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ORIX Aviation steps up for Avolon

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Why export credit is changing

After SACE's agreement last year to guarantee financing on Boeing aircraft, UKEF's discussions with Boeing may mark a shift in ECA mentality, writes **Jack Dutton**.

In August, several market sources told *Airfinance Journal* that UK Export Finance (UKEF), the British export credit agency (ECA), was working with Boeing to guarantee financing for Boeing 737 Max aircraft despite there not being a significant portion of UK-made content on the aircraft.

Although UKEF's usual policy for financing aircraft is based on how much of the aircraft's content is made in the UK, this will not be the case with 737 Max aircraft. For example, the 787 has a Rolls-Royce engine option, while the only engine option for the 737 Max is the CFM LEAP-1B, which is manufactured in the US.

In January 2017, UKEF said it was able to guarantee financing for the full 85% of the value of an aircraft when more than 20% of its content was made in the UK. ECAs are only ever able to guarantee financing for up to 85% of the aircraft's value.

Since January last year, UKEF has guaranteed financing for 787s delivering to carriers that include Norwegian, Lot Polish Airlines and El Al Israel Airlines, as well as leasing company Avolon. Although UKEF has the potential to guarantee the whole 85% of the value of the aircraft in those deals, sources say that the US Export-Import Bank of the United States has helped co-finance at least one of those deals.

Previously, UKEF would not be able to guarantee the funding for 787s. However, in April 2016, Airbus was undergoing a corruption investigation, after reporting inaccuracies in some of its applications for export credit, meaning that the European ECAs – UKEF, bpifrance (formerly Coface), SACE, Euler Hermes – were unable to guarantee financing on Airbus aircraft. UKEF, therefore, changed its policy so it could finance Boeing aircraft comprising at least 20% UK equipment.

SACE-Boeing agreement

In May 2017, Boeing and SACE, Italy's export credit agency, entered an agreement to support Italian exports in the aviation sector in the form of new aircraft delivery financing. The agreement created a "shared platform" for facilitating the financing of aircraft purchases of mutual interest, said the Italian ECA at the time.

SACE considered guaranteeing credit lines from third parties for the sale of Boeing aircraft up to $1.25 billion last year to support contracts and subcontracts with Italian firms specialised in precision aeronautical components.

Boeing's expenditure on products made in Italy formed the basis of the agreement. Between 2015 and 2016, Boeing purchased $2.5 billion in goods and services from Italian companies.

The heart of Boeing's business in Italy is the 787 programme, of which Leonardo Aerostructure (formerly Alenia) builds 14%. The production plant of Leonardo located in Grottaglie (near Taranto) works on the construction of the central and rear fuselage sections, while the horizontal stabiliser is built in the Foggia plant. Boeing directly employs about 150 people in Italy.

Sources indicate that Boeing's new relationship with UKEF will be similar to its agreement with SACE – finance guarantees will not only be based on the aircraft type, but also on how many UK-made products Boeing purchases from the UK. One source says that the US original equipment manufacturer has been in discussions with a number of ECAs about a new relationship based on how many products Boeing buys from that country.

A UKEF spokesperson says: "We do not comment on speculation on potential future transactions for reasons of commercial confidentiality. UKEF can provide support for any UK export that meets its UK content requirements, risk and other due diligence criteria."

Boeing was unavailable for comment as *Airfinance Journal* went to press.

A number of factors could have spurred the discussions UKEF is having with Boeing about financing Max aircraft. Although the European ECAs are now able to guarantee aircraft deals for Airbus on a "case-by-case basis", sources say the deals are small financings and, although there are a couple of European ECA/Airbus deals ongoing, they have not yet closed.

Furthermore, UKEF will only typically guarantee 30% to 35% financing for Airbus aircraft (it shares the guarantee with Euler Hermes and bpifrance), and only began guaranteeing the full 85% of an aircraft's value when it started financing 787s. Being able to finance Max aircraft too will keep the ECA active in financing UK exports, against the backdrop of increasing trade tensions and Brexit. How Brexit could affect UKEF's propensity to guarantee Airbus aircraft is another question.

It is not clear when UKEF plans to begin guaranteeing financing Max aircraft, but the approval process to do so may take time – such radical shifts are likely to move slowly at government level and it is not always easy to justify them to the UK taxpayer.

UKEF will hope for productive discussions to encourage Boeing to continue buying a steady stream of exports from the UK. Along with the SACE agreement, which was signed last year, a new Boeing/UKEF relationship may represent a larger shift in the role of the ECA in aviation finance.

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Anderson and **Hall** take American's voluntary severance

Two key treasury executives, Amelia Anderson and Jim Hall, have taken up American Airlines' voluntary severance packages as the carrier continues to adjust its organisational structure after its merger with US Airways.

In a letter to employees, dated 19 June and obtained by *Airfinance Journal*, Doug Parker, American Airlines' chairman and chief executive officer, and its president, Robert Isom, outlined the need for "creating the right organisational structure for the future", which will involve a "restructuring that will happen at the director and above level".

Parker and Isom indicate that American's current organisational structure "resulted largely from integration work" that came after the merger, and the carrier "has more director and above leaders than required for the long term".

Anderson joined US Airways in 2009 and was appointed managing director and assistant treasurer of American in January 2014.

Anderson is the co-founder of Advancing Women in Aviation Roundtable, a grassroots initiative working with senior executives to build awareness and develop strategies to promote the development and advancement of women leaders.

She also serves as co-chair of American Airlines' Women's Leadership Programme, and she is actively involved in American Airlines' MBA recruiting process. Anderson was chosen as *Airfinance Journal*'s Aviation Woman of the Year, based on a public nomination process, in 2017.

Hall, director of corporate finance and treasury, has held positions in both treasury and financial planning and analysis. He joined American in 2006 and has been in the treasury department since 2010.

Amelia Anderson

Jim Hall

"Amelia and Jim have been instrumental in financing the company's historic refleeting programme, with over 500 new aircraft delivered since 2014. They successfully completed innovative and efficient financings that brought an impressive display of honours awarded to our treasury team by our aviation finance colleagues," writes Tom Weir, American's treasurer and vice-president, in a separate letter.

Anderson and Hall will remain with American "while the company ensures a smooth transition" but no further details were provided in the letter.

"While not all integration work is complete, much of it is and as a result, now is the right time to look at the organisational structure we need for the future. This will require all of us to challenge the way we have always done things and think creatively and broadly about American's very bright future," conclude Parker and Isom.

American has not yet announced replacements for Anderson and Hall.

FPG Amentum hires chief commercial officer

FPG Amentum, the Dublin-based aircraft leasing company, has hired Eamonn Forbes as chief commercial officer, with overall responsibility for airline sales and marketing, as well as aircraft trading globally.

Forbes brings more than 13 years' aircraft leasing experience, having held senior positions at SMBC Aviation Capital and most recently with Goshawk.

He has an MBA from the Smurfit School of Business at University College Dublin, as well as a law degree from University College Cork.

Aelis gets new Americas representative

Aelis Group has named Szymon Wlodarski as its Americas representative.

Wlodarski has more than 20 years' aviation business experience, working with companies which include Lockheed Martin, Sikorsky Aircraft and Pratt & Whitney.

Before joining Aelis Group, he was responsible for global sales of the M28 aircraft programme (a twin turboprop produced by Lockheed Martin in Poland), working as a sales director and leading an office of international area managers within the corporate USA sales team.

Former CFO returns to **Sri Lankan**

Sri Lankan Airlines has appointed Vipula Gunatilleka as chief operating and finance officer. In his new role, Gunatilleka will report to the chairman and the board of directors and will responsible for the overall management of the airline.

Gunatilleka had a previous stint as chief financial officer (CFO) at Sri Lankan Airlines between January 2005 and October 2008, before moving to Sri Lankan telecommunications company Dialog Axiata as its group CFO. Before returning to the South Asian carrier, Gunatilleka was group CFO of TAAG Angolan Airlines for nearly three years, also serving as a member of the airline's board of directors.

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PROPELLING THE NEXT CONNECTION

Volga-Dnepr appoints charter cargo executive

Volga-Dnepr has appointed Konstantin Vekshin as executive president, charter cargo operations, for Volga-Dnepr Airlines, effective 15 August.

Vekshin will focus on achieving the airline's strategic objectives, managing its international operating bases and regional sales offices – including the UK, Russia, Germany, USA, UAE, China and Ireland – and building up a multinational management team for the company's charter operations.

Vekshin joined Volga-Dnepr in 1997 and was promoted from sales executive to vice-president, charter business sales and marketing. Between 2013 and 2016, he worked as vice-president, charter and government division, with Centurion Cargo Airlines and as vice-president of airfreight charters with Bertling Logistics.

In October 2016, he was appointed managing director of Cargo Logic Management, a UK-based Volga-Dnepr company specialising in management consulting services for international airlines.

Vekshin will be based in London.

Konstantin Vekshin

HNA Group to restructure management

Adam Tan will replace deceased former chairman Wang Jian as the chairman of HNA International, according to a statement from HNA Group's website.

Tan will continue his roles as vice-chairman and chief executive officer of HNA Group.

Wang died after an accident in France, during a business trip on 3 July.

Chen Chao will take over as chief investment officer of HNA Group from Wang Shuang. Chen has also been named executive chairman of HNA International.

Wang Shuang's name did not appear on the new management list.

Yang Guang has stepped down as the president of HNA Group North America and as a trustee of the Hainan Cihang Charity Foundation.

The New York-based Hainan Cihang Charity Foundation is one of two charities which own HNA Group. The other is Hainan-based Hainan Province Cihang Foundation. The two charities hold more than 50% of HNA shares.

In July, Chen Feng became the chairman of HNA Group, taking over from Wang Jian.

Adam Tan

Hazeldine joins CDB as COO

Nick Hazeldine

Nick Hazeldine has left SMBC Aviation Capital, where he was head of credit risk, to join CDB Aviation as chief operating officer (COO), *Airfinance Journal* understands.

Hazeldine joined SMBC Aviation Capital as a credit risk analyst in June 2004. He progressed up the lessor working in negotiation and commercial roles, most recently as head of credit risk since December 2013.

On 17 August, *Airfinance Journal* reported that Rob Murphy, chief operating officer and general counsel of CDB Aviation, had left the company for personal reasons.

CDB Aviation declined to comment.

HFW adds associates

Holman Fenwick Willan (HFW) has added two associates to its aviation team.

Gareth Lond joined the law firm's Hong Kong office on 17 August from Eversheds Sutherland Dubai.

"He's got quite a strong finance background. Given the work we do on the operating leasing side, trading, refinancing and Jolco [Japanese operating leases with call option], having him on board will be a good addition," says Justin Sun, a partner in HFW's Hong Kong office.

Daina Worrall has joined the firm's Sydney office, having previously worked as an associate for Clifford Chance in London. Before that, she was a corporate transaction specialist (legal) for Macquarie AirFinance in London. She began her career as a paralegal at Stephenson Harwood in London.

"We share resources between our offices in Asia," says Sun. "That makes sense, and having two join at the same time will continue to boost our existing capacity and offering."

Icelandair CEO resigns after profit warning

Icelandair's chief executive has resigned after the flag carrier lowered its Ebitda (earnings before interest taxes depreciation and amortisation) guidance for the year.

Björgólfur Jóhannsson, president and CEO of Icelandair, had been with the airline for 10 years, but said that responsibility for a slump in performance rested with him.

The airline's revenue is expected to be 5-8% lower than expected for the year due to an anticipated rise in airline fares not materialising, and to a botched marketing and network restructuring.

"Although the above-mentioned problems have been addressed, it is a matter of responsibility that the said changes at the company were not implemented in a sufficient way and that the problems created were not reacted to more quickly," said Jóhannsson.

"I will assume that responsibility and will thus resign as the president and CEO of the company."

Icelandair now forecasts its 2018 Ebitda to be $80 million to $100 million. That is down from $170 million in 2017 and $220 million in 2016.

Icelandair chairman Úlfar Steindórsson praised Jóhannsson for leaving Icelandair on a stable footing.

"It shows Björgólfur's strength of character to assume responsibility when the company's operations could have been better," says Steindórsson.

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Fraud charges **unlikely to ground Daily Air**

The Taiwanese airline looks likely to continue operations because it provides air services to outlying islands that are hard to reach by boat. **Elsie Guan** and **Michael Allen** report.

Taiwan's civil aviation authority is likely to ensure Daily Air keeps running despite the detention of the airline's chairman on fraud charges. The company provides essential air services that would be difficult to replace, according to two people with close knowledge of Taiwan's airline industry.

A Taiwanese aviation source says the Civil Aeronautics Administration (CAA) is unlikely to ground Daily Air because it provides subsidised air services to citizens living on outlying islands, which are difficult or uncomfortable to reach by sea during inclement weather.

Liberty Times, a Taiwanese newspaper, said on 20 June that Daily Air has received up to NT$1 billion ($32 million) of subsidies from CAA since 2005 – NT$500 million more than it ought to have received under CAA regulations.

"I think they will have to appoint another chairman. There's no replacement for those airline services. This airline needs to go on, whatever the outcome," says one of the sources.

Daily Air's chairman, Kuo Tzu-hsing, was detained on 21 June. Citing the Taipei District Prosecutors Office, the newspaper says Kuo is accused of filing false financial statements to fraudulently obtain extra government funding. Prosecutors searched Daily Air's Taipei headquarters on 20 June, as well as eight offices at Taitung airport and Kaohsiung airport, interviewing Kuo and other suspects.

Local news media say Huang bought second-hand aircraft from Mandarin Airlines and Uni Air at low prices via a company named ROC Advance, which is a subsidiary of Huang's Mayer Steel Pipe (美亚钢管公司) and then leased them to Daily Air at high prices to gain the price differences. After the transaction, the expenses of the airline's aircraft leasing business increased so Daily Air could apply for more subsidies from CAA.

On 23 July, the airline's former chairman Chunfa Huang (黄春发) was also questioned by the Taipei District Prosecutors Office on fraud charges. Kuo is alleged to have copied Huang's fraudulent leasing method after he became the chairman of the airline. The Taipei District Prosecutors Office would not respond to *Airfinance Journal's* questions on the matter.

Airfinance Journal's Fleet Tracker indicates that Daily Air has eight aircraft, including four Viking DHC-6 Twin Otters and four Dornier 228s. Two of the Twin Otters are on lease from Loch Ard Otters, a subsidiary of Palm Beach, Florida-based CAVU Aviation Finance. The company could not be reached for comment.

The Taiwanese aviation source says there is "no chance" of other Taiwanese carriers taking over Daily Air's routes.

"They don't want to get into this kind of 19-seat turboprop market. Mandarin Airlines [a subsidiary of flag carrier China Airlines] has no interest in running this kind of service. They have a more profitable business now instead of running this kind of essential air service; that's why Daily Air has to keep running."

A second source, who formerly worked with a major Taiwanese airline, says: "I think the CAA will be forced to keep Daily Air in operation because they have no alternative choice and need to keep the offshore island transportation there. The legal process will keep going, but, in the meantime, they will keep operations and get a licence to keep operations."

The source adds that Daily Air is operating the routes on a 10-year contract, which it won from the CAA as part of an open bidding process.

Another company, Global Airlines, also made a bid to fly those routes, says the source, who adds that Global Airlines initially won the contract but that the CAA later gave it to Daily Air instead.

A source from Taiwan's CAA tells *Airfinance Journal* it transferred the certification to operate flight routes to outlying islands from Global Airlines to Daily Air because Global Airlines did not meet the funding requirements to buy new aircraft. Daily Air's certification period is 10 years, from 2016 to 2026, says the source.

"Global Airlines was the best applicant at first, but the company didn't meet our terms of tender before the contract expired," adds the source. He declines to comment on the ongoing investigation into Daily Air. Global Airlines declines to comment.

Safety incidents

Besides the arrest of its chairman, Daily Air has contended with two non-fatal incidents in just over a year.

On 23 April, a Twin Otter operated by Daily Air suffered a runway excursion at Kaohsiung airport. On 13 April 2017, a Daily Air Twin Otter suffered a more severe though non-fatal runway excursion.

The first source in Taiwan says Daily Air ought to be given some leeway, because it has to contend with tougher operating conditions than many other carriers.

"As you can imagine, they are operating to some very difficult airports, with short runways and strong winds," says the source. Daily Air was not available for comment.

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No easy China sell for US start-up's RFP

Chinese lessors tell **Michael Allen** it would not be easy to provide financing for the Airbus A220-300 aircraft ordered by a David Neeleman-backed US start-up carrier.

Most Chinese lessors would struggle to finance the Airbus A220-300 (formerly known as the Bombardier CS300 model) for a start-up airline in the USA, according to executives at five different Chinese leasing companies.

Their comments come after suggestions to *Airfinance Journal* that a planned new low-cost carrier in the US has talked to at least one Chinese lessor about a request for proposals (RFP) to finance A220-300 deliveries.

The airline, dubbed Moxy Airways, has secured orders for 60 A220-300s, and is now looking for sale and leaseback financing for 18 units to be delivered between 2020 and 2022. *Airfinance Journal* first broke the news about the order on 11 June. At the 2018 Farnborough air show, an unnamed US start-up committed to purchase 60 A220-300s.

A source at a Chinese leasing company says that without a fully established Irish platform, it would be difficult for a Chinese lessor to complete such a transaction in the US for this new-generation aircraft.

"Someone like ICBC [Financial Leasing] probably can do that because they have substance in Ireland," says the source. "Finance lease might be a chance because the residual value on the A220s right now is not very comfortable."

A source at a second Chinese lessor says the A220-300's lack of certification to fly within China would be a consideration for Chinese lessors looking to bid on this RFP.

"[The aircraft type] is very new and doesn't have a Chinese flying certificate, which means we can't get the planes back to China if anything happens. We have an Irish platform and can definitely do the leasing, etc., but if anything happens and we need to ferry that aircraft, it won't be allowed to fly into China. We will have to do TLC [tender loving care] and storage overseas," says the source, although the person adds that this is just a "minor risk factor".

A Chinese lessor source says it would be difficult to persuade its risk team to take on this kind of transaction.

"Doing A220s is challenging for us…I don't think we can do this," says the source.

> *"I would say this is not an easy project. I see some likely issues: first of all, it's a start-up and doesn't have the track record so far; also, the aircraft is an A220."*
>
> **A source** at a Chinese lessor

A source at a fourth Chinese lessor says it considers the A220-300 to be a "really good aircraft" with a good market, especially in the USA. However, there may be some difficulty financing the aircraft from China.

"I would say this is not an easy project. I see some likely issues: first of all, it's a start-up and doesn't have the track record so far; also, the aircraft is an A220," says the source. A fifth Chinese lessor says it would not have the capability to bid on this RFP.

It is not only Chinese lessors who have qualms about providing financing solutions for this new aircraft type.

Big boost for the A220-300

Nonetheless, the US start-up order represents a "big boost" for the A220-300 programme, according to a source who works indirectly with Airbus, which completed its takeover of the CSeries programme on 1 July.

The airline should also provide more choice for passengers in the domestic US market. "With all the mergers, there are not many choices when you fly in the US," says the source.

David Neeleman – who has set up airlines including Jetblue and Azul – is backing the project.

A risk manager for an international lessor notes that Neeleman's Jetblue was "pretty successful by all accounts".

The source adds: "I just wonder where the room is [in the US market], how you would squeeze that in and what kind of unit costs you can get on the A220, and to what extent you can compete."

A Singapore-based source with experience of working with start-up airlines says that Neeleman's investment in the company would lend confidence to lessors.

The source says: "Lessors typically when they evaluate a new airline credit will go through this credit evaluation process and lessors tend to place a lot of faith in the management team, especially in a start-up situation."

Cinda rides in **Avolon's sidecar**

Several lessors have taken advantage of the benefits of sidecars in recent years. Avolon and Cinda's recent joint venture is one of the latest additions to the market. **Michael Allen** reports.

A sidecar usually refers to a small vehicle attached to a motorcycle in which a passenger can share the thrill of the ride. It is also used in aviation finance to refer to agreements to create a separate entity where parties co-invest with contributions that include cash, assets, other know-how, or a combination of these, according to an article by David Yu, adjunct professor of finance at New York University Shanghai, published in the October/November 2017 issue of *Airfinance Journal*.

Several lessors have taken advantage of the benefits sidecars in recent years. Most recently in July, Hong Kong-based lessor China Aircraft Leasing (CALC) set up a sidecar entity called CAG with investment from three Chinese state-owned enterprises. It will be seeded by an "initial aircraft portfolio" with a target size of about $826 million, consisting of 18 aircraft – 12 Airbus A320s, four A321s and two Boeing 737-800s – with leases attached to 10 airlines and an average remaining lease term of about 9.6 years.

Moreover, on 20 June in Hong Kong, Avolon signed a joint-venture agreement with China Cinda Asset Management, a Chinese company that has a small aircraft leasing business, to establish a sidecar entity. While CALC issued a press release about CAG, the only announcement about Avolon's project was a mandatory disclosure – in Chinese only – to the Shenzhen stock exchange by Bohai Leasing, the HNA Group company which purchased Avolon at the start of 2016.

Under the joint venture, Avolon will make a $17.2 million minority investment, taking 20% equity in a company called Jade Aviation, while Cinda will invest $68.6 million and get an 80% stake. Cinda has also agreed to provide Jade with intercompany borrowings of $280 million.

Pros and cons of sidecars

One Asia-based market source finds the application of the term "sidecar" to aviation finance rather apt: a smaller, less-experienced company joins a bigger, more-experienced lessor – with the latter controlling the speed and direction of the venture.

"The cynical view is probably a reasonable one, which is simply that it's a great benefit for lessors: a way to make sales and mitigate risk. They can sell aircraft they would not be able to get returns on in an open-market transaction. Presumably, people who are entering these sidecars who are not the lessor are people who are less sophisticated," says the source.

> *"Joint ventures, for the most part, don't last forever. They are usually a starting point, a foray. If this goes well and they get to 20 or so aircraft, then probably Cinda will say: 'I can start doing this on my own. I don't need this arrangement'."*
>
> **David Yu**, adjunct professor of finance at New York University Shanghai

Indeed, Avolon is the third-biggest lessor in the world in terms of both number of aircraft and fleet value, according to *Airfinance Journal*'s Leasing Top 50 2017. Cinda, on the other hand, had just three aircraft in its fleet, as well as two under novation, as of 7 June. There is certainly an imbalance, then, between the level of aviation leasing market experience between the two sidecar partners; but not all market players would take the cynical view, because sidecars can be a useful tool for both parties to benefit their businesses.

New York University Shanghai's Yu says it is likely that the main purpose of Jade Aviation is finding and originating deals, selecting deals, technically advising on the deals, and asset management.

"Maybe they want to sell down a small part of their portfolio. This is an easier way to do it and you still retain control and have a piece of it… it's a way to diversify funding as well as your portfolio, because if you're not funding 100% of the equity on every deal, you get to spread it to a higher number or concentration of deals," he says.

Yu says since Avolon only has a minority investment and does not have effective control of Jade, the sidecar's assets will not be consolidated into its balance sheet.

So far, Avolon has sold seven aircraft into the portfolio: three 737-800s, three A320s and one A330-300, according to a filing to the Shenzhen stock exchange. Those seven aircraft range in vintage from 2014 to 2016.

When choosing which aircraft to sell, Avolon must strike a balance between its own preferences and what majority shareholder Cinda will accept, says Yu.

The Asia-based source adds that sidecars also mitigate risk for lessors. "If you only own 20% of this… asset versus 100%, obviously it's better."

Yu says the relationship between Avolon and Cinda may be mutually beneficial for now, but, in time, Cinda may outgrow the need for Avolon's guidance and strike out into international aircraft leasing on its own.

"Joint ventures, for the most part, don't last forever. They are usually a starting point, a foray. If this goes well and they get to 20 or so aircraft, then probably Cinda will say: 'I can start doing this on my own. I don't need this arrangement'," says Yu.

"At that point, they've learned the business; why do they need to pay Avolon all these fees? They can just do a lot of things themselves."

But for now, the two companies will continue to enjoy the benefits of establishing a sidecar venture. When Avolon starts speaking more publicly about the venture, the market may gain more insight into the full purpose of Jade Aviation.

Airlines grab **lion's share**

Although some market observers predicted fewer orders this year, Farnborough matched last year's Paris air show for orders and commitments. But unlike in Paris where lessors accounted for 41% of the announcements, they represented only 20% of the week's activity.

At this year's Farnborough air show, all five major manufacturers announced orders and commitments, with some more strategic than others.

Indian carrier Vistara, a joint venture of Tata Sons and Singapore Airlines, continued to commit to the Airbus narrowbody family, but because it is about to start international operations, the carrier selected the Boeing 787-9 model, which it will receive between 2020 and 2021.

Its Airbus A320 letter of intent (LoI) included 13 firm A320neo/A321neo aircraft and the carrier also opted to lease another 37 new A320neo-family aircraft from leasing companies.

Privately owned Vietnamese low-cost carrier Vietjet selected the Max 10 model, through a memorandum of understanding (MoU) for 80 units (along with 20 Max 8s) delivering between 2022 and 2025. The order complements an existing commitment for 100 737 Max 8s, which was finalised in 2016 and will begin to deliver at the end of 2019.

Vietjet operates 28 A320s, 30 A321s (and has a backlog for another six), as well as one A321neo (with another 72 on backlog). Vietjet also ordered an additional

> *E2 commitments are coming in but not at the pace most people expected. At the show, Embraer announced three commitments for the E195-E2 model and one E190-E2 commitment.*

50 A321neo aircraft at the air show.

Nguyen Thi Phuong Thao, Vietjet's president and chief executive officer, says this dual-aircraft original equipment manufacturer (OEM) strategy provides a degree of protection against delivery delays.

During the show, Airbus won new business for 431 aircraft (93 firm orders and 338 MoUs). Those comprised 60 A220-300s, 304 A320-family aircraft, 42 A330neos and 25 A350s. The European manufacturer notably announced 42 commitments for the A330neo, including both the -800 and -900 models.

Boeing announced 673 orders and commitments, reflecting a continued resurgence in demand for freighters and strong order activity for the 737 Max and 787 passenger aircraft. Boeing secured 48 orders and commitments for the 777F, notably five for the 747-8F model.

Embraer had a good show with sales, options and LoI commitments for a total of 300 aircraft valued at $15.3 billion.

In the North American market, the Brazilian manufacturer continued to sell the E175 model. United Airlines signed a firm order for 25 E175 jets in a 70-seat configuration.

Including this new contract, Embraer has sold more than 420 E175s to airlines in North America over the past five years.

Republic Airlines signed an LoI for a firm order of 100 E175s, with the right to convert to E175-E2 aircraft, and purchase rights for an additional 100 E175s.

E2 commitments are coming in but not at the pace most people expected. At the show, Embraer announced three commitments for the E195-E2 model and one E190-E2 commitment.

The market was even quieter for turboprop aircraft, with ATR announcing

three firm orders and 13 commitments.

Bombardier announced a new customer for the CRJ900 model: Uganda Airlines.

There was an unusual amount of undisclosed announcements at this year's show, especially from Airbus. Of the 1,424 orders, undisclosed announcements represented 417 aircraft or 29.3%.

An existing customer of Airbus signed an MoU for 25 A321neos and 75 A320neos. The unnamed customer has already placed orders for the type.

An undisclosed customer from Spain signed a firm order for three E195-E2s and two options.

Another undisclosed customer agreed to purchase eight A350-900s.

Four unidentified customers committed to a total of 93 737 Max aircraft, including 40 high-capacity Max 8s. The customers include at least one airline and at least one lessor.

An undisclosed customer committed to six A330neo aircraft. Airbus did not specify which A330neo type is covered by the MoU.

An unidentified customer has signed an MoU for 10 A320neos, while another reached an agreement for an additional 100 737 Max aircraft.

Boeing announced two undisclosed carriers for 15 787-9s. One carrier is a 787 operator while the second will become a new 787 customer.

Chasing slots

The leasing community took its share of the Farnborough order tally but they only represented 137 firm orders or 30% of the total as well as 138 other commitments. The lessors represented about 20% of the week's announcements.

Air Lease, Aviation Capital Group and an unidentified Airbus customer placed orders in the narrowbody market (Air Lease also ordered three 787-9s), but sale-and-leaseback specialists Goshawk Aviation, Jackson Square Aviation and Macquarie AirFinance orders caught the attention.

The three lessors had never placed an order with Airbus or Boeing (although Macquarie AirFinance signed a purchase agreement for 40 Bombardier CS300s and 10 options in September 2014).

These lessors may have turned to the OEMs because the sale-and-leaseback market is very competitive and those firms, and other leasing firms, are constantly being outbid by other players. Ordering from the OEM helps these lessors secure growth by getting access to delivery slots before the airlines do. This will provide more opportunities to lease the aircraft to the airlines.

Goshawk Aviation ordered a total of 40 aircraft with both Airbus and Boeing, although its A320neo-family order was undisclosed in Airbus's June update. Jackson Square Aviation and Macquarie AirFinance announced orders for one OEM, but should commit to the other to balance their portfolios.

Novus Aviation Capital has never announced a direct order with Boeing, but its announcement of up to four 777-300ERs was rapidly linked with another Boeing announcement: British Airways will add three new 777-300ERs under an operating lease deal.

Nordic Aviation Capital signed an LoI for three E190s.

Airline announcements

Aeroperu signed an LoI for the purchase of an unspecified number of Sukhoi SSJ100 aircraft. The airline is a planned subsidiary of Peruvian Airlines that plans to start flights in the 2020s.

Airasia X placed an order for an additional 34 A330-900neo aircraft.

Air Botswana signed a firm order for two ATR72-600s.

Air Saint-Pierre signed an MoU for an ATR42-600.

Aurigny Airlines inked an LoI for the purchase of three ATR72-600s.

Azul Linhas Aereas Brasileiras signed an LoI for a firm order of 21 E195-E2 aircraft. This order adds to an order for 30 E195-E2 jets signed by the airline in 2015, which will raise Azul's total order to 51 E2 aircraft. Azul will receive the first aircraft in 2019.

David Neeleman's new US carrier signed an MoU for 60 A220-300 aircraft.

DHL placed an order and commitment for 14 777 freighters and took purchase rights for seven additional freighters.

Druk Air ordered one ATR42-600 unit.

Ewa Air signed an MoU for two ATR72-600s.

Easyfly signed an MoU for three ATR72-600s and two ATR42-600s.

Gol converted 30 737 Max orders to the largest Max 10 variant and ordered 15 additional Max 8s. Deliveries will continue through 2028.

Hawaiian Airlines finalised an order for 10 787-9s, which also includes purchase rights for 10 additional 787s. The US carrier announced in March that it had selected the 787-9 to serve medium- to long-haul routes, signing a letter of intent.

Helvetic Airways signed an LoI for 12 E190-E2s and purchase rights for a further 12 units, with conversion rights to the E195-E2 model. The first 12 E190-E2 aircraft will begin replacing Helvetic's five Fokker 100s and seven E190s, starting in late 2019 and completing in autumn 2021.

Hokkaido Air System signed an MoU for two firm ATR42-600s with an option for a third. Deliveries will start from 2020.

Jet Airways was confirmed as the airline behind an order for 75 737 Max 8s previously unidentified by Boeing. It is an

Gol converted 30 737 Max orders to the largest Max 10 variant and ordered 15 additional Max 8s

additional Max order for the Indian airline, which received its first unit in June 2018.

Level confirmed an order for two A330-200s for delivery in 2019. The order was previously undisclosed.

Mauritania Airlines placed a firm order for two E175s that will deliver next year.

Peach Aviation converted an order for two A320neos to two A321LRs. The Japanese carrier becomes the first Asian customer for the long-range variant of the A321neo.

Qatar Airways ordered five 777 freighters to add to the 13 it already operates. The deal was announced as a commitment in April.

Republic Airways signed an LoI for a firm order of 100 E175s, with the right to convert to E175-E2 aircraft, and purchase rights for an additional 100 E175 aircraft.

Salamair signed an agreement to add six A320neo aircraft to its fleet, of which five units will be on lease from an undisclosed lessor.

Starlux Airlines signed an MoU for 12 A350-1000s and five A350-900s to support the Taiwanese carrier's launch of long-haul services in 2022. Separately, Starlux says it will receive the first of 10 leased A320neos from October 2019.

Sichuan Airlines ordered 10 A350s, finalising a deal announced earlier this year. The Chinese carrier will also lease four A350s.

Tarom ordered five 737 Max 8s.

Uganda National Airlines signed a firm order for four Bombardier CRJ900s.

Uganda Airlines signed an MoU for two A330-800neo aircraft.

United ordered 25 E175s that will start to deliver from the second quarter of 2019, and an additional four 787-9s.

Urumqi Airlines agreed a letter of intent for 20 Comac ARJ21-700 aircraft.

Vietjet signed an MoU for an additional 100 737 Max aircraft consisting of 80 Max 10s and 20 Max 8s. The Vietnamese carrier ordered 100 Max 8s in 2016. It also has signed an MoU for 50 additional A321neo aircraft.

Vistara agreed to purchase six 787-9 aircraft and take options on a further four. It also signed an LoI for 13 A320neos and committed to lease an additional 37 from lessors.

Viva Aerobus ordered 25 additional A321neos and converted 16 A320neo orders to the larger variant.

Volga-Dnepr signed an LoI for 29 777 freighters and confirmed an order for five 747-8Fs. The 29 777Fs are for the company's UK-based operator, Cargo Logic Air.

Wataniya Airways signed a firm order for 10 E195-E2 aircraft. The contract also includes 10 purchase rights for the same model. The carrier also firmed up an order for 25 A320neo-family aircraft after an MoU at the 2017 Dubai Airshow. Golden Falcon Aviation, the exclusive aircraft provider of Wataniya, is the purchaser.

United ordered 25 E175s

Engine orders

Air Lease selected the CFM International LEAP-1A engine to power a previously announced order for 34 A321neos, as well as LEAP-1B engines for an order for 83 737 Max aircraft.

Air Lease selected the Pratt & Whitney PW1100G engine to power a pre-existing order for 26 A320neo-family aircraft. The lessor had previously selected the geared turbofan for another 30 A320neo aircraft.

Airasia X selected the Rolls-Royce Trent 700 engine to power its 34 A330neos.

Aviation Capital Group selected the LEAP-1A engine to power 10 A320neo-family aircraft on firm order. It also selected the LEAP-1B for 20 new 737 Max 8s.

Air Transat selected Pratt & Whitney GTF engines to power 17 firm-order A321neo-family aircraft: two A321neos and 15 long-range A321LRs. All aircraft will be leased from AerCap. Aircraft deliveries are scheduled to begin in 2019.

China Aircraft Leasing (CALC) selected the LEAP-1A engine to power 17 firm A320neo-family aircraft and up to 50 options. In addition, the leasing company finalised an order for CFM56-5B engines to power three firm A320s and nine options for the model. It also signed a contract for Pratt & Whitney engines to power 18 firm A320neo-family aircraft.

ATR announced three firm orders and 13 commitments

Goshawk Aviation placed a firm order for LEAP-1B engines to power 20 new 737 Max 8s.

Level placed an order for General Electric CF6-80E engines to power its two new A330 aircraft and signed a 10-year TrueChoice Flight Hour agreement for the maintenance, repair and overhaul of the engines.

Middle East Airlines selected PW1100G engines to power 11 A320neo-family aircraft on firm order.

Pratt & Whitney announced that the GTF engine will power up to 60 A220-300 aircraft ordered under an MoU by the US start-up airline backed by David Neeleman.

Republic Airlines will use CF34-8E engines for an order for 100 E170/175 regional jets.

Uganda Airlines will use Trent 7000 engines if it firms up a new MoU for two A330-800neos.

Sichuan Airlines selected the Trent XWB engine for an order for 10 A350 aircraft. The Trent XWB is the only engine choice for the aircraft.

Starlux Airlines will order Trent XWB engines if it confirms an order for 12 A350-1000s and five A350-900s.

Volga-Dnepr Group and **CargoLogicHolding** signed an LoI for 29 GE90-115B-powered 777 freighters and five GEnx-2B-powered 747-8 freighters.

Vistara Airlines signed an LoI to buy 26 LEAP-1A engines to power 13 additional A320neo aircraft.

Yunnan Hongtu Airlines selected CFM56-5B engines to power three A320 aircraft.

Wind of **change**

Leasing executives speak to **Jack Dutton** about the growth of low-cost carriers (LCCs) outside Brazil and Mexico, local currency volatilities and why airlines in the region are financially stronger than before.

Latin American airlines have always been good at adapting to change, says Brian Harvey, chief marketing officer at SMBC Aviation Capital.

"I've been watching the elections in Brazil for 15 years and there always seems to be a little noise around the currency, but it tends to wash out relatively quickly in an environment where change is a constant, where people react relatively quickly, digest information and move on," he adds.

"One thing that we think airlines in the region are good at is reacting to change because it's a constant in their lives. The people who run these businesses are very adapted to dealing with change."

Latin America is more volatile than some of the more developed markets such as Europe and North America. Political events, such as the upcoming Brazilian general election, in October, can have drastic effects on local currencies.

However, this has not stopped lessors placing aircraft in the region. Growth is expected to accelerate in Latin America and the Caribbean over the next few years, with gross domestic product (GDP) growth expected to reach 2.7% in 2020, according to the World Bank's 2018 Global Economic Prospects.

Walter Valarezo, head of Americas sales at DAE Capital, tells *Airfinance Journal*: "There are around 12 leasing companies doing business in Latin America which have exposure of 25 or more aircraft in the region and we're one of them."

DAE has aircraft on lease to Gol, Azul, Aerolineas Argentinas, Latam, Surinam Airways, Copa, Aeromexico, Viva Colombia and Viva Aerobus. According to *Airfinance Journal*'s Fleet Tracker, the Dubai-based lessor has 47 aircraft placed in Latin America, making it the joint sixth most active lessor in the region.

> *"One thing that we think airlines in the region are good at is reacting to change because it's a constant in their lives. The people who run these businesses are very adapted to dealing with change."*
>
> **Brian Harvey**, chief marketing officer, SMBC Aviation Capital

In early July, DAE took delivery of its first Boeing 737 Max 8, one of five aircraft it will be delivering to Brazilian carrier Gol under a sale-and-leaseback agreement.

At the time of writing, DAE does not have any new aircraft deliveries scheduled in Latin America, but it is working on lease extensions for existing aircraft for its fleet there and eyeing any opportunities that may arise in the sale-and-leaseback space in the region.

Politics as usual

Both Mexico and Colombia have held general elections over the past 18 months, but Valarezo says any instability brought about by these elections has not made either jurisdiction significantly less desirable for lessors. DAE still aggressively pursues sale-and-leaseback opportunities in both countries.

Despite being generally optimistic about Mexico, SMBC Aviation Capital's Harvey believes that the elections may cause some turbulence.

"I think that will have an influence on Nafta [North American Free Trade Agreement] negotiations with the United States, which are not bedded in any final form. Those things are what drive some of the currency volatilities," he says.

Elsewhere in the region, Argentina is trying to liberalise its policies to attract foreign investment.

Valarezo says: "It's having a difficult time in terms of the currency bouncing a lot. [President Mauricio] Macri is very strong in being pro-business but there's a very, very embedded unionist culture and the two are really hard to marry up. It's essentially socialist versus democratic."

He adds: "The risks are really in the currencies, because, at the end of the day, Argentina pay for their oil in dollars, they pay for their aircraft in dollars and much of their revenues are denominated in their local currencies. So businesses that are more internationally focused are better hedged because they're selling US dollar

tickets, whereas guys that are domestic only are getting mostly domestic revenues."

Banking on Brazil

Brazil is the largest economy in the region, accounting for more than two-thirds of Latin America's GDP at purchasing power parity, according to the World Economic Outlook database.

"In regards to Brazil, we believe that traffic is up from two years ago. Some of the other issues that need to be sorted out are the presidential election in Brazil, and that's going to happen in the fall," says Valarezo. "There's also a bit of instability with respect to the currency, but we believe the central bank is defending the resident currency, so it should turn out okay.

"We expect that Brazil is going to go through a bit of turbulence still over the next few months, but once the presidential election is over, things should come down and move forwards. We're pretty optimistic. For us, Brazil is a long-term play. If you're going to lease aircraft on a worldwide basis, then you have to be present in Brazil," he adds.

Harvey says: "The long-term feeling in Brazil is that it's a large economy, with a growing middle class, which is why it's an attractive market for aviation investments."

"Our view is that it will ebb and flow around the political situations, and the price of oil is going to be a big driver in how much and when they grow. In the long term, it's a market that we've done well in and we will continue to invest in."

Luís da Silva, senior vice president and regional manager, Latin America and the Caribbean, at GECAS, is also bullish about Brazil. "Previously, the big issue was the Brazilian recession, but that's now over, and Brazil is growing again," he says.

Da Silva adds: "There is a lot of speculation around the election; no one really knows what's going to happen but all in all, we see the region growing. Forecasts are about more or less 2%, depending on the country for the next two years and we hope that translates to a passenger demand increase of 7-10% per year, depending on the multiplying effect of each country."

Stronger balance sheets

GECAS owns and services 90 aircraft in Latin America, according to da Silva. He says that airline consolidation in the region over the past decades has strengthened some of the larger carriers' balance sheets.

"You now have very sophisticated big airlines that are very well run," he says. "Many of them are listed on the New York stock exchange. On the legal side, you see Cape Town being adopted throughout the continent."

Despite the market maturing, Declan Kelly, chief commercial officer of GECAS, says the region is seeing some capital leave because of rising interest rates and because fuel is increasing in value. Local currencies that are dependent on oil revenues are being impacted.

Although he says it is unlikely carriers will do more fuel hedging, their stronger balance sheets will be able to absorb increases in fuel price "without causing any catastrophic effect".

"There were spikes in the system after the 2008 financial crisis. Take Gol, for example. We led the restructuring of Gol, so we went through all that. We're very conscious about looking back at the past and how we manage to go forward, but to me, there will be a slight blip," Kelly says.

"When we talk to the airlines, they're more conscious of this as well and their balance sheets that have been through it. You're not seeing the radical shocks. Maybe it's just a maturing of the airline groups."

Like Kelly, DAE's Valarezo thinks that Gol is one the biggest turnaround stories in the region. In July 2016, the airline carried out a distressed debt exchange under which investors holding $41 million of its 2022s agreed to swap their bonds for just $70 of cash and $380 of new 9.5% 2021s per $1,000 exchanged. Holders of other Gol bonds took similarly hefty haircuts, though the take-up on the exchange was low across the curve.

Eighteen months later, the Brazilian real had stabilised and the economy had exited its worst recession. Furthermore, Gol went through a restructuring that included cutting routes, negotiating with lessors to return 20 aircraft, and selling other jets.

Fitch and Standard & Poor's raised the carrier's credit rating twice, ending last year at B, stable outlook, and B-, positive outlook, respectively. In December, Moody's upgraded Gol's corporate credit rating by four notches to B2, stable outlook. This was clear evidence that the market had begun to acknowledge Gol's improved credit profile.

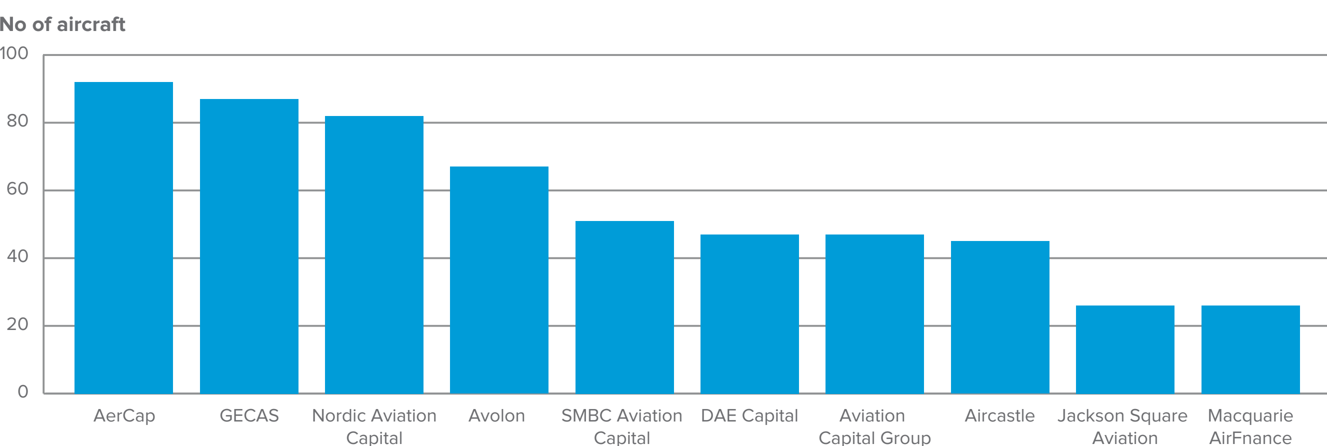
In 2017, Gol's earnings before interest, taxes, depreciation, amortisation and restructuring or rent costs (Ebitdar) margin was an impressive 23%, up from 21.7% in 2016. The balance sheet continued to strengthen: adjusted net debt was six times for the last 12 months. The Ebit margin in the fourth quarter of 2017 was 13%, compared with 7.4% in the fourth quarter of 2016.

At 31 December 2017, total liquidity, including cash, financial investments, restricted cash and accounts receivable, totalled R$3.2 billion ($912 million), an increase of 66% from a year earlier. The airline exhibited a remarkable recovery of its balance sheet.

Financing choices

Stronger balance sheets have attracted more interest from lessors in the region. Valarezo says that North America has gained most of the sale-and-leaseback

Top 10 lessors in Latin America



Source: *Airfinance Journal's Fleet Tracker*

attention over the past few years because many of the airlines have rolled over their fleets to next-generation kit. But now Latin American carriers are doing the same, which creates new sale-and-leaseback opportunities.

"There are over 100 aircraft being delivered in Latin America every year," he says. "If you look at the fleet in Latin America, by our count, 60% is under operating lease. So there's quite a few aircraft to go after in terms of the sale-and-leaseback market."

Valarezo says that, although lease rates in Latin America are not as low as they are for some of North America's premier credits, the region has caught the attention of global lessors and financiers and is still highly competitive.

Latin America has historically been a market where leasing was the preferred financing product to debt, but SMBC Aviation Capital's Harvey thinks this is changing for the major carriers, which are now more likely to access the debt markets. He does not think this is the case for LCCs, where he still sees leasing as the preferred product.

SMBC Aviation Capital has closed sale and leasebacks with carriers such as Avianca and Aeromexico recently. The Mexican flag carrier took its first 737 Max 8 from the lessor in early July as part of a 10 aircraft transaction. In December, Avianca inked a sale-and-leaseback deal for 11 Airbus aircraft with SMBC Aviation Capital.

"But they [Aeromexico and Avianca] are active in the debt financing markets as well, when historically those markets weren't really open to those carriers," says Harvey. "Today, the debt markets are open to some of those carriers because of the improved financial performance and profile the foreign direct investment ownership has given to some of the other airlines in the region."

> *"There are over 100 aircraft being delivered in Latin America every year."*
>
> **Walter Valarezo**, head of Americas sales, DAE Capital

Increased foreign investment

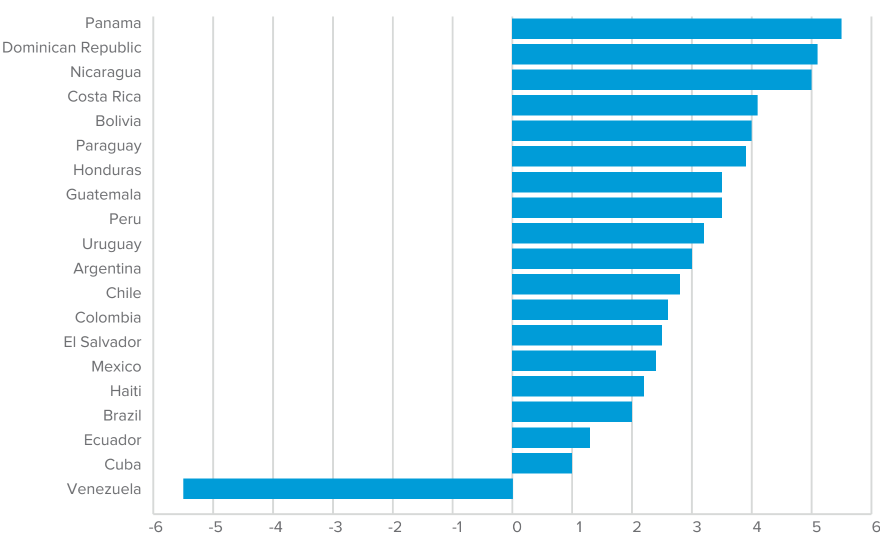
GECAS's Kelly agrees that the uptick in foreign investment into Latin American carriers has been a positive for the market, because it leads to more disciplined management of the airlines.

"There's always a reason for investing and I think investors got in at the right time, but they also bring their knowledge and expertise to these airlines. So you're seeing a more mature response," he says.

Harvey adds: "In the last number of years, [you've had] the consolidation of the majors, then you've had some pretty meaningful foreign direct investment and/or partnerships. You've got Delta into Gol and Aeromexico. You have Qatar into Latam. You have Avianca working on this partnership with United Airlines.

"Some of those deals were real cash and some of them are more synergy based, but that's brought a lot of stability to those larger carriers and they remain attractive counterparties for us, but I suppose the untapped area is the non-Brazil, non-Mexico low-cost carrier market, which is one which is starting to really get a head of steam behind it."

2018 projected GDP growth



Source: Elizabeth Gonzalez, AS/COA; Economic Commission for Latin America and the Caribbean

SMBC Aviation Capital has been doing deals in Latin America since the early 2000s. The company has done business with carriers including Aeromexico, Volaris and Viva Aerobus. Harvey says that the lessor would do business with Aerolineas Argentinas, but "hasn't yet found the right deal".

LCC expansion

Growth is more sectoral than on a country-by-country basis in Latin America, according to Harvey. He is referring to the larger airline groups and the emergence of the low-cost carriers, which are continuing to grow in the region.

"Sky, in Chile, and Flybondi are trying to capitalise on that and you have a number of other start-ups in the region funded by very well-thought-of venture guys like Indigo Partners or the Ryan family. Those are good opportunities because that market is a pretty obvious one."

The market also saw LCC Viva Air Colombia launch Viva Air Peru in May 2017. In Argentina, as well as Flybondi, the market has seen the establishment of Norwegian Air Argentina, an airline owned by Norwegian Air Shuttle, which will be based in Buenos Aires, Córdoba and possibly Mendoza.

"These people are looking to get passengers that are currently travelling by bus, not necessarily passengers that are travelling by legacy carriers these days. There are people coming from outside investing in the region," says da Silva of GECAS.

"The region continues to grow. I think that the advent of LCCs – we see a lot of activity in this sector with Viva Colombia, Viva Peru, and potential expansions of that group," says Valarezo. "These LCCs are stimulating traffic and they're bringing some change to the region. Change is always good. It creates more competitiveness and everybody has to catch up."

The expansion of LCCs is a tailwind for Latin America. However, the region's economies continue to be commodity-based, so they are more subject to macroeconomic movements than more developed regions.

"Brazil and Mexico are two markets where LCCs took hold early on, because they were the two strongest economies in the region," says Harvey. "You're now seeing more LCCs being developed in other countries like Chile, Argentina and Peru."

He adds: "These guys are being funded by people who've funded other start-ups around the world and have been very successful in doing so. They see personnel from other successful start-ups around the world being attracted to these new start-ups and I think that's really going to drive a new wave of growth in the market for Latin America."

Terminating the zombies – regulatory oversight shift for Chinese lessors

Two powerful Chinese regulators have merged, taking over supervision of all financial leasing companies in the country. But lessors, as well as their lawyers and consultants, are unsure about what the new regulatory regime means for their businesses. **Michael Allen** reports.

There are two types of aircraft leasing companies in the market now – and only one type can survive under the new shift in China's regulatory oversight of financial leasing companies, say aviation lawyers and consultants.

"One type is those big, government-supported leasing companies; the other is those zombie ones, if you like. They don't have transactions going on; they only have licences. They are not professional and lack experience," says Yao Zhou, a partner at Dentons (Beijing Dacheng Law Offices).

"These regulatory changes, I think, aim to terminate those zombie ones and only let the good ones live."

A large number of new Chinese leasing companies have emerged in recent years. While some have shown remarkable growth, such as CMIG Leasing – which won "Best new Chinese leasing entrant" at the Inaugural China Awards – others have grown only slowly, or even stagnated completely.

On 8 April, a new regulator called the China Banking and Insurance Regulatory Commission (CBIRC) came into existence. The result of a merger between the China Insurance Regulatory Commission (CIRC) and the China Banking Regulatory Commission (CBRC), the new entity is under the direct supervision of the State Council, the highest organ of state power in China.

The CBIRC appears to have taken a hardline stance in its first months of operation, fining 798 banking institutions a combined Rmb1.4 billion ($204.6 million) and banning 175 people from the banking industry, according to Chinese financial magazine *Caixin Global*, which says this shows the regulator is "intensifying its campaign on misconduct in the world's largest banking sector by assets".

The merger has wide-ranging implications for China's banking and insurance sectors. The implication for aircraft leasing is that those ordinary financial leasing companies which were previously regulated by the Ministry of Commerce (Mofcom) will now come under CBIRC regulation instead (*see box*).

CBIRC is expected to be a stricter, more conservative regulator than Mofcom.

"It means that [CBIRC] will probably impose more stringent requirements in terms of operational and financial performance requirements on all leasing companies," says Zhou.

"My guess is the legal nature [of the lessors] will be changed to [that of] financial institutions. You know how stringent financial regulations will be in any country," he adds.

A China-based aviation lawyer, who declines to be named, says: "In short, the message seems to be that there is a shift of the regime from Mofcom to CBIRC... however, in terms of how the shift is going to be actually implemented is still a big question mark."

"I think at this stage, the best thing we can do is to ask good questions rather than provide bad answers. When Mofcom officially published on its website they are going to hand the authority to CBIRC, does it mean those companies that were previously being regulated in a more relaxed way [will now face more strict regulation]? We don't have a clear, definitive answer to that. The news reports suggest there will be some clarification soon. We are keeping an eye on that, but I have not seen an implementation."

Indeed, as a Clifford Chance briefing document notes: "Though Circular 165 is explicit on the authority handover, it is unclear as to its implementation or the scope and intention of the operational regulations." Circular 165 refers to the *Circular on the Supervisory Duties on Financial Leasing Companies, Commercial Factoring Companies and Pawn Shops*, which introduced the transition of lessor oversight to the CBIRC.

Johnny Lau, chief consultant at PWC Aviation Business Services in Hong Kong, agrees, saying that even if the Chinese government published an effective date on changing the regulator, all the guidance and procedure notes have not been updated.

"Everyone is scratching their heads [over] how to follow," he says, adding: "The thing is, if I want to set up a new leasing company, who do I go to? Am I using the old requirement under the Mofcom? Will there be two categories of leasing companies in the future, or will everybody need to follow the old CBRC regime?"

> *This year it will be very difficult for some new entrants to do aircraft leasing because they can't set up SPVs [special purpose vehicles] even inside China. I know there are three or four who have been verbally asked not to do anything by the regulator.*
>
> **Johnny Lau**, chief consultant, PWC Aviation Business Services

Lau says that this ambiguity is dangerous and advises lessors unsure of the implications of the new regulations to take a step back.

"The best way to avoid this situation is to stop taking aggressive actions. If you are not familiar with anything, it's best to stop," says Lau.

Tejaswi Nimmagadda, head of aviation at King & Wood Mallesons Hong Kong, says lessors are taking a "wait-and-see approach" to the possibility of changes to their regulatory environment.

"The financial leasing companies, while cautious, are not expecting there to be immediate changes to their regulatory environment, but the unification of the two regulators would suggest that the authorities are looking to make the regulation more streamlined and focused on ensuring the financial strength of the lessors," he says.

Nimmagadda says that under the new regulatory regime, consolidation of lessors is likely.

"One of the trends over the last five years has been the emergence of numerous financial leasing companies, both because of the market opportunities, as well as direction from the PRC [People's Republic of China] authorities, and they've been happy to push into the industry on these bases, but they also need to be financially sound," he says.

"The logical result of that would be some consolidation – companies looking for efficiencies in mergers. Some of the financial leasing companies may exit, which I think we're also starting to see. On the other hand, there could be some more trading of aircraft to demonstrate to themselves that their assets are sufficiently liquid, particularly with one eye on possible new financial requirements that they may need to meet."

PWC's Lau says there are a "lot of theories" about what may happen in the future, but nothing is certain. "One likely approach is that the regulatory authority will decentralise the regulation responsibilities to local authorities," says Lau.

The lack of certainty surrounding the situation is likely to put a dampener on the aircraft leasing ambitions of new Chinese entrants.

"This year it will be very difficult for some new entrants to do aircraft leasing because they can't set up SPVs [special purpose vehicles] even inside China," says Lau. "I know there are three or four who have been verbally asked not to do anything by the regulator."

China's two types of lessor

There are two major types of financial leasing companies in the PRC [People's Republic of China]: ordinary financial leasing companies approved by the Ministry of Commerce (Mofcom) and special financial leasing companies approved by the China Banking Regulatory Commission (CBRC). Confusion can arise because, in English, they are both simply translated as "financial leasing companies".

CBRC financial leasing companies are non-banking financial institutions and their establishment and operations are subject to CBRC regulations, principally the Administrative Measures on Financial Leasing Companies (effective from 13 March 2014) and the Implementing Measures on Administrative Licensing Matters for Non-banking Financial Institutions (effective from 5 June 2015).

Only certain types of institutional investors specified by CBRC are eligible to set up or otherwise invest in CBRC financial leasing companies. Such institutional investors include domestic or non-PRC commercial banks with an independent legal personality, domestic large-scale enterprises with a core business of producing goods suitable to be traded in financial lease transactions, foreign registered financial leasing companies and other entities accepted by the CBRC.

Mofcom financial leasing companies are mainly regulated by the Administrative Measures on Supervising Financial Leasing Enterprises issued by Mofcom on 18 September 2013. In addition, historically, foreign invested Mofcom financial leasing companies must also comply with the provisions provided by the Administrative Measures on Foreign Invested Leasing Industry issued by Mofcom on 28 October 2015.

In contrast to CBRC financial leasing companies, the eligibility requirements provided under the Mofcom regulations are less stringent.

Source: Clifford Chance

ORIX Aviation steps up for Avolon

The Dublin-based lessor's move to take a 30% stake in Avolon, a company with a fleet three times its size, surprised many in the leasing industry. **Jack Dutton** speaks to the lessors' senior management about the deal.

Japanese-owned lessor ORIX Aviation's move to buy a 30% stake in Avolon for $2.2 billion is the latest in a series of divestments made by the Irish lessor's once acquisitive parent, HNA Group.

The Chinese conglomerate has shed nearly $17 billion in assets since 2017 after a multi-year asset binge.

The whole process began with a conversation between Avolon's chief executive officer, Domhnal Slattery, and James Meyler, chief executive officer of ORIX Aviation Hong Kong, in January in an informal setting about the aspirations for their businesses.

"ORIX Aviation and Avolon have been strong trading partners for the past three or four years with 45 aircraft valued at $3 billion being traded between both companies," says Meyler, in an interview with *Airfinance Journal*.

He adds: "In knowing the Avolon business well from our close working relationship, we knew there was limited overlap in our business models which made it a fit."

Rumours first emerged at *Airfinance Journal*'s Hong Kong event last November that parts or the entire Avolon portfolio could be sold to a rival lessor, with AerCap and CDB Aviation being touted as possible suitors.

The rumour mill started again this year with various media reports indicating that HNA had contacted parties "in the last couple of months" about buying a slice of the lessor. Hong Kong-based CK Holdings and NWS were rumoured as potential buyers.

However, Slattery was quick to deny these rumours on the day of the announcement, saying there was never any formal sales process in place. He insisted that sales talks only ever occurred with ORIX, which will finance the acquisition out of cash from the ORIX Group. The deal is expected to close in November.

Deal challenges

"I think valuation is important," says Slattery. "This transaction has been valued at a slight premium to our book value, but it's had a very significant premium on Bohai's price to book." Bohai Capital is Avolon's direct parent.

According to Avolon, the HNA-owned lessor has an enterprise value of $23.7 billion based on its 31 March status.

He adds: "Bohai's stock price has had its challenges after the last number of weeks after it effectively started trading again. Bohai's price is trading at a deep discount to book, so this is a really smart transaction from the Bohai investor's perspective."

Although some market participants were surprised that ORIX ended up investing in Avolon, the lessor has been in the space for 28 years and its parent, ORIX Corporation, has been consistently lending and investing in airlines and aviation since 1978. ORIX Corporation has also invested in airports and worked with companies such as Vinci Airports, which operates 36 airports globally.

Unlike Avolon, ORIX Aviation has a long-term shareholding structure, being the industry's longest single shareholder-owned leasing business. ORIX Aviation combines larger aviation investments with asset management, which attracts both domestic Japanese and international investors, as well as traditional aircraft acquisition and leasing. In the financial year ending 31 March 2018, the lessor executed $4.2 billion in transactions and has closed more than $30 billion in deals over the past 15 years.

Meyler says that the main challenges ORIX experienced when negotiating the deal was defining the "insulation framework" structure for Avolon as a fully funded and capitalised entity, independent of its troubled parent HNA Group.

Japanese endorsement

Meyler believes the deal will increase Avolon's foothold in the Japanese market.

"ORIX becoming a 30% shareholder in Avolon should be and will be seen in the Japanese market as a very strong endorsement of the Avolon business model and franchise," he says.

Although Avolon already has several Japanese banks as part of its lending syndicate, Slattery also believes that the ORIX stake is likely to improve the Japanese market's perception of the HNA-owned lessor, on both the bond investor side or on the debt side.

"ORIX is probably the most active distributor/syndicator in the Japanese investor market and has been for a very long time," says Slattery. "So, whether that's the single investor, JoI [Japanese operating lease], ORIX are right up there."

"ORIX becoming a 30% shareholder in Avolon should be and will be seen in the Japanese market as a very strong endorsement of the Avolon business model and franchise."

James Meyler, chief executive officer, ORIX Aviation Hong Kong

He adds: "The great opportunity for Avolon is to have ORIX further turbocharge the level of activity in Japan so it becomes the premier distributor of aircraft in the Japanese investor market, which over many cycles and decades has proven to be a very resilient market. It's perhaps the deepest single market in the world for acquiring aircraft, be it corporate entities or be it high net-worth individuals."

Complementary or competitive?

The main benefit for Avolon in having ORIX as a minority shareholder is the latter's investment-grade status.

"ORIX fitted the profile of the investor that would effectively remove any structural impediments to our roadmap to investment grade," says Slattery. "And we believe this transaction will achieve that and you'll see that any structural impediment of Avolon getting to investment grade has effectively been removed as a consequence of this transaction."

The deal is the largest-ever single dollar ticket for a minority investment in an aircraft leasing company. Slattery says he was "convinced" that only a lessor with ORIX's scale, balance sheet, liquidity and commitment to the leasing sector would be able to write a ticket of that size.

Shareholders of Bohai Capital still need to approve the deal, which includes a governance framework with significant protections for the minority shareholder.

However, ORIX does not have a right to purchase a larger stake of Avolon at a predetermined price.

"You should think about this split at 70 to 30% being a long-term stable split of the ownership of the business," says Slattery. "I think it's fair to say, and I think this will be brought out in the rating agency releases when they come out over the next few hours, that ORIX has got a series of minority shareholder protections that have got them very comfortable with their minority position."

Slattery says that those minority shareholder protections have also assisted the agencies in becoming comfortable with decoupling Avolon's credit rating from its parent's rating. He says the deal will take away the structural impediments of Avolon getting to investment grade.

"For the foreseeable future, 70 to 30% is what you'll be looking at," he adds.

Although both lessors have traded many aircraft in the past, David Power, chief executive officer of ORIX Aviation, insists that the businesses are more complementary than competitive.

"When we looked at the opportunity, we could see that our businesses are very complementary and the areas of overlap are minimal. That was very positive for each of the parties; it also helps given the strength of ORIX Corporation and the

investment-grade aspirations of Avolon."

Power says the deal will create "a win-win situation", although both businesses will continue to be run separately.

As a 30% shareholder in Avolon, ORIX will benefit from the Chinese-owned lessor's cash flows and profits. Meyler, who is also deputy chief executive officer and chief commercial officer of ORIX Aviation Group, says his company will also benefit from the returns made from Avolon's orderbook, but it will not be taking any of the orders itself.

Meyler says: "We're buying into the business plan that Avolon has set out and we want Avolon to keep growing, increase in value and reach investment grade. That's very much our target for the investment. ORIX Aviation will continue to grow by its business plan."

However, there will be areas of synergy. "We imagine in future there will be opportunities for us to cooperate on various types of transactions, especially in the Japanese market where ORIX is one of the key players," says Meyler.

He adds that these transactions are likely to be aircraft trades.

ORIX has moved from owning and managing 100 aircraft eight years ago to 230 aircraft today. The lessor plans to grow to more than 300 aircraft in the next three years. Avolon, on the other hand, eventually looks to become the world's largest aircraft lessor. Its owned, managed and committed fleet was 890 aircraft at 30 June, making it the third largest behind GECAS and AerCap.

HNA's motivations

Slattery insists that the deal was commercially rather than politically motivated. He says conversations were held purely between HNA Group, Bohai, ORIX and Avolon, and they had nothing to do with China looking to sell off parts of the HNA portfolio to reduce its debt burden.

He indicated in an investor call in August that HNA had no interest in selling a controlling interest in Avolon.

On completion of the transaction, the revised Avolon board will comprise two ORIX directors, three Bohai directors, with Slattery as executive director and one independent director.

"Having dealt with the HNA and Bohai group in this process, it is fair to say that they are a well-run and professional organisation working diligently to restructure their business model in line with their circumstances. This deal is assisting that process," says Meyler.

"People need to remember that Avolon is fully funded from an equity perspective and is very much a standalone global entity. As such, Avolon is a real success story for HNA and fits its core aviation industry business focus. We expect them to continue as a valued partner."

"Inflation is now back on the radar and so if you want to put a significant amount of dollars to work – and I think $2.2 billion in anybody's terminology is a big number – Avolon allowed them to put it to work in scale."

Domhnal Slattery, chief executive officer, Avolon

The fact that ORIX acquired a minority stake rather than a majority stake in Avolon raised some eyebrows in the market, because it still allows Bohai and HNA to have majority control over the business. However, Meyler seems comfortable with this.

"HNA and Bohai bring real value to the table in terms of the ORIX Group's position with the manufacturers and their knowledge and experience in the airline and airport sectors," says Meyler.

"ORIX Aviation has certain minority shareholder protections that, in essence, give us rights over key business decisions. Both ORIX Aviation and the rating agencies comfortable that this transaction decouples Avolon from HNA and gives ORIX Aviation has a powerful position at the board table with two board seats," he adds.

Putting dollars to work

For Avolon, the deal "accelerates its roadmap" towards becoming an investment grade-rated lessor. As one of the largest buyers of aircraft in the world, becoming investment grade will allow the lessor to buy aircraft at lower prices and access cheaper debt, accelerating its growth. It also presents a significant deleveraging opportunity for its parent Bohai Leasing.

Slattery does not expect HNA Group to extract any further capital from Avolon. "Just normal on-the-run dividend flow over years," he adds, "so I think we're in a different phase of the company's development now that ORIX has come to the table."

For ORIX, which is primarily focused on mid-life aircraft and asset management rather than new aircraft acquisitions from the original equipment manufacturers, it provides an opportunity for it to put its dollars to work.

"It's an inflation hedge – inflation is now back on the radar and so if you want to put a significant amount of dollars to work – and I think $2.2 billion in anybody's terminology is a big number – Avolon allowed them to put it to work in scale," says Slattery.

ORIX has been through many industry cycles and events, including 9/11 and the financial crisis of 2008. Meyler says the lessor has had a strong past couple of years.

"We've added almost 100 aircraft over the last couple of years to our owned and managed portfolio," he adds. "We're now at just under 230 aircraft owned and managed, worth $10 billion. Our business model is quite unique but also it's complementary to the likes of Avolon where it has the orderbook.

"ORIX Aviation has bought into other investments in the past – airlines and airports; we're an investor in aviation. We see this as a very good investment and return on our equity as expected. Even if the business is completely run independently to our business plan, we expect the return on investment to be good and that's accretive to our own business because we'll have 30% of their business."

Although Slattery says that the stakeholder structure of Avolon will not change in the short term, Power has not ruled out increasing ORIX's stake in Avolon sometime in the future. Asked whether ORIX would consider eventually doing so, Power says: "We are committed to this space and if the right opportunity comes along to increase our investment in this space, we will certainly plan to take advantage of that opportunity."

Sky's **not the limit**

Ruth Kelly, chief executive officer of Goshawk, tells **Jack Dutton** why Ireland-based Sky Leasing was the perfect fit for her lessor and why she has not ruled out future M&A opportunities.

On 22 June, Goshawk Aviation announced a deal to buy Sky Aviation Leasing International (SALI) in what was the Dublin-based lessor's latest move to expand its platform.

According to a statement from Goshawk shareholder NWS Holdings, SALI's management team will be "absorbed and integrated" with Goshawk and Ruth Kelly will remain as its chief executive officer.

On completion of the acquisition, which is expected to close in the third quarter of this year, Goshawk will have a fleet of 223 aircraft, including ordered and committed aircraft, made predominantly of new-technology narrowbodies but also some widebodies, including Airbus A330s and Boeing 777s. The lessor also has one Embraer E190 on lease to Air Astana. By the end of this year, Goshawk will have somewhere between 170 and 180 aircraft on its books, says Kelly.

Founded in 2015, Dublin-based SALI is a $3 billion business with a fleet of 51 owned and committed aircraft.

Goshawk was launched in November 2013 by Investec and two initial co-shareholders, Chow Tai Fook Enterprises (CTFE) and the Cheung Kong group. The Cheung Kong group sold its stake to NWS Holdings and then set up its own rival leasing firm, Accipiter. Last year, Investec sold its stake in Goshawk to the two existing co-shareholders, NWS and CTFE, leaving them each with a 50% stake in the Dublin-based lessor.

> *"With the acquisition of Sky, we're taking on an ABS funding structure, so we will now have access to the ABS market. We would consider any other new sources of funding if they made sense from a pricing and structure perspective."*
>
> **Ruth Kelly**, chief executive officer, Goshawk

Since it was founded five years ago, Goshawk has steadily built up its portfolio, which now holds aircraft valued at more than $9.1 billion. Its owners and management have greater ambitions still, but in an ultra-competitive sale-and-leaseback market, Goshawk requires innovative ways to grow its fleet while maintaining quality assets.

After the SALI acquisition, 17 new lessees and six new countries will be added to Goshawk's portfolio, expanding the airline lessee base to a total of 65 airlines in 35 countries. Narrowbody aircraft will account for 77% of the combined fleet.

Funding for growth

Goshawk already has debt in place to buy SALI in a deal that includes the latter's S-JETS asset-backed securitisation (ABS). The balance of funding is composed of a mix of shareholder equity and unsecured debt, including a JP Morgan acquisition facility.

Previously, the lessor had tapped different markets to fund its growth, including the US private placement market, the Schuldschein market and, more recently, an unsecured deal in the Asian market.

After the Sky transaction closes, Goshawk will have 55% unsecured debt on its balance sheet.

Kelly says that Goshawk wants to continue being active in the unsecured and secured markets, adding that diversity of financing will help de-risk the business.

"With the acquisition of Sky, we're taking on an ABS funding structure, so we will now have access to the ABS market. We would consider any other new sources of funding if they made sense from a pricing and structure perspective."

During the Farnborough air show, Brian Cheng, executive director of Goshawk shareholder NWS, said that an initial public offering (IPO) could be part of Goshawk's strategic plan.

Kelly says: "Our shareholders have said they would consider an IPO of the business if conditions were right, including if valuations were at the right level. Our focus

is to continue to build a leasing company which provides strong value to its owners."

She insists that Goshawk does not have a specific growth target, but wants to build a quality portfolio. "If we can't find those aircraft at the right price and right structures as a private company, we can pull back. The primary objective isn't growth, it is buying quality assets and good transactions."

Sky Leasing approach

For Kelly, SALI was the perfect fit for Goshawk's business.

"The Sky portfolio is very like ours," she says. "It's predominantly young narrowbody aircraft on long leases. There are additional lessees in the Sky portfolio that complement our current portfolio – with the Sky acquisition we're adding 17 lessees and six countries."

SALI kicked off the sales process earlier this year. Rich Wiley, its chief executive officer, said in November 2017 at *Airfinance Journal*'s Hong Kong conference that his lessor was not up for sale, but the fact that SALI is owned by private equity made its sale more likely, particularly as it sought new capital.

"Normally, there is some sort of recapitalisation event, somewhere around two-and-a-half to three years, which could take the form of all sorts of strategic opportunities. I expect something to happen at Sky, as we are going to need more capital for growth," he said at the time.

Later, on 31 May, *Airfinance Journal* reported that Goshawk had been involved in a bidding process for SALI, along with Avic International Leasing and Aviation Capital. Chinese lessor Avic was originally the frontrunner, but was pipped to the post by Goshawk.

Commenting on how Goshawk won the deal, Kelly says that Goshawk engages with various seller requirements, including speed and certainty of execution, and balance sheet management.

"We tried to think a little bit wider than price only. We tried to be more strategic and figure out what else was important to the seller, as we always do in our approach to transactions.

"In this case, we focused on demonstrating to the seller that we were low on execution risk. We did that by fully engaging in the due diligence phase of the transaction, immediately appointing advisers and spending time fully and comprehensively engaging in the process. We also got our funding in place to give the seller comfort on our execution risk. That was the thinking differently approach we took to this particular transaction.

"I can't think of any other leasing business out there at the moment that would fit as well as Sky, but we're focusing on finding good aircraft so if opportunities arise, we are open to considering additional M&A."

"If we can't find those aircraft at the right price and right structures as a private company, we can pull back. The primary objective isn't growth, it is buying quality assets and good transactions."

Ruth Kelly, chief executive officer, Goshawk

Debut OEM order

At the 2018 Farnborough air show in July, Goshawk made its first direct original equipment manufacturer (OEM) orders – for 20 Airbus A320neos and 20 Boeing 737 Max 8s. Although some lessors have made speculative orders in response to the competitiveness of acquiring aircraft through sale and leasebacks, Kelly says this was not the case, and that the order was always part of the lessor's strategy.

"We always anticipated that a direct order was a necessary product stream, not only for growth, but more importantly [for an] additional product offering for our customers. Our OEM order was more an evolution than a change," she says.

Deliveries of the aircraft will not begin until 2023 and are due to finish in 2025, a five-year lead time for Kelly. She sees the long backlogs that have arisen from a global order glut as a double-edged sword.

"On the one hand, strong demand for aircraft is good for asset valuations. On the other hand, it would be nice to get earlier delivery slots from the OEMs. Our first deliveries are in 2023, [but] by then the lessor proportion of orders is much less than it is for 2020 or 2021; we see that as a positive."

New equity

Although more competition can lead to tough times for lessors when trying to win deals, Kelly believes that the market will continue to see more equity pouring into it.

"We've seen a reasonable amount of new start-up lessors and M&A activity over the last few years. That is a sign that additional equity has come into the aircraft lessor space. I think this pattern of equity being attracted to the aircraft leasing sector is going to continue."

A cyclical market means ebbs and flows of new equity investments, but as the sector offers strong risk-adjusted returns, Kelly foresees the interest continuing. However, a result of this interest has been more sale-and-leaseback deals and aircraft being placed in the market at aggressive lease rates.

Kelly says that Goshawk would never go low on lease rates to win sale-and-leaseback request for proposals.

"The lease rate factor is one element of the transaction, but there are many other elements, including costs and structure of debt, asset depreciation, the resulting profitability of the transaction, as well as many risk factors, including the maintenance reserve situation and lessee credit quality. We consider the combination of all of these elements in deciding whether a transaction works for us."

In the past, Goshawk has used balance sheet solutions to help it win sale-and-leasebacks. For example, in October 2017, it won a deal with UAE carrier Etihad Airways for four 787-9s by providing additional pre-delivery payment financing for the airline.

Although interest rates are a material cost for all lessors and if they rise then higher lease rates would be expected, Kelly says it is not that simple a relationship.

"There has been a rise in interest rates over the last 12 months. All else being equal, you would expect this to be reflected in higher lease rate factors. But actually, what we're seeing in the sale-and-leaseback market is that it has got more competitive and lease rate factors are generally reducing."

In an environment where lease rates are aggressively low, lessors such as Goshawk need to continue being open to the M&A opportunities that can provide innovative solutions to customers and distinguish them from the rest of the pack.

Aviation market braces for **Rolls-Royce's liability loss**

Rolls-Royce is seeking to claw back money from airlines as it continues to address engineering issues with its Trent 1000 engines stretching back to 2016, reports *Airfinance Journal* sister publication *The Insurance Insider* and **Michael Allen**.

Aviation underwriters are preparing for yet another large manufacturer's liability claim to hit the market as Rolls-Royce grapples with engineering issues relating to a type of engine used in the Boeing 787 aircraft.

Rolls-Royce holds manufacturer's liability cover with an aggregate limit of $500 million across two policy years, which is led by aviation specialist Global Aerospace (GA) and brokered by Marsh, *Airfinance Journal*'s sister publication *The Insurance Insider* reveals.

Sources said GA had a 10% line on the risk, while AIG has a 20% line.

UK engineering giant Rolls-Royce is seeking to claw back money from carriers as it continues to address the issues with its Trent 1000 engines stretching back to 2016.

"I'm surprised they only have $500 million of general liability as it seems small for a company of this size and magnitude," says David Yu, adjunct professor of finance at New York University Shanghai.

"Given the fact they have all these new-technology products, I would have expected a bit higher coverage even temporarily to anticipate for some teething problems as they should have the kinks pretty much ironed out for the older products – unless they don't want to pay the premiums and are just willing to expense it as it comes up."

Rolls-Royce has previously warned that the total bill for fixing the engines, used on about one-quarter of 787s in service, is likely to exceed $1 billion.

The market is anticipating a substantial claim from Rolls-Royce as the company pays for the redesign of affected parts and bolsters its repair centres around the world to deal with the disruption.

Multiple sources say Rolls-Royce is likely to file claims for two separate occurrences stretching over multiple policy years in a bid to push for the maximum $500 million policy limit.

Rolls-Royce has been working to fix problems with the jet engine since 2016, when Japan's All Nippon Airways (ANA) discovered its turbine blades were corroding faster than expected.

> *"We are working closely with our customers to minimise any operational impact of these inspections and we deeply appreciate their continued cooperation. We remain absolutely committed to eliminating this issue from the Trent 1000 fleet."*
>
> **Chris Cholerton**, president, Rolls-Royce's civil aerospace division

Blades in the intermediate pressure compressor of the jet engine were found to vibrate when operating at high speed in certain conditions, potentially causing metal fatigue.

In response to the issue, Rolls-Royce says it will monitor the Trent 100 engines currently flying and has announced a timetable for repairs that are set to take place until 2022.

In first-half results published on 5 August, the engineering firm registered an exceptional charge of £554 million ($723.7 million) for costs relating to Trent 1000 in-service issues it said were "abnormal in nature".

Payout uptick

The Insurance Insider previously revealed that aviation underwriters were expecting a $31 million loss arising from problems with Pratt & Whitney's PW1100G engine. That came after the loss of an Embraer prototype aircraft in May, which is set to cost the market $130 million.

Sources say a number of recent aviation manufacturing liability claims would not have been paid under wordings issued more than five years ago.

The introduction of "non-occurrence grounding" clauses has resulted in an uptick in payouts, even in cases when a loss event has not taken place.

In April, the US Federal Aviation Administration (FAA) issued a directive preventing all aircraft powered by the Rolls-Royce engines from flying more than 140 minutes from an airport they can divert to in an emergency. This is down from the standard 330 minutes.

The restrictions have caused disruption for a number of airlines, including ANA, British Airways, Air New Zealand, Norwegian Air and Virgin Atlantic.

The FAA mandate came shortly after the European Aviation Safety Agency ordered additional maintenance checks on certain Trent 1000 engines.

The Rolls-Royce claim is the latest in a number of manufacturers' liability losses to strike the beleaguered aviation insurance market.

Chris Cholerton, president of Rolls-Royce's civil aerospace division, says: "We are working closely with our customers to minimise any operational impact of these inspections and we deeply appreciate their continued cooperation. We remain absolutely committed to eliminating this issue from the Trent 1000 fleet."

New York University Shanghai's Yu says it is likely that insurers could increase their premiums as a result of these claims.

"Rolls-Royce has a right to claim back any false claims filed under liability by the airlines. I'm sure, depending on how much they have claimed over the years, the insurers definitely could increase the premium or even lower the overall coverage amount going forward," he says.

"It really depends how the insurance companies have modelled it internally and how much demand there is in the market. Unless the market is very deep for this kind of insurance, I think insurers will have to rework their internal models and account for the differences by adjusting premiums or the amount of liability coverage or both."

Marsh declined to comment. Global Aerospace and AIG also declined to comment.

Professionalism comes first for Tigerair Taiwan's Shih

Erin Shih has gone from a full-service flag carrier to a regional low-cost airline. One year after making that switch, Tigerair Taiwan's first female chief financial officer tells **Elsie Guan** about the lessons that experience has given her.

Professionalism transcends gender in the aviation industry and – no matter if you are working as a pilot, maintenance staff, or other function – it is how you comport yourself and the decisions you make that define you, not whether you are a man or a woman.

That is the philosophy of Erin Shih, who spent 18 years at Taiwanese flag carrier China Airlines before transitioning to a low-cost carrier as the chief financial officer (CFO) of Tigerair Taiwan.

After completing the buy-out of Tiger Airways Holdings' stake in Tigerair Taiwan in early 2017, the low-cost carrier became a wholly owned subsidiary of China Airlines.

Shih joined Tigerair Taiwan as CFO on 16 July 2017 after 18 years at China Airlines. Having been in the position for exactly one year when *Airfinance Journal* interviewed her, she says she initially approached the role carefully, after previously spending so long with just one company.

"When I was transferred from China Airlines, I was in an exploratory period for the first two to three months. My job focuses on fuel hedging and treasury management, so I started Tigerair's financial business from where I'm good at," says Shih.

"Let's look back to June last year: Tigerair's return of cash utilisation was only 0.2. After one year, now this return has reached up to between 0.68 and 0.7," she says. "This was a several-fold increase and I hope that I can look forward to a larger growth in the future."

Since Tigerair Taiwan has more flexibility as a newer low-cost carrier, it was easier to implement such changes to the company's financial strategy than at legacy carrier China Airlines.

"The management team in China Airlines transferred me to Tigerair Taiwan to establish a good financing strategy and system at the early stage of the company's transfer of ownership to China Airlines," says Shih.

She adds that, since China Airlines has been operational for nearly 60 years, it bears more burden compared with a less-than-five-year-old fledgling carrier such as Tigerair Taiwan.

> *"If you set up a good point at the very beginning when you start a new business, it will develop well in the future."*
>
> **Erin Shih**, chief financial officer, Tigerair Taiwan

"Many things could not be changed in a short time at China Airlines, but things can be different at Tigerair Taiwan. We can adjust the strategy of Tigerair Taiwan and give it a more relaxed environment to develop itself," she says.

"If you set up a good point at the very beginning when you start a new business, it will develop well in the future," she adds.

Shih says that on top of these financial strategy changes, she also had to work on areas of the business related to accounting and contract management, which she seldom covered before.

"This can be seen as a rare experience for me to expand my knowledge and exercise myself," she says.

One of the most challenging times in Shih's career was during the 2007-2008 global financial crisis when she was the senior manager of the financial and treasury management department at China Airlines.

Many airlines were suffering major losses and during that period Shih learnt the importance of capitalising an airline properly. After the financial crisis subsided, she was transferred to the carrier's' fuel department to establish an effective hedge mechanism.

"Fuel hedging is a very important issue for international airlines. The idea of hedging is to stabilise costs. The strategy of what portion to hedge and the exit mechanism need to be planned in advance," she says.

Under her management, China Airlines' profit from fuel hedging increased NT$46 million ($1.5 million) in 2011 and NT$102 million in 2012.

"For corporate finance, any investment should depend on the safety of that investment. If a corporate wants to acquire higher returns under higher risks, it has deviated from its main businesses," says Shih.

In December 2017, Tigerair Taiwan took delivery of one Airbus A320 on 10-year operating lease from BOC Aviation. While Shih says Tigerair Taiwan's fleet will be planned by the whole China Airlines group, she will continue to work on optimising the airline's financials, maintaining her philosophy of professionalism at all times.

Regional jets 'key' to **China's aviation future**

Guoliang Wang, marketing director of Industrial Bank Financial Leasing's aviation department, has been working in China's leasing sector since 2001. He tells **Elsie Guan** why regional aircraft will be critical to the country's airline industry.

The marketing director of Industrial Bank Financial Leasing's aviation department Guoliang Wang loves working in the aviation industry so much he describes himself as "jet-blooded".

The Beijing-native says he has experienced the development of the aviation industry through his stints in different sectors: military, commercial, business aviation and, finally, aircraft leasing.

Wang began his career on the military side with Aviation Industry Corporation of China in 2001, gaining overseas experience in the Middle East and North Africa.

In 2004, Wang joined General Electric's Experienced Commercial Leadership Programme, before officially joining General Electric (GE) as a non-trainee in 2006, working in the aviation department for the sale of commercial engines. He was later appointed as the sales director covering Air China and Cathay Pacific Airways and became based in Beijing.

He left GE in 2012 to join Bombardier Aerospace, where he sold business jets. After working there for four years, he joined Industrial Bank Financial Leasing (IBFL) in August 2016.

Banker's point of view

Although he now works for a lessor, Wang often finds that he also needs to think more from a banker's point of view, because Industrial Bank Financial Leasing is wholly owned by Fuzhou-based Industrial Bank.

"Many bank-sponsored leasing companies would seriously consider the aircraft leasing business and make it a strategic priority," he says. "Among all the reasons for this, the most important one is that aircraft assets are internationally accepted and there are established rules and standards to protect the trading of those assets – the market is more mature and the risk is lower, if you compare with other leased assets," says Wang.

IBFL's aircraft department has three sub-departments: marketing, funds, asset and risk management. The lessor has a fleet of 33 commercial aircraft and seven business jets. The commercial aircraft fleet includes nine Airbus A320s, four A321s, 16 Boeing 737-800s, one 737 Max 8, one 777-300ER and two 787s. The lessor also has 20 Comac C919s, five Bombardier CRJ900s and five Q400s on order.

"Many bank-sponsored leasing companies would seriously consider the aircraft leasing business and make it a strategic priority."

Guoliang Wang, marketing director, aviation department, Industrial Bank Financial Leasing

Wang says IBFL has been established under a "multidivisional" structure, which means that there is a company with a number of different divisions operating separate businesses. Legally, the parent company owns all of the divisions and gives them significant autonomy, which allows them to act independently.

"As a bank-sponsored leasing company, it is easier to get funds in the market, with the support of a bank. On the other hand, we are building up our own capabilities, such as asset evaluation, asset management, as well as sales and marketing. We also benefit from the subsidiary structure of the bank, which enables us to approach customers from all over the country easily," says Wang.

Regional push

Although IBFL owns more narrowbodies than regional aircraft, Wang believes that using the latter could be more economical and environmentally friendly on some routes.

For some less-developed provinces and cities in the west of China, regional aircraft are in high demand because the routes have smaller passenger load factors.

"A320s and 737s wouldn't be economic on those routes with low load factors," says Wang. "Regional jets with fewer seats will work both economically and environmentally. We believe that airlines will consider regional jets for certain routes and certain markets."

Wang says the Chinese government has found that trunk routes have become over served in recent years, especially in many developed cities on China's wealthy eastern seaboard. The government is encouraging brand new carriers, such as Tianjiao Airlines, to establish themselves in Inner Mongolia and to acquire regional aircraft.

However, progress has not been swift, because of challenges in the approval process. "We've seen the difficulties here: on one hand, it takes a long time to go through the approval process to obtain an air operator's certificate from the regulator, and on the other hand, it is difficult to be profitable in the first couple of years for a new airline company," says Wang.

High-speed rail versus regional aircraft

Although some people in the industry are dubious about the efficiency of regional aircraft against the competitiveness of high-speed rail in China, Wang says that, despite the latter's comfort and convenience, there are areas where regional aircraft can compete.

"For several western Chinese cities, it is not economical to establish a high-speed rail network compared with building new airports. Even in some fourth- and fifth-tier cities in the east, regional aircraft have their place in the market," says Wang.

"For example, if an airline has an operating base in Nantong, Jiangsu province, it would be able to connect destinations between eastern and western China, where you could see tremendous tourism demand on such routes."

Despite regulatory hurdles faced by the Chinese government in trying to tap into regional aircraft, Wang is optimistic about the future of the country's aviation sector and wants to remain in the industry long term.

"I always remember that when I was taking training programmes at GE Aviation, people teased each other that we were all jet-blooded," he says. "I've been working in the aviation industry for almost 20 years, and it looks like a true love: I've never thought about quitting."

Pricing will determine **success**

Boeing's much-mooted medium-sized jet will have a lot of ground to make up on its main competitor, the Airbus A321neo, writes **Jack Dutton**.

The price of Boeing's New Midsize Airplane (NMA) will be critical in determining whether it will receive strong appetite from potential buyers, several leasing executives tell *Airfinance Journal*.

The Boeing NMA was rumoured to be launched at the 2018 Farnborough air show in July, but market sources say the launch will likely be in 2019 or perhaps in 2020. However, other sources believe a launch announcement could come as early as the end of this year, if Boeing's studies on the proposed aircraft go well.

The aircraft would have 225- to 265-seats, according to Boeing. Although that niche is partly filled by the Airbus A321neo, the US original equipment manufacturer says that the NMA could open new routes because of its longer range and superior economics.

Commenting on the proposed aircraft, Declan Kelly, chief commercial officer of GECAS, says: "I think price is really going to drive the asset into the market. Can you build it at a price where people can make money from the aircraft? You're looking at who's going to power the aircraft – different variants of it."

He adds: "Something Boeing will have to bear very careful thought to is how many variants there are going to be and the range of the aircraft, because I don't think you can build an aircraft to suit everybody. That and the price you can sell it at need to be competitive. You've seen the A321 and what that's capable of doing and every day I look at it, it seems to be able to do more."

The NMA's main competitor, the A321neo, has already received 1,942 orders since it launched with Virgin America in May 2017. *Leeham News* reported on 18 July that Boeing had shifted the target entry into service from 2024-2025 to 2025 in its first-quarter earnings call, indicating that the programme would have a lot of ground to make up on its Airbus competitor.

> *"There's a business case that supports the need for an airplane of that size and if Boeing can get the operating economics and the cost of the airplane right, then I think it will be a successful programme."*
>
> **Brian Harvey**, chief marketing officer, SMBC Aviation Capital

Air Lease (ALC) founder Steven Udvar-Hazy said at the 38th Annual North American Airfinance conference in Miami in mid-May that by the time the NMA enters service (which he sees as being in 2026-27), Airbus will have delivered 2,500 A321neo aircraft.

However, Brian Harvey, chief marketing officer at SMBC Aviation Capital, says that there is a motive for Boeing to build the aircraft.

"There's certainly a business case that supports the need for an aircraft of that size and if Boeing can get the operating economics and the cost of the aircraft right, then I think it will be a successful programme," he says.

Harvey adds that Boeing is looking to capture more of the income from services after selling the aircraft.

"They want to be in the services business and managing the aircraft and selling the spare parts for the aircraft, which is currently not their model," he says. "Their model is to sell something and the third-party MRO [maintenance, repair and overhaul] market captures a lot of that business, so Boeing is looking at this on a different investment case."

Harvey adds that Boeing's new increased services offering with the NMA "is going to be an interesting business case to hear about".

John Plueger, chief executive officer of ALC, says the lessor is in discussions with Boeing about the aircraft.

"We do see strong interest by a number of carriers globally for that aircraft, but the question is more whether or not Boeing can produce the business case, pricing that aircraft and offering enough value to make it work for them and for the customers."

He adds: "The NMA would fill a hole in the Boeing product line. Airlines are interested in it, but it has to be priced well and that's the part that Boeing is working on right now. In the meantime, you have the A321LR and now the proposed XLR, as well as the A330neo – and those are tough competitors – there is less of a product gap in the Airbus line-up."

Boeing is taking a look at the competitive considerations, he says, adding: "If Boeing can price it well and show a large value add without a lot of new technology risk, then I think that aircraft will do well and we'd be interested in it."

Disagreements on NMA market footprint

Appraisers differ on market size but Boeing's new aircraft type could enter service as early as 2026.

No announcement was made at the Farnborough air show about the proposed New Midsize Airplane (NMA). With Airbus' A321neo model selling well, the ball is in Boeing's court.

The A321neo is Airbus's weapon to challenge that market and the European manufacturer is trying to move fast into the middle of the market segment with more A321neo improvements in an effort to challenge further Boeing on its business case.

The aircraft's current maximum range is 4,000 nautical miles (nm), but Airbus is understood to be working on an improved version that would be capable of 4,500nm or more. This would enable airlines to operate the aircraft on transatlantic services to destinations further south on the US east coast and further east.

After the A330-800neo market

Extending the range of the A321LR, among other things, could be the reason why there are delays in announcing the NMA business case.

Airbus A321LR possible improvements might yet tighten the mid-market pincer from below but the Toulouse-based manufacturer has yet to convince the market with its A330-800neo.

This has not gone unnoticed by Boeing, whose strategy will be pointing out the commercial difficulties of the A330-800neo.

Appraiser firms believe Boeing will launch the NMA with an entry-into-service of about 2026-27.

"Analysis of recent all new programmes suggest there is a typical seven- to eight-year development period between authority to offer and entry into service. So, if there is no authority to offer before the end of 2018, then the earliest entry into service would likely be sometime in 2026 or 2027," says Flightglobal Ascend's head of consultancy Rob Morris.

He believes the Boeing business case is clearly sensitive to volume and price and a case both for "launch and no launch" can be made.

Production transformation is very important in making the business case. "This could be key as the NMA could become an enabler for the production system for the next-generation single-aisle aircraft, which is where the key battleground will be for Airbus and Boeing in the future," says Morris.

"Optimum NMA appears to be around 220-270 passengers in a two-three-two ovoid fuselage, with a range of around 4.500nm."

Angus Mackay, principal, ICF

"I think production transformation is part of the business case but not all," says Gueric Dechavanne, vice-president, Collateral Verifications. He adds: "The OEMs [original equipment manufacturers] have become more and more efficient at building aircraft, so this will just be a continuation of that. My belief is that in order for the NMA business case to make sense, it needs to include the top end of the Max family."

Market footprint

Angus Mackay, principal at ICF, says the size of the market is between 3,000 and 3,500 aircraft over a 20-year period. Dechavanne thinks more of a 1,000 to 1,500 aircraft market.

Morris says the NMA market footprint will be highly dependent on the aircraft's size and range, which appears to be coalescing about 5,000nm and 220 to 275 seats dual-class, as well as Boeing's ability to manage unit cost and, of course, the competitive reaction from Airbus.

Ascend believes there is an opportunity for the NMA to capture a significant share of the demand between 2025 and 2040. "There are a wide range of demand and supply scenarios, with the NMA capturing upwards of 1,500 deliveries through 2040."

Mackay says: "Optimum NMA appears to be around 220-270 passengers in a two-three-two ovoid fuselage, with a range of around 4.500nm. The key sweet spot is the 45,000lbs thrust engine. Neither Airbus type covers this without any compromises."

Morris says that Airbus has that market covered to some extent with its A321neo and A330-800 model. "Boeing also already has some of this market covered with the Max 10 and 787-8 model. The future of the NMA depends upon how market share plays out between these aircraft."

Dechavanne believes that the current and future improvements of A321neo and A330-800 models could cover the segment well, but he also warns should Boeing launch a new family of aircraft that replaces the top end of the 737 Max family, Airbus will need to react with a new family as well.

Engine choice and price

The appraisers are divided as to which engine providers will power the NMA.

Dechavanne sees Pratt & Whitney and Rolls-Royce being in the programme "as long as they can get their act together with their current issues". Oriel's Les Weal expects General Electric and another engine manufacturer.

Mackay anticipates one engine provider only with the programme share risk: General Electric and CFM International.

Weal expects NMA pricing to be in the $70 million and $80 million bracket, though he expects early orders to get significant discounts. "Having engine choice will help pricing too," he says.

Mackay sees pricing at about $75 million and $80 million net to airlines, with significant buyer-furnished equipment content.

Morris says net delivered price will be in the $67 million to $82 million range.

Dechavanne is at the upper range of the market with an $80 million and $90 million estimated price range.

The new era of **lease accounting**

Niall Naughton, partner, KPMG Ireland, discusses challenges lessors and lessees face when IFRS 16 comes into effect in 2019.

After nearly 10 years of discussions, the international accounting standard setters (IASB) published *IFRS 16 Leases* in January 2016 with the new standard requiring companies to bring all significant leases on-balance sheet from 2019. The US standard setters (FASB) issued the new US GAAP standard on leases, a month later in February 2016. Key aspects of the new standards under the two frameworks are converged but there are some important differences which will result in different practice under the two frameworks.

Background to IFRS 16

A key long-standing objective of the IASB has been to bring leases on-balance sheet for lessees. All companies which lease major assets for use in their business will see an increase in reported assets and liabilities. This will affect a wide variety of sectors and the aviation sector will be significantly impacted given the high volumes of operating leased aircraft.

Currently, operating leases are off-balance sheet for lessees. Companies are required to disclose details of their off-balance sheet leases and many analysts already use this information to adjust published financial statements. The key change will be the increase in transparency and comparability. For the first time, analysts will be able to see a company's own assessment of its lease liabilities, calculated using a prescribed methodology that all companies reporting under IFRS will be required to follow.

Impact of new IFRS standard

The impact of the new standard is not contained to the balance sheet. There are also changes in accounting over the life of the lease. In particular, companies will now recognise a front-loaded pattern of expense for most leases, even when they pay constant annual rentals. The new standard takes effect in January 2019. Before that, companies will need to gather significant additional data about their leases, and make new estimates and calculations.

Impact on lessors

The lobby for the lessor community was successful in achieving a result of very limited change in lessor accounting. The lobbying approach for the lessor community was very much one of "why try and fix something that's not broken", which the IASB ultimately listened to.

Lessor accounting remains similar to current practice – ie, lessors continue to classify leases as finance and operating leases. Leases that transfer substantially all the risks and rewards incidental to ownership of the underlying asset are finance leases; all other leases are operating leases. The lease classification test is based on the criteria in the current lease accounting standard, *IAS 17 Leases*.

This accounting model is inconsistent with the accounting model to be applied by lessees – lessees follow a new single accounting model, whereas lessors retain a dual model. For example, in the case of an operating lease, the lessee will recognise a financial liability for its obligation to make

Singapore Airlines disclosed in its 31 March 2018 financial statements: "As at the reporting date, the group has non-cancellable operating lease commitments amounting to $3.127 billion"

in Wizz Air's 31 March 2018 financial statements it discloses that "the impact on profits for the year of initial application will be a loss of €15–20 million."

fixed-lease payments, but the lessor will not recognise a financial asset for its right to receive those lease payments. This is causing some issues for sub-leases or intermediary lease structures.

Major impact on lessees

At the simplest level, the accounting treatment of leases by lessees will change fundamentally. IFRS 16 eliminates the current dual accounting model for lessees, which distinguishes between on-balance-sheet finance leases and off-balance-sheet operating leases. Instead, there is a single, on-balance sheet accounting model that is similar to current finance lease accounting.

Bringing operating leases on-balance sheet also changes the profit-and-loss (P&L) account of lessees. Currently, operating lease expenses are charged to the P&L on a straight-line basis over the life of a lease.

From 2019, leases will be accounted for as if the company had borrowed funds to purchase an interest in the leased asset. This typically results in higher interest expense in the early years than in the later years, similar to any amortising debt. In turn, this means that total lease expense in the profit-and-loss account will be higher in the early years of a lease – even if a lease has fixed regular cash rental payments.

Wider business impacts

Key financial metrics will be affected by the recognition of new assets and liabilities, and differences in the timing and classification of lease income/expense. This could impact debt covenants, tax balances and a company's ability to pay dividends. The additional assets and liabilities recognised and the change in presentation will affect key performance ratios – eg, asset ratios and debt/equity ratios – and consequently could impair the ability to satisfy any debt covenants that are not applied on a "frozen GAAP" basis.

To minimise the impact of the standard, some companies may wish to reconsider certain contract terms and business practices – eg, changes in the structuring or pricing of a transaction, including lease length and renewal options. The standard is therefore likely to affect departments beyond financial reporting – including treasury, tax, legal, procurement, real estate, budgeting, sales, internal audit and IT.

What is the impact on airlines?

In the last reporting cycle, given the new standard had less than 12 months to implementation date, airlines have been disclosing the likely impact in future period financial statements. A number simply disclose that the current operating lease commitments disclosed is a reasonable proxy of what will be recognised as lease liabilities and corresponding right of use (ROU) assets when the new rules take effect.

For example, Singapore Airlines disclosed in its 31 March 2018 financial statements: "As at the reporting date, the group has non-cancellable operating lease commitments amounting to $3.127 billion. The group expects a large proportion of these operating leases to be recognised as lease liabilities with corresponding ROU assets under the new standard. This will increase the group's leverage ratio and its foreign exchange volatility arising from revaluation of lease liabilities that are denominated in USD. There will also be an impact on the timing of expense recognition in the profit and loss account over the period of lease. Interest expense will be recognised using the effective interest method on outstanding lease liabilities and the ROU assets will be depreciated, rather than operating lease payments being the expense."

Wizz Air provides similar disclosures in its 31 March 2018 financial statements and, as well as disclosing the estimated balance sheet impact, it discloses that "the impact on profits for the year of initial application will be a loss of €15–20 million".

There are also other less obvious impacts that airlines may need to consider outside of the operating lease of aircraft. For example, do various contracts at a hub airport such as customised lounges, hangars or common areas meet the definition of lease and need to come on-balance sheet and how are similar contracts in airports other than its hub dealt with?

However, the single issue that comes up most often when we discuss the new standard with airlines is the foreign exchange volatility introduced for non-US dollar reporters. This is an issue for all sectors but is particularly pronounced in aviation where leasing contracts are generally denominated in US dollars. For airlines which do not prepare their financial statements in US dollars, that foreign currency liability needs to get retranslated at each balance sheet date and potentially causes foreign exchange volatility in the reported results.

CALS chairman caught up in **China's P2P clampdown**

The detention of Jiedong Min, the chairman of Chinese lessor CALS, over alleged illegal fundraising comes amid a wider clampdown on peer-to-peer (P2P) companies in China. Min was developing P2P fundraising for aircraft, although it is uncertain how far those plans had progressed. **Michael Allen** and **Elsie Guan** report.

On 16 July the Shanghai Public Security Bureau's (PSB) Changning District branch detained Jiedong Min and announced an investigation into a company he owns called Xindacang Group, which owns a stake in lessor CALS Financial Leasing (Shanghai), of which Min is chairman. The investigation relates to peer-to-peer (P2P) fundraising.

The Shanghai PSB says Min and other unnamed suspects made a commitment to return investors' invested capital, along with profit, over a fixed investment term, but then gathered large amounts of money from the public illegally. Min and the suspects established at least three companies: Haoyoubang Everwin Financial Information Services (Shanghai), CALS Financial Leasing (Shanghai), and Shanghai Haoyin International Trade. Min and the suspects set up retail outlets around China and an online platform for Haoyoubang, using the terms "物权众筹" (property crowdfunding) and "融资租赁" (financial leasing).

The Shanghai PSB, which is taking "criminal coercive measures" against Min, adds it is doing its best to investigate the case and is trying to recover investors' losses. "Criminal detention" is among the five "criminal coersive measures" stipulated in the Criminal Procedure Law of the People's Republic of China.

The Shanghai PSB is taking action against Min and the other suspects for the "crime of illegally absorbing of public savings" (非法吸收公共存款罪).

Airfinance Journal reported on 15 August that Min had falsely claimed to have an honorary doctorate from Columbia University.

"The company is awaiting shareholder guidance on its future positioning which is likely to follow once a statement on the investigation around Mr Min by the Shanghai police is made. The company does not share information about internal affairs nor speculates," says Peter Huijbers, chief executive officer of CALS Aviation, a brand that covers Irish registered China International Aviation Leasing Service and Pacific Clipper Leasing in Hong Kong.

Huijbers says he is in no way involved with whatever Min has done to warrant a police investigation, nor is he involved in Haoyoubang's business or the crowdfunding business. He has had no communication with the mainland Chinese or Hong Kong authorities regarding Min, he says.

"It is correct that the situation of Mr Min is related to his crowdfunding platform Haoyoubang and has nothing to do with either the CALS Aviation Group or me personally," Huijbers says.

> *"It is correct that the situation of Mr. Min is related to his crowdfunding platform Haoyoubang and has nothing to do with either the CALS Aviation Group or me personally."*
>
> **Peter Huijbers**, chief executive officer of CALS Aviation

Companies named in the PSB report and CALS' shareholding structure

Min co-owns Xindacang with his daughter Xing (Chris) Min: he has an RMB 29.45 million investment and she has an RMB 1.55 million investment, according to the National Enterprise Credit Information Publicity System (NECIPS).

Besides being chairman of CALS Financial Leasing (Shanghai), which was named in the Shanghai PSB statement, Min is also chairman of two other CALS-branded entities not named by the police: China International Aviation Leasing Service and Shanghai CALS Aviation Equity Investment Funds Management.

Xindacang has a $15.3 million investment in Shanghai CALS Aviation Equity Investment Funds Management, which in turn owns 24% of CALS Financial Leasing (Shanghai). It was formerly known as Shanghai Dacang Investment Management and was established on 6 May 2010, before being renamed Xindacang on 30 January 2018.

According to the NECIPS, Haoyoubang does not have a link to any CALS entities in its shareholding structure, though little public information is available about Haoyoubang's owners: It is controlled (96%) by a company called Suzhou Banjia Lake Restaurant Management, which is in turn owned by two people called Lingpei Meng and Buzhou Min, about whom no further information is available. Buzhou Min's surname uses the same Chinese character as Jiedong Min's, but it is not clear if the two are family. Before 5 September 2017, Jiedong Min and his daughter were investors, but after that date ownership changed to Lingpei Meng and Buzhou Min. A person called Yaping Zhang owns the remaining 4%.

In January 2016, Haoyoubang, CALS Financial Leasing (Shanghai) and Xindacang (under its former name) were sharing the same office floor. A photo posted on WeChat 'Moments' of the company's commercial director for Asia-Pacific and the Americas Minsi (Tina) Jiang shows five companies sharing the fifth floor of an office: China International Aviation Leasing Service; CALS Financial Leasing (Shanghai); Shanghai CALS Aviation Equity Investment Funds Management; Haoyoubang; and Shanghai Dacang Investment Management – the company that was later renamed Xindacang and is now under investigation.

Marketing materials sent to *Airfinance Journal* in May 2017 by Jiedong Min showing the proposed internet P2P fundraising model of Haoyoubang and its internet finance platform CN Aviation Loan were in the same PDF document as

marketing materials for CALS International Aviation Lease Service and CALS Financial Leasing (Shanghai).

P2P information provider Wangdaizhijia (网贷之家) says Haoyoubang and CN Aviation Loan's office has been closed since 16 July. Photos on that site and different photos on blogging platform Baijiahao (百家号) show the office locked and empty. A former Haoyoubang employee, speaking anonymously, confirms Haoyoubang has closed and all staff had to find new jobs.

"We all feel angry, but we can't do any thing," the former employee says, explaining that he is still owed one and a half month's salary from Haoyoubang.

According to the NECIPC, CALS Financial Leasing (Shanghai's) ultimate owners are China National Nuclear (CNNC) and five individuals including Jiedong Min and Xing Min; as well as three other people called Biao Tang, Yunfu Tang and Haibo Tan, about whom no other information is available (*see diagram one for full details*).

Zhong Guo Hua Yu Economic Development took a 51% stake in CALS Financial Leasing (Shanghai) on 12 June 2016 and CNNC owns 100% of Zhong Guo Hua Yu Economic Development, according to a CALS company presentation and the NECIPC.

Several CALS company presentations also mention CNNC as the shareholder and multiple sources say CALS was keen to emphasise its links to the Chinese state-owned enterprise in meetings.

However, in a 6 February statement on its website, CNNC says Zhong Guo Hua Yu Economic Development is not a company funded or established by CNNC and any company or organisation established by Hua Yu that operates using the name of CNNC, or claims to be a CNNC affiliate, has never been approved by CNNC.

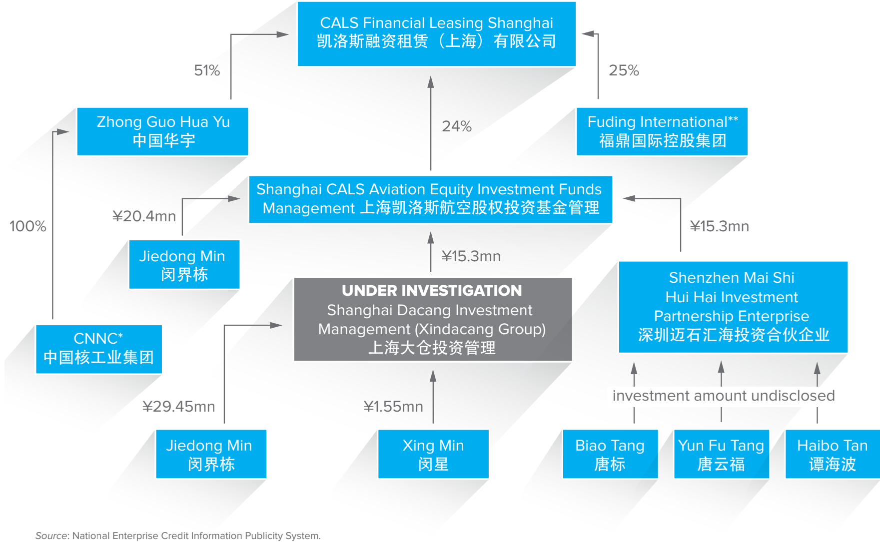
"Any activity conducted by Hua Yu and its subsidiaries does not represent CNNC or its affiliates; neither CNNC nor its affiliates will bear any legal consequences caused by any action of Hua Yu and/or its subsidiaries," CNNC says.

CNNC is directly controlled by the central government of the People's Republic of China (PRC) and is "a leading element of national strategic nuclear forces and nuclear energy development", according to its website.

The NECIPS lists CNNC's business scope as including the production and sale of military nuclear products, without going into details about what those products are. *Airfinance Journal* understands that at least one bank communicated to Peter Huijbers its discomfort with CNNC as a shareholder.

"Any manufacturers of military equipment – regardless of its being nuclear – are of concern to banks. The fact that it is of a nuclear nature sets off double alarm bells," says a source at that bank.

Diagram one: CALS Financial Leasing (Shanghai's) shareholding structure



Source: National Enterprise Credit Information Publicity System.

*CNNC disputes ownership **Hong Kong registered

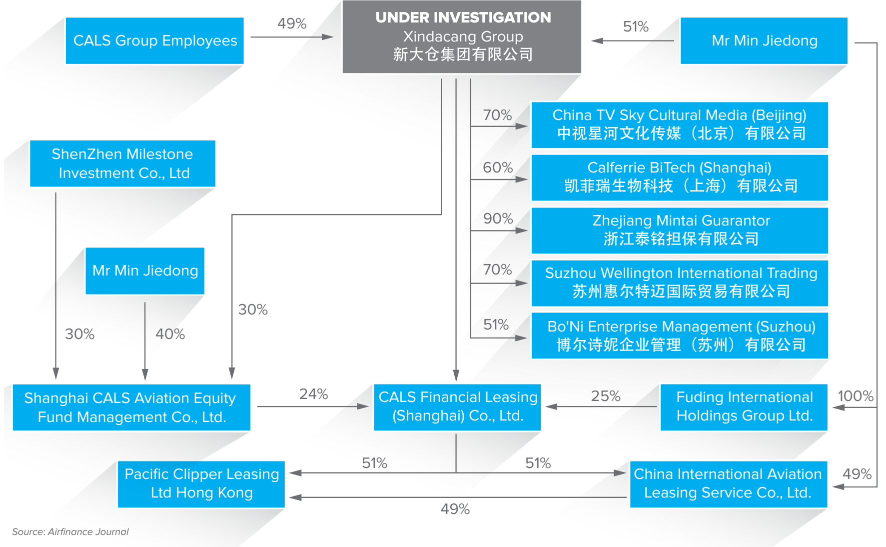
Airfinance Journal understands that after the bank raised concerns with CALS about CNNC being a shareholder, Huijbers emailed the bank attaching a letter from Jiedong Min that said CNNC is not involved in military business that is for "harmful or lethal purposes". The person describes the letter as "poorly written", as though it were written in Chinese and then auto-translated.

According to sources, in early 2018 CALS Aviation Group proposed a shareholding structure without CNNC or Zhong Guo Hua Yu Economic Development. In this structure, Xindacang – the company owned by Jiedong Min and now under investigation by the Shanghai PSB – would be the direct majority shareholder (51%) of CALS Financial Leasing (Shanghai). CALS Group employees would hold 49% of Xindacang and Min would retain a controlling 51% stake. CALS Financial Leasing (Shanghai) would then hold 51% of CALS International Aviation Lease Service and 51% of Pacific Clipper Leasing (*see diagram two*), Ireland-registered and Hong Kong-registered companies, respectively.

It is not known how advanced this plan was, but it shows there was at least some chance that not only CALS Financial Leasing (Shanghai) but also two non mainland-Chinese companies could have come under the control of a company now under investigation by the Shanghai PSB.

The company sent a diagram of the

Diagram two: Early 2018 proposed new shareholding structure



Source: Airfinance Journal

proposed restructuring to at least two international banks, *Airfinance Journal* understands.

On 26 February 2018, Xindacang widened its business scope to include aircraft sales and accessories, according to the NECIPS.

Min could not be reached for comment. Xing Min, who also worked for CALS as a member of the capital markets team, did not respond to WeChat messages seeking comment. She was an active user of WeChat 'Moments', posting updates almost every day, but since 15 July, the day before her father's detention, her account has been silent.

The former Haoyoubang employee who was quoted earlier in this article says rumours are circulating among his co-workers that Xing Min has also been detained.

"From the precedent I know, if the shareholder or chairman was detained by police, then the police will officially investigate into details of the business and all the data in connection with the platform," says Tao Yang, a partner at Allbright Law Offices in Beijing, who acts for a major Chinese P2P company.

"The chairman, legal representatives of the company, or shareholders usually will be detained by police and it will take time for the police to learn the details. If they can find some evidence that these people are violating the laws, then it will be a case which will subsequently go to the trial phase for the court to judge."

He adds that this may take some time as "the police are very busy now because many P2P platforms have problems".

For example, just days before Min's detention, the Shanghai police detained Tao Lei, the legal representative of P2P platform Tangxiaoseng, for issuing illegal wealth-management products and offering return rates ranging from 5 to 15% a year, according to the *South China Morning Post*. The scheme involved a total of RMB 38 billion (around $5.5 billion). One of the victims was a 43-year-old Suzhou resident who lost his life savings of RMB 860,000 to the platform. *Airfinance Journal* could not reach Tao Lei or Tangxiaoseng for comment.

"Actually, this is very common nowadays in China," says Yang.

"The management and shareholders run away without reporting to the government. Many, many investors lose the money. It's very serious in China now and that's why the Chinese government is doing their best efforts to give a lot of regulations…they just want to stabilise this market."

"P2P is obviously one of the areas the regulators are cracking down and that's caused quite a significant impact in terms of that particular area. The P2P in particular has been exactly the target for the banking regulators," says Justin Sun, a partner at Holman Fenwick Willan (HFW).

P2P fundraising for aircraft: a reality or fantasy?

It remains unclear whether CALS, Haoyoubang or CN Aviation Loan actually completed any P2P internet fundraising transactions for aircraft, or even whether it has completed any conventional operating lease transactions. Huijbers declines to disclose any fleet data or provide information about any deals the company may have done. He also declines to say whether the crowdfunding/P2P funding model is something CALS will continue to pursue in future.

"CALS Aviation Group has never made public statements to this extent and continues to do so," he says.

How Haoyoubang and CN Aviation Loan proposed to structure PDP-P2P internet financing for aircraft can be seen from a chart included in a company presentation sent to *Airfinance Journal* in June 2016 by Min and replicated in a different company presentation Min sent to *Airfinance Journal* in May 2017. In both cases, the structure was illustrated as part of Haoyoubang and CN Aviation Loan's marketing materials, with no mention of CALS, although in the May 2017 presentation it was included in the same PDF document as marketing materials for China International Aviation Leasing Service and CALS Financial Leasing (Shanghai).

"Normally, the total PDP may sum up to about 40% of the total purchase price of an aircraft, which is an important cash outflow for airlines and leasing companies," the May 2017 Haoyoubang/CN Aviation Loan presentation says in introducing CN Aviation Loan's "combination of internet finance and PDP financing".

"Based on our clients' requirement and our evaluation, we can provide customised PDP financing solutions with a maximum of 20% of the total airplane purchase price, which is equivalent to one half of the PDP financing needs."

Haoyoubang and CN Aviation Loan's clients must have aircraft purchase orders with an OEM in order to qualify for the financing, which can be between one and three years in tenor.

CNCALS.com, which was taken offline after *Airfinance Journal* made enquiries about the website, published a press release in January 2018 saying CALS Financial Leasing (Shanghai) had leased an Airbus A330-300 purchased through crowdfunding to Finnair.

Finnair confirms it does not have any aircraft from CALS. Huijbers says that press release is incorrect.

"The CNCALS.com website is the original website of CALS SHA [CALS Financial Leasing (Shanghai)] and covers all their business activities like medical, retail etc. Until Q1-2017 it also covered aviation, but then we established calsaviation.com for the aviation-related activities only – and only there, on calsaviation.com are any (by me) approved messages to the media with regards to aviation," he says.

CALS' now commercial director for Asia-Pacific and the Americas Minsi (Tina) Jiang also claimed in a 15 July 2016 email – in which Min was copied – to *Airfinance Journal* that CALS had provided "PDP internet finance" for one G407 Bell helicopter. In that same email, CALS also said it was working on PDP internet finance for a Finnair A330.

Huijbers says CALS has "never been involved in rotary wing assets". Jiang declines to comment.

Peter Huijbers

CEO Peter Huijbers joined the company in January 2017, having previously worked as head of marketing at Hong Kong Aviation Capital. He is described by several market sources as the English-speaking, Western face of CALS.

A source who has worked with CALS says the situation of Min's detention is "a shame" for Huijbers.

"He's a great guy with an excellent reputation in the market. He found a place where he could ply his trade. I'm absolutely convinced [the detention] has nothing to do with Peter. [Peter] just found someone who's willing to back him [Peter]," the person says.

"He's proved himself very, very capable of doing deals; he's got lots of contacts. People are happy to do business with him and lease from him. CALS just was not the right shop to back."

As reported earlier in this article, Huijbers says he is in no way involved with whatever Min has done to warrant a police investigation, nor is he involved in Min's crowdfunding business.

One source says that the CEO of a company and the other board members have a responsibility to hold the company's chairman to account.

The person notes that in mainland Chinese companies, the chairman tends to be "culturally more powerful", despite having similar legal powers to a chairman in a Western country like the United States. A Chinese chairman typically is more likely to use his powers to remove executives he dislikes or disagrees with, and other executives and employees at a Chinese company are more likely to treat their chairman with a high-level of deference relative to a US company chairman.

He adds that if Min has not resigned as chairman, this could put CALS in limbo as the board may not be able to reach quorum to make decisions.

Huijbers declines to comment on whether he plans to stay at or leave CALS.

*Go to **www.airfinancejournal.com** for the unabridged report.*

Embraer E195 – next generation takes on duopoly

The largest model in Embraer's current E-Jet family has been less successful than some of its stablemates, and appraisers are reserving judgment as to whether its successor, the E195-E2, will enjoy greater popularity.

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

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.

E2 family

In the face of prospective competition, particularly from Bombardier's CSeries (now the Airbus A220), Embraer launched the second generation of E-Jets at the 2013 Paris air show, designating the new models as E2 variants. The main changes for E2 models are the switch to Pratt & Whitney-geared turbofan engines and the redesign of the wings. Embraer says that fuel and maintenance costs of the latest generation of aircraft offer "double-digit savings" over their respective predecessors.

As part of a rationalisation of seating capacity, the new family includes only three models. The E195-E2 remains the largest variant and is extended by three seat rows compared with the original variant. The E195-E2 is scheduled to enter service in the first half of 2019.

Istat appraisers' views

Oriel

Olga Razzhivina, senior Istat appraiser

After developing the E-Jet family as a clean-sheet design, Embraer made the logical step of fine-tuning and re-engining the relatively young platform. The E195-E2 receives the longest stretch, which slots it between the Airbus A220-100 and the A220-300, as well as pitching it against the smallest versions of the Airbus Neo and Boeing Max families.

The Embraer E195-E2 made its maiden flight in March 2017

The CSeries's adoption as an Airbus product hastened the establishment of a joint venture between Embraer and Boeing. The implication of these industrial tie-ups for the E195-E2 (and all of the E2 and A220 families) is that the competition for orders will be played out, not only based on the individual aircraft capabilities, but also based on their role in the wider Boeing and Airbus portfolios.

With the demand for mainline aircraft in the new Neo and Max generations moving towards the larger aircraft in the respective families, there is a question mark over the size of the 110- to 130-seat market. There is certainly demand from operators such as Delta Air Lines, which has stood by its CSeries/A220 order.

However, many carriers, such as United Airlines, seem to favour moving to larger aircraft. Fleet commonality is a significant factor in airline selections, particularly in light of widely forecast pilot and mechanic shortages.

Another important factor for the E195-E2's success is the degree of urgency in replacing existing fleets, which requires considerable capital expenditure.

Embraer's decision to re-engine was taken in the environment of high fuel costs and the threat from new entrants. However, oil prices have since subsided and new engine technology has shown some potential problems. In these circumstances, airlines are hesitant to commit to new orders.

The original E195 is likely to benefit from any lack of interest in its replacement. As the newest variant of the original E-Jet generation, the E195 has only recently started to enter the secondary market. The values and lease rates for older vintages reflect the expectations of used-aircraft operators in the sector and therefore are much lower than those commanded by new aircraft.

Another reason why regional operators may be wary of the E195 is the reportedly higher than anticipated cost of maintaining its engines. In the long term, Oriel expects to see values and lease rates of the E195 decline as more vintages pass to the secondary market. If new sales of the E2 achieve no price premium over current-generation aircraft, there will be additional downward pressure on values and lease rates for all vintages.

Collateral Verifications (CV)

Gueric Dechavanne, vice-president, commercial aviation services

Market demand for the E195 has softened over the past 12 months because of the increase in availability of used aircraft. Current values in today's market have become soft for used aircraft, but have remained more stable for new aircraft. Over the past 12 months, values have decreased by 5% to 10% depending on the vintage. CV expects this trend to continue over the next six to 12 months, especially with the increase in current and potential availability of used aircraft from several North American carriers.

The E195 is now leasing for between $150,000 and $280,000 a month, depending on the vintage and variant. The monthly lease rates for used aircraft have remained stable over the past 12 months while lease rates for new aircraft have been under more pressure.

Aircraft characteristics

	E195	E195-E2
Seating/range		
Max seating	122 at 30-inch pitch	146 at 28-inch pitch
Typical seating	108 at 32-inch pitch	132 at 31-inch pitch
Maximum range	2,200 nautical miles (AR model)	2,600 nautical miles
Technical characteristics		
MTOW	52.3 tonnes (AR version)	61.5 tonnes
OEW	28.9 tonnes	34 tonnes
MZFW	42.5 tonnes	50 tonnes
Fuel capacity	16,210 litres	16,250 litres
Engines	2 x CF34-10E	2 x PW1919G
Thrust	18,500lbf	23,000lbf
Fuels and times		
Block fuel 200nm	1,420kg	1,210kg
Block fuel 500nm	2,870kg	2,440kg
Block time 200nm	47 minutes	47 minutes
Block time 500nm	85 minutes	85 minutes
Fleet data		
Entry into service	2006	2019 (target)
In service	164	None
Operators (current and planned)	17	6
In storage	8	None
On order	11	113

Source: *Airfinance Journal Fleet Tracker*

Indicative maintenance reserves		
C-check reserve	$45 to $50 per flight hour	No data available
Higher checks reserve	$35-$40/flight hour	No data available
Engine overhaul	$70-$75/ engine flight hour	No data available
Engine LLP	$90-$95/ engine cycle	No data available
Landing gear refurbishment	$35-$40/cycle	No data available
Wheels, brakes and tyres	$55-$60/cycle	No data available
APU	$70-$75/APU hour	No data available
Component overhaul	$180-$185/ flight hour	No data available

Source: *Air Investor, January 2018*

The introduction of newer aircraft such as the Mitsubishi MRJ and the Comac ARJ21, as well as A220s may further affect the future values of the original E195 models. CV believes that new entrants to the market could impact the E195's residual values once they begin to mature and show signs of real success, but this is unlikely to happen in the short term.

CV also believes that current E195 operators are likely to shift their focus to the E2 variant, which would probably impact the values and lease rates of the original generation aircraft.

The E195-E2 seems to have garnered the bulk of the firm orders for the E2 variants, which bodes well for the model. This indicates that the additional capabilities of the aircraft, including more range, capacity and lower operating costs, are attractive to operators looking at the type for their future capacity growth needs. Over the long term, CV believes that, although most of the original E195 operator base will replace their fleets with E2 models, the first-generation E195s should find new homes with secondary operators, especially as this market segment grows over the next few years.

Overall, CV feels that the original E195 has a viable future because there will be a trend of smaller operators looking to develop their markets using 70- to 110-seat aircraft. This trend will not happen overnight, but as more secondary operators get created, we feel the market will show further signs of stability.

ICF

Kara Levine, senior manager

The orderbook for the E195-E2 has been steadily increasing since 2014, and stood at 113 firm orders as of August 2018. This means the E195-E2 orderbook has already reached about 70% of the total fleet size of the original E195.

The E195 never quite developed the market presence envisioned by Embraer as witnessed by having the smallest fleet size of the four original E-Jet models. With only a four-seat differential to the E190 in typical dual-class seating configurations or 16 in a single-class configuration, the aircraft falls into a niche where it is too large for regional operations but viewed as not large enough for traditional mainline carriers.

The fuselage stretch will place the E2 more directly in competition with the smaller narrowbodies. As a stretched aircraft, it will offer very competitive unit costs. With the A319neo and 737 Max 7 yet to develop sizeable orderbooks, there seems to be an opportunity for the A220-300 and E195-E2 in this size category.

The current E195 fleet is highly concentrated with Azul, which as of August had 54 E195s in service. The Brazilian carrier is also one of the largest order holders for the E195-E2 with 30 firm orders and additional commitments placed at the recent Farnborough air show. Azul reportedly has plans to phase out its current-generation E-Jets over the next five years and has already removed several from service.

With 11 aircraft listed as parked (or about 6% of the overall E195 fleet) and the limited carrier base, the E195 is already proving to be a challenge in the secondary market. Of the 11 stored aircraft, seven have been parked for more than one year.

The combination of the new higher-performance E195-E2 and the reduction in fleet size of the primary operator of the type will put significant pressure on values and lease rates for the original E195, with end-of-line variants experiencing a reduction in economic life. However, given the parts commonality between the much larger in-service fleet of the E190, values of the E195 should find a floor based on the part-out potential of the aircraft.

Values

Current market values ($m)

Build year	2010	2012	2014	2016	2018	E2 2018
CV view	16.8	19.4	23.0	25.7	34.2	38.0
ICF view	20.2	23.2	26.5	30.2	34.2	38.5
Oriel view	12.4	14.1	16.3	24.2	29.1	32.5

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

Indicative lease rates ($000s/month)

Build year	2010	2012	2014	2016	2018	E2 2018
CV view	195	215	235	225	255	300
ICF view	162-278	175-192	188-207	202-222	216-238	290
Oriel view	165	180	200	225	270	285

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

A330-900 takes on **787-9**

Airbus holds an advantage over Boeing in the single-aisle market, but the US manufacturer has the upper hand in the widebody market. **Geoff Hearn** looks at whether the A330-900, which is due to enter service in 2018, can redress the balance by effectively competing with the 787-9.

The single-aisle market tends to be the focus of attention in analyses of the respective fortunes of Boeing and Airbus, not least because of the eye-catching number of aircraft being ordered. The widebody market appears at first sight to be much less important, but the smaller number of sales belies the importance of the sector in terms of revenue.

Boeing widebody sales have outnumbered Airbus orders in recent years, although the European manufacturer still claims a 50% share of sales over the past 10 years.

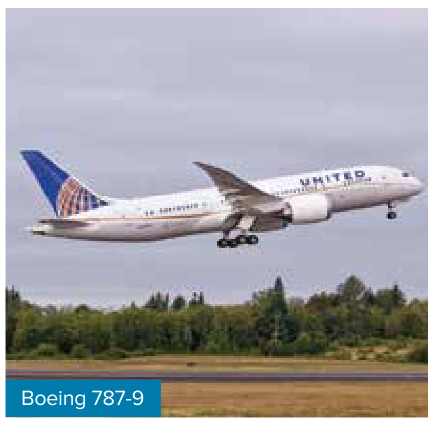
Whether the European manufacturer can maintain that market share is linked to the ability of the Airbus A330-900 to compete with the Boeing 787-9.

A330-300/A330-900neo

Airbus formally launched re-engined versions of its A330-200 and A330-300 models at the Farnborough air show in 2014. The replacement models were designated as the A330-800 and A330-900 respectively and were assigned the marketing designation Neo (new engine option). The aircraft are intended to complement the European manufacturer's A350 models and help compete against the smaller models in the 787 family.

Airbus denies that A330neos could cannibalise the A350 market, but the relative success of the A330-900 compared with the smaller A330-800 might suggest otherwise.

Airbus A330-900neo



Boeing 787-9

The A330neos are the same size as the aircraft they replace, but incorporate an A350-style cabin, which allows an increase in capacity. Airbus claims the new cabin allows the installation of up to 10 more seats in the A330-900 compared with its predecessor, but *Airfinance Journal* believes typical configurations are more likely to accommodate five or six extra passengers.

The Rolls-Royce Trent 7000 is the only engine available on the A330neo variants and contributes much of the fuel burn savings that Airbus is promising. A new nacelle design adds to the improvements obtained by the installed engine.

In addition to the new engine, the A330neos will have an increased wingspan, resulting primarily from the adoption of wingtips based on the technology of the A350's sharklets.

Boeing 787-9

The 787 was launched in April 2004. From the outset Boeing has used the branding 'Dreamliner' and airlines have been quick to adopt the terminology for their own marketing purposes.

The 787 family initially comprised three models: the high-capacity, short-range 787-3, the medium-capacity, long-range 787-8 and the high-capacity, longer-range 787-9. Orders for the 787-3 version were limited and the variant was abandoned. Boeing subsequently launched the higher capacity 787-10 during the 2013 Paris air show.

The 787 design was ambitious in its use of high-tech materials. Composites make up about 50% of the primary structure of the 787 (including wing spars and floor beams) and contribute to a 20% reduction in weight compared with more conventional airframe designs. However, the 787 suffered several development delays and had a troubled entry into service.

All members of the 787 family offer a choice of two new-technology engines, the General Electric GEnx 1B and the Rolls-Royce Trent 1000. Both engines deliver significantly improved fuel consumption and reduced noise and emissions compared with previous generation engines.

The stretched 787-9 typically seats 250 to 290 passengers and has a range of about 7,600 nautical miles (14,100km).

Key data

Model	787-9	A330-300	A330-900neo
Maximum seats	420	440	440
Typical seats two class*	290	277	287
Typical range (nm)	7,635	6,344	6,549
Entry into service	2014	1993	2018
Delivered	350	719	0
Orders backlog	424	59	223
List price ($m)	281.6	264.2	296.4

Source: *Source: Airfinance Journal's Fleet Tracker* and additional research .

Orders

In a simple direct comparison of deliveries and orders, the 787-9 has a clear lead over the Airbus rival, but this would be expected given the four-year gap between their respective entries into service. Early sales of the Neo model were strong and, despite a slowdown, the backlog has reached more than 220 aircraft, which is about half of Boeing's unfilled orders for the 787-9.

However, a broader comparison of widebody sales (see table) shows a more balanced picture. Airbus's loss of its sole A330-800 order when Hawaiian Airlines chose to swap to the 787-9 looks bad for the variant, but Airbus insists there is a market for the smaller A330neo model and continues to offer it to potential customers.

Operating cost

Airbus claims a 14% improvement in fuel burn per seat for the A330neos over the corresponding predecessor models, but this factors in the full 10 additional seats. The headline Airbus figure is for a 4,000-nautical mile sector and the company concedes it will be less on shorter sectors. Given the improvements in fuel burn for later versions of the original A330 models, the advantages offered by the new engine models may be closer to 10%.

Airfinance Journal has carried out its own analysis of operating costs based on information released by the manufacturers. For the purposes of this analysis, Airbus's claimed differential of 10 seats between the A330-900 and A330-300 is maintained.

The analysis of cash operating costs indicates that the 787-9 provides a significant advantage over the A330-300. The new technology may have proved troublesome for the 787's development and introduction into service, but it does appear to have provided the savings in operating costs that the manufacturer was targeting.

The A330-300, which was given a new lease of life by the delays in the 787 programme, is now clearly uncompetitive in terms of cash operating costs. The A330-900 reduces the 787-9's advantage to some extent, particularly if full credit is given for the potential additional seating, but it looks as if maintaining a 50% share of this segment of the market is going to be a struggle for the European manufacturer.

Total orders for A330neo/A350 versus 787-9/-10

Type	Orders	Type	Orders
A330-800	none	787-8	449
A330-900	223	787-9	774
A350-900	723	787-10	163
Total	**946**	**Total**	**1,386**

Source: *Airfinance Journal's Fleet Tracker 1 August 2018*

Indicative relative cash operating costs (COC)

	787-900	A330-300	A330-900
Relative trip cost	86%	Base	93%
Relative seat cost	82%	Base	89%

Indicative relative total direct operating costs (DOC)

	787-900	A330-300	A330-900
Relative trip cost	91%	Base	102%
Relative seat cost	87%	Base	98%

Assumptions: 2,000-nautical mile sector, fuel price $1.85 per US gallon. Fuel consumption, speed, maintenance costs and typical seating layouts are as per Air Investor 2018. Capital costs based on 2018 list prices.

Large widebodies **need a boost**

Although the market for small twin-aisles has been performing less well than the single-aisle counterpart, it is in rude health compared with the market for large widebodies.

Boeing and Airbus both have their problems when it comes to their larger twin-aisle aircraft. The Airbus A380's lack of sales has been well documented and, although Emirates gave the aircraft a lifeline in early 2018, the future of Airbus's largest model looks far from secure.

The secondary market looks particularly difficult for investors as witnessed by the Dr Peters Group parting out two of its four aircraft after failing to place the 10-year-old models with a secondary operator, following the lease from Singapore Airlines.

The US manufacturer has not been immune to difficulties in this segment. Backlogs for the Boeing 747 and 777 models have been dwindling, leading to cuts in production of those models.

The situation has not been improved by the sale of 15 777-300ERs to Iran Air becoming a casualty of the current US administration's policies.

The problem for the 777 is that, despite the inherent advantages of a larger aircraft, its seat-mile costs are barely superior to those of the latest smaller twin-aisle aircraft. *Airfinance Journal*'s model shows a less than 1% advantage for the 777-300ER over the A330-900 in terms of cash-cost per seat. Furthermore, hikes in fuel price will erode any remaining advantage.

An upturn in the freighter market is mitigating some of the slowdown in the sales of passenger models, but what rates of production can be maintained until the arrival of the 777-9 in 2020 is an open question.

Rating agency unsecured ratings

Airlines

	Fitch	Moody's	S&P
Aeroflot	BB-(stable)	-	-
Air Canada	BB-(pos)	Ba2(stable)	BB(pos)
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(stable)	-	B(stable)
British Airways	BBB-(stable)	Baa3(stable)	BBB-(stable)
Delta Air Lines	BBB-(stable)	Baa3(stable)	BBB-(stable)
Easyjet	-	Baa1(stable)	BBB+(stable)
Etihad Airways	A(stable)	-	-
Gol	B(stable)	B2(stable)	B-(stable)
Hawaiian Airlines	BB-(stable)	Ba3(stable)	BB-(stable)
Jetblue	BB(pos)	Ba1(stable)	BB(stable)
Latam Airlines Group	B+(pos)	Ba3(stable)	BB-(stable)
Lufthansa Group	-	Baa3(stable)	BBB-(pos)
Qantas Airways	-	Baa2(stable)	BBB-(stable)
Ryanair	BBB+(stable)	-	BBB+(stable)
SAS	-	B1(stable)	B+(stable)
Southwest Airlines	BBB+(pos)	A3(stable)	BBB+(stable)
Spirit Airlines	BB(neg)	-	BB-(stable)
Turkish Airlines	-	Ba3(neg)	B+(stable)
United Continental Holdings	BB(stable)	Ba2(stable)	BB(stable)
US Airways Group	-	-	-
Virgin Australia	-	B2(stable)	B+(stable)
Westjet	-	Baa3(neg)	BBB-(neg)
Wizz Air	BBB(stable)	Baa3(stable)	-

Source: Ratings Agencies - 29th August 2018

Lessors

	Fitch	Moody's	S&P	Kroll Bond Ratings
AerCap	BBB-(stable)	-	BBB-(stable)	-
Air Lease Corp	BBB(stable)	-	BBB(stable)	A-(stable)
Aircastle	BBB-(stable)	Baa3(stable)	BBB-(stable)	-
Avation PLC	BB-(stable)	-	B+(pos)	-
Aviation Capital Group	BBB+(pos)	-	A-(stable)	-
Avolon Holdings	BB(pos)	Ba2	BB+(stable)	BBB+(stable)
AWAS Aviation Capital	-	Ba3(pos)	BB+(stable)	-
BOC Aviation	A-(stable)	-	A-(stable)	-
Dubai Aerospace Enterprise	-	Ba2(pos)	BB(stable)	-
Fly Leasing	-	Ba3(neg)	BB-(stable)	BBB(stable)
ILFC (Part of AerCap)	BBB-(stable)	Baa3(stable)	-	-
Park Aerospace Holdings	BB(pos)	Ba3	-	-
SMBC Aviation Capital	A-(stable)	-	BBB+(stable)	-

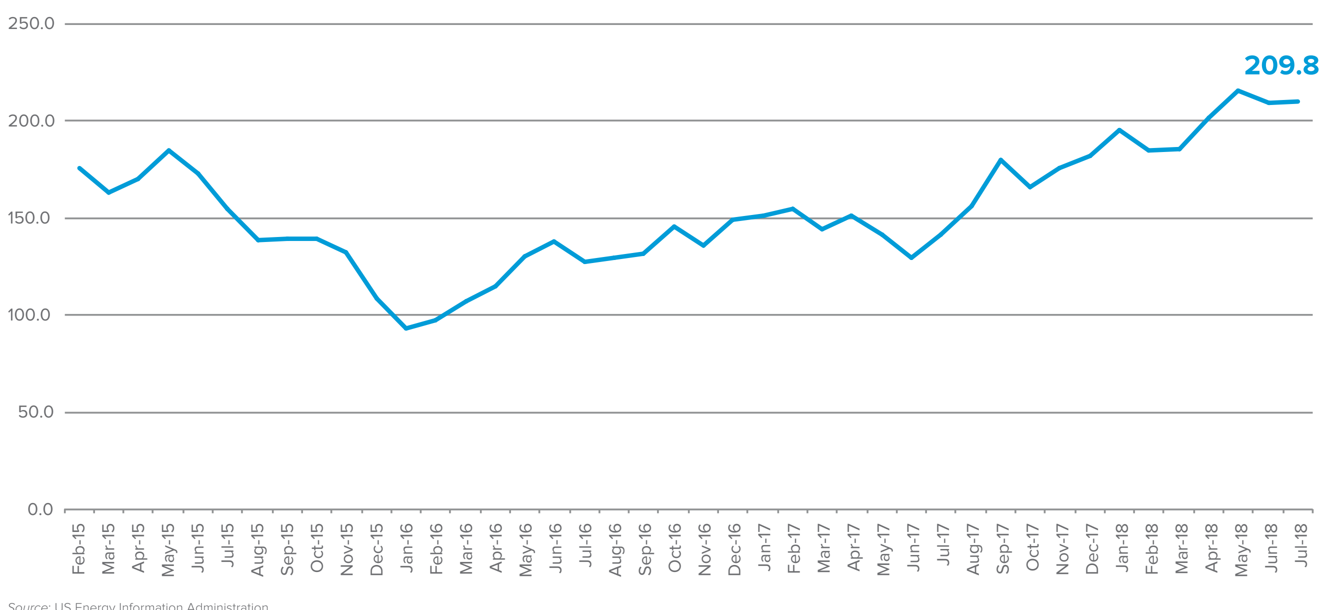
Source: Ratings Agencies - 29th August 2018

Manufacturers

	Fitch	Moody's	S&P
Airbus Group	A-(stable)	A2(stable)	A+(stable)
Boeing	A(stable)	A2(stable)	A(stable)
Bombardier	B(neg)	B3(neg)	B-(stable)
Embraer	BBB-(stable)	Ba1(stable)	BBB(stable)
Rolls-Royce	A-(stable)	A3(neg)	BBB+(neg)
United Technologies	-	Baa1(stable)	A-(neg)

Source: Ratings Agencies - 29th August 2018

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



Source: US Energy Information Administration

Fuel prices continue to rise

Aircraft list prices - new models

Model	$ millions
Airbus (2018 prices)	
A220-100	81
A220-300	91.5
A319neo	99.5
A320neo	108.4
A321neo	127
A330-800neo	254.8
A330-900neo	296.4
A350-900	317.4
A350-1000	359.3
Boeing (2018)	
737 Max 7	96
737 Max 8	117.1
737 Max 9	124.1
737 Max 10	129.9
777-8X	394.9
777-9X	425.8
787-10	325.8
Embraer (2018)	
E175-E2	51.6
E190-E2	59.1
E195-E2	66.6

Current production aircraft prices and values ($ millions)

Model	List price	Current market value*
Airbus (2018)		
A220-100	79.5	32.5
A220-300	89.5	37.1
A319	92.3	35.6
A320	101	43.9
A320neo	110.6	48.5
A321	118.3	51.9
A330-200	238.5	87.5
A330-300	264.2	100.8
A350-900	317.4	147.9
A380	445.6	221.8
ATR (2016)		
ATR42-600	22.4	16.1
ATR72-600	26.8	20.4
Boeing (2018)		
737-700	85.8	36.3
737-800	102.2	46.4
737-900ER	108.4	48.2
737 Max 8	117.1	51.0
747-8 (passenger)	402.9	163.1
747-8 (freighter)	403.6	183.6
777-200F	339.2	160.9
777-300ER	361.5	157.1
787-8	239.0	118.5
787-9	281.6	142.2
Bombardier (2017)		
CRJ700	41.4	23.0
CRJ900	46.4	26.1
CRJ1000	49.5	28.3
Q400	32.2	21.7
Embraer (2018)		
E170	43.6	25.1
E175	46.9	28.6
E190	50.6	32.6
E195	53.5	34.6

*Based on Istat appraiser inputs for Air Investor 2018

Lease rates ($'000 per month)

Model	Low	High	Average
Airbus			
A220-100	230	280	255
A220-300	280	310	295
A319	225	275	250
A320	290	345	317.5
A320neo	330	390	360
A321	350	410	380
A321neo (ACF)	360	450	405
A330-200	600	750	675
A330-300	625	825	725
A350-900	950	1,150	1,050
A380	1,450	1,900	1,675
ATR			
ATR42-600	105	155	130
ATR72-600	145	180	162.5
Boeing			
737-700	220	275	247.5
737-800	310	375	342.5
737-900ER	330	380	355
737 Max 8	330	440	385
747-8 (passenger)	1,050	1,300	1,175
747-8 (freighter)	1,325	1,550	1,437.5
777-200F	1,150	1,350	1,250
777-300ER	1,050	1,350	1,200
787-8	850	975	912.5
787-9	950	1,100	1,025
Bombardier			
CRJ700	170	200	185
CRJ900	180	233	206.5
CRJ1000	190	255	222.5
Q400	170	200	185
Embraer			
E170	170	225	197.5
E175	190	250	220
E190 (AR)	230	280	255
E195 (AR)	240	280	260
Sukhoi			
SSJ100	165	210	187.5

Commercial aircraft orders by manufacturer

	Gross orders 2018	Cancellations 2018	Net orders 2018	Net orders 2017
Airbus (31 May)	269	65	214	1,109
Boeing (31 June)	639	70	487	912
Bombardier	65	42	23	70
Embraer	52	50	2	86
ATR	7	0	7	113

sed on *Airfinance Journal* research and manufacturer announcements until 29/08/2018

Mystery of my **oil price forecast**

Adam Pilarksi, senior vice-president at Avitas, looks forward to 16 October to show that his long-term – or is it short-term? – forecast was correct.

The date 16 October 2018 is approaching and I get a lot of messages reminding me of a forecast I made at the annual Istat meeting in March 2011 regarding the future of oil prices. At that time, oil prices were considerably more than $100 a gallon, reaching $147 in July 2008. Most people in the industry firmly believed high (and continuingly higher) oil prices would stay forever. A remark by Willie Walsh, chief executive officer of International Airlines Group, that he would be purchasing aircraft with the assumption that oil prices would forever be exceeding $150/gallon led me to react.

Such assumptions about long-term oil prices will necessarily lead to sub-optimal fleet selection if, as I firmly believed, the oil price forecasts were fundamentally wrong. Oil prices are historically very volatile because of significant political factors affecting oil production levels – also the oil markets, as clearly emphasised by the existence of a powerful cartel (Opec) using conscious direction to manipulate the markets.

On the other hand, the accepted belief that "we are running out of oil" is plainly wrong. We have today 56 years of oil left, while in 1954 we had only 32 years of oil remaining. So, the more oil we extract, the more we have left. Some oil analysts are changing the question today from the old one of "what will we do without any oil left" to "what will we do with the stuff in the ground when we no longer want it?"

Like all other forecasts, we can differentiate between short and long term. In our industry, short-term forecasts use different techniques but are critical in predicting airline profitability or whether oil price hedging is a good strategy. Long-term forecasts help us decide what kind of aircraft to design, build and purchase. When oil prices were more than $100/gallon, the industry assumed such a level would remain for a few decades. Hence, designing and purchasing the most fuel-efficient aircraft was the proper strategy. If, on the other hand, the oil price level is only temporary, there is no need to restructure the fleet to a more efficient one but

Our author at the 20th Global Annual Airfinance Conference in Dublin

> *"Some oil analysts are changing the question today from the old one of 'what will we do without any oil left' to 'what will we do with the stuff in the ground when we no longer want it?'"*

concentrate on other options to maximise profitability under temporarily high oil prices. In my view, when making the Istat prediction a large part of the industry accepted the short-term forecasts as the appropriate long-term one.

The obvious question is what is short versus long term. Simply, long term is often seen as a few decades, a long time away. Or when the reader or forecaster will be retired or in another job. Or, as Lord Keynes said: "In the long run we are all dead." The term long term is generally not taken too seriously. When confronted by such a term, the reader usually is interested to know "what exactly do you mean by long term?"

Accepting general long-term statements such as: "By the year 2039 there will be demand for 45,678 aircraft" is often met with scepticism. In 2011, I was quite confident that oil prices would drop below $100/gallon "in the long run". And that such a forecast was very meaningful for our industry and would bring dramatic changes to all concerned. As expected, nobody liked the term "in the long run" – hence, everybody wanted a quantification of the specific date. My analysis led me to believe that oil prices would definitely fall below $100/gallon and even, at some time, below $40/gallon. Hence, my forecasts specified an eventual drop to below $40/gallon. The timing I identified was not as before "in the long run" but specifically tied to the launch of the Neo and even the Max series, which was not yet launched. While this was more precise than before, many people still wanted a precise date. I selected the date I knew I would not forget: my 70th birthday, 16 October 2018.

So what has happened? Oil prices stayed at the $100/gallon for a time and then started falling until they went below $40/gallon on 24 August 2015. My prediction re oil prices below $40/gallon materialised almost 100 times.

Right now oil prices have been rising and are in the neighbourhood of $70/gallon. This is the reflection of a number of political factors. Some reflect demand shortages (upheaval in Venezuela, restrictions on Iran), some are a cooperation of Russia and Saudi Arabia related to political developments in the Middle East, and some the forthcoming initial public offering of Saudi oil company Aramco, which is worth potentially $2 trillion. The existing $70 price is a temporary phenomenon and, in the long term, I am fairly confident that my forecasts over the years were accurate – even right now some who hedged will lose money.

In the true long term, I believe that oil prices below $40 are more likely than above.

An *Airfinance Journal*

special supplement

Airline top 50 2018

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	31-Mar-18	$8,314	6.7	32.3%	16.5	51.0%	0.4	6	6	8	8	8	7.4	→
2	Air Arabia	31-Dec-17	$1,034	3.9	26.9%	-19.1	67.8%	1.5	7	5	8	8	7	7.0	↗
3	Copa Holdings	31-Dec-17	$2,528	7.8	28.5%	5.4	37.3%	1.6	6	5	8	8	7	6.9	↗
4	Japan Airlines	31-Mar-18	$12,437	9.7	21.8%	19.5	32.5%	-0.7	5	4	8	7	8	6.6	→
5	Westjet	31-Dec-17	$3,459	7.5	22.4%	5.0	30.5%	2.0	6	4	8	7	7	6.5	→
6	Wizz Air	31-Mar-18	$2,279	4.5	33.8%	2.4	50.3%	1.9	7	6	4	8	7	6.3	↗
7	Luxair Group	31-Dec-17	$622	4.9	3.8%	-21.4	38.6%	-3.2	7	1	8	8	8	6.3	→
8	Alaska Air Group	31-Dec-17	$7,933	7.5	25.4%	6.2	20.4%	1.6	6	5	8	5	7	6.2	↘
9	International Airlines Group	31-Dec-17	$26,707	11.5	22.1%	4.9	29.1%	1.5	5	4	8	6	7	6.2	→
10	Allegiant Travel Company	31-Dec-17	$1,504	18.4	26.4%	10.9	27.4%	2.0	2	5	8	6	7	6.1	↘
11	Cebu Pacific	31-Dec-17	$1,276	5.0	31.6%	3.7	23.0%	2.9	7	6	7	5	6	6.1	↗
12	Spirit Airlines	31-Dec-17	$2,648	5.3	28.4%	3.1	34.1%	3.0	7	5	6	7	6	6.1	↘
13	Air New Zealand	31-Dec-17	$3,473	8.0	23.3%	5.6	25.5%	2.3	6	4	8	6	6	6.0	↘
14	Easyjet	30-Sep-17	$6,487	7.0	14.6%	5.6	26.3%	0.7	6	2	8	6	8	6.0	→
15	Frontier Airlines	31-Dec-17	$1,915	5.5	29.4%	2.2	37.1%	2.9	7	5	4	8	6	5.9	↘
16	Hawaiian Airlines	31-Dec-17	$2,696	11.5	28.1%	4.9	17.1%	1.6	5	5	8	4	7	5.9	↘
17	Southwest Airlines	31-Dec-17	$21,171	10.6	22.6%	21.0	15.5%	0.4	5	4	8	4	8	5.9	↗
18	SIA Group	31-Mar-18	$11,509	6.3	22.5%	4.2	17.3%	1.9	6	4	8	4	7	5.8	↘
19	British Airways	31-Dec-17	$17,193	13.5	22.5%	9.4	22.9%	1.2	4	4	8	5	7	5.8	→
20	Jazeera Airways	31-Dec-17	$187	6.2	37.9%	1.7	41.2%	3.7	6	7	3	8	5	5.8	↘
21	Scoot	31-Mar-17	$511	0.7	17.8%	5.0	45.4%	8.0	8	3	8	8	3	5.7	↗
22	Vietjet Air	31-Dec-17	$995	3.2	31.4%	2.0	30.4%	3.9	7	6	4	7	5	5.6	↑
23	Air Greenland	31-Dec-17	$203	19.7	16.9%	34.4	16.4%	-0.7	2	3	8	4	8	5.5	↗
24	Jin Air	31-Dec-17	$833	11.6	23.8%	2.2	38.2%	2.2	5	4	4	8	6	5.5	↑
25	Republic Airline	31-Dec-17	$1,196	8.0	34.9%	3.5	20.6%	4.4	6	6	7	5	4	5.5	↑
26	Pegasus Airlines	31-Dec-17	$897	5.4	25.5%	2.3	37.2%	4.6	7	5	4	8	4	5.4	↑
27	Spring Airlines	31-Dec-17	$1,612	4.1	21.8%	2.5	38.9%	4.6	7	4	5	8	4	5.4	↗
28	Qatar Airways	31-Mar-17	$10,847	5.4	17.5%	2.7	50.1%	3.1	7	3	5	8	5	5.4	↑
29	Skymark Airlines	31-Mar-18	$747	6.2	36.7%	2.5	12.9%	2.9	6	7	5	3	6	5.3	↗
30	TUI Airways	30-Sep-17	$2,615	8.2	18.0%	2.7	48.3%	3.8	6	3	5	8	5	5.3	↑
31	Qantas Airways	30-Jun-17	$10,162	10.1	20.0%	6.2	10.5%	1.9	5	3	8	3	7	5.2	↘
32	Finnair	31-Dec-17	$3,076	9.5	21.1%	2.1	37.2%	3.2	5	4	4	8	5	5.2	↗
33	Jetblue	31-Dec-17	$7,015	9.2	22.0%	8.6	9.9%	1.1	5	4	8	2	7	5.2	↘
34	Lufthansa Group	31-Dec-17	$42,530	10.9	13.7%	17.7	10.8%	0.9	5	2	8	3	8	5.2	↗
35	Air Canada	31-Dec-17	$12,484	15.2	17.6%	4.0	23.4%	2.2	3	3	7	5	6	5.1	↘
36	Delta Air Lines	31-Dec-17	$41,244	15.7	20.5%	11.3	6.4%	1.1	3	4	8	2	7	5.1	↘
37	Turkish Airlines	31-Dec-17	$11,054	7.5	22.3%	4.6	18.9%	4.2	6	4	8	4	4	5.1	↑
38	Jet2.com	31-Mar-17	$2,220	22.0	11.8%	2.5	32.8%	0.7	1	2	5	7	8	5.1	→
39	ANA Holdings	31-Mar-18	$17,729	10.0	21.8%	3.6	18.1%	3.1	5	4	7	4	5	5.0	→
40	Jeju Air	31-Dec-17	$895	11.4	25.0%	2.1	29.3%	2.9	5	4	4	6	6	5.0	→
41	Korean Air	31-Dec-17	$10,860	9.5	26.2%	4.1	10.5%	5.2	5	5	8	3	4	5.0	→
42	Indigo	31-Mar-18	$3,232	5.9	28.0%	1.5	31.2%	4.7	7	5	3	7	4	4.9	↗
43	Airasia	31-Dec-17	$2,419	5.6	31.1%	2.6	18.9%	4.1	7	6	5	4	4	4.9	↓
44	Hainan Airlines	31-Dec-17	$8,713	5.1	30.4%	1.5	53.2%	7.4	7	6	2	8	3	4.9	↓
45	Icelandair	31-Dec-17	$1,420	21.6	13.5%	5.7	15.9%	1.2	1	2	8	4	7	4.9	↘
46	Swiss International Air Lines	31-Dec-17	$4,612	14.1	19.6%	11.5	4.9%	0.8	4	3	8	1	8	4.9	↘
47	United Continental Holdings	31-Dec-17	$37,736	14.4	18.3%	4.4	10.1%	2.8	4	3	8	3	6	4.9	↘
48	Vueling Airlines	31-Dec-17	$2,463	6.6	21.4%	1.8	32.4%	3.4	6	4	3	7	5	4.9	↗
49	Air France-KLM	31-Dec-17	$31,876	11.0	16.7%	3.3	18.3%	2.7	5	3	6	4	6	4.8	↗
50	KLM - Royal Dutch Airlines	31-Dec-17	$12,057	9.8	18.8%	3.6	10.9%	2.7	5	3	7	3	6	4.8	↗

Source: *Airfinance Journal's The Airline Analyst*

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Top 50 by size of current fleet

		Fleet size			%	Fleet value ($m)		
Rank	Airline	Leased	Owned	Total	Leased	Leased	Owned	Total
1	**American Airlines**	409	602	1,011	40%	9,638	19,900	29,538
2	**Delta Air Lines**	185	748	933	20%	3,755	13,744	17,499
3	**Southwest Airlines**	123	692	815	15%	1,967	15,248	17,215
4	**United Airlines**	156	632	788	20%	2,176	15,604	17,780
5	**China Southern**	199	383	582	34%	6,494	16,126	22,620
6	**China Eastern**	112	419	531	21%	4,294	16,766	21,060
7	**Skywest Airlines**	108	345	453	24%	477	4,427	4,905
8	**Ryanair**	74	372	446	17%	3,078	11,878	14,957
9	**Air China**	102	314	416	25%	4,732	11,949	16,681
10	**Fedex**	21	364	385	5%	349	10,074	10,423
11	**Lufthansa**	23	264	287	8%	614	9,752	10,365
12	**Turkish Airlines**	67	218	285	24%	3,014	10,828	13,842
13	**British Airways**	103	176	279	37%	2,821	5,012	7,833
13=	**Emirates**	155	124	279	56%	17,334	14,274	31,609
15	**Jetblue**	49	199	248	20%	722	5,347	6,070
16	**Aeroflot**	223	21	244	91%	9,440	789	10,229
16=	**UPS**	3	241	244	1%	21	5,525	5,546
18	**All Nippon Airways**	16	216	232	7%	796	7,393	8,189
19	**Hainan Airlines**	106	125	231	46%	4,640	5,115	9,755
20	**Expressjet**	45	181	226	20%	138	413	551
21	**Air France**	111	104	215	52%	4,685	3,563	8,248
22	**Qatar Airways**	81	129	210	39%	6,608	11,978	18,586
23	**Air Canada**	98	110	208	47%	1,504	5,550	7,054
24	**Saudia**	78	126	204	38%	3,932	7,394	11,326
25	**Republic Airline**	27	175	202	13%	470	2,674	3,144
26	**Shenzhen Airlines**	46	139	185	25%	1,219	4,777	5,996
27	**Alaska Airlines**	26	151	177	15%	753	4,367	5,120
28	**Endeavor Air**	167	9	176	95%	1,605	6	1,611
28=	**Indigo**	156	20	176	89%	5,019	412	5,431
30	**Easyjet**	65	107	172	38%	1,188	3,209	4,397
31	**Korean Air**	30	141	171	18%	2,104	9,661	11,765
32	**Xiamen Airlines**	72	96	168	43%	2,762	3,541	6,303
33	**Japan Airlines**	21	142	163	13%	647	6,264	6,910
34	**Cathay Pacific Airways**	35	123	158	22%	2,682	9,922	12,604
35	**Garuda Indonesia**	135	16	151	89%	5,554	249	5,802
36	**Mesa**	79	66	145	54%	1,583	810	2,393
37	**Sichuan Airlines**	57	84	141	40%	2,457	2,800	5,256
37=	**Air India**	83	58	141	59%	3,794	2,664	6,458
39	**Eurowings**	123	17	140	88%	2,518	310	2,827
40	**SAS**	94	39	133	71%	2,640	577	3,217
40=	**Tianjin Airlines**	115	18	133	86%	2,326	639	2,965
42	**Azul Linhas Aereas**	109	23	132	83%	2,476	502	2,978
43	**Qantas**	25	106	131	19%	935	3,462	4,397
44	**Allegiant Air**	101	27	128	79%	925	691	1,617
44=	**Etihad Airways**	38	90	128	30%	2,934	5,220	8,154
46	**Westjet**	39	87	126	31%	806	2,306	3,113
47	**Singapore Airlines**	30	94	124	24%	2,260	7,678	9,938
47=	**PSA Airlines**	124	0	124	100%	1,565	0	1,565
49	**Shandong Airlines**	69	51	120	58%	2,609	1,733	4,341
50	**KLM**	89	30	119	75%	3,882	578	4,460

Source: *Airfinance Journal's Fleet Tracker*

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

Rank	Airline	Allison	BMW RR	CFM International	Engine Alliance	GE	IAE	P&W	Rolls-Royce	Other	Total
		Manufacturer									
1	**American Airlines**			466		104	241	82	118		1,011
2	**Delta Air Lines**		90	368		72	56	328	19		933
3	**Southwest Airlines**			814				1			815
4	**United Airlines**	9		335		91	167	123	63		788
5	**China Southern**			287		56	165	43	31		582
6	**China Eastern**	1		348		22	105		55		531
7	**Skywest Airlines**					436		17			453
8	**Ryanair**			446							446
9	**Air China**			243		34	54	12	73		416
10	**Fedex**			1		224		93	67		385
11	**Lufthansa**			109		32	63	11	72		287
12	**Turkish Airlines**			87		65	97	10	26		285
13	**British Airways**			7		42	128		102		279
13=	**Emirates**				90	162			27		279
15	**Jetblue**					60	188				248
16	**Aeroflot**			160		17			22	45	244
16=	**UPS**					92		113	39		244
18	**All Nippon Airways**			57		72		39	64		232
19	**Hainan Airlines**			166		25		11	29		231
20	**Expressjet**	163				63					226
21	**Air France**			112	10	92				1	215
22	**Qatar Airways**			4	10	118	36		42		210
23	**Air Canada**			90		108		2	8		208
24	**Saudia**			66		90	1	6	41		204
25	**Republic Airlines**	20				180		2			202
26	**Shenzhen Airlines**			139			41	1	4		185
27	**Alaska Airlines**			170		7					177
28	**Endeavor Air**					176					176
28=	**Indigo**			13			113	50			176
30	**Easyjet**			170			1			1	172
31	**Korean Air**			38	10	60		63			171
32	**Xiamen Airlines**			152		12			4		168
33	**Japan Airlines**			50		97		16			163
34	**Cathay Pacific Airways**			1		67		7	83		158
35	**Garuda Indonesia**			77		30		19	25		151
36	**Mesa**					140		5			145
37	**Sichuan Airlines**			34			82	11	14		141
37=	**Air India**			72		45	17	7			141
39	**Eurowings**			91		8	20	20	1		140
40	**SAS**			79		23	23		8		133
40=	**Tianjin Airlines**	18		9		57	20	24	5		133
42	**Azul Linhas Aereas**			16		64		45	7		132
43	**Qantas**		5	70		40			16		131
44	**Allegiant Air**			81				43	4		128
44=	**Etihad Airways**				10	50	34		34		128
46	**Westjet**			120		4		2			126
47	**Singapore Airlines**				1	27		7	89		124
47=	**PSA Airlines**					124					124
49	**Shandong Airlines**			118		2					120
50	**KLM**			50		68			1		119

Source: *Airfinance Journal's Fleet Tracker*

Top 50 by **firm order backlog**

Rank	Airline	Manufacturer								
		Airbus	ATR	Boeing	Bombardier	Embraer	Mitsubishi	Yakovlev	Yunshuji	Total
1	**Indigo**	389	40							429
2	**Airasia**	385								385
3	**Lion Air**	178		195						373
4	**Delta Air Lines**	283		30	20					333
5	**Southwest Airlines**			274						274
6	**Wizz Air**	265								265
7	**Flydubai**			244						244
7=	**United Airlines**	45		174		25				244
9	**American Airlines**	100		120		10				230
10	**Skywest Airlines**					122	100			222
11	**Turkish Airlines**	116		103						219
12	**Emirates**	58		159						217
13	**Norwegian**	95		108						203
14	**Qatar Airways**	97		101						198
15	**Frontier Airlines**	191								191
16	**Vietjetair**	77		100						177
17	**Etihad Airways**	98		77						175
18	**Spicejet**			142	25					167
19	**Ryanair**			150						150
20	**Lufthansa**	123		20						143
21	**Jet Airways**	5		135						140
22	**Avianca**	128		4						132
23	**Goair**	125								125
24	**Gol Transportes Aereos**			124						124
25	**Easyjet**	121								121
26	**Qantas**	107		9						116
27	**Jetblue**	90				24				114
28	**Volaris**	108								108
29	**Singapore Airlines**	46		61						107
30	**Fedex**		30	75						105
31	**Iran Air**	97	7							104
32	**Aeroflot**	14		27				50		91
33	**Air Canada**	45		45						90
34	**All Nippon Airways**	26		47			15			88
35	**Pegasus Airlines**	78		3						81
36	**Cathay Pacific Airways**	56		21						77
37	**Airasia X**	76								76
38	**Flynas**	75								75
38=	**China Southern**	28		42					5	75
40	**Japan Airlines**	31		11			32			74
41	**Garuda Indonesia**	17	4	49						70
41=	**Jetsmart Airlines**	70								70
43	**Korean Air**	34		36						70
44	**Tui Travel**			69						69
45	**British Airways**	49		14						63
46	**Copa**			61						61
47	**Spring Airlines**	60								60
48	**Ethiopian Airlines**	15		33	11					59
48=	**Westjet**			57	2					59
50	**Aeromexico**			57						57

Source: Airfinance Journal's Fleet Tracker

At *Airfinance Journal's* 2017 global awards in Miami in May, two airlines won awards for strong treasury performance and return on invested capital.

Airline treasury team of the year: **Gol Linhas Aereas**

Brazilian carrier Gol Linhas Aereas won the prize this year as investors bought into the company's turnaround story.

In July 2016, Gol carried out a distressed debt exchange under which investors holding $41 million of its 2022s agreed to swap their bonds for just $70 of cash and $380 of new 9.5% 2021s per $1,000 exchanged. Holders of other Gol bonds took similarly hefty haircuts, though the take-up on the exchange was low across the curve.

Eighteen months later, the Brazilian real had stabilised and the economy had exited its worst recession. Furthermore, Gol went through a restructuring that included cutting routes, negotiating with lessors to return 20 aircraft, and selling other jets.

With market conditions as strong as most bankers had seen, Gol – still rated Caa3/CCC+/B but with an upgrade from S&P imminent — was thus able to issue its largest-ever deal at its lowest-ever yield in December 2017.

Gol was looking to price at least $350 million of new bonds, but left open the option to increase the size. After receiving $1.35 billion of orders, the company was able to bring guidance in to 7.375% before launching a $500 million deal at 7.25%.

The transaction was followed by an additional $150 million issuance at 7% in January 2018.

Last year Gol was upgraded by all three major rating agencies.

Fitch and S&P raised its credit rating twice, ending the year at 'B', stable outlook, and 'B-', positive outlook, respectively. In December, Moody's upgraded Gol's corporate credit rating by four notches to 'B2', stable outlook. This was clear evidence that the market begun to acknowledge Gol's improved credit profile.

L to R: **Julio Perotti**, *competitive strategy director* at **Gol** and *AFJTAA managing director* **Michael Duff**

Last December Gol also managed to buy back two-thirds of its 8.875% senior notes due in 2022.

By the offer's deadline on 6 December, subsidiary Gol Finance had received valid tenders for $185 million of the notes from an aggregate principal amount of almost $277 million. The tender offer was launched on 27 November, with note holders offered $1,065 for each $1,000 principal amount of notes, plus accrued interest.

Gol Finance engaged Credit Suisse Securities (USA); Merrill Lynch; Morgan Stanley; and BCP Securities to act as the dealer managers.

In 2017 Gol's Ebitdar margin was an impressive 23%, up from 21.7% in 2016.

The balance sheet continued to strengthen: adjusted net debt was 6x the last 12 months' Ebitdar in the fourth quarter of 2017, compared with 7.5x in 2016.

At 31 December 2017, total liquidity, including cash, financial investments, restricted cash and accounts receivable, totalled R$3.2 billion ($912 million), an increase of 66% from a year earlier.

Airline of the year: **Delta Air Lines**

Delta Air Lines beat strong competition from its US competitors to win the airline of the year award for 2017. The award was based on return on invested capital (ROIC) as recorded by The Airline Analyst (TAA). TAA includes financial data for more than 200 airlines, with more being added all the time.

As can be seen from the chart, the top four ROIC performers were all US airlines. Ryanair came fifth as the top non-US carrier, followed by British Airways and Japan Airlines.

Delta has worked towards ROIC goals for many years, using a disciplined cost structure and balanced capital deployment. The success of this strategy contributed to its investment grade rating in 2016. Delta has now returned $10 billion and repurchased approximately 16% of the outstanding shares of the company while reducing debt by $9 billion.

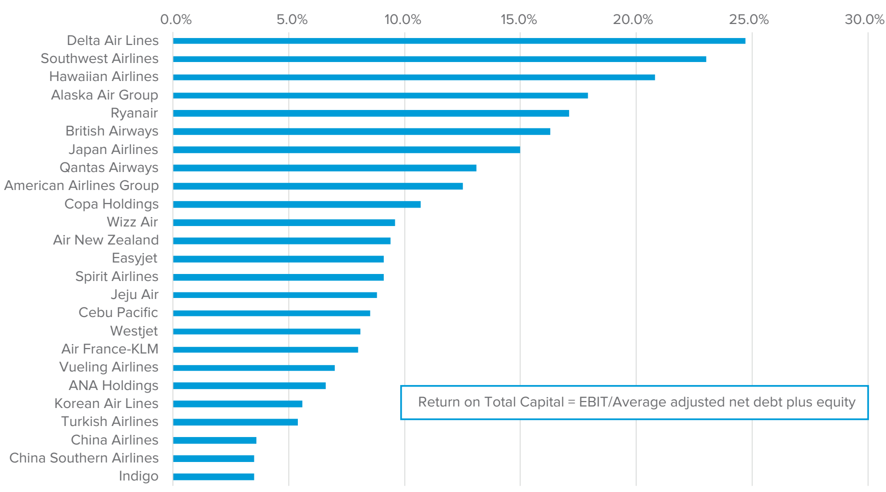
Ebit (earnings before interest and tax) margin in the meantime has doubled from 7.1% in 2012 to 14.2% in 2017.

The airlines in the chart represent the cream of the crop, although it is noticeable how fast airline returns drop away to single digits, which questions whether all of the top 25 – and the wider market – are earning returns in excess of their cost-of-capital.

Notably under-represented in the chart are airlines from the fast-growing Asia-Pacific market and from Latin America.

Nevertheless, Delta clearly generated positive shareholder value and is to be congratulated on an outstanding achievement. We will see if any of 2017's challengers can up their game and run Delta even closer in 2018.

Return on total capital 2017 - Top 25



Industry overview: **Key financials**

As shown in Figure 1 the airline industry had a successful year in 2017/18. Revenues of $651 billion were 4% higher than the prior year. Ebitdar was however slightly lower while net income increased 9% to $36.9 billion, short of the record $40.6 billion in 2015/16.

Ebitdar Margin was a full percentage point lower at 20.5% reflecting tough competition and higher costs, especially fuel and staff.

Notwithstanding some key bankruptcies, capital structure remained benign. The leverage trend has been favourable, despite the record capital expenditure.

Adjusted net debt was down slightly at $473 billion and leverage (measured as adjusted net debt/Ebitdar) declined marginally from 3.6x to 3.5x. Fixed charge coverage declined from 3.2x to 3.1x.

One indicator which has not improved over the last six 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 buy backs by

"The airline industry had a successful year in 2017/18. Revenues of $651 billion were 4% higher than the prior year. Ebitdar was however slightly lower while net income increased 9% to $36.9 billion."

Figure 1: Global airline industry[1] key financials

	Financial periods ending in					
$m	**2012/13**	**2013/14[2]**	**2014/15**	**2015/16**	**2016/17**	**2017/18**
Total Revenue	545,111	535,827	589,317	598,967	626,050	650,929
% change		-1.7%	10.0%	1.6%	4.5%	4.0%
Ebitdar	76,628	81,078	96,404	126,001	134,443	133,335
% change		5.8%	18.9%	30.7%	6.7%	-0.8%
Net Income	6,369	6,532	11,234	40,568	33,836	36,868
% change		2.6%	72.0%	261.1%	-16.6%	9.0%
Adjusted Net Debt	342,528	344,954	392,283	424,159	477,521	472,521
% change		0.7%	13.7%	8.1%	12.6%	-1.0%
Net Fixed Charges	31,626	31,842	34,731	37,973	42,552	43269
Ebitdar Margin	14.1%	15.1%	16.4%	21.0%	21.5%	20.5%
Ebitdar/Net Fixed Charges (x)	2.4	2.5	2.8	3.3	3.2	3.1
Unrestricted Cash/Total Revenues	17.4%	18.3%	16.0%	16.5%	16.8%	16.8%
Adjusted Net Debt/Ebitdar (x)	4.5	4.3	4.1	3.4	3.6	3.5
Parent groups with positive net income	13,960	14,748	19,254	45,795	37,259	39,711
Parent groups with negative net income	(7,591)	(8,216)	(8,020)	(5,227)	(3,423)	(2,843)
Total	6,369	6,532	11,234	40,568	33,836	36,868
Parent groups with positive net income	85	86	74	93	101	105
Parent groups with negative net income	35	34	44	29	27	28
[3] Number of parent groups	120	120	118	122	128	133

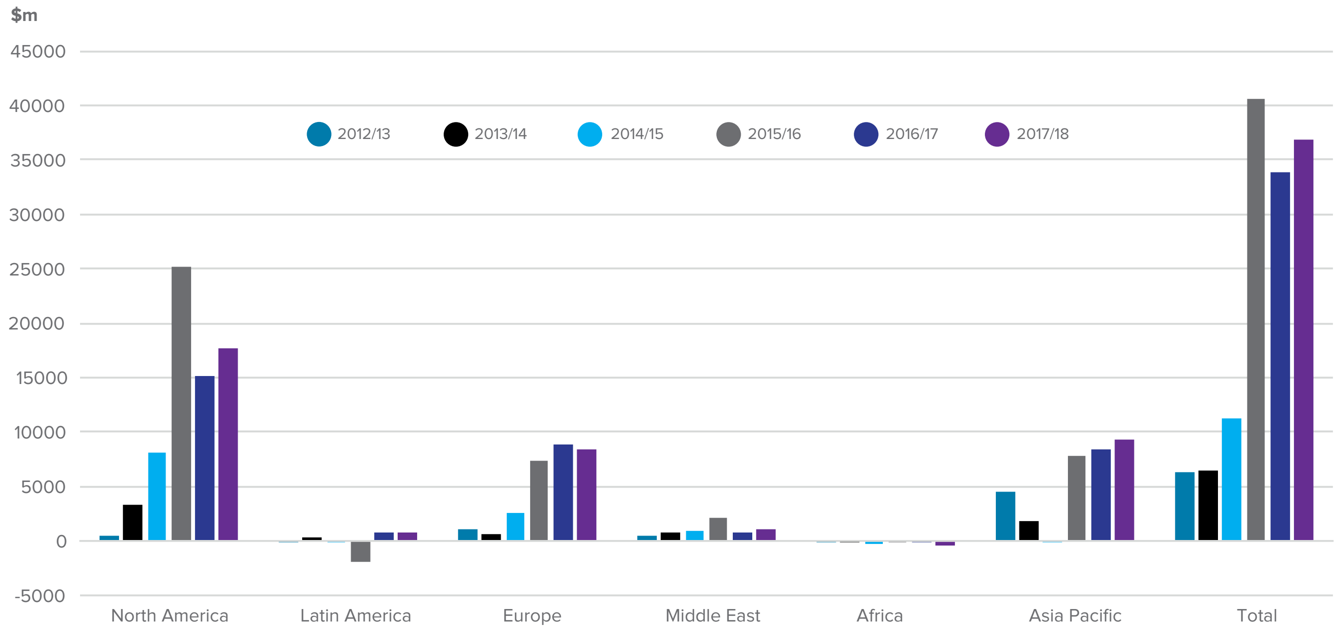
[1] *Aggregate values for airline groups included in study*

[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, Wizz, Azul), de-consolidation (Frontier), bankruptcy (Air Berlin, Monarch, Alitalia) and financials for additional airlines becoming available.*

Source: *The Airline Analyst*

Figure 2 - Net income by major region



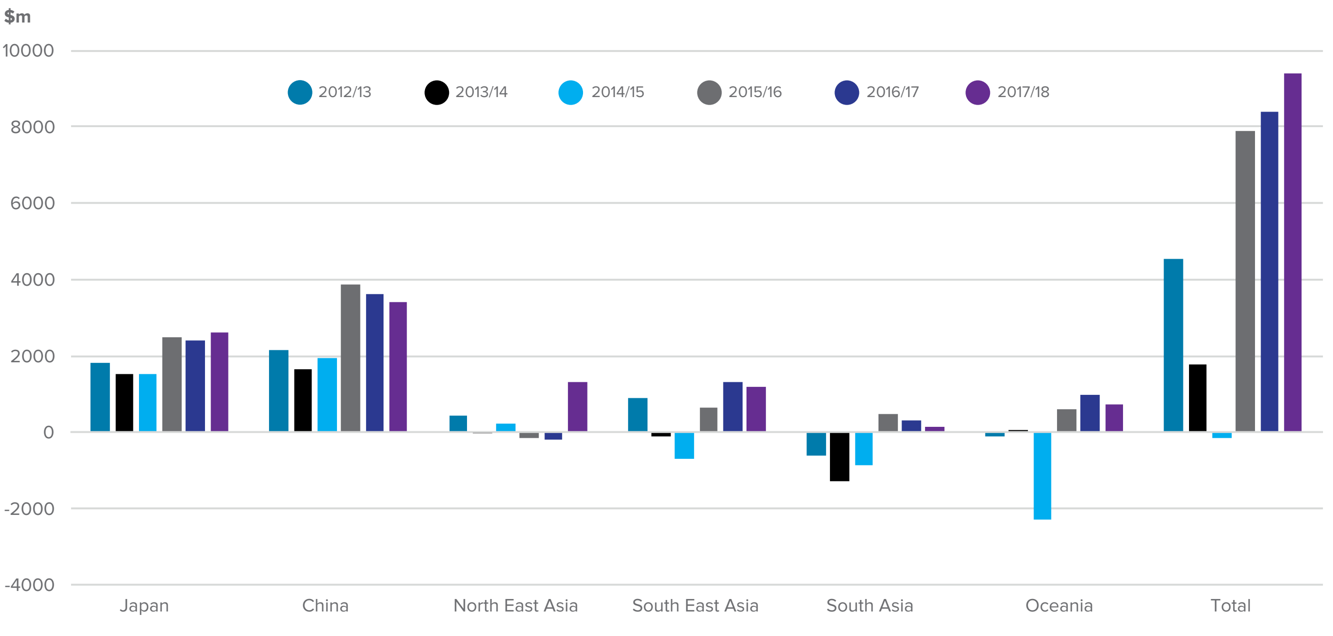
Source: *The Airline Analyst*

a significant number of airlines. Figure 2 shows net income broken down by region and illustrates clearly that the growth in profitability in the latest year was primarily driven by North American and Asia-Pacific carriers. The Middle East airlines had a tough year and Latin America remained only marginally profitable in aggregate. Africa was again loss-making. However, some of the perennial loss-makers improved their performance. Of the 133 airline groups in the study, 28 made aggregate net losses of $2.4 billion, the lowest such figure over the last 6 years.

"Of the 133 airline groups in the study, 28 made aggregate net losses of $2.4 billion."

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 contribution from Japan, the decline for China over the last three years and the strong performance by the North East Asia, South East Asia and Oceania sub-regions. South Asia remained weak overall. The China performance needs monitoring.

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, Inc.**	31-Dec-2017
2	**Aegean Airlines**	31-Dec-2017
3	**Aeroflot**	31-Dec-2017
4	**Air Arabia**	31-Dec-2017
5	**Air Astana**	31-Dec-2017
6	**Air Busan**	31-Dec-2017
7	**Air Canada**	31-Dec-2017
8	**Air China**	31-Dec-2017
9	**Air France-KLM**	31-Dec-2017
10	**Air Greenland**	31-Dec-2017
11	**Air Incheon**	31-Dec-2017
12	**Air Italy**	31-Dec-2017
13	**Air Mauritius**	31-Mar-2018
14	**Air New Zealand**	30-Jun-2017
15	**Air Seoul, Inc.**	31-Dec-2017
16	**Air Transport International**	31-Dec-2017
17	**Air Transport Services Group**	31-Dec-2017
18	**Air Wisconsin**	31-Dec-2017
19	**Airasia**	31-Dec-2017
20	**Airasia X**	31-Dec-2017
21	**Alaska Air Group**	31-Dec-2017
22	**Allegiant Travel Company**	31-Dec-2017
23	**American Airlines Group**	31-Dec-2017
24	**Amerijet International**	31-Dec-2017
25	**ANA Holdings**	31-Mar-2018
26	**Asiana Airlines**	31-Dec-2017
27	**Atlantic Airways**	31-Dec-2017
28	**Atlas Air Worldwide**	31-Dec-2017
29	**Atlas Air, Inc.**	31-Dec-2017
30	**Austrian Airlines**	31-Dec-2017
31	**Avianca Brasil**	31-Dec-2017
32	**Avianca Holdings**	31-Dec-2017
33	**Azul S.A.**	31-Dec-2017
34	**Blue Panorama**	31-Dec-2017
35	**British Airways**	31-Dec-2017
36	**Brussels Airlines**	31-Dec-2017
37	**Cargojet Airways**	31-Dec-2017
38	**Cargolux**	31-Dec-2017
39	**Cathay Pacific**	31-Dec-2017
40	**Cebu Pacific**	31-Dec-2017
41	**China Airlines**	31-Dec-2017
42	**China Eastern**	31-Dec-2017
43	**China Southern**	31-Dec-2017
44	**Chorus Aviation**	31-Dec-2017
45	**Comair Limited**	30-Jun-2017
46	**Compass Airlines**	31-Dec-2017
47	**Copa Holdings**	31-Dec-2017
48	**Croatia Airlines**	31-Dec-2017
49	**Danish Air Transport**	31-Dec-2017
50	**Delta Air Lines**	31-Dec-2017
51	**Eastarjet**	31-Dec-2017
52	**Easyjet**	30-Sep-2017
53	**EL AL Israel Airlines**	31-Dec-2017
54	**Emirates**	31-Mar-2018
55	**Enter Air**	31-Dec-2017
56	**Envoy Air**	31-Dec-2017
57	**euroAtlantic airways**	31-Dec-2017
58	**Eva Airways**	31-Dec-2017
59	**Evelop Airlines**	31-Dec-2017
60	**ExpressJet Airlines**	31-Dec-2017
61	**Fastjet**	31-Dec-2017
62	**Finnair**	31-Dec-2017
63	**Flybe**	31-Mar-2018
64	**flydubai**	31-Dec-2017
65	**Frontier Airlines**	31-Dec-2017
66	**Garuda Indonesia**	31-Dec-2017
67	**Gojet Airlines**	31-Dec-2017
68	**GOL**	31-Dec-2017
69	**Grupo Aeromexico**	31-Dec-2017
70	**Grupo VivaAerobus**	31-Dec-2017
71	**Hainan Airlines**	31-Dec-2017
72	**Hawaiian Airlines**	31-Dec-2017
73	**Horizon Air**	31-Dec-2017
74	**Iberia**	31-Dec-2017
75	**Icelandair**	31-Dec-2017
76	**Indigo**	31-Mar-2018
77	**Interjet**	31-Dec-2017
78	**International Airlines Group**	31-Dec-2017
79	**Japan Airlines**	31-Mar-2018
80	**Jazeera Airways**	31-Dec-2017
81	**Jeju Air**	31-Dec-2017
82	**Jet Airways**	31-Mar-2018
83	**Jet2.com**	31-Mar-2017
84	**Jetblue**	31-Dec-2017
85	**Jetstar Asia**	30-Jun-2017
86	**Jin Air**	31-Dec-2017
87	**Juneyao Airlines**	31-Dec-2017
88	**Kalitta Air**	31-Dec-2017
89	**Kenya Airways**	31-Mar-2017
90	**Kenya Airways**	31-Dec-2017
91	**KLM - Royal Dutch Airlines**	31-Dec-2017
92	**Korean Air**	31-Dec-2017
93	**Latam Airlines Group**	31-Dec-2017
94	**Latam Brasil**	31-Dec-2017
95	**Lucky Air**	31-Dec-2017
96	**Lufthansa Group**	31-Dec-2017
97	**Lufthansa Parent**	31-Dec-2017
98	**Luxair Group**	31-Dec-2017
99	**Mesa Airlines**	31-Dec-2017
100	**Miami Air International**	31-Dec-2017
101	**Nok Air**	31-Dec-2017
102	**Nordic Regional Airlines**	31-Dec-2017
103	**Norwegian Air Shuttle**	31-Dec-2017
104	**Oman Air**	31-Dec-2017
105	**Omni Air International**	31-Dec-2017
106	**PAL Holdings**	31-Dec-2017
107	**Peach Aviation**	31-Mar-2018
108	**Pegasus Airlines**	31-Dec-2017
109	**Polar Air Cargo**	31-Dec-2017
110	**Primera Air Scandinavia**	31-Dec-2017
111	**PSA Airlines**	31-Dec-2017
112	**Qantas Airways**	30-Jun-2017
113	**Qatar Airways**	31-Mar-2017
114	**Regional Express Holdings**	30-Jun-2017
115	**Republic Airlines**	31-Dec-2017
116	**Royal Jordanian Airlines**	31-Dec-2017
117	**Ryanair**	31-Mar-2018
118	**S7 Airlines**	31-Dec-2017
119	**SAS**	31-Oct-2017
120	**Scoot**	31-Mar-2017
121	**Shandong Airlines**	31-Dec-2017
122	**Shenzhen Airlines**	31-Dec-2017
123	**SIA Cargo**	31-Mar-2017
124	**SIA Group**	31-Mar-2018
125	**Silkair**	31-Mar-2017
126	**Skymark Airlines**	31-Mar-2018
127	**Skywest, Inc.**	31-Dec-2017
128	**Small Planet Airlines**	31-Dec-2017
129	**Solaseed Air**	31-Mar-2018
130	**South African Airways**	31-Mar-2017
131	**Southwest Airlines**	31-Dec-2017
132	**Spicejet**	31-Mar-2018
133	**Spirit Airlines**	31-Dec-2017
134	**Spring Airlines**	31-Dec-2017
135	**SriLankan Airlines**	31-Mar-2017
136	**Starflyer**	31-Mar-2018
137	**Sun Country Airlines**	31-Dec-2017
138	**Swiss International Air Lines**	31-Dec-2017
139	**TAP Group**	31-Dec-2017
140	**Thai Airasia**	31-Dec-2017
141	**Thai Airways**	31-Dec-2017
142	**Thomas Cook Airlines Limited**	30-Sep-2017
143	**Tianjin Airlines**	31-Dec-2017
144	**Tigerair**	31-Mar-2017
145	**Transat A.T.**	31-Oct-2017
146	**TUI Airways**	30-Sep-2017
147	**Turkish Airlines**	31-Dec-2017
148	**Tway Airlines**	31-Dec-2017
149	**United Continental Holdings**	31-Dec-2017
150	**UPS Airlines**	31-Dec-2017
151	**USA Jet**	31-Dec-2017
152	**UTair**	31-Dec-2017
153	**Vanilla Air**	31-Mar-2018
154	**Vietjet Air**	31-Dec-2017
155	**Vietnam Airlines**	31-Dec-2017
156	**Virgin Atlantic**	31-Dec-2017
157	**Virgin Australia**	30-Jun-2017
158	**Volaris**	31-Dec-2017
159	**Vueling Airlines**	31-Dec-2017
160	**Westjet**	31-Dec-2017
161	**Wizz Air**	31-Mar-2018
162	**Xiamen Airlines**	31-Dec-2017

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 162 airlines (up from 150 last year) whose financials are available in the public domain and which have released financial statements for periods ending between March 2017 and March 2018. The data includes the 31 March 2018 releases for ANA Holdings, Japan Airlines, Jet Airways, Ryanair, Singapore Airlines, Spicejet and a few smaller carriers.

Disappointingly, Qatar Airways has delayed the publication of its results for the year ending 31st March, 2018 and we have yet to see the Etihad financial statements despite their announced intention to publish them. Our numbers therefore do not include two of the three largest airlines in a key region for traffic and the aircraft manufacturers.

Of the 162, 29 are separately reporting subsidiaries such as British Airways, Iberia, Vueling, Austrian Airlines, Swiss, Air France and KLM, meaning that we have 133 airline groups in the study.

The sample does not include airlines whose financial statements are not available publicly (e.g. Etihad, Lion Air, LOT, Saudia) or those whose most recent available financials are for periods prior to March, 2017 (e.g. Adria Airways, Air India, SAA). However the sample is estimated to include airlines representing around 85% of global RPKs. There is additional representation this year from South Korea, China, Japan 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. 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 to a common currency and the validity of the exchange rate chosen. We have converted into US$ using the spot rates prevailing on 15th August 2018. We believe using the spot rates rather than the historic exchange rates produces a more valid comparison by delivering a "constant currency" set of values.

Revenue and profitability

Headed by the "big three" US carriers, total revenues in our sample of 133 airline groups whose financials are available in the public domain are $651 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 $555 billion or 85% of the total sample. The degree of concentration within the Top 50 is apparent - the top 10 airlines account for 54% of the Top 50's revenues.

Of the total sample of 133 parent groups, 105 recorded aggregate positive net income of $36.9 billion while 28 reported losses aggregating $2.8 billion for a net positive figure of $39.7 billion, up from $33.8 billion last year. Overall, the net profit margin for all airline parent groups combined was 5.7%, up from 5.4%.

As we can see from the Top 50 by Net Income Margin, 25 airlines achieved a margin in excess of 10%, headed by Republic Airline, Vietjet Air and Ryanair. Other LCCs have strong representation at the top of the list including Air Arabia, Southwest, Airasia and Spirit Airlines.

Eight US carriers, including Delta but not American or United made it onto the list. Indicative of the continuing stress on network business models, none of Cathay Pacific, Qantas, Emirates, Turkish Airlines, Latam, Air France-KLM 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 42nd position.

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:

	Cargo	LCC	Leisure	National	Network	Regional	Grand Total
Europe	1	6	4	5	21	7	44
North America	9	4	4		7	13	37
North East Asia	1			7	6	4	18
South East Asia	1	8	1		6		16
China		2		1	9		12
Latin America		4			7		11
Middle East		3			6		9
Africa		1		1	3	1	6
South Asia		3			2		5
Oceania					3	1	4
Grand Total	**12**	**31**	**9**	**14**	**70**	**26**	**162**

Source: The Airline Analyst

Analysis: **Revenue and income**

Top 50 by Total revenue

Rank	Airline	$m
1	American Airlines Group	42,207
2	Lufthansa Group	41,902
3	Delta Air Lines	41,244
4	United Continental Holdings	37,736
5	Air France-KLM	29,533
6	International Airlines Group	26,312
7	Emirates	25,011
8	Southwest Airlines	21,171
9	Lufthansa Parent	18,780
10	China Southern	18,675
11	ANA Holdings	17,789
12	Air China	17,755
13	British Airways	15,632
14	China Eastern	14,974
15	Japan Airlines	12,480
16	Air Canada	12,410
17	Cathay Pacific	12,394
18	KLM - Royal Dutch Airlines	11,843
19	Qantas Airways	11,753
20	SIA Group	11,458
21	Turkish Airlines	11,054
22	Qatar Airways	10,913
23	Korean Air	10,724
24	Latam Airlines Group	10,164
25	Hainan Airlines	8,753
26	Ryanair	8,191
27	Aeroflot	7,942
28	Alaska Air Group	7,933
29	Jetblue	7,015
30	Easyjet	6,452
31	Thai Airways	5,761
32	Iberia	5,624
33	Asiana Airlines	5,522
34	Eva Airways	5,327
35	UPS Airlines	5,274
36	China Airlines	5,084
37	SAS	4,696
38	Swiss International Air Lines	4,604
39	Avianca Holdings	4,442
40	Garuda Indonesia	4,177
41	Shenzhen Airlines	4,040
42	Xiamen Airlines	3,817
43	Latam Brasil	3,799
44	Norwegian Air Shuttle	3,710
45	Virgin Australia	3,692
46	Vietnam Airlines	3,573
47	Jet Airways	3,562
48	Westjet	3,438
49	TAP Group	3,386
50	Air New Zealand	3,370

Top 50 by Net income

Rank	Airline	$m
1	Delta Air Lines	3,577
2	Southwest Airlines	3,488
3	Lufthansa Parent	2,812
4	Lufthansa Group	2,708
5	International Airlines Group	2,292
6	United Continental Holdings	2,131
7	American Airlines Group	1,919
8	British Airways	1,771
9	Ryanair	1,661
10	Air Canada	1,556
11	ANA Holdings	1,298
12	Japan Airlines	1,222
13	Jetblue	1,147
14	Air China	1,059
15	Alaska Air Group	1,034
16	China Eastern	927
17	China Southern	871
18	Emirates	761
19	Korean Air	702
20	SIA Group	651
21	Qantas Airways	624
22	Qatar Airways	547
23	Hainan Airlines	486
24	Swiss International Air Lines	443
25	Republic Airlines	434
26	Skywest, Inc.	429
27	Spirit Airlines	421
28	Airasia	399
29	Easyjet	390
30	Copa Holdings	370
31	Hawaiian Airlines	364
32	Aeroflot	341
33	Indigo	326
34	Wizz Air	315
35	Xiamen Airlines	314
36	Air New Zealand	252
37	Atlas Air Worldwide	224
38	Asiana Airlines	223
39	Turkish Airlines	223
40	Vietjet Air	219
41	Westjet	217
42	Shenzhen Airlines	210
43	Allegiant Travel Company	195
44	Finnair	194
45	Juneyao Airlines	194
46	Eva Airways	187
47	Spring Airlines	184
48	Atlas Air, Inc.	172
49	Air Arabia	172
50	Frontier Airlines	165

Top 50 by Net income margin

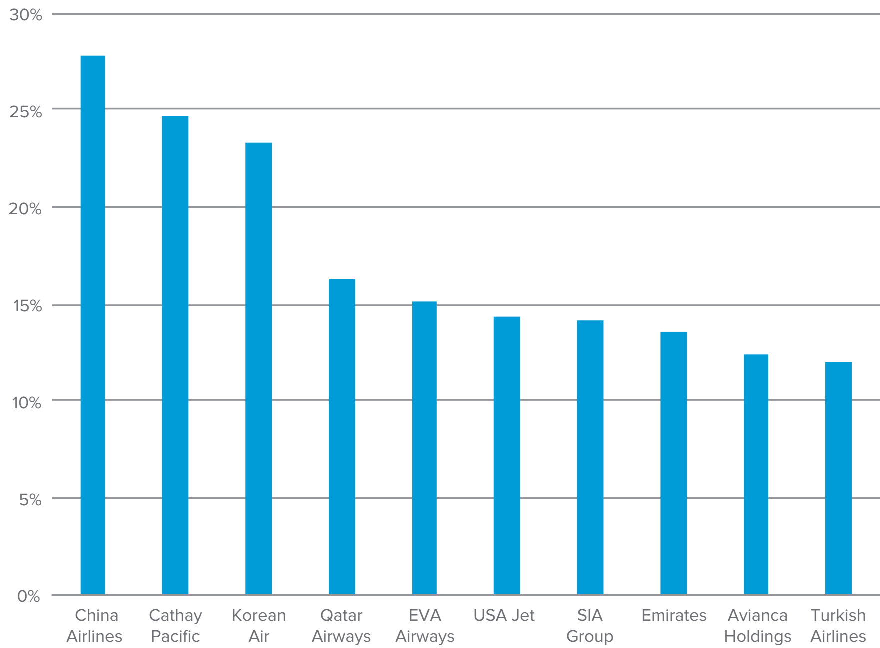
Rank	Airline	%
1	Republic Airlines	36.3%
2	Vietjet Air	22.5%
3	Ryanair	20.3%
4	Euroatlantic airways	18.2%
5	Air Arabia	16.6%
6	Southwest Airlines	16.5%
7	Airasia	16.5%
8	Jetblue	16.4%
9	Spirit Airlines	15.9%
10	Lufthansa Parent	15.0%
11	Horizon Air	14.8%
12	Copa Holdings	14.6%
13	Jazeera Airways	14.5%
14	Wizz Air	14.1%
15	Hawaiian Airlines	13.5%
16	Skywest, Inc.	13.4%
17	Alaska Air Group	13.0%
18	Allegiant Travel Company	13.0%
19	Air Canada	12.5%
20	Chorus Aviation	12.3%
21	Cebu Pacific	11.6%
22	Spring Airlines	11.5%
23	British Airways	11.3%
24	Juneyao Airlines	10.7%
25	Atlas Air Worldwide	10.4%
26	Indigo	10.0%
27	Japan Airlines	9.8%
28	Swiss International Air Lines	9.6%
29	Pegasus Airlines	9.4%
30	Atlas Air, Inc.	9.2%
31	International Airlines Group	8.7%
32	Delta Air Lines	8.7%
33	Frontier Airlines	8.6%
34	Skymark Airlines	8.5%
35	Jin Air	8.3%
36	Xiamen Airlines	8.2%
37	Luxair Group	8.1%
38	Compass Airlines	8.0%
39	Mesa Airlines	7.9%
40	Jeju Air	7.8%
41	Thai AirAsia	7.5%
42	Air New Zealand	7.5%
43	Grupo VivaAerobus	7.4%
44	ANA Holdings	7.3%
45	Spicejet	7.3%
46	Peach Aviation	6.8%
47	Azul S.A.	6.8%
48	Tway Airlines	6.8%
49	Korean Air	6.5%
50	Eastarjet	6.5%

UPS Airlines is number one by cargo revenue

Top 50 by Cargo Revenue
After a number of difficult years, growth has returned to the air cargo sector. 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 $3.4 billion, 14% of its total revenues. Dedicated freight carrier Cargolux is in 7th place by revenues. Other dedicated cargo providers in the list include Kalitta Air, Polar Air Cargo and ABX Air. Some 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.

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 table. 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	5,184
2	Emirates	3,387
3	Lufthansa Group	3,358
4	Cathay Pacific	3,045
5	Korean Air	2,491
6	Air France-KLM	2,390
7	Cargolux	2,211
8	Qatar Airways	1,770
9	SIA Group	1,617
10	Air China	1,498
11	SIA Cargo	1,427
12	ANA Holdings	1,426
13	China Airlines	1,411
14	China Southern	1,327
15	Turkish Airlines	1,317
16	KLM - Royal Dutch Airlines	1,284
17	International Airlines Group	1,242
18	Latam Airlines Group	1,119
19	United Continental Holdings	1,035
20	British Airways	873
21	Japan Airlines	831
22	Eva Airways	809
23	American Airlines Group	800
24	Delta Air Lines	729
25	Kalitta Air	625
26	Thai Airways	610
27	Qantas Airways	591
28	Avianca Holdings	551
29	China Eastern	529
30	Swiss International Air Lines	527
31	Air Canada	496
32	Polar Air Cargo	396
33	ABX Air, Inc.	317
34	Iberia	296
35	Latam Brasil	295
36	Cargojet Airways	290
37	Aeroflot	246
38	Garuda Indonesia	246
39	Amerijet International	245
40	Grupo Aeromexico	231
41	Finnair	226
42	Air New Zealand	221
43	Hainan Airlines	205
44	Southwest Airlines	173
45	SAS	162
46	PAL Holdings	158
47	Indigo	147
48	Air Transport International	138
49	South African Airways	129
50	Alaska Air Group	114

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**	3,895	3,790
2	**Atlas Air, Inc.**	4,978	1,725
3	**Omni Air International**	4,590	641
4	**Miami Air International**	1,726	398
5	**Air Greenland**	1,308	366
6	**Emirates**	4,997	344
7	**EL AL Israel Airlines**	3,775	333
8	**British Airways**	3,245	312
9	**KLM - Royal Dutch Airlines**	3,166	293
10	**SIA Group**	3,856	283
11	**Air Mauritius**	4,346	283
12	**Air France-KLM**	2,960	278
13	**Lufthansa Parent**	2,338	263
14	**Copa Holdings**	3,372	259
15	**Qatar Airways**	N/A	256
16	**Eva Airways**	3,779	248
17	**Korean Air**	3,028	243
18	**Cathay Pacific**	3,638	243
19	**Air Canada**	2,847	230
20	**Royal Jordanian Airlines**	2,548	228
21	**Lufthansa Group**	2,008	224
22	**International Airlines Group**	2,412	221
23	**Icelandair**	2,899	221
24	**Starflyer**	961	221
25	**China Airlines**	2,656	220
26	**United Continental Holdings**	2,351	219
27	**ANA Holdings**	1,659	216
28	**TUI Airways**	3,201	213
29	**Swiss International Air Lines**	2,408	211
30	**Japan Airlines**	1,587	208
31	**Thomas Cook Airlines Limited**	3,643	206
32	**Hawaiian Airlines**	2,281	205
33	**Kenya Airways**	2,301	202
34	**Kenya Airways**	2,353	197
35	**Austrian Airlines**	1,558	195
36	**Finnair**	2,583	194
37	**Thai Airways**	2,916	193
38	**Qantas Airways**	2,258	189
39	**Delta Air Lines**	1,880	187
40	**American Airlines Group**	1,825	181
41	**Air New Zealand**	2,182	181
42	**Regional Express Holdings**	387	172
43	**Sun Country Airlines**	2,188	169
44	**Jetblue**	1,899	157
45	**Oman Air**	2,555	156
46	**Alaska Air Group**	1,913	155
47	**Air China**	1,980	151
48	**South African Airways**	2,504	149
49	**SriLankan Airlines**	2,801	148
50	**Southwest Airlines**	1,594	147

[1] Passenger revenue divided by RPKs
[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**	3,895	97.3
2	**Regional Express Holdings**	387	44.5
3	**Atlas Air, Inc.**	4,978	34.7
4	**Air Greenland**	1,308	28.0
5	**Miami Air International**	1,726	23.1
6	**StarFlyer**	961	23.0
7	**Flybe**	529	16.4
8	**Omni Air International**	4,590	14.0
9	**Croatia Airlines**	767	13.4
10	**Japan Airlines**	1,587	13.1
11	**ANA Holdings**	1,659	13.0
12	**Austrian Airlines**	1,558	12.5
13	**Envoy Air**	798	12.3
14	**Air Wisconsin**	582	11.8
15	**Horizon Air**	537	11.3
16	**Lufthansa Parent**	2,338	11.3
17	**Lufthansa Group**	2,008	11.2
18	**Delta Air Lines**	1,880	9.9
19	**American Airlines Group**	1,825	9.9
20	**Fastjet**	775	9.8
21	**British Airways**	3,245	9.6
22	**SAS**	1,333	9.5
23	**Air France-KLM**	2,960	9.4
24	**United Continental Holdings**	2,351	9.3
25	**KLM - Royal Dutch Airlines**	3,166	9.3
26	**Southwest Airlines**	1,594	9.2
27	**International Airlines Group**	2,412	9.2
28	**Luxair Group**	1,112	9.1
29	**Hawaiian Airlines**	2281	9.0
30	**Nok Air**	665	9.0
31	**Royal Jordanian Airlines**	2,548	8.9
32	**EL AL Israel Airlines**	3,775	8.8
33	**Avianca Holdings**	1,366	8.8
34	**Kenya Airways**	2,301	8.8
35	**Swiss International Air Lines**	2,408	8.8
36	**Azul S.A.**	943	8.4
37	**Aegean Airlines**	1,048	8.4
38	**Kenya Airways**	2,353	8.4
39	**Qantas Airways**	2,258	8.4
40	**Virgin Australia**	1,555	8.3
41	**Air New Zealand**	2,182	8.3
42	**China Airlines**	2,656	8.3
43	**Jetblue**	1,899	8.3
44	**Alaska Air Group**	1,913	8.1
45	**Air Canada**	2,847	8.1
46	**Korean Air**	3,028	8.0
47	**PSA Airlines**	628	7.8
48	**Sun Country Airlines**	2,188	7.7
49	**Copa Holdings**	3,372	7.7
50	**Air China**	1,980	7.6

[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, Omni Air International and Miami Air head this list based on their limited and specialised non-scheduled passenger activity. The next few in the ranking are scheduled airlines: Air Greenland, Emirates EL AL 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, StarFlyer 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.

Other than Southwest which sneaks in at number 50 there are no LCCs appearing on this ranking, reflecting their relatively short average stage length and “no frills” offerings.

Air Transport International 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, Atlas Air 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, Delta, American, British Airways and SAS with their relatively short average trip length and Air France-KLM.

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.

Japan Airlines 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. Increasingly dominated by the "mega" groups, the top 10 airline groups comprise 45% of the total RPKs for the sample of 133 airline groups.

The phenomenon of Emirates' growth is evident from their ranking in 4th place, up from 8th five years ago, edging out Lufthansa, IAG and Air France-KLM. The Chinese majors come in at numbers 8, 10 and 11. Latam at number 22 is the largest of the Latin American carriers. Low cost carrier Southwest comes in at number 9 and Ryanair at number 12.

Top 50 by Passenger Load Factor

Heading the list for the second time is Ryanair at 95.5%, followed by Easyjet, Spicejet, TUI Airways, Wizz Air, Spring Airlines and jet2.com all of which had load factors in excess of 90%. All of the Top 50 achieved load factors in excess of 80% including two US and two European "mega" carrier groups.

Top 50 by RPKs

Rank	Airline	RPKs (m)
1	American Airlines Group	364,269
2	Delta Air Lines	350,374
3	United Continental Holdings	348,038
4	Emirates	292,221
5	Lufthansa Group	261,156
6	International Airlines Group	252,819
7	Air France-KLM	248,475
8	China Southern	230,697
9	Southwest Airlines	207,672
10	Air China	201,078
11	China Eastern	183,182
12	Ryanair	162,579
13	Lufthansa Parent	152,750
14	British Airways	146,561
15	Air Canada	137,015
16	Turkish Airlines	136,947
17	Aeroflot	130,222
18	SIA Group	129,798
19	Cathay Pacific	126,663
20	Hainan Airlines	121,223
21	Qantas Airways	121,178
22	Latam Airlines Group	115,693
23	KLM - Royal Dutch Airlines	103,487
24	Easyjet	89,685
25	ANA Holdings	89,405
26	Alaska Air Group	84,230
27	Korean Air	77,843
28	Jetblue	76,025
29	Thai Airways	71,634
30	Japan Airlines	67,656
31	Norwegian Air Shuttle	63,320
32	Latam Brasil	57,668
33	Indigo	55,524
34	Iberia	54,967
35	Airasia	50,805
36	Shenzhen Airlines	49,346
37	Jet Airways	48,664
38	Wizz Air	47,210
39	Garuda Indonesia	46,300
40	Eva Airways	45,841
41	Swiss International Air Lines	45,597
42	Asiana Airlines	44,211
43	Westjet	41,688
44	Avianca Holdings	40,243
45	China Airlines	40,171
46	SAS	40,078
47	Grupo Aeromexico	39,836
48	Spirit Airlines	39,599
49	Virgin Australia	37,576
50	GOL	37,230

Top 50 by Passenger load factor

Rank	Airline	Load factor
1	Ryanair	95.5%
2	Easyjet	93.6%
3	SpiceJet	93.6%
4	TUI Airways	93.5%
5	Wizz Air	91.6%
6	Spring Airlines	90.6%
7	Jet2.com	90.5%
8	Thomas Cook Airlines Limited	89.9%
9	Grupo VivaAerobus	89.9%
10	Jeju Air	89.3%
11	KLM - Royal Dutch Airlines	88.4%
12	Norwegian Air Shuttle	87.5%
13	Indigo	87.4%
14	Thai AirAsia	87.2%
15	Airasia	87.1%
16	Juneyao Airlines	86.9%
17	Peach Aviation	86.9%
18	Air France-KLM	86.8%
19	Frontier Airlines	86.4%
20	Hainan Airlines	86.1%
21	Hawaiian Airlines	85.9%
22	Delta Air Lines	85.6%
23	Nok Air	85.6%
24	Vanilla Air	85.5%
25	S7 Airlines	85.2%
26	Latam Airlines Group	84.8%
27	Vueling Airlines	84.7%
28	EL AL Israel Airlines	84.7%
29	Pegasus Airlines	84.6%
30	Skymark Airlines	84.6%
31	Avianca Brasil	84.5%
32	Cathay Pacific	84.4%
33	Jetblue	84.4%
34	Volaris	84.4%
35	Alaska Air Group	84.3%
36	Latam Brasil	84.1%
37	Iberia	84.1%
38	Southwest Airlines	83.9%
39	Jet Airways	83.6%
40	Westjet	83.6%
41	Finnair	83.3%
42	Spirit Airlines	83.2%
43	Copa Holdings	83.2%
44	Aegean Airlines	83.2%
45	Avianca Holdings	83.1%
46	Aeroflot	82.8%
47	International Airlines Group	82.6%
48	Air New Zealand	82.6%
49	Shenzhen Airlines	82.5%
50	United Continental Holdings	82.4%

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. That said, Ryanair's pilot shortage and strike experience of the last 12 months shows that the LCCs are not immune from cost pressures.

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. Heading the list of passenger carriers are Vietnam Airlines though this may suggest that disclosure is insufficient to calculate this ratio reliably. The list of passenger carriers with possibly more reliable data are Xiamen Airlines, S7, Wizz Air, Interjet, and Scoot.

They are then followed by creditable performances by other LCCs and leisure carriers (including Airasia X, Nok Air, Vueling, Ryanair, Vietjet, Spicejet, Volaris and Indigo). With cost pressures in China, none of the Chinese Big 3 make the Top 50. Their average staff cost increased to almost $40,000 in 2017/18, up from $26,600 two years ago.

The developed mega carrier groupings also do not qualify for a Top 50 ranking. Lufthansa's ratio is 25.4% (down from 25.9%) while IAG and Air France-KLM are 16.5% (down from 17.5%) and 29.6% (down from 30.1%) respectively. After big increases last year, the US majors with the exception of Delta saw their cost ratios continue to rise in 2017/18. Delta's ratio is 27.9%, UAL's 29.3% and American Airlines is 31.4%. These were all around 25% - 26% two years ago. Southwest is an unexpectedly high 34.6%, 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 17.3%. However its low cost subsidiaries are on the list. The major Latin American carriers had quite varied results. Copa's ratio increased from 13.2% to 16.4%, Avianca's ratio was 15.9% while Latam remain laggards at 19.9%.

Xiamen Airlines 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	**Polar Air Cargo**	120.9	1.8%
2	**Vietnam Airlines**	3.6	2.1%
3	**Enter Air**	21.6	3.1%
4	**Xiamen Airlines**	N/A	4.4%
5	**SIA Cargo**	83.4	5.1%
6	**S7 Airlines**	35.5	5.7%
7	**USA Jet**	N/A	6.4%
8	**Air Italy**	15.1	6.7%
9	**Lucky Air**	N/A	7.5%
10	**Wizz Air**	55.4	7.6%
11	**Evelop Airlines**	63.1	8.0%
12	**Cargojet Airways**	28.5	8.2%
13	**Scoot**	N/A	8.3%
14	**Interjet**	N/A	8.6%
15	**Airasia X**	41.8	9.2%
16	**Hainan Airlines**	45.5	9.4%
17	**Air Astana**	14.4	9.4%
18	**Blue Panorama**	54.0	9.8%
19	**Tigerair**	N/A	9.8%
20	**Nok Air**	N/A	9.9%
21	**Tianjin Airlines**	N/A	10.2%
22	**Vueling Airlines**	65.0	10.3%
23	**Ryanair**	80.7	10.3%
24	**Vietjet Air**	36.6	10.7%
25	**Spicejet**	N/A	11.1%
26	**Volaris**	32.2	11.4%
27	**Indigo**	60.0	11.5%
28	**Aegean Airlines**	23.0	11.5%
29	**PAL Holdings**	44.4	11.8%
30	**Kenya Airways**	27.0	12.0%
31	**Jet2.com**	50.3	12.3%
32	**Jin Air**	N/A	12.3%
33	**Air Busan**	56.8	12.4%
34	**Transat A.T.**	N/A	12.4%
35	**TUI Airways**	81.5	12.6%
36	**Cargolux**	143.7	12.7%
37	**Air Seoul, Inc.**	52.1	12.7%
38	**Jet Airways**	N/A	13.0%
39	**Pegasus Airlines**	22.1	13.3%
40	**Thomas Cook Airlines Limited**	N/A	13.6%
41	**Garuda Indonesia**	N/A	13.6%
42	**Royal Jordanian Airlines**	29.5	14.1%
43	**Easyjet**	79.5	14.2%
44	**Emirates**	57.1	14.2%
45	**Jetstar Asia**	N/A	14.3%
46	**Asiana Airlines**	N/A	14.4%
47	**Starflyer**	75.6	14.5%
48	**Eastarjet**	58.3	14.7%
49	**Kenya Airways**	N/A	14.8%
50	**Brussels Airlines**	68.2	14.9%

Source: The Airline Analyst

Analysis: **RASK-CASK margin**

Air Greenland heads the Top 50 by RASK-CASK margin

Top 50 by RASK-CASK

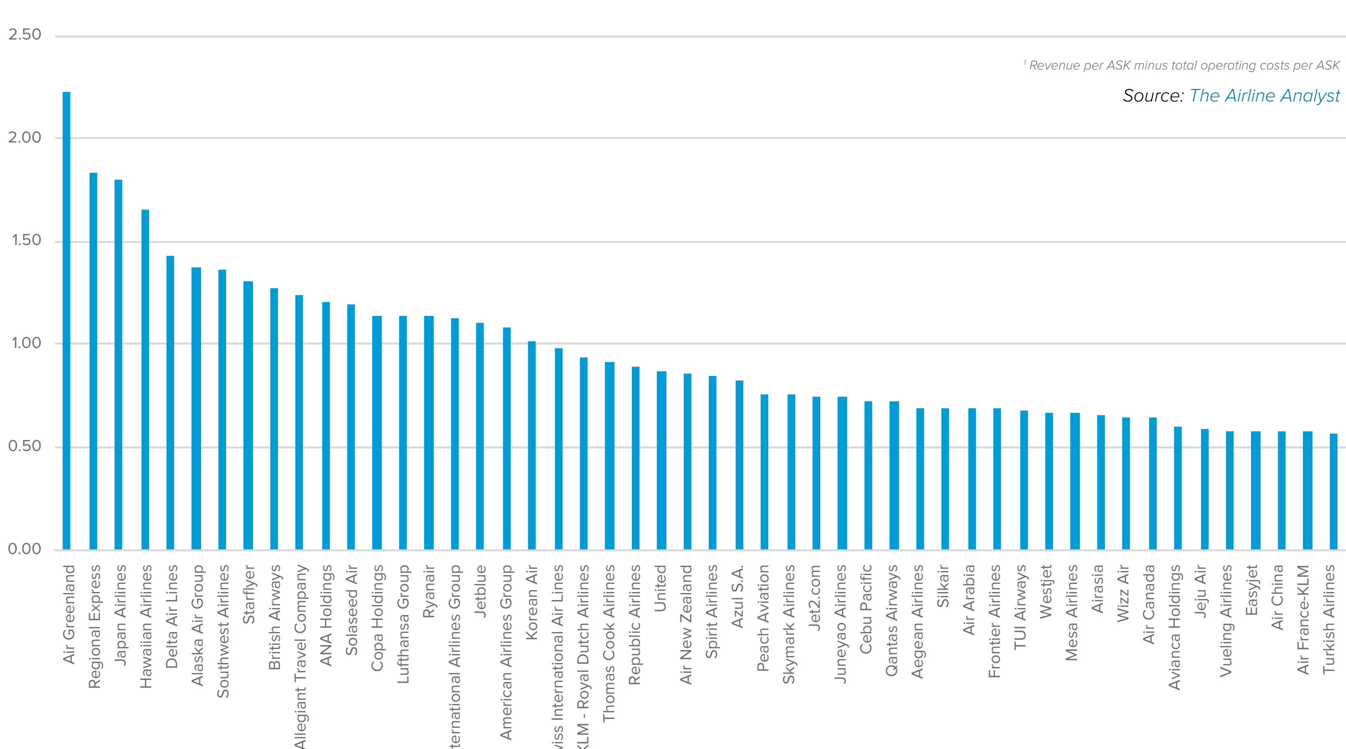
RASK-CASK margin has become one of the key ratios monitored by airline management and analysts alike in assessing competitiveness and trends over time.

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 BA or the US majors. However if it is not, the strength of competitive forces will root out the airline's weakness over time.

Nineteen of our Top 50 achieved a RASK-CASK margin in excess of US$1 cents, seven of them from the US. Excluding the US airlines, Japan Airlines, a major network carrier, topped the list at US$1.8 cents followed by Hawaiian Airlines at US$1.66 cents. Copa was the highest ranked Latin American carrier in 13th position, much improved on last year's 33rd. Demonstrating the volatility of this key ratio, RASK-CASK margin for Air New Zealand declined from 1.55 cents to 0.86 cents.

Outside these leaders British Airways and Lufthansa were the highest ranked of the European majors. Air-France-KLM showed progress by making 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

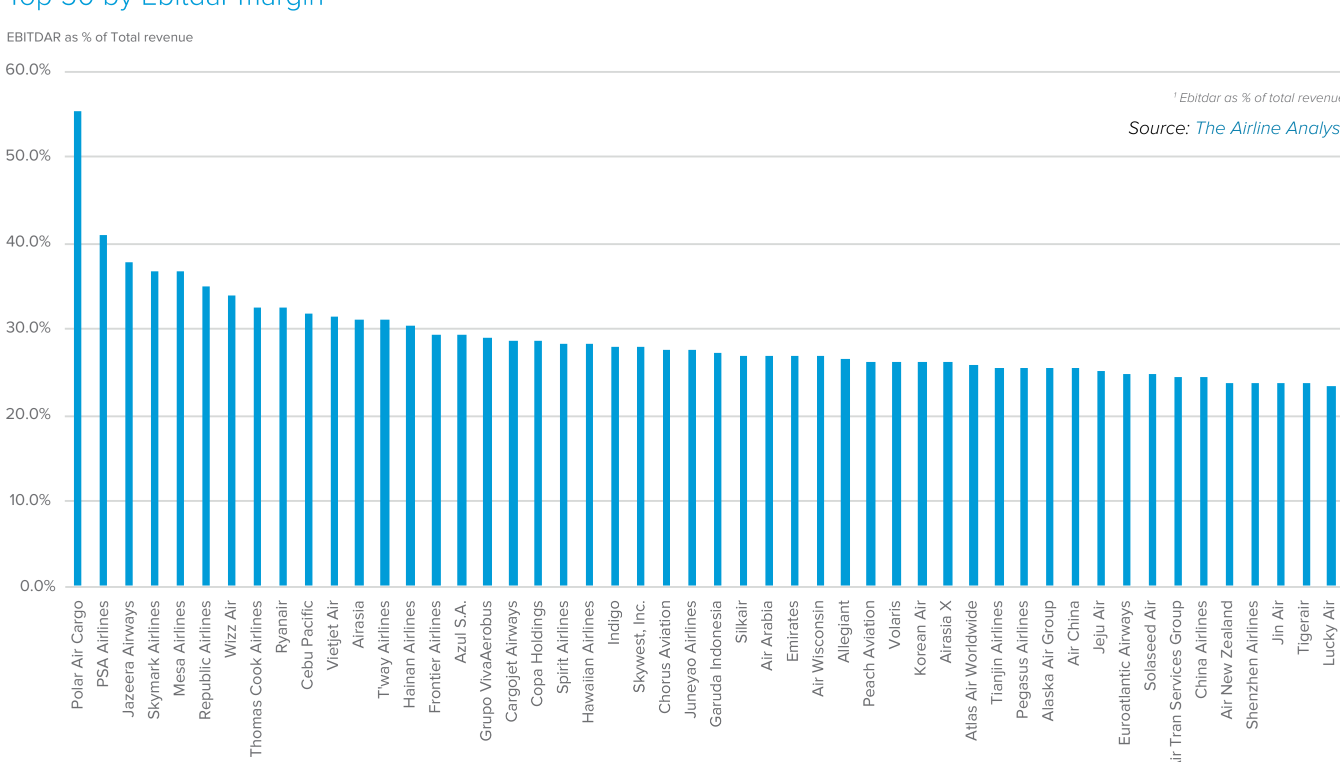
Top 50 by Ebitdar margin
Unlike some other measures, Ebitdar margin (earnings before interest, tax, depreciation and amortisation) is neutral to the means of aircraft financing (owned or leased) and degree of financial leverage of an airline. While a high Ebitdar margin will therefore not alone make 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 competitiveness of the industry and fuel and staff cost pressures, the Ebitdar margin for the sample of 133 airline groups declined from 21.5% to 20.5%.

The passenger carriers on the list are headed by PSA Airlines, Jazeera Airways, Skymark and Mesa 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 and only Air China of the 3 Chinese "majors" made it.

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 8 x 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.

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 3.1x for Qatar Airways. 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 more than half a decade ago. Other majors on the list include Ryanair, Southwest, easyJet, Delta and British Airways. Air France-KLM and Emirates made the list for the first time since we first published "Airline Top 50" five years ago but Cathay Pacific and SAS 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	Luxair Group	0.0
2	Compass Airlines	0.0
3	SIA Cargo	0.0
4	Japan Airlines	0.0
5	Air Greenland	0.0
6	Regional Express Holdings	0.1
7	Ryanair	0.4
8	Southwest Airlines	0.4
9	USA Jet	0.4
10	Easyjet	0.7
11	Jet2.com	0.7
12	Swiss International Air Lines	0.8
13	Lufthansa Group	0.9
14	Jetblue	1.1
15	Delta Air Lines	1.1
16	British Airways	1.2
17	Icelandair	1.2
18	Air Arabia	1.5
19	International Airlines Group	1.5
20	Copa Holdings	1.6
21	Hawaiian Airlines	1.6
22	Alaska Air Group	1.6
23	UPS Airlines	1.8
24	Wizz Air	1.9
25	SIA Group	1.9
26	Qantas Airways	1.9
27	Air Italy	1.9
28	Allegiant Travel Company	2.0
29	Westjet	2.0
30	Transat A.T.	2.0
31	Silkair	2.1
32	Air New Zealand	2.1
33	Jin Air	2.2
34	Air Canada	2.2
35	Air Transport Services Group	2.3
36	Kalitta Air	2.6
37	Thomas Cook Airlines Limited	2.7
38	KLM - Royal Dutch Airlines	2.7
39	Air France-KLM	2.7
40	Comair Limited	2.8
41	United Continental Holdings	2.8
42	Skymark Airlines	2.9
43	Cebu Pacific	2.9
44	Frontier Airlines	2.9
45	Jeju Air	2.9
46	Spirit Airlines	3.0
47	Horizon Air	3.0
48	Iberia	3.0
49	ANA Holdings	3.1
50	Qatar Airways	3.1

[1] *Adjusted net debt/Ebitdar*

Top 50 by Highest Fixed Charge Cover[1]

Rank	Airline	Times
1	Air Arabia	Infinite
2	Luxair	Infinite
3	USA Jet	308.0
4	Air Greenland	34.0
5	Southwest Airlines	21.0
6	Japan Airlines	19.5
7	Regional Express Holdings	19.0
8	Lufthansa Group	17.7
9	Ryanair	16.5
10	Swiss International Air Lines	11.5
11	Delta Air Lines	11.3
12	Allegiant Travel Company	10.9
13	British Airways	9.3
14	Jetblue	8.6
15	Air Transport Services Group	8.6
16	SIA Cargo	8.4
17	UPS Airlines	8.3
18	Alaska Air Group	6.2
19	Qantas Airways	6.2
20	Icelandair	5.7
21	Easyjet	5.6
22	Air New Zealand	5.5
23	Copa Holdings	5.4
24	Westjet	5.0
25	Scoot	5.0
26	International Airlines Group	4.9
27	Hawaiian Airlines	4.9
28	Turkish Airlines	4.6
29	United Continental Holdings	4.4
30	SIA Group	4.2
31	Cargolux	4.2
32	Korean Air	4.1
33	Air Canada	4.0
34	Cebu Pacific	3.7
35	American Airlines Group	3.7
36	KLM - Royal Dutch Airlines	3.6
37	ANA Holdings	3.6
38	Kalitta Air	3.5
39	Horizon Air	3.5
40	Republic Airlines	3.5
41	Xiamen Airlines	3.4
42	Air France-KLM	3.3
43	China Airlines	3.3
44	Spirit Airlines	3.1
45	Air Italy	3.0
46	Thomas Cook Airlines Limited	3.0
47	Air China	3.0
48	Comair Limited	2.9
49	Cargojet Airways	2.9
50	China Southern	2.9

[1] *Ebitdar/Net interest + Rent*

Source: *The Airline Analyst*

Top 50 by Highest fixed charge cover
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 such as Korean Air and two of the Chinese majors make this list despite their higher leverage (China Eastern has dropped out of the Top 50). 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 dropped out of the list after returning last year.

Air Arabia heads 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. At the other end of the scale, many market participants consider that liquidity of 3 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 39 airlines achieved this level, up from 30 last year. Three out of the top 4 are from China, including Hainan Airlines at the figure of 53.2%, which may surprise given all the speculation about its controlling shareholder.

A factor to consider is that some airlines increasingly rely on committed liquidity facilities which are not captured in our data, as with Qantas, British Airways and the other majors. 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. Emirates made it on to this list after missing out last year.

Tianjin Airlines heads the Top 50 by Highest liquidity

Top 50 by Highest liquidity

Rank	Airline	%
1	**Tianjin Airlines**	93.7%
2	**Lucky Air**	92.0%
3	**Air Arabia**	67.8%
4	**Hainan Airlines**	53.2%
5	**Ryanair**	51.0%
6	**Wizz Air**	50.3%
7	**Qatar Airways**	50.1%
8	**TUI Airways**	48.3%
9	**Euroatlantic Airways**	47.7%
10	**Scoot**	45.4%
11	**Fastjet**	43.5%
12	**Jazeera Airways**	41.2%
13	**Spring Airlines**	38.9%
14	**Luxair Group**	38.7%
15	**Jin Air**	38.2%
16	**Copa Holdings**	37.3%
17	**Pegasus Airlines**	37.2%
18	**Finnair**	37.2%
19	**Frontier Airlines**	37.1%
20	**Spirit Airlines**	34.1%
21	**Silkair**	33.8%
22	**Jet2.com**	32.8%
23	**Japan Airlines**	32.5%
24	**Vueling Airlines**	32.4%
25	**Indigo**	31.2%
26	**Westjet**	30.5%
27	**Vietjet Air**	30.4%
28	**S7 Airlines**	30.3%
29	**Jeju Air**	29.3%
30	**International Airlines Group**	29.1%
31	**Atlantic Airways**	28.3%
32	**Volaris**	28.0%
33	**Flydubai**	27.6%
34	**Allegiant Travel Company**	27.4%
35	**Grupo VivaAerobus**	27.3%
36	**Air New Zealand**	26.8%
37	**Easyjet**	26.3%
38	**Aegean Airlines**	25.7%
39	**Eva Airways**	25.5%
40	**Air Canada**	23.4%
41	**Azul S.A.**	23.1%
42	**Cebu Pacific**	23.0%
43	**British Airways**	22.9%
44	**Emirates**	22.2%
45	**Skywest, Inc.**	21.4%
46	**Republic Airlines**	20.6%
47	**Alaska Air Group**	20.4%
48	**SAS**	20.4%
49	**Jetstar Asia**	20.4%
50	**Virgin Atlantic**	20.2%

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 $438 billion as of 3rd August 2018, up from $338 billion last year. Delta continues to be the top ranked airline with a market capitalisation of $38 billion, followed by three of its US rivals.

China contributes three of the top 15 (Hainan Airlines has dropped from number 14 to number 21) while the "mega" European carriers of IAG, Lufthansa, and Air France-KLM make it into positions 5, 9 and 25, respectively. Latam remains the highest ranked Latin American carrier in 17th position, up from 20th last year and 7th two years ago, followed by Copa in 26th.

Southwest leads the LCC stakes, ahead of Ryanair (6), Easyjet (15), Spirit (31), Allegiant (37), Westjet (42), Wizz Air (29). The two major Japanese carriers come in at numbers 8 and 10. Azul, which completed its IPO in 2017 comes in at $4.1 billion and 24th position.

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 two small carriers with limited capital bases. Among the larger carriers, the best performance came from British Airways at 20%, Swiss at 19%, KLM at 18% and Hawaiian and Lufthansa at 17%. A total of 32 generated returns in excess of 10%, down from 39 last year. As before, many of the long established network carriers like Latam and Cathay Pacific earned returns that are unlikely to have exceeded their cost of capital.

Top 50 by Market capitalisation[1]

Rank	Airline	$m
1	Delta Air Lines	37,512
2	Southwest Airlines	33,287
3	United Continental Holdings	22,207
4	American Airlines Group	17,692
5	International Airlines Group	17,655
6	Ryanair	17,166
7	Air China	14,323
8	Japan Airlines	12,644
9	Lufthansa Group	12,592
10	ANA Holdings	11,862
11	China Eastern Airlines	10,300
12	Qantas Airways	8,677
13	China Southern Airlines	8,629
14	SIA Group	8,317
15	Easyjet	7,868
16	Alaska Air Group	7,728
17	Latam Airlines Group	6,792
18	Cathay Pacific	5,954
19	Jetblue	5,712
20	Indigo	5,564
21	Hainan Airlines	5,404
22	Air Canada	4,937
23	Spring Airlines	4,368
24	Azul S.A.	4,143
25	Air France-KLM	4,119
26	Copa Holdings	4,028
27	Turkish Airlines	3,952
28	Juneyao Airlines	3,440
29	Wizz Air	3,118
30	Skywest, Inc.	3,086
31	Spirit Airlines	2,906
32	Airasia	2,859
33	Air New Zealand	2,444
34	Korean Air	2,443
35	Hawaiian Airlines	2,088
36	Eva Airways	2,052
37	Allegiant Travel Company	2,010
38	Aeroflot	1,955
39	PAL Holdings	1,945
40	China Airlines	1,740
41	Atlas Air Worldwide	1,613
42	Westjet	1,515
43	Virgin Australia	1,424
44	Air Arabia	1,334
45	Norwegian Air Shuttle	1,290
46	Air Transport Services Group	1,254
47	Finnair	1,140
48	Grupo Aeromexico	1,069
49	Jeju Air	988
50	Thai Airways	940

[1] *Closing prices 28 July, 2018*

Top 50 by Return on invested capital[1]

Rank	Airline	Load Factor
1	Jet2.com	30.4%
2	USA Jet	26.2%
3	British Airways	20.0%
4	Air Italy	19.6%
5	Swiss International Air Lines	18.8%
6	Air Greenland	18.1%
7	KLM - Royal Dutch Airlines	17.9%
8	Thomas Cook Airlines Limited	17.6%
9	Hawaiian Airlines	17.0%
10	Lufthansa Group	17.0%
11	Frontier Airlines	15.6%
12	Regional Express Holdings	15.5%
13	Evelop Airlines	15.2%
14	International Airlines Group	14.6%
15	Vueling Airlines	14.4%
16	Japan Airlines	13.8%
17	TAP Group	12.8%
18	Delta Air Lines	12.3%
19	Alaska Air Group	12.0%
20	Air Canada	11.6%
21	Jetblue	11.6%
22	TUI Airways	11.6%
23	Comair Limited	10.8%
24	Skymark Airlines	10.7%
25	Air France-KLM	10.5%
26	United Continental Holdings	10.5%
27	Jin Air	10.4%
28	Aegean Airlines	10.2%
29	Euroatlantic Airways	10.1%
30	Sun Country Airlines	10.0%
31	Solaseed Air	10.0%
32	Cargolux	10.0%
33	S7 Airlines	9.9%
34	Air Mauritius	9.9%
35	Westjet	9.9%
36	Air Astana	9.8%
37	Qantas Airways	9.7%
38	Air New Zealand	9.7%
39	Tway Airlines	9.7%
40	Peach Aviation	9.7%
41	Wizz Air	9.7%
42	StarFlyer	9.7%
43	American Airlines Group	9.5%
44	Cebu Pacific	9.4%
45	Omni Air International	9.2%
46	Air Busan	9.0%
47	Spirit Airlines	8.9%
48	Easyjet	8.8%
49	Jeju Air	8.8%
50	Aeroflot	8.7%

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

Source: *The Airline Analyst*

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