaries of NOK 105 million. There are questions about the sudden departure of chief financial officer Frode Foss, who has been at Norwegian since October 2002. His successor will have a difficult task to keep costs under control while continuing Norwegian's growth strategy.

Year of the **Max**

This year's Paris air show was an eventful one. It was Airbus's salesman John Leahy's last air show, the debut of the Max 10 and North American companies again dominated the orderbook. *Airfinance Journal* provides a roundup of the week.

Source: Boeing

So, how many 737 Max 10s did you pick up? That was a common phrase overheard in chalets and at cocktail parties at this year's Paris air show as lessors and airlines conversed about the instant success of Boeing's newest and largest Max-family member.

Under pressure to combat the enormous popularity of the Airbus A321neo, Boeing leaned on its existing Max customers to help launch the Max 10 – a tactic that worked incredibly well.

Boeing secured more than 361 orders and commitments for the Max 10; however, more than 200 deals were conversions from other Max versions. Sources indicate Max 10 customers can swap back to their original Max positions at any time.

Still, the Max 10 orderbook is impressive. This includes a 50-unit order from Indonesia's Lion Air Group and a 40-aircraft order from India's Spicejet — 20 of which were converted over from other Max models.

GECAS also stepped up for 20 Max 10s, while BOC Aviation ordered 10 and tour operator TUI agreed to convert 18 of its 70 outstanding 737 orders to the 10.

However, the biggest blow to Airbus and its narrowbody offering came from United Continental, which converted 100 of its current 737 Max orders into Max 10s, becoming the largest single 737 Max 10 customer. United also announced an order for four additional 777-300ER aircraft.

The 361 orders for the Max family and commitments included 100 aircraft from lessors and 261 from airlines – more orders than all of Airbus's commercial aircraft combined. *Airfinance Journal* estimates that 238 announcements for the Max 10 model were conversions from previous Max orders.

Airbus ended the show with 144 firm orders and memorandum of understandings (MoU) for 182 aircraft, mostly for its A320-family aircraft.

In the widebody segment, Airbus recorded 12 firm orders, comprising of two A330-200s and 10 A350-900s, as well as an MoU for eight A330neo aircraft.

Boeing's widebody tally reached 44 units, of which two firm orders were for the 777 freighter model along with two 787-8s and 31 787-9s. The Seattle-based manufacturer also reported commitments for four 787-8s and five 787-9s.

In the turboprop market, Bombardier announced two firm orders with Philippine Airlines (seven Q400s) and Ethiopian Airlines (five Q400s). But the Canadian manufacturer also unveiled Indian carrier Spicejet for a 50-aircraft letter of intent. Bombardier also signed an MoU with South Africa's Cemair for two Q400s.

However, Bombardier failed to land any orders for its CRJ series and CSeries.

ATR made some inroads into China with two announcements totalling 13 ATR42-600s. The Franco-Italian manufacturer also signed ATR72-600 repeat orders with Air Tahiti and Braathens, while opening a new market with Air Senegal.

Embraer announced a 10 E195-E2s firm order, with an additional 10 purchase rights for the E190-E2 from an undisclosed customer. The Brazilian manufacturer also has a commitment with an undisclosed customer to purchase 20 E190-E2s.

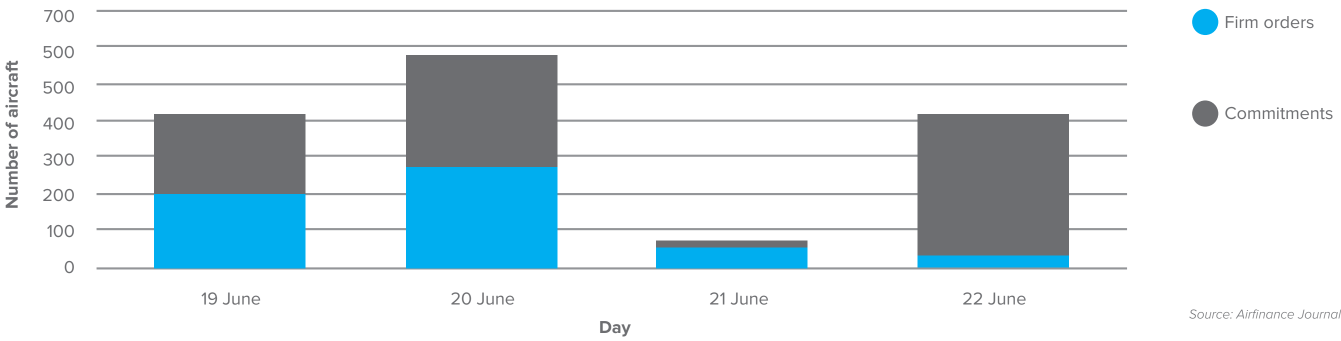
Embraer announced repeat orders from Belavia, Fuji Dream Airlines, KLM Royal Dutch Airlines and Japan Airlines.

Airfinance Journal estimates that 1,395 orders and commitments were announced at the air show. This included 228 conversions from previous models. Of these 561 (or 40%) were firm orders while 60% were commitments, letters of intent or memorandum of understanding announcements.

Airlines grabbed the lion's share with about 59% of the announcements, while lessors accounted for 41%.

The diversity of airlines and lessor announcements showed that the industry remains a global business. North America led the way in firm orders with 262 aircraft, or 48% of the total firm orders. Another 12 aircraft were "committed".

2017 Paris air show commercial aircraft announcements



Source: Airfinance Journal

Europe came second for firm orders with 113 announcements, or 20.6% market share.

Overall, Asia was the focus as a total of 468 aircraft orders and commitments were announced. Asia represented 111 firm orders, or 20.3% market share. Another 357 aircraft were committed, representing 43% of the total commitments.

Africa and the Middle East represented 26 firm orders along with 95 commitments. In this region, airlines and lessors announced orders and commitments on turboprops (ATR72-600s and Q400s), widebodies (787s, A330neos and A350s), narrowbodies (737-800s, Max aircraft and A320neo-family aircraft).

Latin America represented 15 Max 10 firm orders as well as 15 A321 and 25 A320neo commitments.

This year's air show was also John Leahy's last, having previously hinted that he would be stepping down as Airbus's chief operating officer, customers, later this year. The 67-year old will be a tough act to follow: he has sold more than 10,000 aircraft since 1994, worth over $1 trillion. He is expected to hand over to his designated internal successor, Kiran Rao, later this year.

Airline announcements

Airasia topped up its orderbook with Airbus and signed an agreement for 14 more A320s.

Air Tahiti ordered an additional ATR72-600 from ATR.

Air Senegal signed a contract for a firm order of two ATR72-600s with ATR for delivery in November.

Azerbaijan Airlines announced a commitment for four 787-8s.

Belavia ordered one E175 and one E195 – both for delivery in 2018.

Blue Air announced an order for six Max aircraft.

Braathens Aviation (BRA) ordered an additional ATR72-600 from ATR.

Copa Airlines announced an order for 15 737 Max 10s, becoming the first airline in Latin America to operate the newest addition to the 737 Max family. The order is a conversion from a previous 737 Max order.

Cemair signed a letter of intent for two Q400s with Bombardier.

Donghai Airlines converted an order for 10 737 Max units to the Max 10 model.

El Al Israel Airlines finalised an order for three 787s, including two 787-8s and one 787-9. El Al now has six unfilled orders for 787s, with lease agreements in place for a further seven units.

Delta Air Lines placed an order for 10 A321s after announcing orders for 30 incremental A321s in May.

Ethiopian Airlines placed an order for 10 additional A350-900 aircraft. The African carrier operates a fleet of four A350s, two of which are on lease, from the 12 aircraft it currently has on order.

Bombardier unveiled Ethiopian as the customer for five additional Q400s. Bombardier announced the order on 9 June with an undisclosed customer.

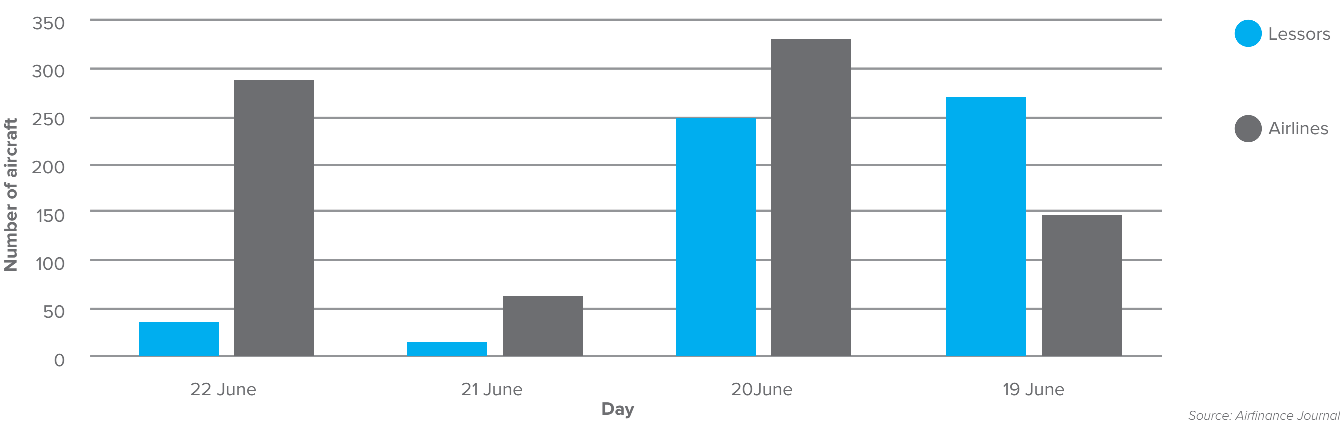
Ethiopian also announced a commitment agreement for two 777 freighters with Boeing along with 10 Max 8s.

Fuji Dream Airlines signed a firm order for three E175s, with purchase rights for an additional three aircraft of the type.

Hi Fly placed an order with Airbus for two A330-200s.

Iran Airtour Airlines signed an MoU with Airbus for a total of 45 A320neo-family aircraft.

2017 Paris air show summary announcements



Source: Airfinance Journal

Japan Airlines signed a firm order for an additional E190 with Embraer for subsidiary J-AIR.

KLM Royal Dutch Airlines ordered two additional E190s.

Lion Air announced a commitment for 50 737 Max 8s. The carrier now has 251 Max aircraft on order.

Malaysia Airlines ordered 10 737 Max 10s, converting 10 of its current 737 Max aircraft order to the newest version of the 737 Max family.

Mauritania Airlines announced an order for one 737 Max 8 aircraft. The delivery is expected this year.

Monarch Airlines ordered 15 737 Max 8s.

Norwegian ordered two 737 Max 8s.

Okay Airways announced an order for seven Max 8s and eight Max 10s. The Chinese carrier also signed a memorandum of understanding for five 787-9s.

Philippine Airlines ordered seven Q400s, exercising its purchase rights.

Ruili Airlines entered a memorandum of understanding with Boeing for 20 737 Max aircraft.

Spicejet signed a memorandum of understanding for 40 737 Max aircraft, including 20 new 737 Max 10s and the conversion of 20 Max 8s from its existing order to the 737 Max 10 version. The India-based low-cost carrier also SpiceJet signed a letter of intent for 50 Q400s. The agreement includes 25 aircraft and purchase rights for additional 25.

Shaanxi Tianju Investment Group signed a letter of intent for the acquisition of 10 ATR42-600s to develop commuter services in the province of Xinjian, China.

Ryanair finalised an order for 10 additional 737 Max 200s, five of which will deliver in the first half of 2019, with the remaining five aircraft delivering in the first half of 2020. The Irish-based low-cost carrier has an existing firm order for 100 737 Max 200s, with a further 100 options remaining.

Tassili Airlines placed an order with Boeing for three 737-800s.

TUI Group selected the Max 10 aircraft for its future growth. The leisure group ordered 18 aircraft of the type, converting eight of the Max aircraft it has on order as well as 10 options.

UPS Airlines announced an order to convert three 767-300ER passenger aircraft into Boeing-converted freighters.

United Airlines converted 100 of its current 737 Max orders into 737 Max 10s, becoming the largest single 737 Max 10 customer in the world. United also announced an order for four additional 777-300ER aircraft.

Viva Air signed a memorandum of understanding with Airbus for 50 A320-family aircraft. The transaction includes 15 A321 and 35 A320neo aircraft.

Wizz Air announced an order for 10 additional A321s, with deliveries scheduled in 2018 and 2019.

Xiamen Airlines signed a memorandum of understanding with Boeing for 10 737 Max 10 aircraft.

Xuzhou Hantong Aviation Development signed a letter of intent to purchase three ATR42-600s to develop commuter services in the province of Jiangsu, China.

Zagros Airlines inked a memorandum of understanding with Airbus for the acquisition of 28 new aircraft, including 20 A320neo and eight A330neo aircraft.

Lessor announcements

Air Lease (ALC) firmed an order for 12 A321neos. ALC also announced a memorandum of understanding with Boeing for five 737 Max 7s and seven Max 8s.

AerCap announced an order for 15 Max 10 aircraft. The agreement is the conversion of 15 Max aircraft previously ordered. The Dublin-based lessor also announced an order for 30 787-9s, making it the largest customer for the 787 family. AerCap has taken delivery of 55 787s and, after this order, will have a further 67 787s on backlog, including sale and leasebacks.

ALAFCO announced a commitment for 20 737 Max 8s.

Aviation Capital Group (ACG) secured an order for 20 Boeing 737 Max 10s. ACG is already part of the 737 Max family with 60 current orders, including a mix of Max 8s and Max 9s.

Avolon signed a memorandum of understanding for 125 737 Max 8s. The agreement includes firm orders for 75 Max 8s as well as purchase rights for an additional 50 737 Max 8s.

BOC Aviation became the first Boeing 737 Max 10 leasing customer with a memorandum of understanding agreement for 10 aircraft. The Singapore-based lessor has an additional 74 737 Max aircraft on order.

CDB Aviation Lease Finance signed a memorandum of understanding for 45 aircraft, consisting of 30 A320neos and 15 A321neos. In addition, 15 A320neo positions from CDB Aviation's previous order will be converted to A321neo aircraft. It also signed an MoU agreement for 42 737 Max 8s, 10 737 Max 10s and eight 787-9s. CDB Aviation Lease Finance converted six 737 Max 8 orders to the new Max 10 model from a previous order. The leasing company is scheduled to begin taking delivery in 2021.

China Aircraft Leasing Group announced an order for 50 737 Max aircraft, including 15 Max 10s. The aircraft will be delivered "in stages" up until 2023.

GECAS announced an order for 20 737 Max 10s, converting 20 of its current Max orders to the larger version. It has 170 737 Max aircraft on order, the largest of any aircraft leasing company. It also signed a 100 A320neo-family firm order, taking its commitment for the re-engined aircraft at 220 units.

Japan Investment Adviser (JIA) announced a commitment to purchase 10 737 Max 8 aircraft. JIA Group activities include operating a lease business which manages a fleet of about 60 aircraft through its operating lease arm, JP Lease Products & Services.

Tibet Financial Leasing signed a memorandum of understanding for 20 737 Max aircraft. The agreement includes Max 8 and Max 10 aircraft. It also signed an MoU for 20 A321neos.

Engine orders

CFM International logged record orders at the 2017 Paris air show, receiving 1,658 LEAP and CFM56 engines commitments, in addition to long-term service agreements. Its total 2017 orderbook reached more than 2,850 engines for the six-month period and total LEAP orders on the books for more than 14,000 engines.

"This air show has far surpassed all of our expectations," says Gaël Méheust, president and chief executive officer of CFM International. "It is highly gratifying and humbling to have so many airlines put their faith in CFM to power and support their single-aisle fleets. Now, it is our job to reinforce, every day, that they have made the right choice."

The Safran-General Electric joint venture booked six airline customer orders, as well as six leasing companies during the air show.

China Southern Airlines placed an order for CFM International LEAP-1A engines to power 50 new Airbus A320neo aircraft.

China Eastern Airlines placed an order for CFM LEAP-1A engines to power 70 new A320neo aircraft. The order includes a long-term support agreement. The airline is scheduled to begin taking delivery in 2018. China Eastern also selected General Electric's GEnx-1B engine to power its 15 new 787-9s. The aircraft order was announced in April 2016. Deliveries are expected to begin in 2018.

Delta Air Lines ordered the CFM International CFM56-5B engine to power 10 additional A321s aircraft.

International Airlines Group (IAG) selected the LEAP-1A engine to power a total of 55 A320neo-family aircraft for its British Airways and Iberia brands. The aircraft – scheduled to begin delivery in 2018 – are part of an order announced by IAG in 2014 and 2015.

Spring Airlines signed an agreement with CFM International for LEAP-1A engines to power 60 new A320neo/A321neo aircraft. The aircraft are scheduled for delivery between 2019 and 2023.

Air Lease selected CFM International's LEAP-1A engine to power 25 additional A320neo-family aircraft. The engines are for option aircraft previously announced. They are scheduled for delivery between 2019 and 2022.

Aviation Capital Group announced an order with CFM International for LEAP-1B engines to power 20 new 737 Max 10s.

CDB Aviation Lease Finance ordered CFM LEAP-1B engines to power 42 737 Max 8 and four 737 Max 10 aircraft.

GECAS selected CFM International for the LEAP-1A engine to power its 100 A320neo-family firm order.

The lessor also announced an order for the LEAP-1B engines to equip 20 737 Max 10 aircraft.

ICBC Leasing signed an agreement to purchase the CFM LEAP-1A engine to power 40 A320neo aircraft.

VEB Leasing announced an order for CFM LEAP-1A engines to power 20 new A320neo/A321neo aircraft scheduled to begin delivery in 2019. In addition, the leasing company firmed orders for LEAP-1B engines to power 22 new 737 Max aircraft with deliveries scheduled to begin in 2018. Other CFM orders/commitments included: **Avolon Leasing** for 75 737 Max 8 LEAP-1B engines; **Lion Air Group** for 50 737 Max 10 LEAP-1B engines; **China Aircraft Leasing Group** for 50 737 Max LEAP-1Bs; **Spicejet** for 20 737 Max 10 LEAP-1Bs; **TUI Group** for 40 LEAP-1Bs powering 737 Max 10s; **Okay Airways** for 15 737 Max LEAP-1Bs; **Blue Air's** LEAP-1B engines for six 737 Max aircraft; **Aviation Lease and Finance Company** for 20 737 Max LEAP-1Bs; **BOC Aviation's** LEAP-1Bs for 10 737 Max 10s; and **Ryanair** for 10 737 Max LEAP-1Bs.

Other engine announcements

Arkia Israeli Airlines signed a 15-year rate per flight hour agreement with CFM to support is fleet of LEAP-1A engines that will power four A321neo aircraft. The engine order was announced in April.

Atlas Air signed a three-year TrueChoice Transitions agreement with General Electric Aviation for the time and material to repair and overhaul 41 CF6-80C2 engines that power its fleet of 767-300F aircraft.

China Eastern signed a 15-year TrueChoice Overhaul agreement with GE Aviation for the time and material to repair and overhaul GEnx-1B engines.

China Southern reached a 15-year TrueChoiceTM Flight Hour agreement with GE Aviation for the maintenance, repair and overhaul of its GE90 fleet, including GE90-110B engines powering its 12 777 freighter aircraft and GE90-115B engines powering its 10 777-300ER aircraft.

Eva Airways signed a 12-year TrueChoiceTM flight hour agreement with GE Aviation for the maintenance, repair and overhaul of its CF6-80E1 engines that power its 12 A330 aircraft.

HNA's subsidiaries **Hainan Airlines** and **HNA Technic** reached a 30-year GE branded service agreement for GEnx and CF34 engines with GE Aviation. The deal enables Hainan Airlines and HNA Technic to serve as authorised service providers for GEnx-1B and CF34-10 engines and perform original equipment manufacturer maintenance, overhaul workscoping and component repairs, as well as provide comprehensive materials support.

Japan Airlines signed a two-year TrueChoiceTM Overhaul agreement with GE Aviation for the time and material to repair and overhaul 18 CF6-80C2 engines that power its fleet of 767-300 and 767-300ER aircraft.

Royal Air Maroc selected GE for a five-year, TrueChoice Overhaul agreement for the maintenance, repair and overhaul of the CF34-10E engines powering its four E190 aircraft.

Turkish Airlines has concluded a 15-year rate per flight hour maintenance agreement with CFM International to support the LEAP-1B engines that will power the airline's new fleet of 75 737 Max aircraft scheduled for delivery between 2018 and 2023.

Rolls-Royce

Rolls-Royce announced an order from Ethiopian Airlines for Trent XWB engines to power 10 new A350-900 aircraft. The announcement includes TotalCare service support for 14 aircraft already in service or on order.

The UK engine manufacturer also unveiled Air France Industries KLM Engineering & Maintenance to join its CareNetwork with an agreement covering Trent XWB engines.

Air France-KLM has 25 A350 aircraft on order with 25 options, all powered by the Trent XWB. These engines will be supported under a TotalCare long-term services arrangement, with engine maintenance carried out by AFI KLM E&M. In addition, both parties will cooperate on the repair of Rolls-Royce engine parts and components. The first component repairs to be implemented by AFI KLM E&M are Trent 1000 LPC shaft and IPC front stub shaft, and Trent 1000/Trent XWB tiled combustion chambers.

Rolls-Royce is developing its CareNetwork to be more capable, competitive and flexible as its Trent installed base grows.

Pratt & Whitney

Pratt & Whitney announced some engine developments at the air show.

Its PurePower PW1100G-JM engine was granted 180-minute extended-range operations (Etops) eligibility by the European Aviation Safety Agency. This came after US Federal Aviation Administration approval in December 2016.

Subsidiary Pratt & Whitney Canada signed an agreement to supply its latest PW150 engine-family powerplant – the PW150C – to power the AVIC Aircraft MA700. Since the selection of the PW150C for the new regional turboprop, P&WC has invested significantly in the engine's development to support its integration into the airframe.

"Enhancements we have built into the PW150C engine include advanced high-efficiency technologies, materials and manufacturing processes, including a third-stage power turbine, a modified reduction gearbox to support the aircraft's larger-diameter propellers and an optimised low-pressure compressor," says Frédéric Lefebvre, P&WC vice-president marketing.

The PW150C engine control will be integrated with the MA700's avionics and controls system to reduce pilot workload. It will offer enhanced dispatch availability and reliability in the hot and high environments of western China.

Lefebvre says the agreement was on the definition of the mechanical interfaces. "The engine is in the detailed design phase and will be available to support AVIC's first aircraft rollout and flight test programme," he says.

Pratt & Whitney also signed a memorandum of understanding with Ilyushin Joint Stock Company to explore the restart of the Ilyushin IL114-100 regional turboprop aircraft programme with PW127H engines. A total of 10 IL114-100s were manufactured in Uzbekistan on behalf of Ilyushin before the programme was suspended. P&WC will support the initial programme restart by providing two PW127H engines for IL114-100 regional turboprops. Both companies will also cooperate in reaching a new, long-term agreement regarding future regional turboprop programmes for Russian and international regions.

The first flight of the IL114-100, powered by two PW127H turboprop engines, took place in January 1999 and the aircraft obtained a type certificate from the Aviation Register of the Interstate Aviation Committee at the end of that year.

Holding off the **repo man**

A recent lease termination between CALC and a Chinese airline has brought usually rare Chinese repossessions back into the spotlight. **Michael Allen** reports.

Aircraft repossession cases in China seldom end up in court. The last notable occurrence was eight years ago, when US lessor GECAS sought repossession from the now-defunct East Star Airlines.

In 2005, the Wuhan-based carrier agreed to lease 10 Airbus A320s from GECAS, and deliveries started from the second quarter of 2006. But GECAS delivered only nine before East Star went into liquidation on 30 March 2009.

Sources with knowledge of the matter say the court "very quickly" recognised the ownership rights of GECAS. While the process of getting the aircraft back took about five to six months, sources attribute most of the delay to the interests of creditors in the proceedings. Once it had reclaimed the aircraft, GECAS remarketed them both inside and outside China.

"Since the GECAS/East Star Airlines case, there have not been any controversial court-based repossessions in China," says Gavin Wang, a partner at Jun He Law Offices.

Another law firm partner, who declines to be named or have his firm named, tells *Airfinance Journal* about a repossession he oversaw from the now-defunct Jade Cargo International in 2011.

Two German bank clients of the lawyer had exposure to three Boeing 747-400 freighters at the Shenzhen-based airline when, on 31 December 2011, it suspended operations. He says that, while the courts were not involved, it was a challenge to deregister the aircraft from the Chinese aircraft registry and it took about one year to get the aircraft out, during which time the creditors suffered financial losses.

"The advice from PRC [People's Republic of China] counsel at the time was to negotiate an arrangement with the airline to assist with the deregistration of the aircraft, because the CAAC prefers to deal with the airline than the lessor. The airline was not obstructing repossession, per se. They said we could pick up the keys, but the aircraft was Chinese registered," he says.

"Ideally, you want to deregister and reregister the aircraft into an Irish register, then you could have an Irish crew to fly

> *Since the GECAS/East Star Airlines case, there have not been any controversial court-based repossessions in China.*
>
> **Gavin Wang**, partner, Jun He Law Offices

Source: Jetphotos.net

it out to where you want it. In the end, though, the airline did assist with the ferry flight out of China and the deregistration."

Airfinance Journal understands that, on the whole, repossessions are relatively rare in China. This can be explained by the ownership structure of Chinese airlines.

"Historically, most airlines in China were either part of the big three state-owned carrier groups [Air China, China Eastern and China Southern] or the well-capitalised HNA Group. Therefore, few defaults occurred," says Leo Fattorini, a partner at Bird & Bird Singapore.

"Recent years have seen exponential growth in air travel in China, and thus the establishment of a host of new independent airlines. While some benefit from the backing of local governments, many do not. Given the increased competition in the market and for the available infrastructure, we could see a higher level of defaults in the future."

The latest potential Chinese repossession case that has emerged concerns LJ Air and its lessor, China Aircraft Leasing (CALC), which on 16 June issued termination notices to the airline for two A321s.

CALC declines to confirm whether it plans to repossess the aircraft and, if it does, there is no indication that the case will necessarily go to court. However, a lawyer with experience of repossessions tells *Airfinance Journal* that repossession would be a "natural step" after the issuance of a lease termination notice.

It remains unclear what happened between CALC and LJ Air, but *Airfinance Journal* understands that the airline has been seeking a new investor for some time.

The two A321s are LJ Air's only aircraft, according to *Airfinance Journal* Fleet Tracker. In China, an airline must have at least two aircraft in its fleet to maintain its air operator's certificate (AOC), according to two Chinese lawyers.

"The airline may not easily give up – and fight for these aircraft," says Jason Jin, senior associate at Grandall Law Firm in Beijing, explaining that once the CAAC revokes an airline's AOC it is "almost impossible" to get it back.

He adds: "CALC can terminate the lease and negotiate with the lessee about how to return the aircraft. If the airline refuses to cooperate, the only option they have will be to appeal to the local district court in Harbin and the court will decide."

Jin and Wang agree that, should the case end up in court, it could take more than a year to get the aircraft back.

"Normally, the court is required to issue a judgment for a dispute within six months," says Wang. "If it's very complicated, it could be delayed. If any party wants to appeal, they need more time to get a final judgment."

Source: PlanespottersNet

"Recent years have seen exponential growth in air travel in China, and thus the establishment of a host of new independent airlines. While some benefit from the backing of local governments, many do not. Given the increased competition in the market and for the available infrastructure, we could see a higher level of defaults in the future."

Leo Fattorini, partner at Bird & Bird Singapore

Because of the length of this process, courts sometimes encourage parties to settle outside of court.

Challenges of Chinese repossessions

In some aspects, China can be approached in a similar way to other jurisdictions in terms of repossession. *Airfinance Journal* understands that Chinese courts generally recognise the rights of an owner, after default, to terminate the lease of an aircraft and seek repossession, though there could be complications when certain bankruptcy proceedings are associated with the default.

There could also be practical issues that may affect repossession, according to a Hong Kong-based lawyer who requested anonymity.

First, creditors such as airport authorities, fuel suppliers and mechanic/repair lien holders could become involved with the proceedings.

"The lessor or financier would usually need to pay those lien holders before they can secure the release of the aircraft to them," says the lawyer.

Another challenge, adds the lawyer, would be locating and ensuring all parts of the aircraft, including maintenance records, are in order – particularly if, for example, the airline was permitted to pool the engine or parts with other airlines.

Third, there could be some dispute about which local court has jurisdiction over the case.

"It may be that the lessor or financier will want a business-friendly, more internationalised court to look at this matter, whereas other creditors may want their local court to look at the case," says the lawyer.

If the case ends up in a local court, the lawyer warns, then that court "may not have an understanding of high-value leasing transactions of this kind, which may potentially delay how the proceedings will run".

Cape Town

Another aspect to consider, says a different lawyer, is the application of the Cape Town Convention (CTC), which China ratified on 3 February 2009.

The CTC remains untested in China, and so is only helpful for repossessions "theoretically speaking", says the lawyer who worked on the Jade Cargo repossession.

In relation to the LJ Air/CALC case, however, the CTC would not apply if CALC had leased the aircraft via a domestic Chinese structure, *Airfinance Journal* understands. This is because it would be treated as a domestic case and would be dealt with purely in the Chinese courts.

CALC declined to comment on issues raised in this article, GECAS did not immediately respond to a request for comment and LJ Air could not be reached for comment.

China's problem with **engine leasing**

Engine leasing in China is a tough business and one that is dominated by just a few players. **Michael Allen** explains why few Chinese companies are keen to do engine leasing deals.

The leasing of aircraft into China is a well-documented industry, participated in by a broad swathe of domestic and international lessors. Aircraft engine leasing, on the other hand, is more unexplored territory, with fewer foreign players venturing into the space.

"Engines are not big ticket assets compared to aircraft and you need high technical expertise to do it," explains David Yu, executive director for Asia operations at the International Bureau of Aviation (IBA).

"There are many Chinese lessors wanting to get into engine leasing. They want to increase exposure, but it's hard to get scale due to the size of each deal."

Whereas airlines which lease aircraft usually do so for a minimum of several years and up to 15 years (short-term wet-leasing excluded), engines are often leased as spares for short-term periods. Many airlines in China, especially the larger state-owned carriers, prefer to purchase their own spare engines rather than lease them.

However, Yu says that there are "a lot of new entrants that have recently entered into this space globally and are competing for deals and scale".

Guangzhou-based Legend Financial Leasing told *Airfinance Journal* in a February 2017 interview that it had leased five spare Embraer ERJ145 engines to Tianjin Airlines. A Legend source confirms to *Airfinance Journal* that it has not leased any more engines since then.

The engine leasing business in China is more likely to be a side-business for participants – such as Legend, whose core business consists of equipment leasing, such as underground piping, medical equipment and environmentally-friendly public transport vehicles – rather than a majority part of their leasing activity.

Bob James, managing director of UK-based AerFin, says that he is not aware of specific Chinese lessors focused on engines, but believes engine leasing "should be considered as strategically important as aircraft leasing, and it will only

Source: Crosa

> *There are many Chinese lessors wanting to get into engine leasing. They want to increase exposure, but it's hard to get scale due to the size of each deal.*

David Yu, executive director for Asia operations, International Bureau of Aviation (IBA)

> *Given the technical nature of engine leasing, any Chinese lessor investor seeking to invest in the engine leasing business would be well advised to acquire engine lease management expertise from which to develop their own technical and commercial competencies.*
>
> **Bob James**, managing director, AerFin

be a matter of time before this business is developed in China".

Chinese lessors looking to lease engines should make sure they are well-versed in the technicalities of that business before starting, advises James.

"Given the technical nature of engine leasing, the wide variety of engine types and the potential impact on residual values and remarketability if not appropriately managed, any Chinese lessor investor seeking to invest in the engine leasing business would be well advised to acquire engine lease management expertise from which to develop their own technical and commercial competencies," he says.

An executive from one Chinese leasing company, who declined to be named, says that although engines are among the most common types of aerospace equipment, lessors in China "seldom" touch them. He says that his company does not lease engines because the "amount is too small".

Jon Sharp, president and chief executive officer of Engine Lease Finance Corporation (ELFC), says that new Chinese money is invested mainly in the aircraft rather than the engine market.

"That has driven distortion of the sale and leaseback market to the extent that lessors are finding it now unattractive and so are placing orders direct with the OEM [original equipment manufacturer]. A risky strategy, in the hope of better returns," he says.

"Only a small proportion of the Chinese money is in engines. The engine market is, however, small and that extra money together with more new entrants from Asia is damaging returns for the engine lessors."

Harsh environment

Chinese cities tend to suffer from high levels of air pollution. The country's busiest airport, Beijing Capital, serves a city often plagued with severe levels of pollution. In December 2016, 359 flights from that airport had to be cancelled because of heavy smog reducing visibility levels, according to Hong Kong newspaper *South China Morning Post*.

Aircraft engines also suffer from the pollution, deteriorating much faster than they would in a cleaner air environment.

"Narrowbody engines appear to exhibit significant premature deterioration in terms of engine performance, resulting in an increase in engine shop visit costs as a consequence of the non-benign operating environment in China. Engine lessors may need to carefully consider the deterioration rates and associated impact on maintenance reserves and engine residual values," says AerFin's James.

ELFC's Sharp agrees, saying that a typical narrowbody engine tends to last "half as long" in China compared with one operating in Europe.

"It's that bad," he says, adding: "That means there is a lot of emphasis on return conditions and usage rates and reserves."

Engine repossessions

Aircraft repossessions in China present several challenges and can take time, although they are relatively uncommon compared with other jurisdictions (*see pages 22-23*). Engine repossessions are even more uncommon, and usually would form part of an overall aircraft repossession with the engines included rather than engines on their own, says IBA's Yu.

Sharp says that one of the difficulties with China is that nobody has any experience of engine repossession.

"There have been some aircraft, but not engines – that's a different case. So there's a bit of a question mark over that, but generally speaking engines are easier to repossess than aircraft," he adds.

Looking ahead

Despite the challenges, the prospects for the development of the engine leasing market in China are generally good.

Yu says, however, that the majority of engine leasing deals are still finance leases.

James says the exact level of growth is difficult to calculate because of the lack of reliable statistics on engine leasing in China.

"However, it is known that such entities as Hainan and the larger carriers such as China Southern have been supported by OEMs with engine leases, particularly on the larger big fan engine types," he says.

"The engine leasing market is not considered mature in China, but given the greater than 13,500 forecast new aircraft deliveries over the next 20 years, it will inevitably grow and there are not seen to be barriers that would prevent this from increasing."

CASC Willis eyes portfolio expansion in China

Willis Lease's Chinese joint-venture company aims to expand its portfolio rapidly with about 10 engines a year.

Shanfa Yan, the joint venture's general manager, tells *Airfinance Journal* that CASC Willis Engine Lease started slowly, having bought just a handful of engines since it was set up three years ago, but now wants to expand more rapidly.

He says the company will use bank financing combined with equity to purchase the engines.

CASC Willis has engines on operating leases to China Eastern, Shandong Airlines, Hainan Airlines and Juneyao Airlines. Its portfolio includes powerplants for the Boeing 737 and 777.

CASC Willis was established within the China (Shanghai) Pilot Free Trade Zone in order to take advantage of the governmental support programmes offered to companies there. It is a 50-50 joint venture between Willis Lease Finance and China Aviation Supplies Import & Export Corporation.

Yan, who has been working with Willis Lease for 20 years, says that when he started there were only a "couple of hundred" aircraft in China, and now the number stands at about 3,000.

"It's a big change," he says, adding: "Airlines' fleets are getting bigger and sometimes they buy the spare engines. Sometimes they short-term lease and sometimes they long-term lease the engines."

The first aviation joint venture in China concerned engines. In 1996, Pratt & Whitney and Chengdu Engine Group established a production facility to manufacture components for aircraft engines and industrial gas turbines, according to an article – "The effectiveness of China's industrial policies in commercial aviation manufacturing" – by US think tank RAND. This spurred the rapid development of aviation joint ventures in China, so that "most major foreign commercial aircraft manufacturers and aviation subsystems suppliers now have facilities in China".

All eyes on the E2

John Slattery, Embraer's chief executive officer, tells **Jack Dutton** about service entry of the Embraer E190-E2, his hopes for the programme and why Embraer puts lessor interests before its own.

Original equipment manufacturers (OEMs) have a good reason to be slightly worried right now. After several years of steady growth, there has been some turbulence in the market, with a global slump in orders and a deceleration in traffic growth. Yet, despite these obstacles facing the industry, the chief executive officer of Embraer has a rather positive outlook of the market.

"We're going through a patch of calm air with a reasonable tailwind," John Slattery tells *Airfinance Journal*, "and that's why my expectation is that we will continue to see more new orders being announced throughout the balance of this year and my hope is that that includes orders from existing customers and new operators."

At the 2017 Paris air show in June, the Brazilian manufacturer booked orders for 18 aircraft worth about $1 billion at list prices. Customers included Belarusian Belavia Airlines, Japan's JAL and Fuji Dream Airlines, and KLM Citihopper. This made Paris 2017 a slightly stronger air show than Farnborough 2016, at which Embraer booked 16 orders.

Like other OEMs, some of the headwinds for Embraer include geopolitical risks and global pilot availability, but Slattery says that the Brazilian OEM is experiencing strong momentum, and benefiting from a longer pipeline of lessor engagement opportunities than he has seen in the past few years.

"I'm definitely sharing a target with my colleagues to bring new network flag carriers into the operator base of the E-Jets. So I'm very focused on that and I hope we can achieve that goal over the balance of this year and into next year. I would say that the mood at Embraer is very strong and upbeat. It's confident, but not in an arrogant way," he adds.

One reason for this optimism is that Embraer is now within a year of entry into service of the E190-E2.

"The customers have confidence that we're on time; they have confidence in the technical spec of the aircraft. In fact, it is slightly ahead of what was originally scheduled and we're under budget, so our shareholder base is pleased," says Slattery.

"We're now seeing a level of interest right across the world with airline CEOs and their leadership that I have not witnessed in three years," he adds.

"This year I expect we'll continue to have more E1 orders but as we came to the end of this year and into next year, there's no doubt about it, the focus will be on the E2."

John Slattery, chief executive officer, Embraer

Over the next 20 years Embraer expects 6,400 aircraft in the 70- to 130-seat range to be delivered around the world. Half of that number will go to western Europe and to North American markets, according to Slattery.

So far, Embraer has enjoyed most of its success in these markets, working with carriers including Air France, KLM, Lufthansa, British Airways, Alitalia, LOT Polish Airlines, American, Delta, United Airlines, Jetblue Airways and Alaska Airlines.

But Slattery identifies south-east Asia and China as the "standout" area of growth since "27% of our market will come from that region over the course of the next 20 years".

He adds: "My key focus now is to broaden Embraer's footprint in south-east Asia."

The chief executive also believes that the arrival of the geared turbofan (GTF) engine on the Embraer E2 family will bring a "second wave" of opportunities to place aircraft in the Middle East.

There are about 80 Embraer aircraft active with Middle East carriers, according to *Airfinance Journal*'s Fleet Tracker.

Asked how the Middle East's appetite for widebodies could impact regional demand, Slattery says: "The thing about widebodies is that you have to feed them. In a lot of these big hubs, at least a third of the aircraft that are flying there, maybe more, are regional aircraft to feed the larger widebodies.

"As the Middle East orders more widebodies, in my opinion, they're going to need more and more smaller aircraft to feed those mega-hubs that they have in the region."

Slattery believes the GTF-powered E2 is a good candidate to meet that need, because it is designed to cope with "hot, high and harsh conditions".

He adds: "My expectation is that, with the capability of the E2 and the E1 in terms of range and increased seating, coupled with the capabilities of the GTF engine, we will have a second wave of opportunities in the Middle East." Although many customers are still ordering E1s rather than turning their attention to the E2, Slattery appears unconcerned.

"If it's an E1 solution – and I expect more E1 orders this year – then that's fine. If it's an E2 solution they're looking for, then that's fine.

"This year I expect we'll continue to have more E1 orders but as we came to the end of this year and into next year, there's no doubt about it, the focus will be on the E2.

"I expect a lot of activity around the E2 but I also expect that we're going to be selling E1s for many years to come."

Waiting game with lessors

Although Slattery expects to concentrate on the E2 programme next year, he will not accept any more orders from lessors for the type until they have placed "a reasonable percentage" of the aircraft.

Three lessors – AerCap, Aircastle and ICBC Leasing – have orders for 50, 25 and

Source: Embraer

10 E2 aircraft, respectively, according to Fleet Tracker.

"I would not entertain any more lessor orders until a reasonable percentage of the aircraft from those three lessors in aggregate have been placed. That's my commitment to the marketplace."

He adds: "It's not a contractual commitment; we just believe it's the right thing to do. Those lessors now are partners with Embraer and we will not abuse partnerships in any shape or form. We're working with them and not only that, we put the interests of our lessor partners before ours."

Slattery also mentions Nordic Aviation Capital's outstanding order for 24 E1s, before adding that Embraer "has a slightly different philosophy" to other OEMs in that it wants initially to limit the number of lessors buying a new aircraft type, and instead focus on a few "key leasing partners" the company can work closely with.

E2's challenges

But even with the promise of the E2, new aircraft programmes rarely come to market without some early teething problems.

The only confirmed lessor placements of E2s have come from Aircastle, which has placed three E195-E2 aircraft with Brazilian carrier Azul Linhas Aereas, and from AerCap, which has placed three E190-E2s and two E195-E2s with Turkish carrier Borajet.

Slattery refuses to say much more about lessors placing the E2 aircraft, citing a need to respect confidentiality, especially as many of them are public companies. He points out, though, that Aengus Kelly, AerCap's chief executive officer, has appeared very confident in the lessor's quarterly earnings about the placement of E2s.

However, Borajet, currently AerCap's only customer for the E2s, suspended operations in April, citing maintenance issues. Some of the carrier's aircraft had to be repossessed. Although the airline wants to relaunch next year after a restructuring, it is uncertain whether it will take the E2 aircraft, plus it looks unlikely to be an attractive leasing partner, having narrowly avoided administration.

The lack of airlines choosing to lease the aircraft is not the only obstacle facing the E2. The US, the leading market for Embraer aircraft, has thrown up some issues for the E175-E2, which fails to meet pilot scope clause criteria.

The only firm orders for the aircraft type in the region are from US company Skywest Airlines Inc., which has a 100-unit backlog. However, because the E175-E2 exceeds the maximum weight limit for regional aircraft under the scope clause, it is now prohibited from operating in the US. In response, Embraer has delayed delivery of the aircraft from 2020 to 2021.

But Slattery remains optimistic about the clauses.

"We expect, over the course of the next number of years, that management will have these meaningful discussions with their pilot unions," he says. "Scott Kirby, the president of United Airlines went public a couple of weeks ago saying that he wants to have that discussion with the pilot unions. There are broad discussions around scope clause; that's the conversation between the management teams and the unions."

He adds that Embraer still "has a solution" for the customer today and is able to sell the scope-compliant E175-E1, if the talks do not progress.

Regional consolidation

Another aspect of the regional market that Slattery has to consider is lessor consolidation and the growing domination of Nordic Aviation Capital (NAC) in the regional space. Last year the company acquired two Embraer-focused lessors – Aldus Aviation and Jetscape – in the space of a few months. NAC now has a fleet of 138 Embraers, making up nearly one-quarter of all leased Embraer aircraft, according to Fleet Tracker. Other significant players in the market include Avolon, CDB Leasing, Falko and GECAS.

Slattery, however, is not concerned. "NAC is already one of the most formidable lessors in the regional space, both on the turboprop and on the regional jet side, and I can tell you from my perspective that they're already proving themselves to be a formidable partner, somebody that I engage with a lot, I trust a lot and I look for their support a lot."

But he does recognise that monopolies in this industry are best avoided. "I don't think Martin Møller and his team expect to have a monopoly on the E1 or the E2," he says. "GECAS continues to be a large lessor; BOC Aviation – Robert Martin and his team – still have aircraft. The leasing business is a trading business, don't forget that, so lessors will trade aircraft. I'm sure Martin [Møller] will end up trading some aircraft at some time; it's just a good discipline."

Lessor engagement

Each year Embraer holds leasing events in Dublin. Slattery says Embraer is hosting more of these events because many E1s are coming off lease.

"We are working with our lessors to make sure we are competitive in cost and in lead time to make sure we get aircraft turned around quickly and get them prepared for those second leases. Constantly aligning our interests with the lessor's interest is important to maintain long-term residual values."

Although Slattery has a bullish short-term outlook when it comes to aircraft sales, he is wise to ensure his team continues to work with lessors so that Embraer can withstand any turbulence ahead.

Flybondi focuses on narrowbodies

Julian Cook, chief executive officer of the Latin American start-up, tells *Airfinance Journal* about its debut and the challenges in Argentina for a low-cost carrier.

Argentine start-up carrier Flybondi is targeting October to start operations from Cordoba with the Boeing 737-800 model configured with 189 all-economy seats.

The ultra-low-cost carrier plans to operate four 737-800s by the end of this year. Another six aircraft will be added in 2018.

"Today, we have two full lease agreements signed and a letter of intent for another four 737-800s," says Julian Cook, the airline's chief executive officer. "By September, we will have the first four aircraft signed up and another three that will be delivering next year."

Cook says the leases are for five to six years because Flybondi aims to keep flexibility around its fleet.

"We will not keep aircraft beyond those terms," he says. "We are convinced the 737-800 is the right aircraft to develop the ultra-low-cost model in Argentina and very pleased with the level of support that Boeing has provided us with."

Plans for the Boeing Max 200 model have been on hold as the start-up carrier concentrates on completing the lease agreements of 10 aircraft that represents the backbone of its fleet, as well as starting operations.

Flybondi confirmed to *Airfinance Journal* earlier this year that it had been in discussions with Boeing for an order of Max 200 aircraft.

"We are not in active negotiation for an order right now and we will not be focusing on the Max 200 aircraft over the next six months," he says.

Flybondi intends to operate only narrowbody aircraft.

"We have a narrowbody strategy only – pure low-cost model aircraft. We have no desire to branching out to widebody aircraft, as we have enough opportunities replicating the low-cost model in Argentina," says Cook.

Airport choice

Flybondi selected Cordoba as its base to launch operations.

"We always had Cordoba as a base in our business plan. We will grow the Cordoba base," he says.

El Palomar airport, situated west of Buenos Aires was used as a second back up for Aeroparque (after Ezeiza) because of maintenance of their runways around November 2010. But the military airport has an infrastructure dating from the 1940s.

Flybondi has presented a private initiative to the authorities, which is under review. Cook says Flybondi will commit to build a terminal and an apron that will have 12 positions. But he expects some delays because it is an election year in Argentina.

Once the plan is approved, construction should take about eight months, he estimates. If the authorities approve the plan in September, El Palomar could be ready for operations in the second quarter of next year, he adds.

The 2,100-metre runway is equipped with an instrument landing system and there are no movement restrictions, he says.

Flybondi would use some of its cash for the project but Cook reveals that the carrier has been approached by local lenders for the financing.

Economic obstacles

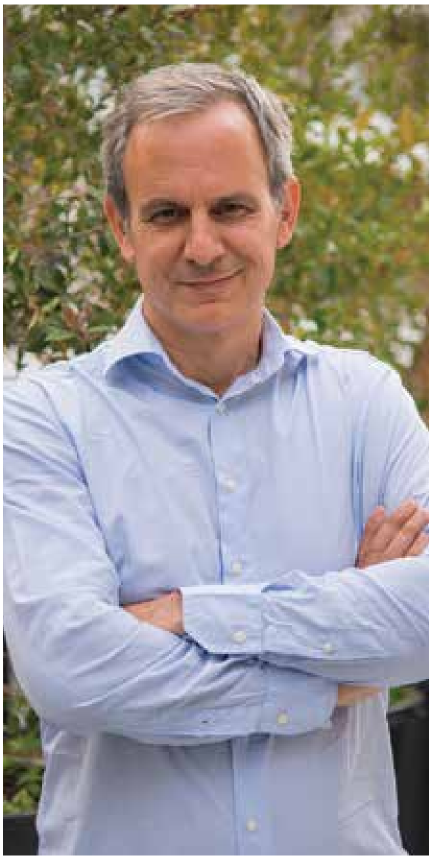
The airline looks to capitalise on a rapidly growing market: the population in Argentina is expected to reach 45.6 million by 2020, according to Trading Economics global macro models and analysts' expectations. This compares with 40.7 million in 2010.

About 92% of Argentina's population lives in cities, with the 10 largest metro areas accounting for nearly half of the population.

Buenos Aires has a population of about three million, with a metropolitan population of close to 13 million. By 2030, greater Buenos Aires is predicted to have 17 million residents.

But the economic situation is challenging. Argentina has one of Latin America's largest middle class demographics, but it is shrinking and chronically impoverished by galloping inflation, which even president Mauricio Macri's team has yet to bring under control.

In December 2015, Argentina scrapped most of its currency controls and allowed



"Today, we have two full lease agreements signed and a letter of intent for another four 737-800s, and by September, we will have the first four aircraft signed up and another three that will be delivering next year."

Julian Cook, chief executive officer, Flybondi

Source: Flybondi

the peso to start trading freely, setting the stage for a sharp devaluation.

The peso has devalued almost 60% year-on-year and inflation remains in the region of 22%. But Trading Economics forecasts inflation to drop progressively to 18% over the next year and reach 12% by 2020.

"Argentina will continue to struggle with lacklustre growth for the next few years, as it begins to digest the challenges behind the implementation of President Macri's economic reforms and the woes coming from its key trading partner Brazil," writes Trading Economics in its 2017-20 outlook report.

In 2001, about 25% of the population lived below the poverty line. That figure jumped to 70% in 2002 after the peso got decoupled from the dollar and individual savings lost two-third of their values. The poverty line best estimates are in the 30% to 40% range now.

Untapped potential

But Cook believes that Argentina has the potential become a mature economy.

Today, less than 7% of the population travels by aircraft, says Cook, adding that the Argentine market represents about 10 million passenger trips a year.

Cook estimates that three million passengers travel three to four times a year by aircraft.

"Argentina will continue to struggle with lacklustre growth for the next few years, as it begins to digest the challenges behind the implementation of President Macri's economic reforms."

Julian Cook, chief executive officer, Flybondi

"The propensity to fly in Argentina is below other Latin America countries. In Chile, it is 2.5 times higher. Argentina may have larger cities than Chile, still 10 million passengers fly in Chile for an 18 million population," he says.

"The travelling population of Argentina should be in the 30 to 40 million range," he adds.

He highlights the importance of bus transportation in Argentina but is hopeful that passengers will turn to flying thanks to low-cost airlines.

A flight between Posadas and Buenos Aires takes 75 minutes, he says. Aerolineas Argentinas flies the route three-times a day, the equivalent of 180,000 passengers a year. The same route attracts more than 500,000 passengers a year by bus, despite a 13-hour journey, he says. Bus companies are charging more than what a low-cost carrier can charge, he adds.

Flybondi expects to transport 10 million passengers in five years and double the air travel market in Argentina.

Cook was the founder of Swiss regional carrier Flybaboo but he sees no difference with starting an airline in Argentina.

"The start-up process is similar despite a different environment and a different risk profile," he points out.

"The Swissair reaction was negative when we started in Lugano. In Argentina, the authorities have been straightforward and clear to an open market. We have had a fair treatment," he says.

"One new element is the unions in Argentina," adds Cook, "but Flybondi has a good relationships with the unions. We have not had any negative comments from political parties either. LCCs [low-cost carriers] will be positive for Argentina."

Ownership change

US private equity firm Cartesian Capital Partners has acquired shares in Argentina's start-up Flybondi, confirms the carrier's chief executive officer Julian Cook.

Cook tells *Airfinance Journal* that Cartesian put up more than 50% of the capital raised by the low-cost carrier.

"They have a good record in investing in airlines," he says, adding that Cartesian led the initial institutional investment in 2002 in Gol Lineas Aereas along with Brazil's Constantino family, the carrier's founders.

Flybondi completed its initial $75 million capital raise and will also have Japanese investor Yamasa as one of its shareholders. Yamasa was an investor in European low-cost carrier Wizz Air.

Cook also confirms that a "European family that owns a low-cost carrier" has also invested into Flybondi.

Other prominent investors include Michael Cawley and Michael Powell, former executives of Ryanair and Wizz Air respectively as well as small Argentine and international investors will own the rest of the shares, he adds.

Flybondi closed the transaction in June, says Cook.

"This initial investment will take us to the next step strategy. We don't have any plans to raise more money," he says.

But, he adds, longer-term plans could involve a trade sale or an initial public offering.

Battle lines are drawn

Sky Airlines is targeting Airbus A320neos as the market heats up in Chile, reports **Laura Mueller**.

Two years after transitioning from full-service to low-cost operations, Chilean carrier Sky Airlines has no regrets despite the launch of a new budget airline in its domestic market.

"We are absolutely convinced that we have made the right decision and the passenger traffic statistics support that," said José Ignacio Dougnac, chief financial officer of Sky Airlines, in an interview with *Airfinance Journal*.

"During 2017 we have grown 14% in the domestic market versus 2% from the industry, and we have experienced a growth in passenger traffic of 58% in our international destinations versus 21% from the industry.

"We are the first LCC in Chile, and we are recognised by the market as such."

Chile's airline market is dominated by Latam Airlines, Latin America's largest carrier, which resulted from the merger of LAN and TAM in 2012, while Sky accounts for the next-largest share.

However, the landscape for Chile's incumbent airlines is changing, with the domestic economy facing challenges and a new entrant in the market.

Jetsmart, which markets itself as an ultra-low-cost carrier, was formed by Arizona-based investment firm Indigo Partners in February. The Santiago-based airline flew its inaugural flight on 26 July, operating an Airbus A320 from Santiago to Calama.

Indigo Partners has already established itself in the low-cost arena with ownership of Mexican low-cost carrier Volaris and stakes in Wizz Air and Denver-based Frontier Airlines.

Using a further three A320s, Jetsmart will expand its coverage of the Chilean market this year to include Antofagasta, La Serena, Concepcion, Copiapo Desierto de Atacama, Puerto Montt and Temuco La Araucania.

Latam and Sky Airlines already serve eight of the planned routes on Jetsmart's future network. Indigo's managing partner, Bill Franke, has stated that the carrier will increase frequencies on some of the services once it becomes more established and gains more capacity.

Chile's Latin American Wings (LAW) also expanded into the domestic market in 2017. LAW began operations in January 2016 with the opening of its first route to the Dominican Republic, but recently launched operations in Chile with routes to Concepcion and Puerto Montt from Santiago. The company has a fleet of four Boeing 737 aircraft and is expanding in Latin America.

Though these new entrants, for the time being, are just small players in Chile's domestic market, they present a challenge for Sky, which is looking to expand. Due to increasing pressure from low-cost airlines in the region, Latam has stated that it may introduce a new fare structure this year.

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José Ignacio Dougnac, chief financial officer of Sky Airlines

Competition is nothing new to Sky, says Dougnac. "We are very used to it, we overlap with other players in almost every route, and there have always been new players in the market coming in and out. What we really want to do is to enable more people to fly in the domestic and international markets, and we can do so because of our low fares."

For the first half of the year Latam Airlines accounted for 68% of the Chilean domestic market, while Sky was responsible for 29%and others for 3 %, according to Dougnac.

Since 2014, its last year of full-service operations, Sky has "increased considerably" its seats offer with a compound annual growth in available seat kilometres (ASKs) from 2014 to 2017 of 9%, and an increase in load factor of 12 percentage points over the same period.

"Our lower fares and a point-to-point strategy have encouraged people to consider and to use more the aircraft as a primary means of transportation in Chile, and we hope to continue in that direction," he says.

However, fares may also be a key differentiator for Jetsmart, which will offer one-way tickets for less than $2.

"We will have 30,000 tickets for 1,000 pesos ($1.5) per one-way trip plus taxes, to fly within Chile ... in 2017," Jetsmart states on its website.

Sky has been particularly careful to cater to the Chilean market by offering a website dedicated to corporate-travel sales for the Chilean business traveller.

Also, Sky prices all its fares on a one-way basis, so a round trip costs twice as much as the basic one-way fare.

"We want to give people the opportunity to fly; therefore, we are very focused on expanding our network in a very efficient way, so we can charge very low fares. As an example, we are already selling $3 tickets, but we are also very on top of our customers' needs. We give a simple service but provide a very consistent delivery on our promise," says Dougnac.

The carrier will incorporate new Airbus A320neos as part of its fleet renewal to offer more seats and new destinations.

Part of this $800 million fleet replacement has already started, says Dougnac. Sky will take delivery of six new leased A320neos in 2018 – with three coming from lessor SMBC Aviation Capital and the remaining units from Air Lease.

The carrier is in the market for 12 additional A320neos to add to its portfolio on operating lease.

"For us, the A320neo meets all the conditions we require to achieve maximum efficiency in the operation. We are looking for these operating leases coming in 2019 and 2020," Dougnac says.

Currently Sky operates 13 A319s and two A320s leased from a variety of lessors including AerCap, Apollo Aviation, DAE Capital, ORIX Aviation and SMBC. BBAM has the largest exposure to the carrier with six leased A319s.

So far Sky has favoured operating leases to build its fleet, but Dougnac indicates the carrier is also evaluating purchase orders from 2021 onwards of A320neo or A321neo units.

While Sky may have carved out a niche for itself in the low-cost market, it operates in a challenging environment.

Although Chile is among the safest and most stable countries in Latin America, it faces political uncertainty, with an upcoming general election in November, and financial worries due to a long-running mining strike at Escondida, the world's largest copper mine. Chile's economy is heavily dependent on the production and export of copper and copper products, which account for just under half its exports.

Credit ratings agency Fitch downgraded Chile's long-term foreign currency rating to A from A+ in early August and revised its outlook from "negative" to "stable," as slow growth and low prices for copper put pressure on the nation's fiscal revenues.

The downgrade "reflects the prolonged period of economic weakness and lower copper prices, which are contributing to a sustained deterioration on the sovereign balance sheet", Fitch said.

"In Fitch's view, growth is unlikely to recover to levels consistent with per-capita income convergence with 'A' peers."

The decision by Fitch comes after a separate downgrade by ratings agency S&P in July, which represented Chile's first credit downgrade since the 1990s.

Standard & Poor's downgraded its rating on Chile's long-term foreign currency sovereign credit rating to 'A+' from 'AA-', with a stable outlook.

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José Ignacio Dougnac, chief financial officer, Sky Airlines

S&P analysts wrote: "The combination of still-low global copper prices and low domestic business confidence continues to constrain private consumption and investment, limiting the country's GDP growth prospects."

The ratings agency expects the Chilean economy to grow only 1.6% in 2017, unchanged from last year. In 2004 growth reached 7%. Then, after it dipped during the financial crisis, it recovered to 5.8% in 2011 and 2012.

S&P expects GDP growth to rise only modestly to 2% in 2018 and to 2.4% in 2019.

Against this backdrop the US dollar has been strengthening, putting pressure on Latin American countries. In July, Chile's central bank held its benchmark interest rate steady at 2.5%.

However, Dougnac notes Chile's currency depreciation "has been less of an issue" during the past two years.

"Growing the international markets, of course, helps offset the exchange rate impact," he adds.

Sky has increased its seats offer in international markets, with four new international destinations during the last 18 months. The carrier is currently flying to six international destinations, which include Buenos Aires, Mendoza, Cordoba, Rosario, Montevideo and Lima, but Argentina is Sky's most important international market, says Dougnac.

"We are always seeing and analysing new routes to better satisfy our customers, based on an efficient and sustainable operation," he says, adding: "And there is more growth to come."

How to take advantage of Hong Kong's **tax reforms**

The recent passing of a bill to reduce the tax rate for aircraft lessors domiciled in Hong Kong has spurred more lessors to consider establishing operations in the city. **Michael Allen** looks at how lessors can take advantage of the new legislation.

On 28 June, Hong Kong's legislature passed an unprecedented bill that promises to transform the city into an aircraft-leasing hub by reducing the effective profit tax rate to just 1.65%.

Few spectators joined *Airfinance Journal* in gracing the Legislative Council's public gallery – the debate about the bill lasted a gruelling 12 hours over three non-consecutive days – but leasing companies in Hong Kong, China and around the world were eagerly awaiting news of the bill's passing.

Clarence Leung, director, tax services, at PwC Hong Kong, says that now the bill has become law – having been gazetted on 7 July – companies should "start to look at it now and formulate a plan in terms of whether Hong Kong is going to be a stable jurisdiction in relation to their business plan".

He cautions, however, that lessors seeking "treaty shopping" should not come to Hong Kong.

"When we were doing the marketing, one point the IRD [Internal Revenue Department] wanted to point out is you shouldn't use it as a tax minimisation vehicle," he says.

In addition, lessors looking to enjoy the benefits of the bill should be those intending to conduct a good amount of business in Hong Kong.

"If you do one aircraft only it is not worth coming to Hong Kong because it

> *"Lessors seeking "treaty shopping" should not come to Hong Kong."*
>
> **Clarence Leung**, director, tax services, PwC Hong Kong

is a bit expensive," he says, adding that the cost of setting up in Hong Kong should be weighed against your intended business there.

Some early birds are setting out to catch the worm: Avolon, which established a Hong Kong presence last year, says it may take delivery of some new aircraft under Hong Kong ownership in the future.

"The headline tax rate is clearly a significant step forward; however, the relatively narrower tax treaty network in Hong Kong versus Ireland still makes it more restrictive. As lessors begin to consider locating aircraft ownership in regional hubs, Hong Kong has clearly taken a significant step in its relative benefits," Andy Cronin, chief financial officer of Avolon, tells *Airfinance Journal*.

ORIX set up its office in Hong Kong in December 2016. Chief executive officer David Power, who declines to comment specifically on his company's plan to take advantage of the new bill, tells *Airfinance Journal* only that the company opened the office "to be closer to one of our key markets and for better access and communications with our investors and shareholder".

Causeway Bay-based Century City, which has a portfolio of 15 aircraft, says that the passing of the bill is a "good start to try attracting lessors and managers to set up their base in Hong Kong".

Kenneth Szeto, executive officer, chairman's office, says: "Hopefully, the practice notes will come out soon to give more detailed guidance to the lessors, managers and other interested parties. I believe they want to ensure that they will be qualified to enjoy the concessionary tax benefits with their setup."

He adds that Century City is "having some internal discussion on this topic", but has no "definite plan" yet.

CALC has been perhaps the most outspoken about its intentions in Hong Kong, although the lessor has long had a presence there and is not a new entrant to the city. The company's chief executive officer, Mike Poon, said in a statement

> *"The headline tax rate is clearly a significant step forward; however, the relatively narrower tax treaty network in Hong Kong versus Ireland still makes it more restrictive. As lessors begin to consider locating aircraft ownership in regional hubs, Hong Kong has clearly taken a significant step in its relative benefits."*
>
> **Andy Cronin**, chief financial officer, Avolon

marking the bill's passing that, as a result, CALC could add Hong Kong to its existing Dublin, Tianjin and Shanghai platforms.

Speaking to *Airfinance Journal* at the Paris air show in June, Poon said: "I trust in one or two years' time Hong Kong will be a very attractive place for global lessors. Once the changes have been implemented, we will move some aircraft under Hong Kong law. Definitely. We are the market first mover in Hong Kong and we will keep pushing this until it happens."

Mainland lessors

Chinese mainland companies are widely considered to be eyeing the bill with interest and considering establishing a presence in Hong Kong. Because of their geographical proximity – among other things – they could be the some of the first movers. Yao Zhou, counsel at Rui Bai Law Firm, has been advising mainland clients on the advantages of setting up a leasing platform in Hong Kong.

She says that before Hong Kong's legislature passed the bill, "everything was still uncertain and up in the air" and Chinese lessors were only doing analysis. However, now that the bill has become official, they are more seriously looking at establishing a company in Hong Kong.

In June, Ryan Guo, the managing director of Zhongyuan Aviation Leasing, told *Airfinance Journal* that his company was considering a move to Hong Kong from Zhengzhou, Henan province.

> *"The PRC government authorities have already streamlined their approval process and we see the tendency that if the amount is not high, then a filing requirement is imposed rather than a prior approval requirement. The process is relatively straightforward compared to what it looked like, say, two or three years ago."*
>
> **Yao Zhou**, counsel at Rui Bai Law Firm

Its base in Zhengzhou – a Tier 2 Chinese city in Henan province about 700km from Beijing and nearly 1,000km from Shanghai – makes it hard to attract aircraft leasing talent, he said, adding: "So we will plan to move to Hong Kong because Hong Kong has got the tax reforms."

A source at Minsheng Financial Leasing also tells *Airfinance Journal* that it plans to set up a presence in Hong Kong now that the bill has been passed. *Airfinance Journal* understands that Ping An Leasing established an entity in Hong Kong in 2016.

"We don't have any deals in the Hong Kong platform yet, while we may have the possibility to put aircraft in Hong Kong in the future. It's hard to tell now," says a Ping An source.

From a People's Republic of China (PRC) law perspective, PRC-Hong Kong outbound investment involves Hong Kong being treated as a foreign jurisdiction, says Zhou. In this way, PRC-Hong Kong investment is governed by the same rules as, for example, PRC-UK or PRC-Canada investment.

Companies need to seek several governmental approvals to make the investment, including from the National Development Reform Commission (NDRC), State Administration of Foreign Exchange (Safe) and Ministry of Finance (Mofcom).

China has recently tightened control on overseas investments. In December 2016, Beijing took measures to stem capital flight as the country's exchange reserves continued to fall. *The Financial Times* reported in January that the central bank's foreign exchange reserves for the previous month fell by $41 billion to $3.01 trillion.

However, Zhou does not believe these increased restrictions are likely to negatively impact aircraft lessors looking to set up in Hong Kong.

"They [the Chinese government] are concerned with outbound real estate investment. Also, they impose particularly rigid requirements on investment or merger and acquisition projects. In terms of setting up a vehicle company by a leasing company, I don't think they will suffer from the tightening by the government.

"The PRC government authorities have already streamlined their approval process and we see the tendency that if the amount is not high, then a filing requirement is imposed rather than a prior approval requirement. The process is relatively straightforward compared to what it looked like, say, two or three years ago."

Zhou is referring to new regulations unveiled last year stating that companies would no longer be required to apply for NDRC approval for mid- to long-term debt; rather, they can register certain information with the NDRC before incurring a foreign debt.

Tejaswi Nimmagadda, a counsel at King & Wood Mallesons Hong Kong, agrees that increased restrictions on outbound investment could, in theory, be an issue. He says that the Chinese government is experiencing a tension between its "long-term goals and the short-term desire to stop capital outflow".

However, he adds that Chinese lessors setting up in Hong Kong could help reduce overall capital outflow from China.

"Funding a deal really means paying the capital cost of getting the aircraft which is really a capital transfer overseas to Airbus and Boeing," he says.

He provides the example of a US leasing company that becomes attracted by Hong Kong's new tax bill and sets up in the city. If the US company, rather than a domestic Chinese lessor, leases to a Chinese airline, then the total amount of money leaving China is less, because the foreign company is making the investment in the aircraft via the sale and leaseback, while the Chinese company is only paying in instalments and the US company still retains a significant chunk of equity in the aircraft.

"So that amount of money going out of China is less – and spread out over a longer period of time," says Nimmagadda.

He also believes that Hong Kong's new tax reform bill could increase non-Chinese lessors' leasing into China – a trend that has dropped in recent years because of the decline in the renminbi and Chinese airlines' preference for financing in renminbi, as well as the legal uncertainty of being able to regain title over aircraft that come off lease and need to be transferred to another jurisdiction.

Speed of setting up

Priscilla Law, head of financial services at InvestHK, a department of the Hong Kong government that promotes foreign direct investment, says that setting up a company in Hong Kong can be done "very quickly" and the steps to achieve that are "fairly straightforward".

She says: "Incorporating the company will only take a few days to a week. The company should also engage some tax experts in looking at the kind of lease or activities they will be doing in Hong Kong. The tax issue is very important for aircraft lessors. They will have to have someone who has the expertise to do an overall analysis of their existing activities and see if they can take advantage of the tax relief."

Law adds that InvestHK has already helped CDB Aviation to set up its Hong Kong office, and expects more lessors to follow.

"The forecast in terms of the new aircraft to be delivered into China is significant compared to other countries, so a large part of that will be financed by the western lessors. While I believe the Chinese lessors will be very interested, I would not underestimate the speed of western lessors to come to Hong Kong or use Hong Kong to lease into China."

Clarence Leung, director, tax services, at PwC Hong Kong

In the "initial stage" after the passing of the bill, she expects mainland leasing companies to set up a presence in Hong Kong.

"They will be very keen to set up an office, but over time I think the Middle East, US and European lessors will also be very interested. Not just because we are part of China and because of the proximity to that market for aircraft leasing, but also that we are an international financial centre.

"We hope these companies will set up their offices here soon, but it's hard to say an exact timeline. Probably before the end of the year we may have at least one or two Chinese or maybe non-Chinese companies as well."

PwC's Leung says it should not be underestimated how keen western lessors are to use the Hong Kong platform to lease into China.

"The forecast in terms of the new aircraft to be delivered into China is significant compared to other countries, so a large part of that will be financed by the western lessors. While I believe the Chinese lessors will be very interested, I would not underestimate the speed of western lessors to come to Hong Kong or use Hong Kong to lease into China," he says.

Justin Sun, a partner at Holman Fenwick Willan in Hong Kong, says that although Chinese companies will no doubt be attracted by these rules, it is not the only reason why they are looking to set up in Hong Kong.

"Because of the attractiveness of the new tax rule, people will start to book their aircraft from Hong Kong, though personally I don't think that will happen immediately. The lawyers and accountants need to get a clear idea of how it works, particularly if it is a big institutional client and investor," says Sun.

"I think there will be some time gap between now and when the first proper qualified lessor is set up. Whether you will see Irish lessors rushing to start to transfer part of their business to Hong Kong, my personal view is it might happen a bit later. My gut feeling is PRC lessors may start to do it in the first batch because they are close to home and it makes more sense given their own customer base."

Not just lessors – airlines, too

It is not just operating lessors that can take advantage of the tax reforms: airlines with captive leasing arms are also considering setting up in Hong Kong. *Airfinance Journal* understands that China Eastern Airlines' leasing arm, CES Financial Leasing, is studying a plan to do so.

"Some people say it might be difficult to get funding for those second-tier airlines. In Hong Kong, we have many different banks here. They should explore in relation to where they should actually use Hong Kong to lease," says Clarence Leung, director, tax services, at PwC Hong Kong.

"I know that a lot of airlines are looking at it, but I think they are slower than the leasing companies. I would encourage them to take proper advice… As far as I know the airlines don't like to rely on one source of financing. Sometimes they will go to different banks, even if it's got a worse margin for them. You never know when the bank will close the tap. That's why you need to keep the different financing channels."

Embraer E195 – bigger not always better

The largest model in Embraer's current E-Jet family has been less successful than some of its stablemates, and appraisers are divided on its prospects.

The Embraer E195 is the largest member of the E-Jet family from Brazilian manufacturer Embraer. The family consists of four principal variants, grouped in two size categories. The original E170 model and the slightly larger E175 offer about 70 to 80 seats, while the stretched E190/E195 variants typically accommodate between 90 and 110 passengers. The E195's capacity is about 10 seats more than that of the E190.

The stretched E190 and E195 versions are equipped with higher thrust engines, larger wings and upgraded landing gear. There is about 95% parts commonality between the E190 and the E195 and these two models have nearly 90% commonality with the E170/175.

The E195 is available in four versions but the vast majority of aircraft are either advanced-range (AR) or long-range (LR) models.

The E-Jet cabin accommodates four-abreast seating (2+2) and has good headroom. Embraer cites the relatively spacious cabin when suggesting the E-Jets – particularly the larger E190/E195 models – are mainline aircraft rather than regionals.

Future developments

Embraer has launched the second generation of E-Jets for which it has adopted the designation E2. As part of a rationalisation of the capacities of the various models, the E195-E2 will be a stretch of the existing model and will offer about 144 seats.

The E195-E2 is scheduled to be the second of the new-generation models (after the E190-E2) with entry into service targeted for the first half of 2019. Embraer suggests that both fuel and maintenance costs of the latest generation of aircraft could be as much as 25% lower than their predecessors.

Istat appraisers' views

AVITAS

Martin O'Hanrahan, senior consultant

The most popular variant of the E195 is the long-range version. As of July, there were 78 Embraer 195LRs in service and the variant accounted for all the outstanding E195 orders. While AVITAS considers the market for the type to be currently balanced, this represents a modest in-service fleet within the wider E-Jet family with the end of the production run in sight.

The slightly smaller E190 variants have enjoyed much more success in terms of orders to date. The E195 has always been caught between two market segments. On the one hand, operators in North America are limited in terms of how they can deploy the aircraft by pilot scope clauses, which restrict the number of aircraft that can be flown by regional carriers by size and weight. On the other hand, the type does not offer the accommodation or range of more capable types in the 120- to 150-seat class.

The E195 will be succeeded by the E195-E2, which had amassed 91 firm orders and 25 options as of July. The first of these aircraft will enter commercial service in 2019.

A secondary market for the E195 has yet to develop fully but prospects should remain strong because it is part of a successful family and could blend easily into the fleets of existing operators looking to add capacity with a larger, technically compatible complementary type.

MBA

Lindsey Webster, director asset valuations

The largest of Embraer's E-Jet family, the E195, was the final variant to enter service in 2006. Although the E-Jet family has been well received in the market, the E195 lags behind the other family members in orders and operators.

Brazilian carrier Azul has 40% of the remaining orders for the type and the top three operators account for two-thirds of the overall fleet. This distribution places the aircraft in a precarious situation, yet values have maintained stability since entry into service. The secondary market has been fairly active for a relatively young fleet, but a demonstrated ability to place the E195 with new operators augurs well for the variant's long-term potential.

In the second half of 2019, the E195 will be replaced by the E195-E2, an aircraft that boasts 20% better fuel burn than current-generation models and which will offer up to 146 seats in a single-class configuration. While not a clean-sheet design, the E195-E2 is likely to impact residual values of the

AIRCRAFT CHARACTERISTICS

Seating/range

Max seating	122 at 30-inch pitch
Typical seating	108 at 32-inch pitch
Maximum range (AR version)	2,200 nautical miles (4,077km)

Technical characteristics

MTOW (AR version)	52.3 tonnes
OEW	28.9 tonnes
MZFW	42.5 tonnes
Fuel capacity	16,210 litres
Engines	CF34-10E
Thrust	18,500lbs

Fuels and times

Block fuel 200nm	1,420kg
Block fuel 500nm	2,870kg
Block time 200nm	47 minutes
Block time 500nm	85 minutes

Fleet data

Entry into service	2006
In service	149
Operators (current and planned)	17
In storage	8
On order	8 excluding E2 models
Built peak year (2011)	24
Built 2016	7
Average age	5.9 years

Source: *Airfinance Journal's* Fleet Tracker

Indicative maintenance reserves

C-check reserve	$45 to $50 per flight hour
Higher checks reserve	$35-$40 flight hour
Engine overhaul	$70-$75/engine flight hour
Engine LLP	$90-$95 engine cycle
Landing gear refurbishment	$35-$40/cycle
Wheels brakes and tyres	$55-$60/cycle
APU	$70-$75/APU hour
Component overhaul	$180-$185 flight hour

Source: *Air Investor*, January 2017

current E195 in the long run. However, in a time of low fuel prices, E2 orders have been uninspiring. A lack of replacement orders may aid residual values of current-generation E195s in the short term. This may occur if operators keep current-generation aircraft in service longer because of lower capital costs outweighing fuel cost savings. This is a general effect that is being seen among current-generation aircraft that are facing replacement by re-engined versions. This trend may be positive in the short term, but the long-term impact on values is questionable.

Oriel

Olga Razzhivina, senior Istat appraiser

The largest member of the E-Jet family, the E195, is widely regarded as a niche aircraft and has the smallest fleet of the family. It appears too large for the traditional regional operators, especially in the US where pilot scope clauses exclude it from the fleets of feeder carriers. At the same time, it has proven too small for the mainline operators such as Jetblue Airways where the Brazilian aircraft's per-seat costs are unfavourably compared with those of the A320s operated by the carrier.

The E195 has found its main market in Europe, where it has successfully replaced aircraft such as the Fokker 100. A total of 12 European airlines, including Austrian, Air Dolomiti and Flybe, have the Embraer model in their fleets. Although Flybe appears to have had a change of heart about the type, it retains a number of E195s to complement the Q400s that predominate in its fleet.

Azul is the single largest operator with 61 aircraft. It utilises the type on its Brazilian network of long low-density routes. Tianjin Airlines, the largest Asian operator, with 12 aircraft, uses the type to connect secondary and tertiary airports. The E195 is very suitable for operating in Russia and the CIS – two airlines, Saratov and Belavia, have four aircraft between them. However, it is facing increasing protectionism from the Russian government, which views the Brazilian aircraft as a competitor to the indigenous SSJ100 Superjet.

The used market is starting to develop for the E195 with former Azul and ex-Lufthansa aircraft finding new homes in Europe. Purchases by the Stobart Group have confirmed the strength of the type in Europe. Borajet in Turkey was an active operator of used E195s but its demise, caused by political instability and falling traffic, has resulted in more aircraft becoming available. Asia has proved a disappointing market, in part because poor airport infrastructure limits the use of regional jets.

Because of its small fleet, the E195 has gained little popularity with lessors, thus limiting competition and potentially supporting healthier lease rates than those of the more popular E190. Although the E195 is being replaced by the E2 version, the orders for the new generation are slow in materialising.

With its values and lease rates now reaching an acceptable level and operator base broadening, the E195 has the potential to maintain value better than other members of the family, which have more concentrated fleets and greater lessor involvement.

Values E195LR, GE CF34-10E engines

Current market value ($m)

Build year	2008	2010	2012	2014	2016
Avitas view	17.4	20.7	24.6	28.7	33.5
MBA view	17.5	20.2	23.4	27.0	31.3
Oriel view	14.0	15.5	17.4	20.2	26.5

Assuming standard Istat criteria. Maintenance status assumes half-life, except for new aircraft, which assumes full-life.

Indicative lease rates ($000s/month)

Build year	2008	2010	2012	2014	2016
Avitas view	148–158	174-184	200-210	226-236	252-262
MBA view	170-190	190-210	210-230	230-250	250-270
Oriel view	165	175	195	215	250

Monthly rental will vary according to factors such as term and lessee credit.

Turboprops compete for **70-seat market**

The 70-seat turboprop market is the preserve of ATR and Bombardier, but their competing aircraft have markedly different attributes.

Turboprops have enjoyed a resurgence in recent years. ATR has had an annual production rate of close to 80 aircraft since 2014, with the 70-seat ATR72 accounting for most of the deliveries. Over the same period, Bombardier has delivered 20 to 30 units a year of its 70-seat Q400 turboprops.

There have been some indications that the revival might be stuttering but both manufacturers were able to make positive announcements at this year's Paris air show (see Paris 2017 round up, *page 18*).

ATR72-600

The ATR72 is a twin-engined turboprop developed from the ATR42 to provide capacity for 70-plus passengers, by stretching the fuselage, increasing the wingspan and upgrading to more powerful engines. The original ATR72-100 variant entered service in October 1989, but was soon superseded by the -200 model. The aircraft was developed with a series of upgrades to maximum take-off weight and engine power, culminating in the ATR72-212.

The ATR72-500 (certificated as the ATR72-212A) is a major development of the aircraft. It incorporates six-bladed propellers in place of the original four-bladed configuration.

The ATR72-600 model replaces the -500 and is the current production standard. It offers further performance improvements and includes a redesigned cabin.

The latest development of the ATR72-600 is a high-density seating configuration, which can accommodate 78 passengers.

Bombardier Q400

The Q400 (original designation Dash 8-400) is the only member of Bombardier's Dash 8 family still in production. The

original Dash 8-100 (Series 100) entered service in 1984 and has a maximum capacity of 39 seats. The Series 200 has the same capacity but offers more powerful engines, the Series 300 is a stretched 50-seat version and the Series 400 is a further stretch originally seating a maximum of 78 passengers, which has subsequently been pushed to 80, with a 90-seat configuration in development.

All Series 400 delivered after 1997 are equipped with a cabin noise suppression system and Bombardier adopted the designation Q (Dash 8-Q400) to emphasise this development. The Dash 8 prefix has since been dropped from the company's marketing literature – the aircraft is now generally referred to as the Q400.

The current version, introduced in December 2009, is designated by the manufacturer as the Q400NextGen and has an updated cabin and improved landing gear. The manufacturer says it also offers reduced fuel and maintenance costs compared with its immediate predecessor.

A defining characteristic of the Q400 is a cruise speed in excess of 350 knots, which distinguishes it from slower conventional turboprops such as the ATR72. This speed and associated productivity advantage comes at the cost of extra fuel burn. The tradeoff between these two cost elements is at the heart of the debate on the merits of the two aircraft.

In terms of future deliveries, the ATR72-600 appears to be in a stronger position, with a backlog of 239 units compared with Bombardier's 77 unfilled orders. The ATR backlog is, however, bolstered by a large number of orders from leasing companies and there are some concerns in the industry as to where these aircraft will be placed.

According to *Airfinance Journal*'s Fleet Tracker, there are more than 30 ATR72-600s in storage. One source suggested to *Airfinance Journal* that ATR's recent announcement that it was setting up a leasing arm (see News analysis: New ATR unit to support lessors and residual values, pages 15-16) is an acknowledgement that the aircraft is facing a difficult market situation with lease rates coming under strong pressure.

Operating cost

When comparing aircraft with significantly different speeds, generic comparisons of relative operating costs are highly influenced by assumptions relating to aircraft utilisation. *Airfinance Journal*'s cost model uses a technique adopted by the Association of European Airlines, which has the effect of crediting the faster aircraft with greater productivity gains as the sector length increases. *Airfinance Journal* has looked at a relatively long 500-nautical mile

Leading characteristics of the 70-seat market

Model	Entry into service	MTOW (tonnes)	Maximum pax	Typical pax	Range (nm)	In service	On order	Operators
Bombardier Q400	1999	29.5	80*	74	1,010	519	77	62
ATR72-600	2011	22.8	74	68	825	340	239	74

Source: *Airfinance Journal Fleet Tracker, 1 August 2017 *90-seat interior in development.*

Indicative relative direct operating costs – 200 and 500 nautical mile sector

	ATR72-600	Q400	Typical 70-seat RJ
Relative trip cost (200 nm sector)	Base	+19%	+34%
Relative seat cost (200 nm sector)	Base	+9%	+30%
Relative trip cost (500 nm sector)	Base	+12%	+17%
Relative seat cost (500 nm sector)	Base	+3%	+13%

Assumptions: figures are based on *Airfinance Journal*'s interpretation of manufacturer claims and published data. Fuel consumption, speed, maintenance costs and typical seating layouts are as per Air Investor 2017.

sector as well as at a more typical regional route of 200 nautical miles.

On the 200-nautical mile sector, *Airfinance Journal*'s analysis indicates the Q400's direct operating cost (DOC) per trip cost is 19% higher than that of the ATR72-600. Even with the extra capacity of the Bombardier aircraft, its DOC per seat on the relatively short sector is still 9% higher than its rival's.

On the 500-nautical mile sector, the Q400 is significantly more competitive, with a direct operating cost per trip about 12% higher than the ATR72-600, with a 3% higher seat-mile cost.

A spokesman for ATR confirms that *Airfinance Journal*'s figures are in line with the company's own analysis, but notes: "There are very few ATR operations on 500-nautical mile sectors and the operational average is nearer 200 to 250 nautical miles."

The spokesman adds: "We consider that there is a difference of six seats between the ATR72-600 and the Q400 in terms of equivalent seating comfort/layout." The six-seat differential appears to be in line with the views of the market and, as such, is used in the *Airfinance Journal* analysis.

Bombardier's analysis, however, shows a very different perspective. Patrick Baudis, vice-president marketing, Bombardier Commercial Aircraft, says direct comparison between the two aircraft can be misplaced. He notes the Q400 is a much more capable aircraft in terms of speed, range and capacity, meaning it is suitable for markets in which the ATR72 cannot compete. He adds that the Bombardier model integrates much better with single-aisle aircraft operations/schedules.

In any case, Bombardier has a very different view of the relative operating costs, suggesting that, on a 300-nautical mile sector, the Q400 has about the same trip cost as an ATR72-600 but can carry up to 14 more passengers. Baudis says it is unrealistic to compare the aircraft operating at their respective maximum cruise speeds, because airlines would operate the Q400 at lower speeds on the type of sectors that could be served by the ATR.

Baudis also believes that the perception the Q400 has higher maintenance costs is incorrect and, in particular, Bombardier believes the PW150A engine costs less to maintain than the older-technology PW127 that equips the ATR72-600.

Current market value ($m)

Build year	2011	2013	2015	2017
ATR72-600 Collateral Verifications view	13.47	14.96	17.26	20.46
ATR72-600 Fintech Aviation Services view	11.82	13.65	15.61	18.18
Q400 Collateral Verifications view	13.10	14.68	17.23	20.96
Q400 Fintech Aviation Services view	13.72	15.75	17.96	20.49

Based on standard Istat criteria.

Indicative monthly lease rates ($)

Build year	ATR72-600	Q400
2011	135,000	150,000
2013	150,000	165,000
2015	165,000	180,000
2017	180,000	195,000

Source: *Collateral Verifications*

Market view on operating costs

Market sources suggest that the relative costs obtained from *Airfinance Journal*'s analysis are broadly in line with market expectations, but that looking at costs alone can be misleading.

Chris Beer, managing director of regional aircraft broker Skyworld Aviation, points out that it is important to consider the increased productivity. He says: "On sector lengths of 300 nautical miles and above, the productivity benefits of the Q400 really start to be noticeable in terms of scheduling and potential revenue generation."

Values and lease rates

Airfinance Journal canvassed the views of appraisers on the respective current market values of the Q400 and ATR72-600 (see table). Gueric Dechavanne, vice-president, commercial aviation services, Collateral Verifications (CV), confirms that there has been some recent softening of values, particularly for the ATR aircraft. Dechavanne says CV has seen values and lease rentals drop for the ATR72-600 by about 5% to 10% over the past 12 months.

However, Dechavanne believes rates will stabilise and may even increase slightly over the next 12 to 18 months with a potential for further improvements thereafter. Dechavanne says Q400 rates have been more resilient, with declines of less than 5% depending on the vintage.

Oliver Stuart-Menteth, managing director, Fintech Aviation Services, says there has been limited availability of Q400s and that values have therefore been more robust than those of the ATR72-600. He adds that, in the current market, it is impossible to sell the ATR model without leases attached at anything close to book value, so lease transactions are the only deals being accomplished.

Stuart-Menteth says that the Q400 is not without its problems, with the high cost of spares leading to relatively young aircraft being parted out.

Horses for courses

There is always considerable room for debate when comparing competing aircraft types. The scope for debate is particularly broad given the differing characteristics of the Q400 and the ATR72.

An airline looking to operate a 70-seat aircraft on a conventional turboprop network with short average stage lengths will probably opt for the ATR, but if the airline operates a significant number of routes of more than 300 nautical miles on which it needs an aircraft that will integrate with a jet fleet, the Q400 may be a better bet.

The future success of these competing models probably has as much to do with how these respective markets develop as it does with the relative merits of the aircraft.

Rating Agency Unsecured Ratings

Airlines

Airline	Fitch	Moody's	S&P
Aeroflot	B+(stable)	-	-
Air Canada	BB-(stable)	Ba3(stable)	BB-(stable)
Air New Zealand	-	Baa2(stable)	-
Alaska Air Group	BBB-(stable)	-	BB+(stable)
Allegiant Travel Company	-	Ba3(stable)	BB-(stable)
American Airlines Group	BB-(stable)	Ba3(stable)	BB-(stable)
Avianca Holdings - IFRS	B(neg)	-	B(stable)
British Airways	BBB-(stable)	Baa3(stable)	BB+(stable)
Delta Air Lines	BBB-(stable)	Baa3(stable)	BB+(pos)
Easyjet	-	Baa1(stable)	BBB+(stable)
Etihad Airways	A(stable)	-	-
GOL	CCC	Caa3(neg)	CCC(neg)
Hawaiian Airlines	B+(pos)	B1(stable)	BB-(stable)
jetblue	BB-(pos)	Ba1(stable)	BB-(stable)
LATAM Airlines Group	B+(stable)	B1(stable)	BB-(stable)
Lufthansa Group	-	Ba1(stable)	BBB-(stable)
Qantas Airways	-	Baa2(stable)	BBB-(stable)
Ryanair	BBB+(stable)	-	BBB+(stable)
SAS	-	B2(stable)	B(stable)
Southwest Airlines	BBB+(stable)	A3(stable)	BBB+(stable)
Spirit Airlines	BB+(stable)	-	BB-(stable)
Turkish Airlines	-	Ba3(neg)	BB-(neg)
United Continental Holdings	BB(stable)	Ba2(stable)	BB-(pos)
US Airways Group	-	B1	-
Virgin Australia	-	B2(neg)	B+(stable)
Westjet	-	Baa2(neg)	BBB-(stable)

Source: Ratings Agencies - 17th August 2017

Lessors

	Fitch	Moody's	S&P
AerCap	BBB-(stable)	-	BBB-(stable)
Air Lease Corp	BBB(stable)	-	BBB(stable)
Aircastle	-	Ba1(stable)	BB+(pos)
Avation PLC	B+(stable)	-	B+(stable)
Aviation Capital Group	BBB(stable)	-	A-(stable)
AWAS Aviation Capital Limited	-	Ba3(stable)	BB(stable)
BOC Aviation	A-(stable)	-	A-(stable)
CIT Group Inc	BB+(stable)	Ba2(stable)	BB+(stable)
DAE Aviation Holdings	-	B3(stable)	B-(pos)
Fly Leasing	-	B1(pos)	BB-(stable)
ILFC (Part of AerCap)	-	Baa3(stable)	-
SMBC Aviation Capital	A-(stable)	-	BBB+(stable)

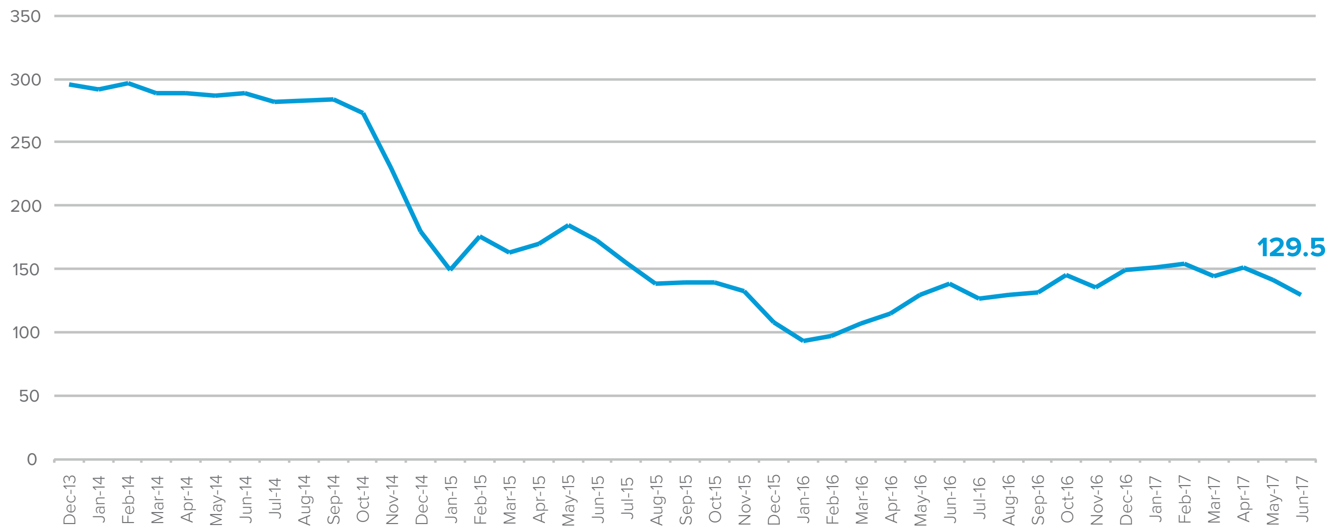
Source: Ratings Agencies - 17th August 2017

Manufacturers

	Fitch	Moody's	S&P
Airbus Group	A-(stable)	A2(stable)	A+(stable)
Boeing	A(stable)	A2(stable)	A(stable)
Bombardier	B(neg)	B2(stable)	B-(stable)
Embraer	BBB-(stable)	Ba1(neg)	BBB(neg)
Rolls-Royce	A-(stable)	A3(neg)	BBB+(stable)
United Technologies	A-(stable)	A3(stable)	A-(stable)

Source: Ratings Agencies - 17th August 2017

US Gulf Coast kerosene-type jet fuel (cents per US gallon)



Source: US Energy Information Administration

Recent commercial aircraft orders by customer

Orders since the Paris air show (as of 15 August)

Customer	Country	Quantity/Type
Iberia	Spain	20xA320neo
IAG	UK	2xA330-200
BOC Aviation	Singapore	4x787-9
ALC	US	2x787-9, 7x737 Max 8, 5x737 Max 7
ICBC Leasing	China	18xA320neo

Aircraft list prices - new models

Model	$ millions
Airbus (2017 prices)	
A319neo	99.5
A320neo	108.4
A321neo	127
A330-800neo	254.8
A330-900neo	290.6
A350-800	275.1
A350-1000	359.3
Boeing (2016)	
737 Max7	90.2
737 Max8	110.0
737 Max9	116.6
777-8X	371.0
777-9X	400.0
787-10	306.1
Bombardier (2016)	
CS100	76.5
CS300	85.7
Embraer (2017)	
E175-E2	51.6
E190-E2	59.1
E195-E2	66.6

Current production aircraft prices and values ($m)

Model	List price	Current market value*
Airbus (2017 price)		
A319	90.5	35.6
A320	99.0	43.7
A321	116.0	51.6
A330-200	233.8	90.4
A330-300	259.0	102.1
A350-900	311.2	143.5
A380	436.9	220.3
ATR (2016)		
ATR42-600	22.4	16.1
ATR72-600	26.8	20.4
Boeing (2016)		
737-700	80.6	36.1
737-800	96.0	46.8
737-900ER	101.9	49.0
747-8 (passenger)	378.5	162.6
777-200LR	313.8	N/A
777-300ER	339.6	156.9
787-8	224.6	117.3
787-9	264.6	137.1
Bombardier (2016)		
CRJ700	41.4	23.6
CRJ900	46.5	26.0
CRJ1000	49.5	27.9
CS100	76.5	32.4
CS300	85.7	37.2
Q400	31.9	21.4
Embraer (2017)		
E170	42.4	25.8
E175	45.7	28.5
E190	50.6	32.5
E195	53.5	34.5

*Based on Istat appraiser inputs for Air Investor 2017

Lease rates ($m)

Model	Low	High	Average
Airbus			
A319	230	310	270
A320	285	370	328
A320neo	300	400	350
A321	340	420	380
A330-200	400	830	615
A330-300	500	900	700
A350-900	900	1,200	1,050
A380	1,500	2,000	1,750
ATR			
ATR42-600	110	155	133
ATR72-600	150	200	175
Boeing			
737-700	240	310	275
737-800	295	400	348
737-900ER	320	400	360
747-8 (passenger)	1,050	1,440	1,245
777-300ER	1,100	1,450	1,275
787-8	850	1,050	950
787-9	950	1,150	1,050
Bombardier			
CRJ700	150	228	189
CRJ900	180	233	207
CRJ1000	190	255	223
CS100	215	300	258
CS300	255	330	293
Q400	161	200	181
Embraer			
E170	170	230	200
E175	190	245	218
E190	230	285	258
E195	240	290	265

Commercial aircraft orders by manufacturer

	Gross orders 2017	Cancellations 2017	Net orders 2017	Net orders 2016
Airbus	252	47	205	731
Boeing	460	60	400	668
Bombardier (30 June)	23	0	23	237
Embraer (16 August)	24	2	22	55
ATR (22 June)	89*	0	89	45

Based on Airfinance Journal research and manufacturer announcements until 31 July, unless stated
** includes a provisional order from IndiGo for 50 ATR72-600s*

Middle East slowdown has profound implications on aviation

The big three Middle Eastern carriers grew at an unprecedented rate, despite having no real domestic basis to justify it, says **Adam Pilarski**, senior vice-president at Avitas.

Recent developments in the Middle East dampened the overall positive outlook for aviation experienced by the region, especially in the big three Gulf carriers (Emirates, Etihad and Qatar Airways), which had spectacular growth in the past few years.

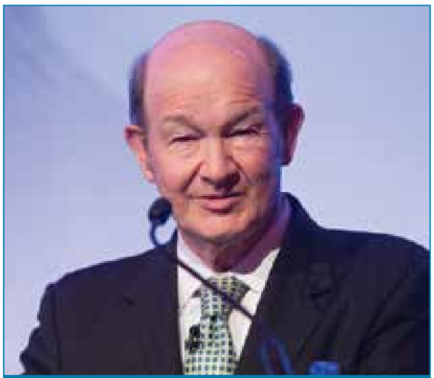
These three airlines are located in a region with very difficult operating conditions and a forbidding climate, with a total citizen population that, when added together, would not make the list of the top 75 cities in China. Despite such an environment, the Gulf carriers grew at rates almost unheard of in the world. They also became a leading force in aviation, having a very active role in determining the shape of the industry.

The Airbus A380 would probably not exist without them, and the Boeing 777X might not have been launched. The region has been a crucial part of aircraft orders, especially in the widebody category.

Recent developments show lower traffic growth, lower productivity and aircraft order delays. Some see this as a result of the political conflict between Qatar and some of its regional adversaries. It is my contention that these unfortunate events are immaterial in the long run. What really matters are the oil prices. If they stay at similar levels as experienced now, as is my firm belief, future high rates of growth of Gulf carriers will not happen.

Unlike China or India which are blessed with huge populations, these carriers succeeded in exploiting peculiar circumstances and creating a wonderful product and highly successful airlines and airports. With miniscule home markets, they managed to secure a position where they have about 10% of the world's in-service widebody fleet and more than 20% of widebody backlog. Interestingly, these shares were both about 1% 20 years ago, having shown a continuing upward trend almost every year. This trend stopped showing growth in 2014 when oil prices dropped.

To give the Gulf carriers appropriate credit, they transformed elements of airline traffic by introducing new ways of connecting passengers, not just via hubs but also by expanding traffic from secondary cities. Their service surpassed most competitors and introduced levels not achieved before. Their expat crews made flying fun again.



Our author at the 19th Global Annual Airfinance Conference in Dublin.

> *These three airlines are located in a region with very difficult operating conditions and a forbidding climate, with a total citizen population that when added together would not make the list of the top 75 cities in China.*
>
> **Adam Pilarski**, senior vice-president, Avitas

When I was asked years ago to assess these phenomenal developments my contention was that they were entirely because of the high price of oil. This does not detract from the fantastic job these airlines did but without high prices all this would not have happened. Let me start with dismissing the false reasons given for the growth of traffic in the region. It was not because of their central location. Yes, the Gulf is probably eight hours away from 80% of the world's population (or whatever advocates claimed) but we can come up with virtually dozens of other cities with similar locations such as Kampala, Uganda.

Also, the argument pursued now that the success of Gulf carriers is entirely because of unlimited government subsidies does not make sense. How many decades was Alitalia subsidised? And how about Air India? Or the major Chinese carriers of today? Government subsidies did not make them power houses like the Gulf carriers are today.

Going back to my hypothesis, high oil prices represent three reasons for the Gulf carriers' successes. One is simple economics. Even if Dubai does not have oil, many countries in the region have vast oil-induced wealth that attracts business people to visit, plus it generates incomes for locals who travel extensively.

Two, jet fuel is very heavy and when prices are high it is very uneconomical to carry it for long distances on board, hence hubs make good sense. Falling oil prices make this argument less pronounced, reducing the relative attractiveness of flying passengers via hubs.

Finally, the stiff opposition to the Gulf carriers' expansion, especially in Europe and the US, reduces their market penetration. The US oligopolistic airlines did not suddenly raise concerns. Lufthansa in Europe was raising similar concerns pushing for de facto protectionism. The arguments were that Singapore, another very small country, managed to surprise the industry years ago and establish itself as a major force in aviation, and the Gulf carriers will establish a significant beachhead from which nobody will be able to displace them in the future.

While oil prices were high and expected to go even higher, many governments were reluctant to antagonise Middle East countries and allowed their expansion at the expense of local airlines supposedly in the interest of their economies. This rationale disappeared with lower oil prices, and the US and some European governments decided to take a much stronger protectionist stance.

So, if oil prices stay where they are, the Gulf carriers will have a greatly reduced impact on world aviation. The destiny of the A380 or the 777X may be seriously affected. One of the major sources of growth in the worldwide widebody market will pause, thus affecting the whole market tremendously.

AIRFINANCE JOURNAL

An *Airfinance Journal* special supplement

Airline top 50 2017

The top 50 airlines

Basic information				Financial rating parameters					Financial rating scores						
Rank	Airline	Most recent 12 month "Latest Twelve Months" (LTM)	LTM revenues [USDm]	Average age of fleet (years) *Source: AeroTransport Data Bank*	EBITDAR (Earnings before interest, tax, depreciation, amortisation and rents)/ Total Revenues (%)	Fixed charge cover: EBITDAR/Net Interest plus Rent (x)	Liquidity as % of revenue	Adjusted net debt/EBITDAR (x)	Average age of fleet score	EBITDAR margin score	Fixed charge cover score	Liquidity score	Leverage score	Score for most recent 12 month (LTM) period	Movement in latest 12 months
1	Ryanair	30-Jun-17	$8,043	6.5	33.2%	15.7	60.8%	0.3	6	6	8	8	8	7.4	→
2	Hawaiian Airlines	30-Jun-17	$2,594	10.2	29.3%	4.9	32.5%	1.0	5	5	8	7	8	6.8	↗
3	Copa Holdings	31-Mar-17	$2,281	6.6	25.6%	4.1	36.8%	2.2	6	5	8	8	6	6.7	↑
4	Air Arabia	31-Mar-17	$1,010	2.9	21.0%	-96.2	57.7%	2.6	8	4	8	8	6	6.6	↘
5	Japan Airlines	31-Mar-17	$11,340	9.2	22.1%	15.0	31.4%	-0.5	5	4	8	7	8	6.6	→
6	Spirit Airlines	30-Jun-17	$2,493	4.0	30.7%	3.2	38.9%	2.5	7	6	6	8	6	6.5	↘
7	Westjet	31-Mar-17	$3,363	6.9	22.4%	4.3	37.4%	2.0	6	4	8	8	6	6.5	→
8	Alaska Air Group	31-Mar-17	$6,333	9.1	29.9%	11.3	27.0%	1.2	5	5	8	6	7	6.4	→
9	Allegiant Travel Company	31-Mar-17	$1,390	21.7	31.9%	16.3	25.4%	1.0	1	6	8	6	7	6.3	↘
10	Luxair Group	31-Dec-16	$580	5.8	1.8%	-7.3	43.3%	-6.0	7	1	8	8	8	6.3	→
11	Silkair	31-Mar-16	$710	4.1	26.4%	2.6	51.0%	1.2	7	5	5	8	7	6.3	↗
12	Air New Zealand	31-Dec-16	$3,525	8.1	26.9%	6.0	25.2%	2.2	6	5	8	6	6	6.2	→
13	IAG	31-Dec-16	$23,817	11.1	20.3%	4.7	28.5%	1.8	5	4	8	6	7	6.2	↗
14	Wizz Air	31-Mar-17	$1,754	4.1	33.7%	2.2	49.3%	2.1	7	6	4	8	6	6.1	→
15	Easyjet	30-Sep-16	$5,766	6.2	16.6%	6.9	20.8%	0.8	6	3	8	5	8	6.0	→
16	Frontier Airlines	31-Mar-17	$1,775	8.2	30.6%	2.5	30.1%	2.6	6	6	5	7	6	6.0	↗
17	Jetblue	31-Mar-17	$6,620	8.5	24.6%	8.1	15.8%	1.0	6	4	8	4	8	6.0	→
18	Airasia	31-Mar-17	$1,722	5.6	38.6%	2.8	34.3%	4.2	7	7	5	7	4	5.9	↗
19	Hainan Airlines	31-Dec-16	$5,909	5.2	35.9%	2.1	49.7%	5.3	7	7	4	8	4	5.9	↗
20	British Airways	31-Dec-16	$15,051	13.1	21.0%	8.6	21.8%	1.6	4	4	8	5	7	5.8	↗
21	Icelandair	30-Jun-17	$1,333	21.5	15.8%	7.5	27.0%	0.4	1	3	8	6	8	5.8	→
22	SIA Group	30-Jun-17	$11,044	6.5	21.1%	3.6	24.3%	1.9	6	4	7	5	7	5.8	→
23	Southwest Airlines	30-Jun-17	$20,842	12.0	22.9%	18.5	15.1%	0.4	4	4	8	4	8	5.8	→
24	Cebu Pacific	31-Mar-17	$1,261	3.9	32.4%	3.8	17.8%	3.2	7	6	7	4	5	5.6	↗
25	Lufthansa Group	31-Mar-17	$36,337	11.4	11.4%	12.9	16.2%	0.6	5	2	8	4	8	5.5	↗
26	Scoot	31-Mar-17	$516	0.7	17.8%	5.0	45.4%	8.0	8	3	8	8	2	5.5	↗
27	Qatar Airways	31-Mar-17	$10,756	5.3	17.5%	2.7	50.1%	3.1	7	3	5	8	5	5.4	↓
28	Qantas Airways	31-Dec-16	$11,875	8.9	20.4%	5.7	10.5%	2.0	6	4	8	3	6	5.3	→
29	Virgin America	30-Sep-16	$1,626	6.3	29.5%	2.0	37.8%	3.5	6	5	3	8	5	5.3	↗
30	Air Canada	31-Mar-17	$10,964	14.9	17.3%	3.5	24.2%	2.7	4	3	7	5	6	5.2	→
31	Air Mauritius	31-Mar-17	$581	13.0	16.8%	4.0	16.8%	1.8	4	3	7	4	7	5.2	↗
32	Indigo	31-Mar-17	$2,886	4.6	28.4%	1.7	44.9%	4.5	7	5	3	8	4	5.2	↗
33	Jeju Air	31-Mar-17	$730	10.8	24.5%	1.9	38.1%	3.0	5	4	3	8	6	5.2	→
34	Swiss International Air Lines	31-Dec-16	$4,497	14.1	17.6%	15.0	7.2%	0.7	4	3	8	2	8	5.2	→
35	United Continental Holdings	30-Jun-17	$37,385	13.6	20.3%	4.8	12.4%	2.3	4	4	8	3	6	5.2	→
36	Delta Air Lines	30-Jun-17	$39,880	15.7	20.8%	11.7	7.5%	1.0	3	4	8	2	7	5.1	→
37	Jet2.com	31-Mar-16	$1,562	22.3	13.7%	3.1	28.4%	0.7	1	2	6	6	8	5.1	↗
38	American Airlines Group	30-Jun-17	$41,111	11.2	20.4%	3.9	16.8%	3.3	5	4	7	4	5	5.0	↘
39	ANA Holdings	31-Mar-17	$15,652	10.2	21.9%	3.5	18.1%	3.1	5	4	7	4	5	5.0	→
40	Korean Air Lines	31-Mar-17	$10,507	9.5	26.3%	4.5	10.9%	5.2	5	5	8	3	4	5.0	↗
41	Air China	31-Dec-16	$16,534	6.1	32.1%	3.9	6.0%	4.1	6	6	7	2	4	4.9	→
42	EVA Airways	31-Mar-17	$4,929	7.0	21.9%	2.6	26.5%	4.4	6	4	5	6	4	4.9	→
43	Juneyao Airlines	31-Dec-16	$1,440	3.9	29.5%	3.3	14.9%	3.6	7	5	6	3	5	4.9	→
44	Finnair	30-Jun-17	$2,883	10.1	18.9%	1.8	39.6%	3.9	5	3	3	8	5	4.8	↗
45	Spring Airlines	31-Mar-17	$1,308	3.7	19.7%	2.0	52.7%	5.8	7	3	3	8	4	4.7	↓
46	Tigerair	31-Mar-16	$514	4.4	20.8%	1.5	37.3%	5.0	7	4	2	8	4	4.7	↑
47	VietJet Air	31-Dec-16	$710	3.6	36.2%	1.6	17.3%	5.7	7	7	3	4	4	4.7	↗
48	Skywest	31-Mar-17	$3,125	11.7	27.1%	2.5	18.5%	4.8	5	5	5	4	4	4.5	↗
49	Thai Airasia	31-Dec-16	$929	4.1	28.2%	1.7	20.4%	5.2	7	5	3	5	4	4.5	↗
50	Xiamen Airlines	31-Mar-17	$3,405	5.3	21.7%	6.1	2.7%	4.7	7	4	8	1	4	4.5	→

Source: Airfinance Journal's Fleet Tracker

Top 50 by
size of current fleet

		Fleet size			%	Fleet value ($m)		
Rank	Airline	Leased	Owned	Total	Leased	Leased	Owned	Total
1	**American Airlines**	410	615	1,025	40.0%	9,553	20,297	29,850
2	**Delta Air Lines**	174	740	914	19.0%	2,962	11,397	14,359
3	**Southwest Airlines**	121	659	780	15.5%	1,942	13,331	15,273
4	**United Airlines**	170	596	766	22.2%	2,438	17,104	19,541
5	**China Southern**	199	334	533	37.3%	6,537	13,704	20,241
6	**China Eastern**	120	368	488	24.6%	4,202	15,328	19,531
7	**Skywest Airlines**	104	299	403	25.8%	627	3,679	4,306
8	**Ryanair**	42	356	398	10.6%	1,486	11,939	13,425
9	**Air China**	106	292	398	26.6%	5,116	12,482	17,598
10	**Fedex**	21	346	367	5.7%	406	8,520	8,926
11	**Expressjet**	64	247	311	20.6%	427	890	1,317
12	**Turkish Airlines**	81	216	297	27.3%	3,656	11,347	15,003
13	**Emirates**	156	117	273	57.1%	17,995	13,823	31,818
14	**British Airways**	94	176	270	34.8%	3,443	6,652	10,095
15	**Lufthansa**	16	253	269	5.9%	431	9,476	9,907
16	**Easyjet**	63	193	256	24.6%	1,199	5,468	6,667
17	**UPS**	3	233	236	1.3%	23	4,302	4,324
18	**Jetblue**	50	182	232	21.6%	791	4,905	5,696
19	**Air France**	149	80	229	65.1%	5,536	3,051	8,587
20	**All Nippon Airways**	17	208	225	7.6%	1,011	10,366	11,377
21	**Republic Airlines**	16	191	207	7.7%	237	2,966	3,203
22	**Aeroflot**	180	23	203	88.7%	7,937	1,064	9,001
23	**Qatar Airways**	65	132	197	33.0%	5,139	11,004	16,142
24	**Hainan Airlines**	79	115	194	40.7%	4,051	4,981	9,032
25	**Saudia**	53	135	188	28.2%	2,810	8,996	11,806
26	**Air Canada**	97	86	183	53.0%	1,999	5,427	7,426
27	**Alaska Airlines**	25	147	172	14.5%	499	4,360	4,859
28	**Shenzhen Airlines**	43	127	170	25.3%	1,276	4,180	5,456
29	**Korean Air**	32	130	162	19.8%	2,061	9,069	11,130
30	**Japan Airlines**	29	131	160	18.1%	911	6,448	7,359
31	**Endeavor Air**	148	9	157	94.3%	1,511	6	1,518
32	**Xiamen Airlines**	51	102	153	33.3%	1,874	4,064	5,938
33	**Cathay Pacific Airways**	32	121	153	20.9%	2,754	9,982	12,735
34	**TAM**	136	14	150	90.7%	4,788	358	5,146
35	**Garuda Indonesia**	130	16	146	89.0%	5,924	272	6,197
36	**American Eagle**	2	141	143	1.4%	4	662	666
37	**Norwegian Air Shuttle**	52	86	138	37.7%	2,867	3,577	6,444
38	**Indigo**	129	7	136	94.9%	4,264	290	4,554
39	**Mesa**	62	73	135	45.9%	1,273	970	2,243
40	**Azul Linhas Aereas**	95	40	135	70.4%	2,152	799	2,951
41	**Sichuan Airlines**	45	84	129	34.9%	2,095	2,742	4,837
42	**Jazz Air**	74	55	129	57.4%	348	651	999
43	**Etihad Airways**	34	95	129	26.4%	2,754	6,837	9,591
44	**SAS**	98	29	127	77.2%	2,598	444	3,042
45	**Qantas**	36	91	127	28.3%	1,431	3,139	4,569
46	**Air India**	65	58	123	52.8%	2,887	2,367	5,254
47	**LAN**	92	30	122	75.4%	4,746	859	5,605
48	**Singapore Airlines**	34	87	121	28.1%	2,583	6,710	9,292
49	**Tianjin Airlines**	105	16	121	86.8%	1,830	579	2,409
50	**Westjet**	38	81	119	31.9%	836	2,071	2,907

Source: *Airfinance Journal's Fleet Tracker*

Top 50 by **size of current fleet and engine manufacturer**

		Manufacturer									
Rank	Airline	Allison	BMW RR	CFM International	Engine Alliance	GE	IAE	P&W	Rolls-Royce	Other	Total
1	**American Airlines**			445		108	244	95	133		1,025
2	**Delta Air Lines**		91	316		78	65	355	9		914
3	**Southwest Airlines**			780							780
4	**United Airlines**			325		85	160	134	62		766
5	**China Southern**			246		52	173	35	27		533
6	**China Eastern**	1		308		21	105	1	52		488
7	**Skywest Airlines**					385		18			403
8	**Ryanair**			398							398
9	**Air China**			239		30	53	10	66		398
10	**Fedex**					206		93	68		367
11	**Expressjet**	193				118					311
12	**Turkish Airlines**			99		64	100	7	27		297
13	**Emirates**				90	157			26		273
14	**British Airways**			3		39	129		99		270
15	**Lufthansa**			108		32	63	6	60		269
16	**Easyjet**			256							256
17	**UPS**					84		113	39		236
18	**Jetblue**					60	172				232
19	**Air France**			132	10	87					229
20	**All Nippon Airways**			58		75		33	59		225
21	**Republic Airlines**	32				173		2			207
22	**Aeroflot**			133		16			22	32	203
23	**Qatar Airways**			5	8	111	42		31		197
24	**Hainan Airlines**			137		21		13	23		194
25	**Saudia**			57		93	1	2	35		188
26	**Air Canada**			73		100		2	8		183
27	**Alaska Airlines**			165		7					172
28	**Shenzhen Airlines**			133			37				170
29	**Korean Air**			39	10	50		63			162
30	**Japan Airlines**			50		94		16			160
31	**Endeavor Air**					157					157
32	**Xiamen Airlines**			140		9			4		153
33	**Cathay Pacific Airways**			4		67		7	75		153
34	**TAM**			55		27	61	5	2		150
35	**Garuda Indonesia**			77		30		15	24		146
36	**American Eagle**	107				36					143
37	**Norwegian Air Shuttle**			123					15		138
38	**Indigo**			8			107	21			136
39	**Mesa**					130		5			135
40	**Azul Linhas Aereas**			7		75		48	5		135
41	**Sichuan Airlines**			32			84	1	12		129
42	**Jazz Air**					32		97			129
43	**Etihad Airways**			1	10	45	34		39		129
44	**SAS**			83		12	24		8		127
45	**Qantas**		8	66		35			18		127
46	**Air India**			59		39	17	8			123
47	**LAN**			54		18	27	1	22		122
48	**Singapore Airlines**					27		7	87		121
49	**Tianjin Airlines**	19		8		55	17	19	3		121
50	**Westjet**			113		4		2			119

Source: *Airfinance Journal's Fleet Tracker*

Top 50 by **firm order backlog**

		Manufacturer							
Rank	**Airline**	**Airbus**	**ATR**	**Boeing**	**Bombardier**	**Embraer**	**Mitsubishi**	**Comac**	**Total**
1	**Indigo**	408	50						458
2	**Airasia**	399							399
3	**Lion Air**	187		203					390
4	**Delta Air Lines**	147		41	75				263
5	**American Airlines**	124		123		11			258
6	**Southwest Airlines**			239					239
7	**United Airlines**	35		185		10			230
8	**Norwegian Air Shuttle**	97		128					225
9	**Emirates**	46		168					214
10	**Qatar Airways**	108		104					212
11	**Skywest Airlines**					106	100		206
12	**Vietjetair**	93		100					193
13	**Ryanair**			175					175
14	**Etihad Airways**	88		81					169
15	**Turkish Airlines**	92		77					169
16	**Spicejet**			142	25				167
17	**Lufthansa**	116		20	21				157
18	**Easyjet**	143							143
19	**Avianca**	137		4					141
20	**Goair**	139							139
21	**Jetblue**	105				24			129
22	**Singapore Airlines**	56		68					124
23	**Wizz Air**	124							124
24	**Qantas**	107		8					115
25	**Air Canada**			69	45				114
26	**Iran Air**	97	17						114
27	**All Nippon Airways**	33		50	3		15		101
28	**China Southern**	20		65				5	90
29	**Jet Airways**	5		85					90
30	**Korean Air Lines**	30		46	10				86
31	**Flynas**	80							80
32	**Airasia X**	76							76
33	**Garuda Indonesia**	20	5	50					75
34	**Fedex**			75					75
35	**Flydubai**			75					75
36	**Japan Airlines**	31		12			32		75
37	**Tui Travel**			74					74
38	**Frontier Airlines**	73							73
39	**British Airways**	53		18					71
40	**Westjet**			62	6				68
41	**Spirit Airlines**	67							67
42	**Pegasus Airlines**	64		3					67
43	**Azul Linhas Aereas**	36				30			66
44	**Gol Transportes Aereos**			64					64
45	**China Eastern**	35		23				5	63
46	**Copa**			63					63
47	**Aeromexico**			62					62
48	**Gulf Air**	29		16	10				55
49	**LAN**	55							55
50	**Air France**	30		24					54

Source: *Airfinance Journal's Fleet Tracker*

Airline treasury team of the year: **American Airlines**

American Airlines scoops the prize this year for carrying out major investment in its fleet and for using a broad range of financial structures.

Last year, the airline invested $4.4 billion in new aircraft, comprising 55 new mainline and 42 new regional aircraft. It took advantage of historically low interest rates to finance this fleet renewal and tapped a variety of markets.

The airline has been a prolific issuer of enhanced equipment trust certificates (EETC) for years, but in 2016 it tapped this market more than any other airline by issuing $2.8 billion in three separate EETC deals. The deals were well priced, with an average fixed interest rate of 3.63%.

"Something like 37% of the outstanding EETC paper was issued by an entity that is now subsumed within American Airlines," says Tom Weir, vice president and treasurer at the airline. "We were mindful of the potential that we could go to that market too often. But right now, there's no obvious pricing penalty that we're paying for over-allocating our financing to that market," he adds, noting that there was plenty of Asian appetite for recent EETC deals.

The airline also closed $1.8 billion in other loans, bearing interest at fixed and variable rates of LIBOR plus margin, which averaged 2.96% at the end of the year.

"The repricing of the JFK bonds was a very good transaction for us."

Tom Weir, *vice president and treasurer, American Airlines*

The ***American Airlines treasury team****, collecting their award from AFJ's editor* ***Jack Dutton***

On top of this, the airline issued $844 million of special facility revenue bonds ("JFK bonds") via the New York Transportation Development Corporation (a special vehicle that issues debt for infrastructure projects), to refinance a prior issuance. The deal was rated "BB" by Fitch Ratings, which is one notch higher than the airline's long-term issuer default rating. This is due to the strategic importance of American's position at JFK airport.

"The repricing of the JFK bonds was a very good transaction for us. We felt we had good cooperation from the port authority and I think our timing was very good," adds Weir.

The deal involved bringing together local authorities and lenders in a complicated deal. But it closed successfully despite the number of parties involved.

American Airlines also tapped the capital markets in August 2016 through a private placement covering two Boeing 737-800 deliveries. BNP Paribas acted as the sole structuring and placement agent. This transaction was to diversify funding sources and gain access to a new investor base different from the typical investor base for public EETC issuances. It was the first primary issuance by American Airlines to be placed with Japanese investors. The transaction features straight line amortisation for the senior and junior notes, one Japanese rating agency (Rating & Investment Information, Inc.), and Reg S format.

Most improved airline of the year: **United Airlines**

During the past two years, United's financial fundamentals have seen a significant improvement, according to *Airfinance Journal*'s Financial Ratings model.

The model evaluates four key ratios:

- **EBITDAR**: United's margin of 22.1% for 2016 was ahead of American's and just a touch behind Delta's;
- **Fixed charge cover**: United was ahead of American;
- **Liquidity**: United's position was a strong second place behind American;
- **Leverage**: United's at 2x (improved from 3.2x two years ago) also puts it in second place.

Underlying some of these improvements was strong operational performance. United set new all-time records for departure performance, arrival performance, completion factor and baggage handling.

United ended the year 2016 with $5.8 billion in unrestricted liquidity, including $1.35 billion of undrawn commitments under its revolving credit facility.

United ended 2016 with $5.8 billion in unrestricted liquidity, including $1.35 billion of undrawn commitments under its revolving credit facility.

Operating cash flow was $5.5 billion and free cash flow $2.2 billion for 2016, permitting some reduction in debt.

The company continued to invest in its business through capital expenditures of $3.2 billion for the full year.

Gross debt balance at year-end, including capitalised operating leases, was $16.5 billion, about $600 million less than at the end of 2015.

The company has publicly stated that maintaining a strong balance sheet remains the top strategic priority which lends confidence that the balance sheet improvement will continue and that an investment grade rating should not be out of reach on a two-three year view.

L to R: ***Jason Fein*** *from United Airlines collecting his award from AFJ's managing director* ***Mike Duff***

Industry overview:
Key financials

This time last year we reported that many of the world's airlines had enjoyed a stellar 12-18 month run of improving profitability. Revenues had reached close to $600 billion. More noticeable was the 30.7% increase in EBITDAR (earnings before tax, depreciation, debt and rental costs) and the 261% increase in net income to a record $40.6 billion.

The story this year remains positive. Amidst many predictions that the growth cycle was reaching its peak, revenues grew 4.5% and EBITDAR by 6.7% leading to EBITDAR Margin edging upwards to 21.5%. So far so good, but net income fell 17% to $33.8 billion. A closer look at the data confirms that the decline is almost entirely accounted for by tax credits at American and United and hedging gains at Delta in 2015 that were not repeated in 2016. So, 2016 clearly can be considered as good a year as 2015 from a profitability perspective.

On the leverage front the trend was also favourable, despite the record capital expenditure. Although adjusted net debt increased by 12.6% to $477 billion, leverage (measured as adjusted net debt/EBITDAR) rose only marginally from 3.4 times to 3.6 times. Fixed charge coverage declined from 3.3 times to 3.2 times.

"The story this year remains positive. Amidst many predictions that the growth cycle was reaching its peak, revenues grew 4.5% and EBITDAR by 6.7% leading to EBITDAR Margin edging upwards to 21.5%."

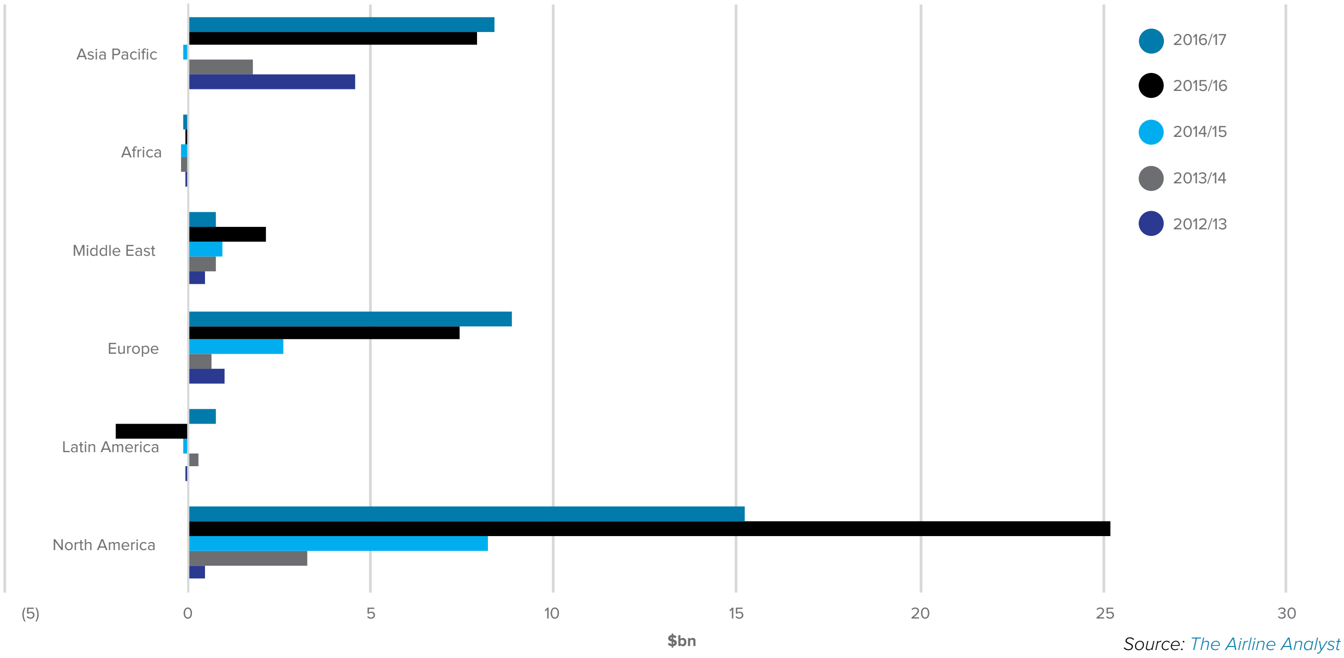
Figure 1: Global airline industry[1] key financials

	Financial periods ending in				
$m	**2012/13**	**2013/14[2]**	**2014/15**	**2015/16**	**2016/17**
Total revenue	545,111	535,827	589,317	598,967	626,050
% change		-1.7%	10.0%	1.6%	4.5%
EBITDAR	76,628	81,078	96,404	126,001	134,443
% change		5.8%	18.9%	30.7%	6.7%
Net income	6,369	6,532	11,234	40,568	33,836
% change		2.6%	72.0%	261.1%	-16.6%
Adjusted net debt	342,528	344,954	392,283	424,159	477,521
% change		0.7%	13.7%	8.1%	12.6%
Net fixed charges	31,626	31,842	34,731	37,973	42,552
EBITDAR margin	14.1%	15.1%	16.4%	21.0%	21.50%
EBITDAR/net fixed charges (x)	2.4	2.5	2.8	3.3	3.2
Unrestricted cash/Total revenues	17.4%	18.3%	16.0%	16.5%	16.8%
Adjusted net debt/EBITDAR (x)	4.5	4.3	4.1	3.4	3.6
Parent groups with positive net income	13,960	14,748	19,254	45,795	37,259
Parent groups with negative net income	(7,591)	(8,216)	(8,020)	(5,227)	(3,423)
Total	6,369	6,532	11,234	40,568	33,836
Parent groups with positive net income	85	86	74	93	101
Parent groups with negative net income	35	34	44	29	27
[3] Number of parent groups	120	120	118	122	128

Source: *The Airline Analyst*

[1] *Aggregate values for airline groups included in study*
[2] *2013/14 excludes Delta's $8.3 billion tax credit*
[3] *Number of parent groups" varies due to consolidation (US Airways, Tigerair, Vueling, Aer Lingus), IPOs (IndiGo and Wizz Air), de-consolidation (Frontier) and financials for additional airlines becoming available.*

Figure 2 - Net income by major region



Source: *The Airline Analyst*

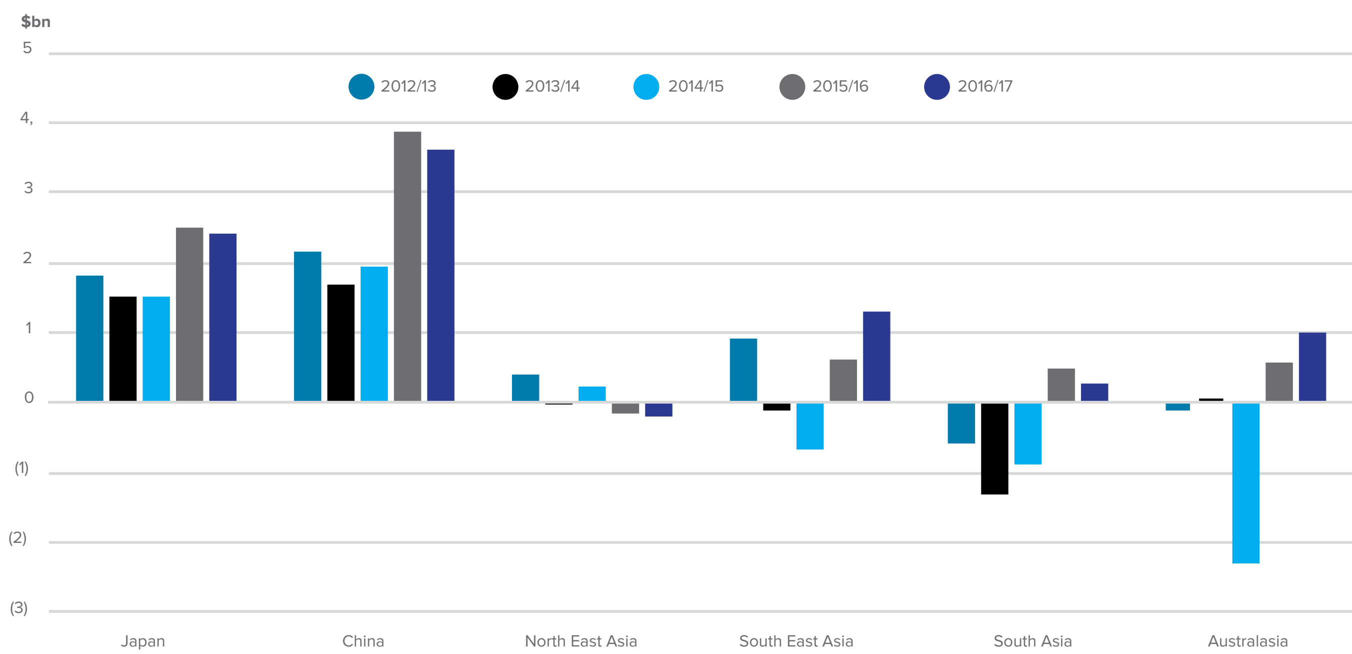
The only indicator which has not improved over the last five years is liquidity as a percentage of revenues, which remains at the 16.8% level, equivalent to only about two months' worth of liquidity. Given the cost to carry, a number of airlines have been reducing cash on balance sheet in favour of committed liquidity facilities. Another factor reducing liquidity has been special dividends and stock buybacks by a significant number of airlines.

Figure 2 shows net income broken down by region and illustrates clearly that the fall in profitability in the latest year was primarily driven by North American and Middle Eastern carriers. All of the other regions improved year-on-year. While the aggregate figures are impressive, not all regions or all airlines have achieved such a significant improvement in their performance. Of the 128 airline groups in the study, 27 made aggregate net losses of $3.4 billion. The loss makers tended to be in countries with weak economic conditions like Brazil or where excess capacity and competition have impacted profitability, such as South East Asia.

It is also helpful to look at the breakdown of the Asia Pacific numbers by sub-region as there are huge differences that tend to be camouflaged in the aggregates.

This is presented in Figure 3 and shows clearly the large, stable and growing contributions from Japan and China and the volatile and often marginal profitability from the other sub-regions. That said, we can see the significant improvement in 2016/17 from South East Asia (driven by AirAsia) and Australasia (driven by Qantas and Air New Zealand).

Figure 3 - Asia-Pacific net income by sub-region



Source: *The Airline Analyst*

The **data** set

Airlines included in survey

No.	Airline	FYE
1	**ABX Air**	31-Dec-16
2	**Aegean Airlines**	31-Dec-16
3	**Aeroflot**	31-Dec-16
4	**Aigle Azur**	31-Mar-16
5	**Air Arabia**	31-Dec-16
6	**Air Astana**	31-Dec-16
7	**Air Berlin**	31-Dec-16
8	**Air Busan**	31-Dec-16
9	**Air Canada**	31-Dec-16
10	**Air China**	31-Dec-16
11	**Air France**	31-Dec-16
12	**Air France-KLM**	31-Dec-16
13	**Air Greenland**	31-Dec-16
14	**Air Mauritius**	31-Mar-17
15	**Air New Zealand**	30-Jun-16
16	**Air Transport International**	31-Dec-16
17	**Air Transport Services Group**	31-Dec-16
18	**Air Wisconsin**	31-Dec-16
19	**Airasia**	31-Dec-16
20	**Airasia X**	31-Dec-16
21	**Alaska Air Group**	31-Dec-16
22	**Allegiant Travel Company**	31-Dec-16
23	**American Airlines Group**	31-Dec-16
24	**Amerijet International**	31-Dec-16
25	**ANA Holdings**	31-Mar-17
26	**Asiana Airlines**	31-Dec-16
27	**Atlantic Airways**	31-Dec-16
28	**Atlas Air Worldwide**	31-Dec-16
29	**Atlas Air, Inc.**	31-Dec-16
30	**Austrian Airlines**	31-Dec-16
31	**Avianca Brasil**	31-Dec-16
32	**Avianca Holdings**	31-Dec-16
33	**Azul S.A.**	31-Dec-16
34	**Bangkok Airways**	31-Dec-16
35	**British Airways**	31-Dec-16
36	**Cargojet Airways**	31-Dec-16
37	**Cargolux**	31-Dec-16
38	**Cathay Pacific**	31-Dec-16
39	**Cebu Pacific**	31-Dec-16
40	**China Airlines**	31-Dec-16
41	**China Eastern Airlines**	31-Dec-16
42	**China Southern Airlines**	31-Dec-16
43	**Chorus Aviation**	31-Dec-16
44	**Comair**	30-Jun-16
45	**Compass Airlines**	31-Dec-16
46	**Copa Holdings**	31-Dec-16
47	**Croatia Airlines**	31-Dec-16
48	**Czech Airlines**	31-Dec-16
49	**Delta Air Lines**	31-Dec-16
50	**Eastarjet**	31-Dec-16

No.	Airline	FYE
51	**Easyjet**	30-Sep-16
52	**EL AL Israel Airlines**	31-Dec-16
53	**Emirates**	31-Mar-17
54	**Enter Air**	31-Dec-16
55	**Envoy Air**	31-Dec-16
56	**Ethiopian Airlines**	30-Jun-16
57	**Euroatlantic Airways**	31-Dec-16
58	**EVA Airways**	31-Dec-16
59	**Expressjet**	31-Dec-16
60	**Fastjet**	31-Dec-16
61	**Fiji Airways**	31-Dec-16
62	**Finnair**	31-Dec-16
63	**Flybe**	31-Mar-17
64	**Frontier Airlines**	31-Dec-16
65	**Garuda Indonesia**	31-Dec-16
66	**Gojet Airlines**	31-Dec-16
67	**GOL**	31-Dec-16
68	**Grupo Aeromexico**	31-Dec-16
69	**Hainan Airlines**	31-Dec-16
70	**Hawaiian Airlines**	31-Dec-16
71	**Horizon Air**	31-Dec-16
72	**Iberia**	31-Dec-16
73	**Icelandair**	31-Dec-16
74	**Indigo**	31-Mar-17
75	**Interjet**	31-Dec-16
76	**IAG**	31-Dec-16
77	**Japan Airlines**	31-Mar-17
78	**Jazeera Airways**	31-Dec-16
79	**Jeju Air**	31-Dec-16
80	**Jet Airways**	31-Mar-17
81	**Jet2.com**	31-Mar-16
82	**Jetblue**	31-Dec-16
83	**Jetstar Asia**	30-Jun-16
84	**Jin Air**	31-Dec-16
85	**Juneyao Airlines**	31-Dec-16
86	**Kalitta Air**	31-Dec-16
87	**Kenya Airways**	31-Mar-16
88	**KLM - Royal Dutch Airlines**	31-Dec-16
89	**Korean Air Lines**	31-Dec-16
90	**LATAM Airlines Group**	31-Dec-16
91	**Lufthansa Group**	31-Dec-16
92	**Lufthansa Parent**	31-Dec-16
93	**Luxair Group**	31-Dec-16
94	**Mesa Airlines**	31-Dec-16
95	**Nok Air**	31-Dec-16
96	**Norwegian Air Shuttle**	31-Dec-16
97	**Oman Air**	31-Dec-16
98	**Omni Air International**	31-Dec-16
99	**PAL Holdings**	31-Dec-16
100	**Pegasus Airlines**	31-Dec-16

No.	Airline	FYE
101	**Polar Air Cargo**	31-Dec-16
102	**Precision Air**	31-Mar-16
103	**PSA Airlines**	31-Dec-16
104	**Qantas Airways**	30-Jun-16
105	**Qatar Airways**	31-Mar-17
106	**Regional Express**	30-Jun-16
107	**Royal Jordanian Airlines**	31-Dec-16
108	**Ryanair**	31-Mar-17
109	**S7 Airlines**	31-Dec-16
110	**SAS**	31-Oct-16
111	**Scoot**	31-Mar-17
112	**Shandong Airlines**	31-Dec-16
113	**Shuttle America**	31-Dec-16
114	**SIA Cargo**	31-Mar-16
115	**SIA Group**	31-Mar-17
116	**Sichuan Airlines**	31-Dec-16
117	**Silkair**	31-Mar-16
118	**Skywest**	31-Dec-16
119	**South African Airways**	31-Mar-16
120	**Southwest Airlines**	31-Dec-16
121	**Spicejet**	31-Mar-17
122	**Spirit Airlines**	31-Dec-16
123	**Spring Airlines**	31-Dec-16
124	**Srilankan Airlines**	31-Mar-16
125	**Starflyer**	31-Mar-17
126	**Sun Country Airlines**	31-Dec-16
127	**Swiss International Air Lines**	31-Dec-16
128	**TAM Linhas Aereas**	31-Dec-16
129	**TAP Group**	31-Dec-16
130	**Thai Airasia**	31-Dec-16
131	**Thai Airways**	31-Dec-16
132	**Thomas Cook Airlines**	30-Sep-16
133	**Thomson Airways**	30-Sep-16
134	**Tigerair**	31-Mar-16
135	**Transat A.T.**	31-Oct-16
136	**Turkish Airlines**	31-Dec-16
137	**T'way Airlines**	31-Dec-16
138	**United Airlines**	31-Dec-16
139	**UPS Airlines**	31-Dec-16
140	**USA Jet**	31-Dec-16
141	**Utair**	31-Dec-16
142	**Vietjet Air**	31-Dec-16
143	**Vietnam Airlines**	31-Dec-16
144	**Virgin Atlantic Airways**	31-Dec-16
145	**Virgin Australia**	30-Jun-16
146	**Volaris**	31-Dec-16
147	**Vueling Airlines**	31-Dec-16
148	**Westjet**	31-Dec-16
149	**Wizz Air**	31-Mar-17
150	**Xiamen Airlines**	31-Dec-16

Source: *The Airline Analyst*

The **study**

We have evaluated the world's airlines on a number of operational and financial criteria using data from The *Airline Analyst*. The sample includes a total of 150 airlines (up from 137 last year) whose financials are available in the public domain and which have released financial statements for periods ending between March 2016 and March 2017. The data includes the 31 March 2017 releases for ANA Holdings, Japan Airlines, Jet Airways, Ryanair, Singapore Airlines and Spicejet.

Of the 150, 22 are separately reporting subsidiaries such as British Airways, Iberia, Vueling, Austrian Airlines, Swiss, Air France and KLM, meaning that we have 128 airline groups in the study.

The sample does not include airlines whose financial statements are not available publicly, or those whose most recent available financials are for periods prior to March 2016, e.g. Adria Airways and Air India. However, the sample is estimated to include airlines representing around 85% of global RPKs (revenue passenger kilometres). There is additional representation this year from South Korea, China, Brazil and Eastern Europe using financial statements sourced from regulatory filings.

Weaknesses in the methodology are acknowledged. Foremost among these is the fact that different airlines report to different year-ends. As a consequence, the comparisons are not like-for-like regarding the economic or fuel price environment prevailing in their respective financial periods. Note that in *The Airline Analyst* itself, we offer the ability to create comparisons for the same financial periods by aggregating quarterly data, when available, but this is not possible for the full sample of airlines. In addition, while in the majority of cases the financial statements are consolidated, in some only parent unconsolidated financials are available. One other weakness is the need to convert

Ryanair is the number one rated airline

to a common currency and the validity of the exchange rate chosen. We have converted into US dollars using the spot rates prevailing on 31 July 2017. We believe using the spot rates rather than the historic exchange rates produces a more valid comparison.

The Haves and the Have Nots

Headed by the "big three" US carriers, total revenues in our sample of 128 airline groups whose financials are available in the public domain are $626 billion (after eliminating double counting of subsidiaries that are included in the sample separately). Total revenues for our Top 50 by revenue airlines (again adjusted for double counts) are $523 billion or 84% of the total sample. The degree of concentration within the Top 50 is apparent – the top 10 airlines account for 55% of the Top 50's revenues, up from 50% last year.

Of the total sample of 128 parent groups, 101 recorded aggregate positive net income of $37.3 billion while 27 reported losses aggregating $3.4 billion for a net positive figure of $33.8 billion, down from $40.6 billion last year. Overall, the net profit margin for all airline parent groups combined was 5.4%, down from 6.8%.

As we can see from the Top 50 by net income margin, 25 airlines achieved a margin in excess of 10%, headed by Air Asia, Jazeera Airways, Ryanair, Thomas Cook Airlines and Allegiant. Other low-cost carriers (LCC) including Cebu Pacific and Wizz Air are prominent towards the top of the list.

Eight US carriers, including Delta and American made it onto the list. Indicative of the stress on network business models, none of Cathay Pacific, Qantas, Emirates, Turkish Airlines or Singapore Airlines had a net income margin high enough to make the cut. One creditable exception to this is Air New Zealand, coming in at 29.

We have used the following 16 parameters on which to evaluate the airlines' financial and operational performance:

- Total revenue
- Net income
- Net income margin
- Cargo revenue
- RPKs
- Passenger load factor
- Passenger revenue per passenger
- Passenger yield
- Staff costs to revenue
- RASK-CASK margin
- EBITDAR margin
- Leverage
- Fixed charge cover
- Liquidity
- Return on invested capital
- Equity market capitalisation

The sample includes the following categories of airline, each of which has its unique characteristics:

	Network	Regional	LCC	Cargo	National	Leisure	Charter	Total
Europe & Russia	22	2	5	1	5	5	1	41
Middle East & Africa	8	2	1	0	3	0	0	14
North America	8	13	2	9	0	3	1	36
Latin America	8	0	2	0	0	0	0	10
China	9		1					10
Asia Pacific	14	9	8	1	1	1	0	34
South Asia	2	0	3	0	0	0	0	5
Total	**71**	**26**	**22**	**11**	**9**	**9**	**2**	**150**

Source: *The Airline Analyst*

Analysis: **Revenue and income**

Top 50 by Total revenue

Rank	Airline	$m
1	American Airlines Group	40,180
2	Delta Air Lines	39,639
3	Lufthansa Group	38,548
4	United Continental Holdings	36,556
5	Air France-KLM	29,418
6	IAG	26,720
7	Emirates	23,022
8	Southwest Airlines	20,425
9	Lufthansa Parent	18,268
10	Air France	18,253
11	China Southern Airlines	17,104
12	Air China	16,979
13	ANA Holdings	15,954
14	British Airways	15,133
15	China Eastern Airlines	14,712
16	Qantas Airways	12,903
17	Cathay Pacific	11,867
18	Air Canada	11,682
19	Japan Airlines	11,650
20	KLM	11,603
21	Qatar Airways	10,987
22	SIA Group	10,912
23	Korean Air Lines	10,455
24	Turkish Airlines	9,907
25	LATAM Airlines Group	9,527
26	Aeroflot	8,200
27	Ryanair	7,871
28	Jetblue	6,632
29	Easyjet	6,174
30	Hainan Airlines	6,051
31	Alaska Air Group	5,931
32	Iberia	5,436
33	Thai Airways	5,422
34	Asiana Airlines	5,136
35	SAS	4,870
36	EVA Airways	4,786
37	UPS Airlines	4,771
38	China Airlines	4,667
39	Swiss International Air Lines	4,517
40	Air Berlin	4,489
41	TAM	4,486
42	Avianca Holdings	4,138
43	Virgin Australia	3,986
44	Air New Zealand	3,887
45	Garuda Indonesia	3,864
46	Jet Airways	3,562
47	Norwegian Air Shuttle	3,297
48	Westjet	3,282
49	Xiamen Airlines	3,256
50	GOL	3,161

Top 50 by Net income

Rank	Airline	$m
1	Delta Air Lines	4,373
2	American Airlines Group	2,676
3	IAG	2,286
4	United Continental Holdings	2,263
5	Southwest Airlines	2,244
6	Lufthansa Group	2,103
7	British Airways	1,757
8	Ryanair	1,558
9	Japan Airlines	1,484
10	Lufthansa Parent	1,384
11	Air China	1,013
12	Air France-KLM	938
13	ANA Holdings	893
14	Qantas Airways	820
15	Alaska Air Group	814
16	Jetblue	759
17	China Southern Airlines	750
18	Air Canada	697
19	China Eastern Airlines	669
20	Aeroflot	619
21	KLM	612
22	Easyjet	565
23	Qatar Airways	550
24	Air France	527
25	Airasia	479
26	Hainan Airlines	467
27	Thomson Airways	393
28	Air New Zealand	344
29	Emirates	340
30	Copa Holdings	335
31	Swiss International Air Lines	326
32	Wizz Air	291
33	GOL	272
34	SIA Group	265
35	Spirit Airlines	265
36	Ethiopian Airlines	265
37	Indigo	261
38	Virgin Atlantic Airways	237
39	Hawaiian Airlines	235
40	Westjet	235
41	Xiamen Airlines	233
42	Thomas Cook Airlines	227
43	Allegiant Travel Company	220
44	Frontier Airlines	203
45	Volaris	197
46	Cebu Pacific	194
47	Juneyao Airlines	186
48	Iberia	181
49	SAS	163
50	Sichuan Airlines	159

Top 50 by Net income margin

Rank	Airline	$m
1	Airasia	29.9%
2	Jazeera Airways	20.4%
3	Ryanair	19.8%
4	Thomas Cook Airlines	17.2%
5	Allegiant Travel Company	16.1%
6	Cebu Pacific	15.8%
7	Thomson Airways	15.7%
8	Wizz Air	15.7%
9	Copa Holdings	15.1%
10	Volaris	15.0%
11	VietJet Air	14.5%
12	Alaska Air Group	13.7%
13	Air Arabia	12.8%
14	Japan Airlines	12.7%
15	Silkair	12.6%
16	Juneyao Airlines	12.6%
17	Frontier Airlines	11.8%
18	British Airways	11.6%
19	Jetblue	11.4%
20	Spirit Airlines	11.4%
21	Spring Airlines	11.3%
22	Ethiopian Airlines	11.3%
23	Delta Air Lines	11.0%
24	Southwest Airlines	11.0%
25	Thai Airasia	10.5%
26	Hawaiian Airlines	9.6%
27	Easyjet	9.1%
28	Indigo	8.9%
29	Air New Zealand	8.9%
30	Fiji Airways	8.8%
31	Chorus Aviation	8.8%
32	Euroatlantic Airways	8.7%
33	GOL	8.6%
34	IAG	8.6%
35	Omni Air International	8.2%
36	Virgin Atlantic Airways	8.0%
37	Utair	7.8%
38	Hainan Airlines	7.7%
39	Lufthansa Parent	7.6%
40	Aeroflot	7.6%
41	Swiss International Air Lines	7.2%
42	Mesa Airlines	7.2%
43	Westjet	7.2%
44	Xiamen Airlines	7.1%
45	Jeju Air	7.1%
46	Spicejet	7.0%
47	Icelandair	6.9%
48	Kalitta Air	6.9%
49	Jet2.com	6.9%
50	American Airlines Group	6.7%

Source: *The Airline Analyst*

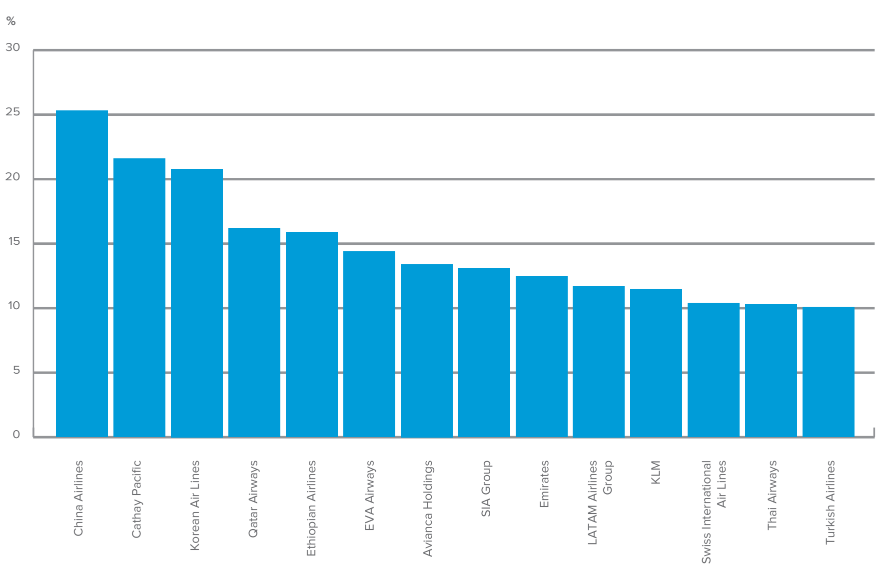
UPS Airlines is number one by cargo revenue

Top 50 by cargo revenue
Other than UPS Airlines, the Top 50 by cargo revenue ranking is dominated by the network carriers from Europe and Asia. Retaining the number 2 spot is Emirates with $2.9 billion, 13% of its total revenues. Dedicated freight carrier Cargolux is in 8th place by revenues. Other dedicated cargo providers in the list include Kalitta Air, Polar Air Cargo and ABX Air. Many of these enjoyed bumper years of growth as a result of US military airlift to Iraq and Afghanistan but are now experiencing a sharp reduction in business from these sources. Several others have gone into liquidation.

Historically seen as a diversification of risk for network carriers otherwise dependent solely on passenger revenues, we have seen in recent years how fickle cargo revenues are to a slowdown in world trade and shipment of technology and fashion products from Asia. Many airlines have not yet achieved a return to the pre financial crisis peak level of cargo revenues and have been aggressively reducing and restructuring their dedicated freighter fleets.

For many of the Asian carriers and selected Middle Eastern and Latin American carriers, cargo revenues nevertheless remain a very high percentage of total revenues, as shown in the chart. The carriers of Taiwan, South Korea and Hong Kong top the list.

Cargo revenues as % of total revenues



Source: *The Airline Analyst*

Top 50 by Cargo revenue

Rank	Airline	$m
1	**UPS Airlines**	4,699.3
2	**Emirates**	2,884.3
3	**Lufthansa Group**	2,847.5
4	**Cathay Pacific**	2,567.0
5	**Air France-KLM**	2,449.7
6	**Korean Air Lines**	2,177.7
7	**Qatar Airways**	1,782.2
8	**Cargolux**	1,715.7
9	**SIA Cargo**	1,504.6
10	**SIA Group**	1,434.8
11	**KLM**	1,329.6
12	**Air China**	1,235.4
13	**IAG**	1,210.1
14	**ANA Holdings**	1,197.0
15	**China Airlines**	1,181.7
16	**Air France**	1,137.8
17	**LATAM Airlines Group**	1,110.6
18	**China Southern Airlines**	1,069.7
19	**Turkish Airlines**	996.0
20	**China Eastern Airlines**	889.1
21	**United Continental Holdings**	876.0
22	**British Airways**	778.9
23	**Japan Airlines**	707.2
24	**American Airlines Group**	700.0
25	**EVA Airways**	689.5
26	**Qantas Airways**	677.0
27	**Delta Air Lines**	668.0
28	**Thai Airways**	559.1
29	**Avianca Holdings**	555.9
30	**Kalitta Air**	497.1
31	**Swiss International Air Lines**	467.9
32	**Air Canada**	407.5
33	**Ethiopian Airlines**	374.5
34	**Polar Air Cargo**	313.8
35	**ABX Air**	303.4
36	**Iberia**	299.6
37	**TAM**	264.2
38	**Cargojet Airways**	261.2
39	**Air New Zealand**	259.3
40	**Garuda Indonesia**	229.1
41	**Amerijet International**	221.3
42	**Aeroflot**	208.2
43	**Finnair**	205.8
44	**Grupo Aeromexico**	188.0
45	**Southwest Airlines**	171.0
46	**SAS**	154.6
47	**Hainan Airlines**	141.5
48	**PAL Holdings**	137.8
49	**South African Airways**	134.1
50	**Alaska Air Group**	108.0

Source: *The Airline Analyst*

Analysis: **Passenger revenue and yield**

Top 50 by Passenger revenue per passenger[1]

Rank	Airline	Ave. trip length[2] (km)	$
1	**Air Transport International**	3,947	4,005.3
2	**Atlas Air, Inc.**	4,978	1,236.4
3	**Omni Air International**	4,562	593.5
4	**Air Greenland**	1,230	356.8
5	**EL AL Israel Airlines**	3,822	335.0
6	**Emirates**	4,933	332.1
7	**British Airways**	3,266	307.6
8	**KLM**	3,215	307.2
9	**Air France**	2,822	300.6
10	**Air France-KLM**	2,971	290.7
11	**SIA Group**	3,865	289.9
12	**Lufthansa Parent**	2,361	270.1
13	**Qatar Airways**	N/A	257.6
14	**Korean Air Lines**	3,101	253.6
15	**EVA Airways**	3,642	252.3
16	**Copa Holdings**	3,346	250.7
17	**Cathay Pacific**	3,598	249.5
18	**Lufthansa Group**	2,066	240.3
19	**Ethiopian Airlines**	3,576	237.5
20	**IAG**	2,418	234.3
21	**Air Canada**	2,744	233.3
22	**Royal Jordanian**	2,665	230.0
23	**Icelandair**	2,839	224.1
24	**Thomson Airways**	3,115	224.1
25	**Swiss International Air Lines**	2,353	221.6
26	**Starflyer**	958	221.0
27	**United Continental Holdings**	2,364	219.7
28	**Air New Zealand**	2,191	219.6
29	**Kenya Airways**	2,380	219.4
30	**Qantas Airways**	2,315	216.2
31	**China Airlines**	2,630	214.2
32	**ANA Holdings**	1,624	207.4
33	**Austrian Airlines**	1,635	205.0
34	**Thomas Cook Airlines Limited**	3,572	202.7
35	**Japan Airlines**	1,591	201.6
36	**Thai Airways**	2,805	200.1
37	**Finnair**	2,491	197.9
38	**Hawaiian Airlines**	2,255	194.2
39	**Regional Express**	375	189.4
40	**Delta Air Lines**	1,866	183.8
41	**American Airlines Group**	1,810	174.0
42	**Sun Country Airlines**	2,341	173.4
43	**Aeroflot**	2,581	160.4
44	**Srilankan Airlines**	2,941	158.0
45	**Jetblue**	1,919	157.1
46	**Air China**	1,948	154.4
47	**Southwest Airlines**	1,610	149.1
48	**Oman Air**	2,393	149.1
49	**South African Airways**	2,498	147.2
50	**Alaska Air Group**	1,746	146.0

[1] Passenger revenue divided by number of passengers
[2] RPKs divided by number of passengers

Source: The Airline Analyst

Top 50 by Passenger yield[1]

Rank	Airline	Ave. trip length[2] (km)	US cents
1	**Air Transport International**	3,947	101.5
2	**Regional Express**	375	50.5
3	**Air Greenland**	1,230	29.0
4	**Atlas Air, Inc.**	4,978	24.8
5	**Starflyer**	958	23.1
6	**Precision Air**	429	19.4
7	**Flybe**	520	18.4
8	**Croatia Airlines**	746	15.0
9	**Air Wisconsin**	616	13.2
10	**Omni Air International**	4,562	13.0
11	**ANA Holdings**	1,624	12.8
12	**Japan Airlines**	1,591	12.7
13	**Austrian Airlines**	1,635	12.5
14	**Envoy Air**	740	12.0
15	**Lufthansa Group**	2,066	11.6
16	**Horizon Air**	471	11.6
17	**Lufthansa Parent**	2,361	11.4
18	**SAS**	1,254	10.7
19	**Air France**	2,822	10.7
20	**Azul S.A.**	885	10.2
21	**Air New Zealand**	2,191	10.0
22	**Delta Air Lines**	1,866	9.8
23	**Air France-KLM**	2,971	9.8
24	**Shuttle America**	911	9.7
25	**IAG**	2,418	9.7
26	**American Airlines Group**	1,810	9.6
27	**KLM**	3,215	9.6
28	**British Airways**	3,266	9.4
29	**Swiss International Air Lines**	2,353	9.4
30	**Qantas Airways**	2,315	9.3
31	**Luxair Group**	1,115	9.3
32	**United Continental Holdings**	2,364	9.3
33	**Southwest Airlines**	1,610	9.3
34	**Kenya Airways**	2,380	9.2
35	**Virgin Australia**	1,575	9.0
36	**El Al Israel Airlines**	3,822	8.8
37	**Royal Jordanian**	2,665	8.6
38	**Air Berlin**	1,584	8.6
39	**Avianca Brasil**	1,106	8.6
40	**Hawaiian Airlines**	2,255	8.6
41	**Avianca Holdings**	1,297	8.6
42	**Air Canada**	2,744	8.5
43	**Aegean Airlines**	1,020	8.5
44	**Alaska Air Group**	1,746	8.4
45	**Nok Air**	623	8.3
46	**Jetblue**	1,919	8.2
47	**Korean Air Lines**	3,101	8.2
48	**China Airlines**	2,630	8.1
49	**Finnair**	2,491	7.9
50	**Air China**	1,948	7.9

[1] Passenger revenue divided by RPKs
[2] RPKs divided by number of passengers

Source: The Airline Analyst

Top 50 by passenger revenue per passenger
Air Transport International, Atlas Air and Omni Air International head this list based on their limited and very specialised non-scheduled passenger activity. The next few in the ranking are scheduled airlines: Air Greenland, El Al, Emirates and British Airways. The data shows the expected correlation with average trip length (RPKs divided by number of passengers). Exceptions to that include Air Greenland, Starflyers and Regional Express. The two main Japanese carriers, Japan Airlines and ANA Holdings are also exceptions, where the high yields in the domestic market support a high revenue per passenger despite average trip lengths of only 1,600 km.

There are no LCCs appearing on this ranking, reflecting their relatively short average stage length and “no frills” offerings.

Air Greenland headed the Top 50 scheduled passenger revenue per passenger

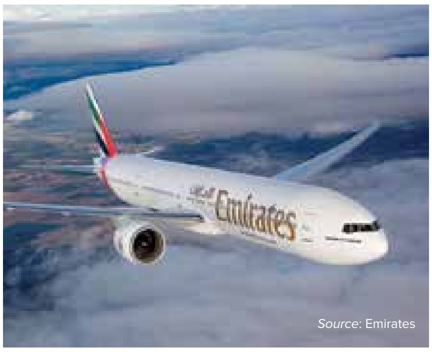
Top 50 by passenger yield
This ranking, while also influenced by average trip length, shows the influence of flying on less competitive routes such as for Air Transport International, Regional Express and Air Greenland. Yields for Japan Airlines and ANA Holdings head the rankings of the major carriers but are trending down due to increased competition. Next follow Lufthansa and SAS with their relatively short average trip length and Air France.

Despite the competitive pressures from Norwegian Air Shuttle, Ryanair and others, SAS continues to realise relatively high yields, higher than most of its European network competitors.

Regional Express did well in the Top 50 by passenger yield

Analysis: **RPKs and passenger load factor**

Top 50 by RPKs
Of all of our rankings, the most predictable is the Top 50 by RPKs (revenue passenger kilometres). Increasingly dominated by the "mega" groups, the top 10 airline groups comprise 45% of the total RPKs for the sample of 128 airline groups. The phenomenon of Emirates' growth is evident from their ranking in fourth place, up from eighth four years ago, edging out IAG, Air France-KLM, and Lufthansa. The Chinese majors come in at numbers eight, 10 and 11. LATAM at number 21 is the largest of the Latin American carriers. Low cost carriers Southwest and Ryanair come in at number nine and 12, respectively.



Source: Emirates

Top 50 by Passenger load factor
Heading the list for the first time is Ryanair at 94.4%, followed by Thomson Airways, Easyjet, Spring Airlines and Spicejet, all of which had load factors in excess of 90%. All of the Top 50 achieved load factors in excess of 80% including all three US and two of European "mega" carrier groups. The average load factor for all airlines in the sample of 128 airline groups for whom RPK and ASK data is available was 79.4%, down from 81%.

Source: Thompson

Top 50 by RPKs

Rank	Airline	RPKs (m)
1	American Airlines Group	359,651
2	Delta Air Lines	342,948
3	United Continental Holdings	338,460
4	Emirates	276,608
5	IAG	243,474
6	Air France-KLM	238,183
7	Lufthansa Group	226,633
8	China Southern Airlines	206,106
9	Southwest Airlines	200,843
10	Air China	188,158
11	China Eastern Airlines	167,529
12	Ryanair	148,676
13	Lufthansa Parent	145,521
14	British Airways	145,173
15	Air France	140,446
16	Turkish Airlines	126,815
17	Cathay Pacific	123,478
18	Air Canada	123,084
19	SIA Group	122,136
20	Qantas Airways	119,054
21	LATAM Airlines Group	113,627
22	Aeroflot	112,110
23	KLM	97,737
24	ANA Holdings	84,594
25	Hainan Airlines	82,951
26	Easyjet	81,496
27	Korean Air Lines	75,908
28	Jetblue	73,417
29	Japan Airlines	65,183
30	Thai Airways	62,442
31	Alaska Air Group	59,882
32	TAM	57,007
33	Iberia	51,071
34	Norwegian Air Shuttle	50,798
35	Indigo	46,288
36	Air Berlin	45,820
37	Skywest	45,086
38	Jet Airways	43,484
39	Garuda Indonesia	43,372
40	Asiana Airlines	42,473
41	Swiss International Air Lines	42,290
42	EVA Airways	40,946
43	China Airlines	38,702
44	Westjet	38,572
45	Avianca Holdings	38,233
46	Wizz Air	37,628
47	Virgin Australia	37,326
48	Virgin Atlantic Airways	37,126
49	SAS	36,940
50	GOL	35,928

Top 50 by Passenger load factor

Rank	Airline	Load factor
1	Ryanair	94.4%
2	Thomson Airways	93.7%
3	Easyjet	92.9%
4	Spring Airlines	91.7%
5	Spicejet	91.6%
6	Jet2.com	91.2%
7	Wizz Air	90.3%
8	Thomas Cook Airlines	90.2%
9	Hainan Airlines	87.8%
10	Norwegian Air Shuttle	87.7%
11	KLM	87.2%
12	Frontier Airlines	87.2%
13	Jeju Air	86.6%
14	Airasia	86.5%
15	Volaris	85.8%
16	Juneyao Airlines	85.7%
17	Air France-KLM	85.4%
18	S7 Airlines	85.4%
19	Jetblue	85.1%
20	Nok Air	85.1%
21	Indigo	84.8%
22	Spirit Airlines	84.7%
23	Delta Air Lines	84.6%
24	Cathay Pacific	84.5%
25	Alaska Air Group	84.3%
26	Air Berlin	84.3%
27	Hawaiian Airlines	84.3%
28	Air France	84.2%
29	LATAM Airlines Group	84.2%
30	Southwest Airlines	84.0%
31	El Al Israel Airlines	84.0%
32	Thai Airasia	83.8%
33	Avianca Brasil	83.8%
34	Air New Zealand	83.7%
35	TAM	83.5%
36	Tigerair	83.3%
37	Allegiant Travel Company	83.1%
38	United Continental Holdings	82.9%
39	Vueling Airlines	82.8%
40	Asiana Airlines	82.6%
41	Air Canada	82.5%
42	Skywest	82.1%
43	Iberia	82.0%
44	Icelandair	82.0%
45	Scoot	81.9%
46	Westjet	81.8%
47	American Airlines Group	81.7%
48	Cebu Pacific	81.7%
49	Mesa Airlines	81.7%
50	IAG	81.6%

Source: *The Airline Analyst*

Analysis: **Staff costs**

Top 50 by lowest staff costs to revenue

Employee costs are typically the second largest EBITDAR cost item after fuel for the world's airlines. Labour relations and compensation structures tend to put the old "legacy" airlines at a serious competitive disadvantage to start-up LCCs and carriers based in emerging economies. The Top 50 by lowest staff costs to Revenue ranking shows this very clearly.

Heading the list are Sichuan Airlines and Vietnam Airlines though this may suggest that disclosure is insufficient to calculate this ratio reliably. Some of the dedicated cargo carriers have extremely low employee costs/revenue ratios, perhaps in part due to costs being in other companies within the group. The list of passenger carriers with more reliable data are S7, Wizz Air, Interjet, Ethiopian, and Scoot.

They are then followed by creditable performances by other LCCs and leisure carriers (including Nok Air, Vueling, Volaris, Indigo and newly listed VietJet). With cost pressures in China, none of the Chinese "Big 3" make the Top 50. Their average staff cost increased to $37.4k from $26.6k two years ago. Ryanair, as a major airline based in a developed economy, achieves an attention getting 9.5%.

By comparison, the developed "mega" carrier groupings do not qualify for a Top 50 ranking. Lufthansa's ratio is 25.9% (down from 27.6%) while IAG and Air France-KLM are 17.5% and 30.1% respectively. The US majors show a little better on account of lower average employee costs but are all around two-three percentage points higher than last year. Delta's ratio is 28.1% (up from 25.2%), UAL's also 28.1% (up from 25.7%) and American Airlines is 30.4% (up from 26.1%). Southwest is an unexpectedly high 33.3%, presumably reflecting their shorter average trip length.

Neither Virgin Atlantic nor Emirates make the list, despite their long average trip lengths offsetting their higher average staff costs, nor does Singapore Airlines with a ratio of 17.6%. However low-cost subsidiaries Tigerair, Scoot and Silkair all are on the list. The major Latin American carriers had quite varied results. Copa made it into the Top 50 at number 37 with a ratio of 13.2%. Avianca's ratio was 16.0% while LATAM are laggards at 20.5%.

Source: Wizz Air

Wizz Air ranked well in the Top 50 by staff costs

Top 50 by Staff costs

Rank	Airline	Ave cost per employee ($k)	Employee costs as % of revenue
1	**Sichuan Airlines**	N/A	2.0%
2	**Vietnam Airlines**	3.7	2.4%
3	**Polar Air Cargo**	156.1	2.7%
4	**Enter Air**	N/A	2.9%
5	**Xiamen Airlines**	9.7	4.4%
6	**SIA Cargo**	82.8	4.9%
7	**S7 Airlines**	38.9	6.0%
8	**USA Jet**	N/A	7.1%
9	**Wizz Air**	53.7	7.2%
10	**Interjet**	N/A	7.8%
11	**Ethiopian Airlines**	17.7	7.8%
12	**Scoot**	N/A	8.3%
13	**PAL Holdings**	32.5	8.3%
14	**Hainan Airlines**	44.4	8.5%
15	**Airasia X**	35.8	9.2%
16	**Czech Airlines**	50.7	9.2%
17	**Ryanair**	61.2	9.5%
18	**Vueling Airlines**	83.6	9.8%
19	**Volaris**	34.5	10.3%
20	**Air Astana**	13.7	10.4%
21	**Cargojet Airways**	38.2	10.5%
22	**Vietjet Air**	36.0	10.8%
23	**Spicejet**	N/A	10.9%
24	**Indigo**	N/A	11.0%
25	**Nok Air**	N/A	11.1%
26	**Easyjet**	N/A	11.6%
27	**Thomas Cook Airlines**	N/A	11.7%
28	**Jin Air**	N/A	11.7%
29	**Jet2.com**	51.8	11.8%
30	**Tigerair**	N/A	11.9%
31	**Transat A.T.**	52.6	12.0%
32	**Aegean Airlines**	63.9	12.2%
33	**Thomson Airways**	80.7	12.2%
34	**Garuda Indonesia**	60.0	12.6%
35	**Air Busan**	52.5	12.9%
36	**Aeroflot**	30.3	13.0%
37	**Copa Holdings**	32.5	13.2%
38	**Starflyer**	68.7	13.5%
39	**Kenya Airways**	39.2	13.6%
40	**Jet Airways**	N/A	13.8%
41	**Thai Airasia**	31.6	13.9%
42	**Cargolux**	137.7	14.3%
43	**Jetstar Asia**	N/A	14.4%
44	**Utair**	N/A	14.4%
45	**Silkair**	67.9	14.5%
46	**Airasia**	33.3	14.8%
47	**Asiana Airlines**	N/A	14.9%
48	**Eastarjet**	52.7	14.9%
49	**Jeju Air**	62.4	15.0%
50	**Comair**	32.4	15.1%

Source: *The Airline Analyst*

Analysis: **RASK-CASK margin**

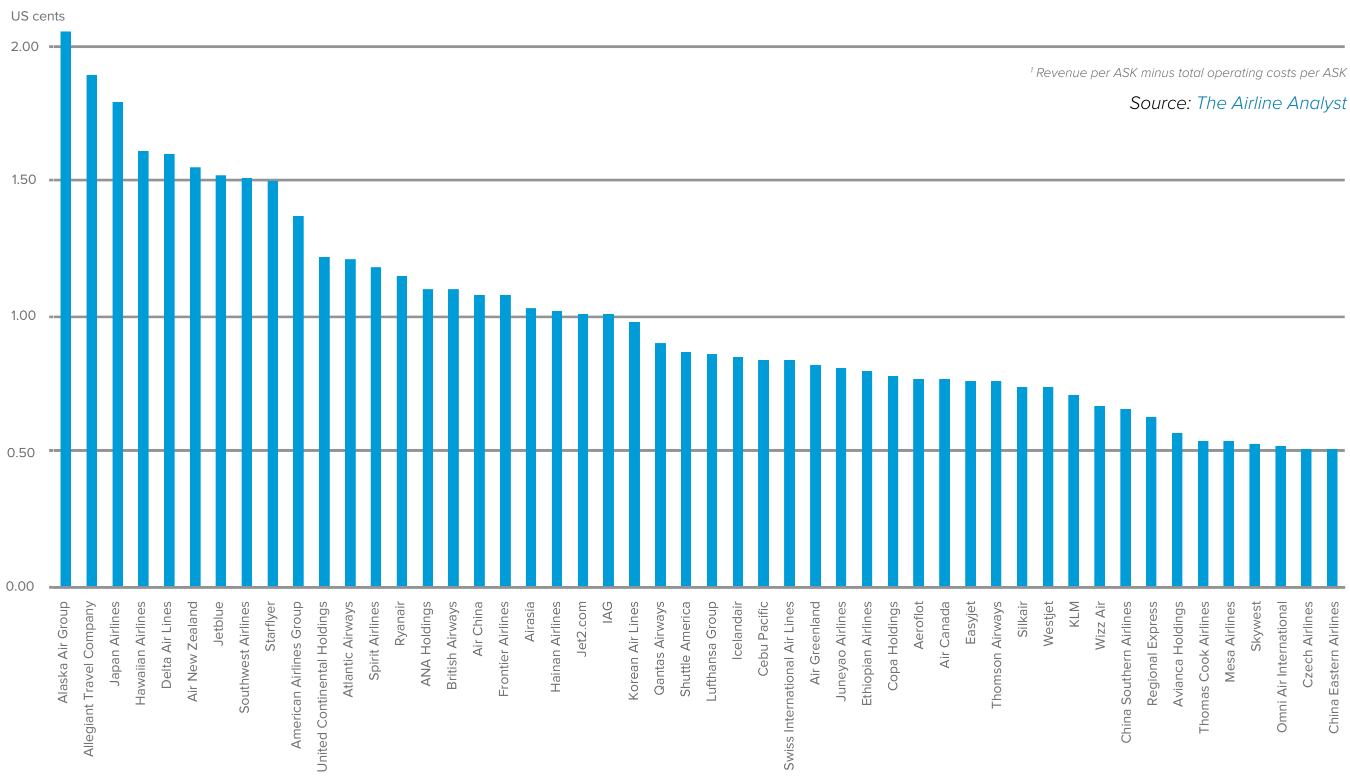
Alaska Air heads the Top 50 by RASK-CASK margin

Top 50 by RASK-CASK margin
RASK-CASK margin has become one of the key ratios monitored by airline management and analysts alike in assessing competitiveness and trends over time.

In the ever competitive airline industry, very slim margins and competitive advantages mean the difference between success and failure. Having a marginally higher cost structure can be sustainable if it is supporting a premium revenue structure such as with British Airways or the US majors. However if it is not, the strength of competitive forces will root out the airline's weakness over time.

Considering that many airline management teams dream for a RASK-CASK margin in excess of one US cent it is striking that 22 of our Top 50 did just that, 10 of them from the USA. Excluding the US airlines, Japan Airlines, a major network carrier, topped the list at 1.79 followed by Air New Zealand at 1.55. Copa was the highest ranked Latin American carrier in 33rd position. Outside these leaders British Airways and Swiss were the highest ranked of the European majors. IAG ranked 22nd this year and Lufthansa Group 26th but Air-France-KLM did not make it into the Top 50.

Top 50 by RASK-CASK margin[1]



Analysis: **EBITDAR margin**

Polar Air Cargo heads the Top 50 by EBITDAR margin

Top 50 by EBITDAR margin

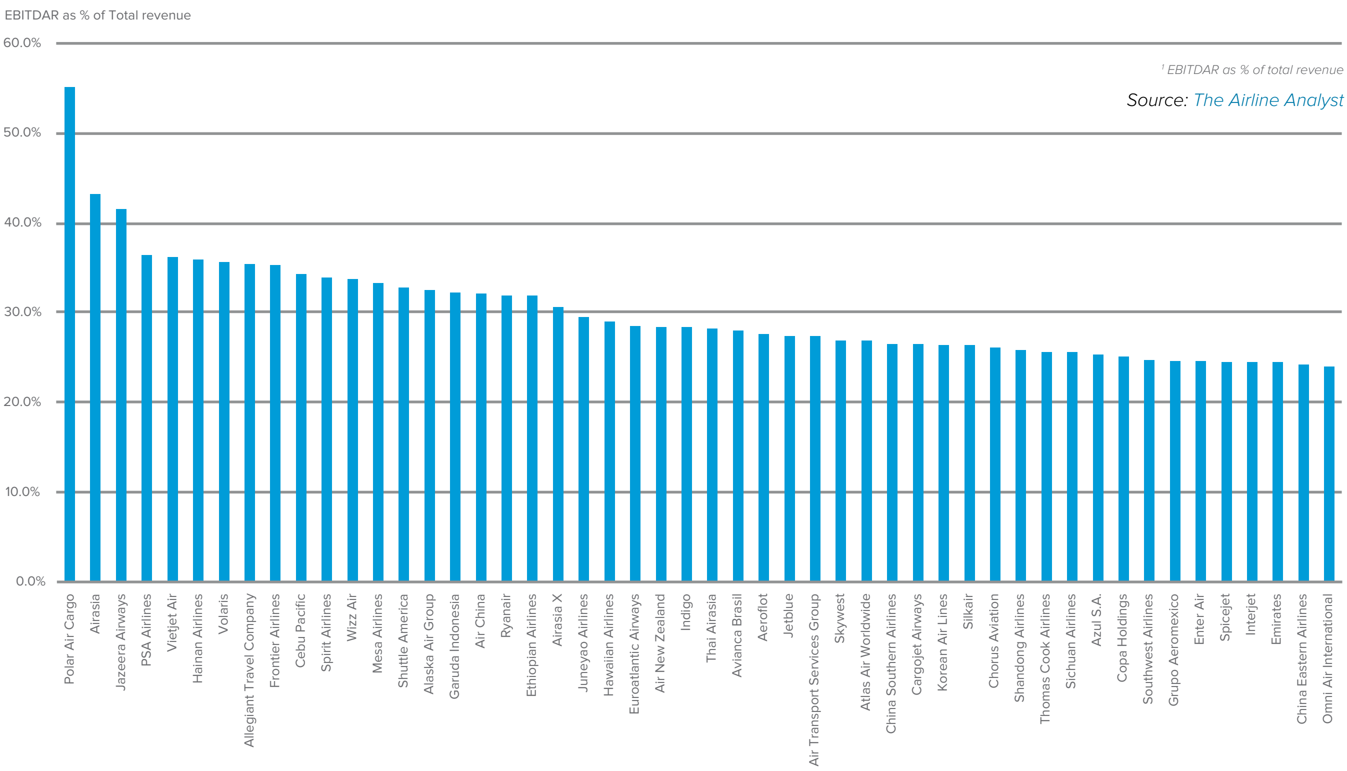
Unlike some other measures, EBITDAR margin (earnings before tax, depreciation, debt and rental costs) is neutral to the means of aircraft financing (owned or leased) and degree of financial leverage of an airline. While a high EBITDAR margin will therefore not alone make a financially successful airline, it is a very appealing measure of management's success in running the airline and the viability of the airline's core business, independent of the financing strategies chosen.

Reflecting the robust performance of the industry, the EBITDAR margin for the sample of 128 airline groups improved slightly to 21.5% from 21%. By comparison, the EBITDAR margin of the top 50 was a remarkable 28.2%.

The passenger carriers on the list are headed by Airasia, Jazeera Airways and PSA Airlines. Some other LCCs also had great results such as Allegiant, Spirit, Volaris, Indigo and Frontier. Hainan Airlines, Alaska Air Group, Garuda Indonesia and Air China are the highest ranked network carriers.

None of the "mega" carrier groupings of the US and Europe are in the Top 50 but the 3 Chinese "majors" all are.

Top 50 by EBITDAR margin[1]



Analysis: **Financial flexibility**

We have assessed financial flexibility on three key financial parameters: Leverage, Fixed charge cover and Liquidity. Leverage is calculated as Adjusted net debt (Net balance sheet debt plus eight times Aircraft rent) to EBITDAR, Fixed charge cover as EBITDAR divided by Net interest + Aircraft rent) and Liquidity as Unrestricted cash as a percentage of Revenue. A "cash flow" measure of Leverage is preferred as traditional ratios based on book equity can mislead. A leverage measure has more value in our opinion if it is related to ability to service debt from continuing operations rather than some balance sheet equity figures that may not reflect current values of assets. Both the Leverage and Fixed charge cover measures take into account the effect of aircraft operating leases, either by "capitalising" the rental as in Leverage or including rent in the fixed charges that must be covered by EBITDAR.

Source: Boeing

Top 50 by lowest Leverage

Leverage for the Top 50 ranges from zero for those airlines with no Adjusted net debt to a high of 3.4 times for KLM. As to be expected, the list includes all airlines with investment grade credit ratings. Noticeably highly placed on the list is Japan Airlines following the debt forgiveness achieved through its restructuring. Other majors on the list include Ryanair, Southwest, Delta, Singapore Airlines, British Airways, IAG, Lufthansa and United but Air France-KLM, Emirates and Cathay Pacific are not in the Top 50. Other absentees include all the Latin American carriers except Copa. A number of the major LCCs make the ranking with strong cash generation supporting their debt loads from recent fleet expansion.

Top 50 by Lowest Leverage[1]

Rank	Airline	Times
1	**Compass Airlines**	0.0
2	**Luxair Group**	0.0
3	**SIA Cargo**	0.0
4	**Japan Airlines**	0.0
5	**Air Greenland**	0.0
6	**USA Jet**	0.0
7	**Regional Express**	0.2
8	**Ryanair**	0.4
9	**Southwest Airlines**	0.4
10	**Delta Air Lines**	0.7
11	**Icelandair**	0.7
12	**Swiss International Air Lines**	0.7
13	**Jet2.com**	0.7
14	**Easyjet**	0.8
15	**Allegiant Travel Company**	1.0
16	**Jetblue**	1.0
17	**Alaska Air Group**	1.2
18	**Silkair**	1.2
19	**Lufthansa Group**	1.2
20	**Hawaiian Airlines**	1.3
21	**British Airways**	1.6
22	**SIA Group**	1.6
23	**Air New Zealand**	1.7
24	**IAG**	1.8
25	**Air Mauritius**	1.8
26	**Kalitta Air**	1.8
27	**Westjet**	2.0
28	**United Continental Holdings**	2.0
29	**Qantas Airways**	2.0
30	**UPS Airlines**	2.0
31	**Wizz Air**	2.1
32	**Frontier Airlines**	2.2
33	**Spirit Airlines**	2.3
34	**Fiji Airways**	2.3
35	**Copa Holdings**	2.4
36	**Air Transport Services Group**	2.5
37	**Air Arabia**	2.5
38	**Horizon Air**	2.6
39	**Air Canada**	2.7
40	**Iberia**	2.9
41	**Comair**	3.0
42	**Cebu Pacific**	3.1
43	**Euroatlantic Airways**	3.1
44	**American Airlines Group**	3.1
45	**ANA Holdings**	3.1
46	**Qatar Airways**	3.1
47	**Jazeera Airways**	3.2
48	**Jeju Air**	3.2
49	**Thomas Cook Airlines**	3.4
50	**KLM**	3.4

[1] Adjusted net debt/EBITDAR

Top 50 by Highest Fixed Charge Cover[1]

Rank	Airline	Times
1	**Expressjet**	Infinite
2	**Compass Airlines**	Infinite
3	**Luxair Group**	Infinite
4	**USA Jet**	157.0
5	**Air Greenland**	33.5
6	**Southwest Airlines**	18.0
7	**Allegiant Travel Company**	18.0
8	**Alaska Air Group**	16.5
9	**Japan Airlines**	15.0
10	**Swiss International Air Lines**	15.0
11	**Ryanair**	14.2
12	**Regional Express**	13.5
13	**Lufthansa Group**	13.5
14	**Delta Air Lines**	12.9
15	**Icelandair**	10.4
16	**Air Transport Services Group**	9.3
17	**Jetblue**	8.8
18	**British Airways**	8.6
19	**Horizon Air**	8.5
20	**Easyjet**	6.9
21	**UPS Airlines**	6.9
22	**Air New Zealand**	6.2
23	**Qantas Airways**	5.3
24	**United Continental Holdings**	5.0
25	**Scoot**	5.0
26	**IAG**	4.7
27	**Korean Air Lines**	4.7
28	**Hawaiian Airlines**	4.6
29	**Westjet**	4.6
30	**Fiji Airways**	4.3
31	**Kalitta Air**	4.2
32	**American Airlines Group**	4.2
33	**Xiamen Airlines**	4.1
34	**Air Mauritius**	4.0
35	**Cebu Pacific**	4.0
36	**Air China**	3.9
37	**Copa Holdings**	3.8
38	**Air Canada**	3.7
39	**SIA Group**	3.5
40	**Spirit Airlines**	3.5
41	**ANA Holdings**	3.5
42	**China Southern Airlines**	3.4
43	**Juneyao Airlines**	3.3
44	**Atlantic Airways**	3.3
45	**Comair**	3.2
46	**China Eastern Airlines**	3.2
47	**Jet2.com**	3.1
48	**KLM**	3.1
49	**Airasia**	3.1
50	**Frontier Airlines**	2.9

[1] EBITDAR/Net interest + Rent

Source: *The Airline Analyst*

“Who cares what our leverage is as long as we pay our rent / interest and you have our aircraft as collateral anyway?”

Top 50 by Highest fixed charge cover
“Who cares what our leverage is as long as we pay our rent / interest and you have our aircraft as collateral anyway?” is a question heard often by aviation financiers and there is an element of truth to it.

A meaningful Fixed charge cover ratio covenant can help protect the asset financier against the likelihood of default. Our Top 50 airlines ranking for Fixed charge cover is similar to the Top 50 by lowest leverage. Those airlines with no or minimal adjusted net debt are at the top but some notable airlines make this list despite their higher leverage such as Korean Air and the three Chinese majors.

All of these airlines have a fixed charge cover comfortably above 2x which translates into the financier being protected for rent and interest (if not principal) payments even if EBITDAR declines by 50-60%. Airasia just retained their position on the list after returning last year.

Southwest ranked highly in the Top 50 by Highest Fixed Charge Cover

Top 50 by Highest liquidity
Liquidity is another major indicator of financial flexibility for an airline and its ability to withstand sudden shocks such as a strike, natural disaster, grounding of all or a portion of its fleet, drying up of capital markets or withdrawal of government support.

Top of the list for liquidity are a number of very successful LCCs whose financial analysis may be focused on whether to return some surplus cash to shareholders or buy new aircraft. At the other end of the scale, many market participants consider that liquidity of three months of revenues is the minimum level required for comfortable operation of an airline.

That is equivalent to a figure of at least 25% of revenues as a liquidity buffer. This year 30 airlines achieved this level, down from 37 last year. A factor to consider is that some airlines increasingly rely on committed liquidity facilities which are not captured in our data, as with Qantas.

Others may keep a buffer of unencumbered aircraft to be converted into cash if required. It is notable that none of the US majors made it into the Top 50 by Liquidity.


Ryanair heads the Top 50 by Highest liquidity

Top 50 by Highest liquidity

Rank	Airline	Liquidity as % of total revenue
1	Ryanair	62.1%
2	Air Arabia	59.3%
3	Jazeera Airways	56.7%
4	Spring Airlines	55.9%
5	Silkair	51.0%
6	Qatar Airways	50.1%
7	Hainan Airlines	49.7%
8	Wizz Air	49.3%
9	Scoot	45.4%
10	Indigo	44.9%
11	Luxair Group	43.3%
12	Fiji Airways	38.1%
13	Jeju Air	37.4%
14	Tigerair	37.3%
15	Westjet	36.9%
16	Copa Holdings	36.7%
17	Frontier Airlines	35.3%
18	Spirit Airlines	34.5%
19	Finnair	33.3%
20	Vueling Airlines	31.8%
21	Japan Airlines	31.4%
22	EVA Airways	31.1%
23	Air New Zealand	30.5%
24	Volaris	30.1%
25	IAG	28.5%
26	Jet2.com	28.4%
27	Alaska Air Group	26.6%
28	SIA Group	26.5%
29	Atlantic Airways	25.7%
30	Euroatlantic Airways	25.5%
31	Hawaiian Airlines	24.9%
32	Allegiant Travel Company	24.5%
33	Airasia	24.5%
34	Jin Air	24.3%
35	Aegean Airlines	24.0%
36	Royal Jordanian	23.7%
37	Virgin Atlantic Airways	23.5%
38	Cargolux	23.4%
39	British Airways	21.8%
40	Cathay Pacific	21.7%
41	SIA Cargo	21.5%
42	SAS	20.9%
43	Easyjet	20.8%
44	Air Astana	20.5%
45	Thai AirAsia	20.4%
46	Air Canada	20.3%
47	Nok Air	19.7%
48	Icelandair	19.5%
49	Comair	18.8%
50	Pegasus Airlines	18.7%

Source: *The Airline Analyst*

Analysis: **Equity market capitalisation and return on invested capital**

Top 50 by Equity market capitalisation
The Top 50 airline stocks had a total value of $340 billion as of 28th July 2017, up from $295 billion last year. Delta continues to be the top ranked airline with a market capitalisation of $36 billion, followed by 3 of its US rivals.

Four of the top 15 are from China while the “mega” European carriers of IAG, Lufthansa, and Air France-KLM make it into positions 8, 16 and 37, respectively. LATAM remains the highest ranked Latin American carrier in 20th position, down from 12th last year and 7th two years ago, followed by Copa in 25th and newly listed Azul in 28th.

Southwest leads the LCC stakes, ahead of Ryanair (5), Easyjet (18), Spirit (24), Allegiant (29), Westjet (33), Wizz Air (47). The two major Japanese carriers come in at numbers 9 and 11.


Source: Boeing

Top 50 by Return on invested capital
The Top 50 by Return on invested capital ranking shows a wide range of results. Topping the list are a number of small carriers with limited capital bases. Among the larger carriers, the best performance came from Lufthansa Group at 20.7%, Swiss at 22.8%, British Airways (18.9%) and Air New Zealand (18.3%).

A total of 39 generated returns in excess of 10%, down from 43 last year. However, many of the long established network carriers like LATAM, Singapore Airlines and Cathay Pacific earned returns that are unlikely to have exceeded their cost of capital.


Source: Jet2

Top 50 by Market capitalisation[1]

Rank	Airline	$m
1	**Delta Air Lines**	35,945
2	**Southwest Airlines**	30,664
3	**American Airlines Group**	23,686
4	**United Continental Holdings**	22,929
5	**Ryanair**	20,945
6	**China Eastern Airlines**	15,215
7	**Air China**	13,975
8	**IAG**	12,956
9	**Japan Airlines**	11,266
10	**Alaska Air Group**	10,943
11	**ANA Holdings**	10,756
12	**China Southern Airlines**	10,252
13	**SIA Group**	8,753
14	**Hainan Airlines**	8,150
15	**jetblue**	7,556
16	**Lufthansa Group**	6,811
17	**IndiGo**	5,948
18	**Easyjet**	5,287
19	**Cathay Pacific**	5,134
20	**LATAM Airlines Group**	4,960
21	**Juneyao Airlines**	4,449
22	**Spring Airlines**	4,375
23	**Qantas Airways**	4,310
24	**Spirit Airlines**	4,012
25	**Copa Holdings**	3,819
26	**Hawaiian Airlines**	3,046
27	**Air Canada**	2,973
28	**Azul S.A.**	2,812
29	**Allegiant Travel Company**	2,768
30	**Aeroflot**	2,672
31	**PAL Holdings**	2,419
32	**Korean Air Lines**	2,193
33	**Westjet**	2,149
34	**Turkish Airlines**	1,961
35	**EVA Airways**	1,957
36	**Skywest, Inc.**	1,887
37	**Air France-KLM**	1,838
38	**Air New Zealand**	1,752
39	**Volaris**	1,733
40	**Air Arabia**	1,690
41	**China Airlines**	1,682
42	**Grupo Aeromexico**	1,550
43	**Thai Airways**	1,491
44	**Airasia**	1,488
45	**Atlas Air Worldwide**	1,305
46	**Norwegian Air Shuttle**	1,299
47	**Wizz Air**	1,294
48	**Avianca Holdings**	1,184
49	**Cebu Pacific**	1,120
50	**Icelandair**	1,013

[1] *Closing prices 28 July, 2017*

Top 50 by Return on invested capital[1]

Rank	Airline	Load Factor
1	**Jet2.com**	44.8%
2	**Compass Airlines**	33.3%
3	**Frontier Airlines**	22.2%
4	**Lufthansa Group**	20.7%
5	**USA Jet**	20.1%
6	**Swiss International Air Lines**	18.9%
7	**British Airways**	18.9%
8	**Air New Zealand**	18.3%
9	**Air Mauritius**	16.9%
10	**Japan Airlines**	15.9%
11	**Delta Air Lines**	15.6%
12	**Qantas Airways**	15.2%
13	**IAG**	14.6%
14	**Jetblue**	14.5%
15	**Air Canada**	14.4%
16	**Wizz Air**	14.2%
17	**Fiji Airways**	13.9%
18	**United Continental Holdings**	13.7%
19	**Euroatlantic Airways**	13.3%
20	**Hawaiian Airlines**	13.0%
21	**KLM**	12.6%
22	**American Airlines Group**	12.4%
23	**Comair Limited**	12.4%
24	**Czech Airlines**	12.3%
25	**Easyjet**	11.6%
26	**Allegiant Travel Company**	11.6%
27	**Jin Air**	11.6%
28	**Air Busan**	11.4%
29	**Southwest Airlines**	11.3%
30	**Alaska Air Group**	11.3%
31	**Aeroflot**	11.3%
32	**Westjet**	10.7%
33	**Starflyer**	10.7%
34	**Icelandair**	10.6%
35	**Thomas Cook Airlines**	10.6%
36	**Airasia**	10.1%
37	**Cebu Pacific**	10.1%
38	**Omni Air International**	10.0%
39	**Silkair**	10.0%
40	**S7 Airlines**	9.8%
41	**Air France-KLM**	9.6%
42	**Shuttle America**	9.5%
43	**Spirit Airlines**	9.5%
44	**Amerijet International**	9.1%
45	**Jetstar Asia**	8.9%
46	**Ethiopian Airlines**	8.5%
47	**Ryanair**	8.4%
48	**Thai Airasia**	8.3%
49	**Kalitta Air**	8.2%
50	**SAS**	8.2%

[1] *(EBIT plus 1/3 Rental)/(Book or Market equity plus Adjusted net debt)*

Source: *The Airline Analyst*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