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The big **squeeze**

Airlines will continue to struggle in the near term – although the Americas are bucking the trend – while lessors thrive, but a big question mark hangs over Hong Kong SAR.

As we approach the final quarter of the year clouds are gathering on the horizon. In June, International Air Transport Association (IATA) downgraded its forecast for global airline profitability for 2019 to $28 billion from the $35.5 billion profit it previously predicted in December 2018. Such a result would mean a reduction on the $30 billion net post-tax profits which airlines generated in 2018, the airline association pointed out.

Costs are expected to grow by 7.4%, outpacing an expected 6.5% rise in revenues. As a result, net margins are expected to be "squeezed" to 3.2%, from 3.7% in 2018, while profit per passenger will also decline to $6.12 from $6.85 in 2018.

IATA director-general Alexandre de Juniac noted that strong competition was curtailing airline yields, while rising costs from everything from labour to fuel and infrastructure, combined with an "intensifying" trade war between the USA and China, means airline margins would be squeezed.

As always the picture is not uniform across the globe. While carriers in Europe and the Asia-Pacific regions are expected to experience a fall in profits, North American carriers will deliver an improved post-tax profit of $15 billion, up from $14.5 billion in 2018.

IATA estimates Latin American carriers will also improve their net profits to $200 million from a $500 million loss in 2018. Middle Eastern carriers will incur a net loss of $1.1 billion in 2019, a worse result than the $1 billion loss of 2018. African airlines will suffer a $100 million loss for the year, unchanged from their performance in 2018, says the association.

In this issue, *Airfinance Journal* is publishing its annual Airline Top 50, a study of the financial performance of 163 airlines. This shows some adverse trends - airline EBITDAR margins declined by 200 basis points to 18.5% in 2018/19 - well down on the last three years. Also, the number of airlines making losses has increased to 43 from 28, while liquidity has declined – driven by cost-to-carry, stock buybacks and the availability of revolving credits. While 31 airlines generated a return on capital employed of more than 10%, the vast majority generated significantly lower returns and will not have covered their costs of capital.

The airline environment may be deteriorating but the aircraft leasing industry continues to perform well. The public lessors reported excellent results at the end of the first half and, as they continue to acquire new-technology aircraft, they transition older and midlife assets.

Investor demand for acquiring leased aircraft is a primary driver of their sales programmes, which generate gains on sales, and there continues to be strong demand from buyers for current-technology mid-aged narrowbody aircraft.

Lessors are unanimous in saying that the shortage created by the Boeing 737 Max grounding and the Airbus delivery delays have, if anything, strengthened near-term single-aisle demand. Placing and delivering a Boeing 737NG can be done within two weeks of repossession, as one lessor said.

There has also been an uptick in lease rentals for those models as well as the other new-technology aircraft in demand, especially the A321neo.

There is no shortage of liquidity for the industry either. The $140 billion-worth of new aircraft hitting the market this year, bar nine months of non-Max deliveries, will be met because all indicators are "green".

True we hear some portfolios being traded, among them an increasing number of Chinese leasing companies, but this is the nature of the business.

More worrying is the situation in Hong Kong SAR (HKSAR) and the potential impact on the leasing industry.

After years of lobbying, HKSAR passed legislation in June 2017 to lower the effective tax rate for aircraft lessors domiciled there to 1.65%.

The tax reform is aimed at giving a tax-favourable environment to attract global lessors. Since 2017, some lessors have extended their network of leasing platforms to HKSAR and/or opened an office.

"People talk about being nervous and there's certainly some concern at some Hong Kong-based companies," says one source.

"The main impact is for those who are looking at where they should position their Asian offices in the longer term and some who have been looking at HK are now thinking that they should focus on Singapore or even Shanghai where they see less chance of unrest," he adds.

Another source told *Airfinance Journal* that, so far, they are not aware of any transactions that have been postponed or shelved as a result of the recent protests in Hong Kong SAR.

"At the moment, I think people still look at it as a short-term crisis," he says. "It's a hard time for Cathay Pacific and the other airlines there. Probably their financials are going to be affected this year, but they are reasonably financially strong and healthy airlines and can probably sustain a shortfall for a number of months without feeling an impact."

But while Hong Kong SAR is still perceived to be a safe place to do business, this may change if the protests are prolonged or China further "tightens" its grip on the territory, says the source.

"On the very long term and depending on how things go, the new Hong Kong scheme for [encouraging] leasing may play out in light of all those events."

The source adds: "If the crisis was continuing for the longer term and there will be more tightening of China over Hong Kong, perhaps that will make people think twice about setting up their SPVs [special purpose vehicles] or their leasing branch into Hong Kong as opposed to somewhere like Singapore."

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Contents

Cover story

News analysis

News analysis

Features

Features

Airline top 50 supplement

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Kelley to head Kroll ABS team

Kroll Bond Rating Agency (KBRA) named Rosemary Kelley as head of its asset-backed securities (ABS) Group in July.

Kelley was previously co-head of the ABS Group along with Anthony Nocera, who is stepping down from his post. In their eight years as co-heads of the ABS Group, KBRA has rated more than 400 transactions and over $172 billion in issuance.

Kelley will assume responsibility for both consumer and commercial asset classes.

Nocera, who joined the company in September 2011, will continue to support the ABS team as a senior adviser over the next six to nine months.

The rating agency also announced that Cecil Smart will lead the commercial ABS team, reporting to Kelley.

Smart has been with KBRA since 2014 and focuses on esoteric and renewable transactions, including residential and commercial solar, PACE, broadcast television rights and mortality-linked assets.

Rosemary Kelley

Marsh hires senior aviation adviser

Michael Tarling

Marsh has appointed Michael Tarling to the newly created role of senior adviser at its aviation practice, Marsh JLT Specialty.

The insurance broker and risk adviser says that Tarling will be responsible for delivering senior client engagement and risk advisory services to Marsh JLT Specialty's aviation clients globally.

Based in Chicago, Tarling reports to Garrett Hanrahan, aviation practice leader in the USA at Marsh JLT Specialty.

Tarling, who was previously employed by Marsh from 2005-11, has worked in the insurance industry for more than four decades, specialising in aviation and aerospace insurance, risk management and claims. Most recently, he was assistant treasurer, risk management and insurance, at Boeing for eight years.

Erste Bank hires former Flybe executive

Erste Bank has hired former Flybe and CarGologic Air executive Sylvain Gloux as senior originator.

Gloux has moved from CarGologic Air, where he had been group fleet development executive since October 2018. Before that, he was head of fleet trading and financing for Flybe for more than three years.

Gloux says he will assist in managing and growing the bank's aerospace finance portfolio globally, which is focused on providing senior debt secured by aerospace assets such as aircraft, engines and parts.

The bank has also hired former DVB Bank executive Viktor Berta to strengthen its finance team.

Rousseau moves to EMEA for Natixis

Natixis has named Alain Rousseau as director aviation finance for the Europe, Middle East and Africa regions (EMEA), based in Paris.

Rousseau previously worked for Natixis as director aviation finance covering airlines and aircraft lessors in the Asia-Pacific.

He joined Natixis in September 2018 after almost 11 years at BNP Paribas, where he held positions in Singapore.

Winston & Strawn gets new aviation finance lawyer

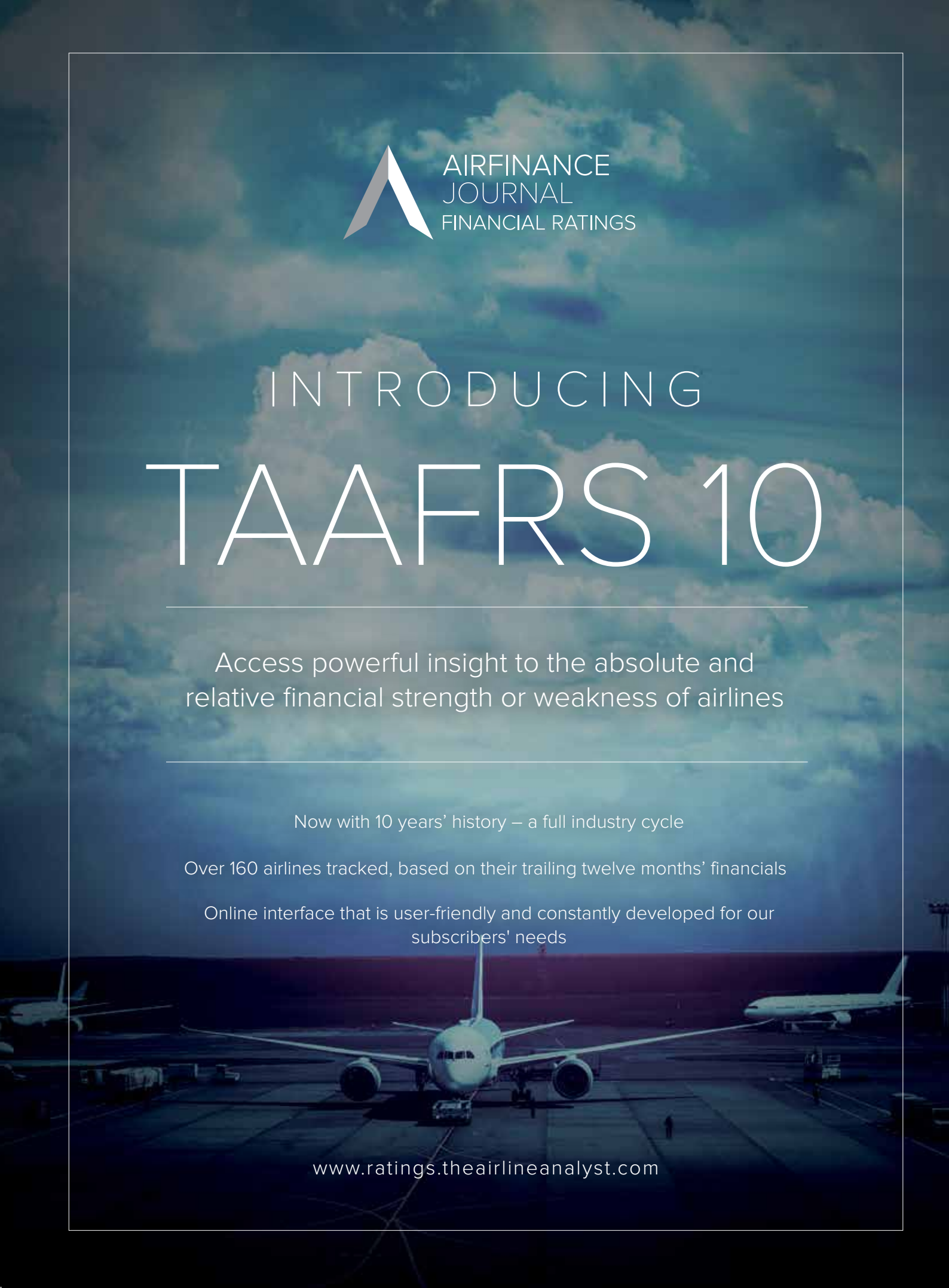
Winston & Strawn has hired aviation finance lawyer Alison Weal as a partner in the company's London office.

Weal will support clients of the firm's aviation finance practice, led by London-based partner Mark Moody, in managing a "growing set of complex issues in the sector", says the law firm.

Educated in the UK and France, Weal has experience in cross-border aviation financing, including finance leases, operating leases, tax-based leasing structures, capital markets structures and export credit-supported financing. Her clients include banks, export credit agencies, operating lessors and airlines.

Weal's LinkedIn profile shows she has worked as an asset finance solicitor for White & Case and, before that, was a solicitor for Watson, Farley & Williams.

Alison Weal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Meijers returns to Airbus

Paul Meijers has joined Airbus as executive vice-president leasing and financing, customers. He moved from PK Airfinance, where he was president of the lending arm of aircraft lessor GECAS.

Meijers spent the previous 14 years at GECAS as senior vice-president sales and marketing, looking at origination of asset-backed loans to airlines and lessors, as well as purchase of secondary debt from the original equipment manufacturers.

Meijers initially started his career at Airbus as a senior airline analyst in 1989, before moving to Credit Lyonnais/PK Airfinance as vice-president marketing.

In 1995, he rejoined Airbus as customer finance director, before moving to PK Airfinance as vice-president marketing in September 2001.

Nigel Taylor, Airbus's senior vice-president financing and guarantees, left the Toulouse-based manufacturer at the end of June. He had worked for the company for more than 30 years.

Investec Aviation Finance names Narayan as global head

Investec Corporate and Investment Banking (Investec) has appointed Ajeeth Narayan as global head of Investec Aviation Finance, replacing Alok Wadhawan.

Narayan was one of the four founders of the Investec Aviation Finance franchise in 2002 and has been with Investec ever since.

Mike Francis, also one of the founders of the franchise, becomes the executive lead of Investec Aviation Finance.

Celia Britt, who joined Investec in 2005 and most recently managed the aviation portfolio, was named chief operating officer.

Wadhawan left the bank in July along with two other members of the aviation finance team, market sources indicate.

He joined Investec in February 2006. Previously, Wadhawan worked as the assistant director at ANZ Investment Bank, specialising in project finance and structured finance. He started his career at ICICI Bank in corporate and structured finance.

Celia Britt

Investec Aviation Finance says it has $6 billion of aircraft assets under management. Across debt and equity, Investec's aviation funds are exposed to more than 200 aircraft.

Investec Bank chief executive officer, David van der Walt, says: "Investec's Aviation Franchise is a long-term success story for the bank, and it will remain a cornerstone of the business as we continue to invest in its growth."

PAL appoints Santa Maria as president and COO

The board of directors of Philippine Airlines (PAL) appointed of Gilbert Santa Maria as the flag carrier's new president and chief operating officer (COO) in July, replacing industry veteran Jaime Bautista. Santa Maria was handpicked by Lucio Tan, PAL's chairman and chief executive officer.

"It is important for my father's vision to be translated into PAL providing consistent quality service to our customers and, also, the flag carrier serving as a means to contribute to nation-building. With this new leadership, we will accomplish this further," says Vivienne Tan, Tan's daughter, PAL executive vice-president and chief administrative officer.

Santa Maria has three decades of executive management and leadership experience across multiple industries and geographies.

Until early 2018 he was COO of Washington-based IBEX Global where he was responsible for the firm's 18,000 global employees. Before IBEX, he was COO and chief financial officer of IQ BackOffice, a California-based finance and accounting outsourcer.

His predecessor, Bautista, announced his resignation in June after leading the flag carrier for more than 26 years. He is credited with modernising the airline's fleet, as well as significantly expanding its network and on-board product.

PAL is undergoing an extensive fleet-renewal programme, replacing older aircraft with Airbus A321neos, A350-900s and Boeing 777-300ERs.

The carrier operates a fleet of 79 aircraft, *Airfinance Journal*'s Fleet Tracker data shows. Of those, 52 aircraft are owned by the airline and the rest are sourced from 15 global lessors.

In early 2019, ANA Holdings (ANAHD) invested $95 million to acquire 9.5% of PAL parent PAL Holding's outstanding shares. ANAHD acquired the shares from Trustmark Holdings, which is owned by the influential Tan family and is the largest shareholder of PAL Holdings.

Allman joins MUFG

Japanese bank MUFG has appointed Keith Allman as a managing director for its structured finance division. He will be based in New York.

Allman joins from Loomis, Sayles & Company, where he had been vice-president, senior securitised asset analyst, over the past three years.

In his new role at MUFG he will focus on the aviation asset-backed securitisation (ABS) business.

At Loomis, he invested across the ABS capital stack from investment-grade/non-investment-grade debt to equity. He also worked on lease transactions with a focus on aircraft, marine shipping containers, rail car and equipment leases.

Before his Loomis assignment, Allman was a director in structured credit global markets at Deutsche Bank, with a particular emphasis on transportation assets, including loans and leasing for commercial and corporate aircraft, marine shipping containers and rail cars.

He also worked on the origination process for new business development and providing analysis for investors.

Keith Allman

Jolco false alarm

Fears over the impact of the tax law change related to Japanese operating lease with call option (Jolco) financings have been alleviated, writes **Dominic Lalk**.

In April, the Japanese tax authorities adopted a tax law change affecting the deductibility for interest payments for leasing entities in Japanese operating lease with call option (Jolco) financings.

The change will restrict the tax allowance for interests paid out to a non-Japanese lender and which are in excess of a threshold set at 20% of the borrower's earnings before interest, tax, depreciation and amortisation (EBITDA).

This 20% figure is lower than the 30% recommended by the OECD in Action 4 of its 2015 final report on the Base Erosion and Profit Shifting (BEPS) project.

For the past decade, the once limited pool of lenders into Jolcos has widened, from consisting mainly of Japanese banks and the Tokyo branches of non-Japanese banks to include overseas lenders courtesy of double tax treaties. Initially, the market was apprehensive, bracing for potential impact. The concern was that the tax law change could easily exceed the 20% threshold, particularly once all the fees in year one had been taken into account. These concerns were alleviated when stakeholders realised that lessors and lessees will not be subjected to increased or new withholding or tax cost.

"Now that there is certainty around the change, transactions may be structured in a way which mitigates the impact of the change," says White & Case Hong Kong partner, Simon Collins. "We are seeing some deals where a strong lessee credit is simply looking for Japanese equity to accept that the loan is fully open to treaty lenders. We are also seeing some deals where a percentage cap is placed on treaty lender participation. Other options will likely be used in future deals as the market adjusts to this new regulation," adds Collins.

"The market got comfortable again, including treaty lenders," says Jackson Chow, a partner at Bryan Cave Leighton Paisner. "It's still a pretty user-friendly product and we're seeing robust demand from PRC-based companies; we're doing a lot deals," adds Chow.

Shakers and movers in aircraft financing expect to see more innovative debt structures to emerge in the second half of this year and in 2020, combining the traditional Jolco with instruments including enhanced equipment trust certificates (EETCs) and Aircraft Finance Insurance Consortium (AFIC) supported-debt.

The first such deals have already begun hitting the market. In June, the Development Bank of Japan (DBJ) funded the world's first insurance-backed Jolco financing, applied to a Boeing 787-9 delivery for El Al. Under the deal, DBJ provided loans to El Al to purchase the

aircraft, while the bank was protected against credit default risk by the Japanese AFIC for the duration of the loan. The Jolco was arranged by SBI Leasing Service and ABL Aviation.

AFIC was formally launched globally by Marsh in June 2017. Japanese AFIC guarantee is offered by Sompo Japan Nipponkoa Insurance and Sompo International, in collaboration with Marsh.

"Through the creation of Japanese AFIC many Japanese financial institutions, especially regional banks, can reduce the lending risks associated with aircraft finance and get involved in this dynamic industry, and offer airline financing solutions with greater confidence," says Robert Morin, AFIC transaction and business development leader at Marsh.

In their relentless quest for increased yields, mature Japanese investors are also expected to take a closer look at the asset-backed securities (ABS) market. Until now, the Japanese have played little or no role in tapping the E-note market on aircraft ABS transactions.

The first such transaction took place in May, when K&L Gates advised JP Lease and Stratos on their JOL AIR 2019-1 aircraft lease ABS transaction, which featured equity sourced in the Japanese operating lease market.

JP Lease sponsored the deal and underwrote the equity to sell to its diversified pool of Japanese corporate clients, while Stratos arranged the acquisition and novation of the aircraft, the debt bridge funding, warehouse loan and ABS issuance, and will service the portfolio to lease maturity.

Proceeds from the ABS issuance were used to acquire a total of 15 aircraft from two separate sellers: GECAS and Standard Chartered, with leases attached to Air Canada, Scoot, Qatar Airways, Flydubai, Gulf Air, AirAsia, Malindo Air, Philippine Airlines, TACA, Brussels Airlines and Batik Air.

The portfolio comprises 13 narrowbody aircraft (63.4% by value) and two widebody aircraft (36.6% by value).

This year Jolco transactions will be closed with debt insured under the Airbus Balthazar structure for the first time. In late July, Turkey's Pegasus Airlines secured financing for an Airbus A320neo delivery under the Airbus new insurance-backed financing product.

Societe Generale-CIB acted as arranger, facility agent and security trustee in the transaction. Pegasus used the Balthazar structure for three A320neos deliveries.

Earlier this year, flag carrier Turkish Airlines became the first airline to combine the Balthazar structure with a French tax lease for the financing of five A321neo aircraft. The transaction was arranged by BNP Paribas, with the latter committing up to $225 million for the portfolio.

"The expectation with a Jolco is that the aircraft will not be traded but will be held by the lessee and operated until the purchase option date."

Simon Collins, partner, White & Case Hong Kong

Turkish Airlines is a prominent tax lease user. Turkish has about 70 aircraft under Jolco structures.

Chief financial officer, Murat Seker, has said Turkish Airlines closed the first Jolco in 2007 and since then the carrier has regularly tapped the Jolco market.

"A third of our financing is from the Japanese market and the Jolco. This shows how much we appreciate this product. Turkish Airlines is very loyal to Japanese investors and vice versa," he recently told *Airfinance Journal*.

Nirmal Govindadas, Emirates Airline's senior vice-president of corporate treasury, and Lufthansa head of corporate capital markets, Markus Ott, also only have praise for the Jolco.

"For the past five years, we have raised about $30 billion. In terms of Jolco, we did financings of about $4 billion to $4.5 billion, comprising 22 777s and three A380s," says Govindadas.

"Jolco is not always the cheapest option, but it's reliable. It takes time to build relationships in Japan, but once they're established it goes very smooth," adds the Emirates treasurer. "It's a deep market. There's liquidity and diversity of investors. We will be closing more A380 transactions this year and the Jolco fits really well," says Govindadas.

German heavyweight Lufthansa is financing about $500 million-worth of aircraft with Jolcos in 2019. "We hope to close more Jolcos before the end of this year," says Ott, who adds that the Jolco is Lufthansa's "most important financing instrument".

Other notable transactions in the market this year include Bocomm Leasing's Jolcos for three KLM 737-800s and AVIC closing Jolco financings for an A330 on lease to SAS and another for an A350 on lease to Vietnam Airlines.

Meanwhile, in August Japanese bank MUFG reported a Jolco financing for six new A320neo aircraft on lease to LATAM Airlines. MUFG acted as the lead arranger and administrative agent of a $310 million bridge loan and Jolco facility. The transaction was the inaugural Jolco between the parties. It also marked LATAM's return to the Jolco market after many years.

Some industry players interested but inexperienced in Jolco transactions have voiced concern regarding ease of tradability at the lessee level or, in other words, if they will be able to trade the associated leasing rights in a non-default situation.

Jolco expert Collins reassures them. "The expectation with a Jolco is that the aircraft will not be traded but will be held by the lessee and operated until the purchase option date," he says. "While theoretically, it is possible to change the lessee in a Jolco, the new lessee would have to seamlessly step into the Jolco. The new lessee would require consent of all the other parties. That consent would be contingent on a number of factors including, (1) the new lessee assuming the role of lessee under the Jolco without amendment other than consequential changes and, (2) the new lessee being an acceptable replacement – same or better credit, jurisdiction, performance risk, security, no adverse tax issues and so on," says Collins.

"I'm not aware that this has actually been done before and it would likely not be at all attractive to someone buying the aircraft," adds Collins. "In addition, it is not possible from the tax perspective to have voluntary termination rights so that the aircraft would be freely traded without the Jolco."

Desperate for cash

Hong Kong Airlines had lofty aspirations when it launched operations in 2006. The aim was to build an airline group robust enough to break Cathay Pacific Group's stronghold in Hong Kong SAR. That plan has failed as the carrier keeps fighting for survival, writes **Dominic Lalk**.

This year did not get off to an auspicious start for Hong Kong Airlines (HKA). On 7 January, Blue Cross Asia-Pacific Insurance terminated its contracts with Hong Kong SAR's second-largest carrier, saying that "in view of the news about Hong Kong Airlines published by media recently... single trip travel insurance plans are not applicable to customers who travel with Hong Kong Airlines with effect from 7 January 2019".

Nine months later, and the airline finds itself in the most traumatic period in its 13-year history – unable to pay for aircraft, equipment and its staff.

In mid-July, it looked as if a cash bonanza was on its way to HKA after representatives from China's CITIC Group visited the airline's headquarters, hoping to close a deal.

Several parties close to the negotiations had alleged that a consortium of investors comprising the family of former Hong Kong chief secretary Henry Tang, a unit of CITIC Group and Wuxi Communications Industry Group, the Chinese owner of the Dornier Seawings amphibious aircraft manufacturer, was prepared to inject Rmb2 billion ($290 million) into embattled HKA.

The consortium also was expected to assume some of the carrier's burgeoning debt. It would appear that that deal has fallen through, or has been delayed, as no news have surfaced since.

A number of critics have suggested Tang should not get involved with HKA because he is no stranger to controversy. In 2013, Tang's wife, Lisa Kuo, was indicted over the unapproved basement extensions of two adjoining residences in Kowloon Tong owned by Tang. Ironically and embarrassing for Beijing, Tang was running for the position of Hong Kong chief executive at the time.

When contacted by *Airfinance Journal* on 28 August, HKA remained tight-lipped, saying only that "as a private company, Hong Kong Airlines does not disclose its financial activities publicly", although it remains "always open to strong strategic investors".

HKA is desperate for cash. Various sources have confirmed to *Airfinance Journal* that the full-service carrier is unable to pay for new aircraft, parts and training equipment. The cash crunch forced HKA temporarily to ground several Airbus A330 and A350 aircraft, although most are now back in service.

Former director, Zhong Guosong is a 27% shareholder in HKA

The same goes for HKA's training equipment. HKA has ordered and received two CAE full-flight simulators (FFSs): one for the A330 and the other for the A350.

Both of them were mistakenly delivered to the airline's new training centre, although they had not been paid for.

HKA is hopelessly behind the agreed payment schedule for the simulators. At this point, the carrier continues to owe Airbus several million euros in missed payments for the two simulators. The original equipment manufacturer has warned the carrier that it will have no choice but to remove the loads, or software, from one of the simulators unless HKA pays up.

The shutdown of an FFS would further hinder HKA's operations. In early July, HKA said it was considering axing long-haul flying altogether after announcing the termination of flights to San Francisco from October and reduction of frequencies to Los Angeles and Vancouver, its only other North American destinations.

Initially, HKA had ordered two more FFSs, also for the A330 and A350. Those were never delivered by CAE, and HKA has been seeking buyers for them behind the scenes. Unless the consortium of investors comes through, HKA's money worries will worsen by the day.

The airline only has enough funds to pay its staff and catering suppliers through the end of the summer schedule. A significant number of pilots have left the carrier to work elsewhere and that exodus continues as widebodies remain on the ground. The majority of the pilots went to work for HNA sister carriers Tianjin Airlines and Hainan Airlines, although Emirates Airline has picked up some of them to pilot A380 aircraft.

This year, HKA has reduced its fleet to 28 from 38 aircraft. In the interim, new A330s and A350s earmarked for HKA are languishing at Airbus headquarters in Toulouse, where they number seven widebodies.

Airfinance Journal has been told that the problems with those new aircraft are multifaceted. While some have not been paid for, certain A350s have been delivered to HKA but the airline is unable to induct them because it does not have enough pilots and/or training capabilities to fly them. When contacted by *Airfinance Journal*, the airline said "we can not comment on market speculation".

In August, beleaguered HKA and Airbus quietly cancelled contracts for two A350-900 aircraft. The airline's A350 backlog once numbered 15 aircraft, although in Airbus's latest orders and deliveries data only 13 aircraft remain.

HKA has three major shareholders that own a combined 90% of the airline: Frontier Investment Partners owns 34%; HNA Group holds 29%; and former director Zhong Guosong has 27%. The remainder are in the hands of several minority shareholders.

Zhong, however, is not a happy stakeholder. In April, he alleged that HKA parent, HNA Group, was sabotaging the Hong Kong SAR carrier's operations by using HKA funds and assets and redeploying them at the parent company and its associated companies, including Hainan Airlines. This led to a temporary injunction against HNA from interfering with or sabotaging the operations of HKA.

In March, HNA announced the sale of its stake in low-cost carrier HK Express to archrival Cathay Pacific Airways for HK$4.98 billion ($640 million). That sale was completed in July.

Cathay faces worst crisis in its 73-year history

The flag carrier has become a political football as pro-democracy protests sweep Hong Kong SAR. **Dominic Lalk** reports from the Chinese special administrative region.

Cathay Pacific Airways was founded on 24 September 1946. Fast-forward 73 years and the Hong Kong SAR flag carrier is facing "white terror" – an even bigger crisis than Sars in 2003 and the global financial crisis in 2008.

The airline has been caught in the crosshairs of politics between authorities in Beijing and anti-government protesters in Hong Kong SAR. On 26 August, trade unions and pro-democracy figures in the Chinese-ruled city once again urged Cathay to put an end to "all forms of white terror", a term widely used across the region to describe the suppression of political dissidents.

The 30% Air China-owned carrier has become the biggest corporate casualty of the Hong Kong protests after China demanded it suspend staff involved in, or who support, the demonstrations.

In late August, the Hong Kong Confederation of Trade Unions (HKCTU) called a news conference after the sudden dismissal of Rebecca Sy, the head of Cathay Dragon's flight attendants' association. She had been with Cathay's regional carrier for 17 years.

Sy claims she was fired, without explanation, after managers saw and confirmed her Facebook account. HKCTU says 14 people have been fired so far over the protests and called Sy's dismissal a "blatant act of suppression".

"Cathay Pacific wishes to emphasise it fully supports the upholding of the basic law and all the rights and freedoms afforded by it," the airline's director of corporate affairs, James Tong, said shortly after Sy's dismissal.

Sy's departure marked the latest in a string of forced resignations and dismissals, which included chief executive officer (CEO), Rupert Hogg, and chief customer and commercial officer (CCO), Paul Loo, leaving the airline with immediate effect.

Chinese authorities demanded Hogg's resignation after he refused to hand over a list of Cathay employees who had allegedly taken part in the protests. Instead of providing a complete list, Hogg gave Beijing a note containing one name only – his own.

It does not end there. Every day, reports of Cathay pilots and cabin crew being bullied and intimidated by mainland Chinese aviation officials make the headlines.

Phones and bags of Cathay and Cathay Dragon flight crew are being searched on landing in China, including deleted files and secure messaging apps. When Cathay employees pushed back, the company sent a note on 17 August saying authorities had "the right to inspect personal electronic devices".

A Cathay Dragon flight attendant says: "We don't think what the company is doing is protecting us. We can't say no to these intrusions and disrespect to our privacy. They are very rude and intimidating. Our personal safety is in danger."

A number of flight attendants have told *Airfinance Journal* that they now hide their personal mobile devices in overhead luggage bins, lavatories and in-flight sales trolleys to avoid detection during turnarounds.

Furthermore, many flight crew have reported that mainland aviation officials have begun questioning the airworthiness of Cathay and Cathay Dragon aircraft and accusing them of lax safety and security standards. The hour-long checks appear to be a way of delaying flights deliberately to increase pressure on the airline.

Scores of flight attendants have since joined hands to refuse flying to mainland China altogether.

In July, the Cathay Pacific Group announced an attributable profit of HK$1.3 billion ($167 million) for the first six months of 2019, reversing a HK$263 million loss over the same period in 2018.

The outlook for the second half, once rosy, is looking increasingly bleak. "We anticipate a significant impact to our revenue in August and onwards," says newly installed CCO, Ronald Lam, who was previously the CEO of recently acquired low-cost carrier HK Express.

Airfinance Journal was told at the airline's interim results presentation in July that forward bookings into Hong Kong SAR had "weakened substantially" and were down "in the region of double digits".

The Cathay group of airlines cannot afford to turn a blind eye to China's demands.

"It's not just that China traffic in one way or another accounts for more than 50% of our revenues; what's much more important here is the issue of airspace and traffic rights. If the Chinese close their airspace to us, we can pretty much close the airline," a Cathay veteran has told *Airfinance Journal* on condition of anonymity.

Nevertheless, Cathay is expected to curtail capacity to mainland China in the second half, using smaller aircraft and consolidating frequencies.

Other airlines have already taken action. "The Hong Kong market has taken a hit and we've seen volumes down in the immediate future by 10% and that's people not travelling to Hong Kong," Alan Joyce, Qantas Group CEO, has told journalists. To address the issue, Qantas has started flying smaller aircraft into Hong Kong.

US carrier United Airlines has announced the termination of daily 777 flights between Hong Kong SAR and Chicago, effective 8 September.

The airline says: "Given the reduced demand for travel between Chicago and Hong Kong, we have determined that it is best to suspend our service."

A220 gains traction with lessors

Leasing companies have shown great enthusiasm for the Airbus A220 and the European manufacturer is displaying a similar passion for lessors, writes **Olivier Bonnassies**.

Two lessors, Air Lease (ALC) and Nordic Aviation Capital (NAC), placed orders at June's Paris air show for the Airbus A220-300. Before the show, the European manufacturer had 77 firm lessor orders for the A220-300 and three for the smaller A220-100 model.

Leasing customers included Lease Corporation International (17 A220-300s and three A220-100s), GTLK (six A220-300s), Ilyushin Finance (14 A220-300s) and Macquarie AirFinance (40 A220-300s).

At 31 May, 85 firm orders had been placed for the A220-100 model and 451 for the A220-300.

Lessors represent 17% of orders for the A220-300, although interest has mounted over the past 15 months as leasing companies have acquired aircraft via sale and leasebacks.

Of the 51 A220-300 aircraft delivered at the end of May, leasing companies represented almost 36% of total deliveries.

Eight aircraft were acquired by NAC from Air Baltic under a finance lease agreement with the Export Development Canada guarantee. Air Baltic also has sold four aircraft to CMB Financial Leasing, as well as six aircraft to Avation.

In June, FPG Amentum became a new A220 customer through the acquisition of one aircraft from Air Baltic. One more delivery is scheduled to close in September this year.

Air Lease order

In Paris, NAC committed to the A220 family with a memorandum of understanding for 20 aircraft. ALC placed an order for 50 A220-300s at the air show, with deliveries scheduled between 2021 and 2026. The Los Angeles-based lessor had long been rumoured to be looking at the A220.

"We always liked the aircraft even when it was the CSeries," says the lessor's chief executive officer, John Plueger.

"We did have some questions on the customer base, etc... but Airbus's acquisition of the programme gave a significant boost of confidence in the long-term supportability of the aircraft globally in airline operations to the scale of magnitude we think is needed."

On why ALC did not order two or three months ago, Plueger says: "In the past six or seven months, and particularly over the past four months, we had a huge increase in the level of enquiries from airlines."

He adds: "Airlines wanted to know when we will get it." Plueger reckons the aircraft will replace plenty of ageing A319s and Boeing 737-700s.

"At the IATA [International Air Transport Association] AGM in Seoul in early June we had five or six airline customers talking to us about the A220. Airbus gave us a number of proposals, and it all came together before the air show," he says.

"But the driver was a surge in customer interest in the last several months from our airline customers," he adds.

Airlines could place orders themselves but Plueger says the A220 is no different to any other aircraft type when it comes to the pros and cons of leasing.

"One thing we tell customers is, if they are not sure about the aircraft, the best thing to do is lease it first. Then they can order the aircraft next, but nine times out of 10, when we order the aircraft, we are sure the airlines will like it. Most of the time they don't give it back."

Airbus turning to lessors?

The next question is whether the A220 could become a lessor favourite.

UK air finance arranger and aircraft remarketing company Skytech-AIC closed the first open-market sale and leaseback for the type in 2018. Up to that point the A220-300 was derided by competitors and shunned by investors with just 249 sales accumulated over eight years.

However, Skytech-AIC director Richard Noble is not surprised that major lessors are placing speculative orders now.

"Lessors are here to facilitate the financing of an aircraft for a customer, not market the aircraft concept," he says.

"Early in the programme, it did not make sense for lessors to place orders because the market did not have any experience of this aircraft and, consequently, the original lessor launch orders were not firmed up. Besides, the CSeries models were not mainstream assets like the Airbus and Boeing models against which lessors are prepared to take launch order risk."

For him, two factors played an important role. First, the Avation acquisition of two A220-300s from Air Baltic, under an open-market sale and leaseback transaction arranged by the company, showed that some lessors at least were interested in the programme.

"When we closed our first deal, we demonstrated that there was an appetite within the leasing community for the model [-300] at good prices provided that the aircraft had a lease attached," he says.

"The second factor was Airbus's acquisition of the programme in 2018, which gave lessors the confidence that the aircraft family would receive a strong marketing push, allied to additional orders from Moxy and Jetblue.

"We now see operator demand for the A220 multiplying rapidly in the years ahead – justifying speculative lessor orders," says Noble.

The customer base of the A220 has gradually expanded but Plueger says there are now plenty of heavy hitters associated with the A220.

"The endorsement of the aircraft is now very strong," he says.

"There have not been a lot of placements. One thing ALC is known for is bringing in new customers, being aggressive in the marketplace, taking advantage of our low cost of financing and our relationships globally to really grow the marketplace and get new customers.

"This distinguishes ALC from other lessors, and I know that plays into the Airbus equation of wanting us to order the A220, in addition to ordering the A321XLR as launch customer," adds Plueger.

In the past, ALC has led a lessor surge for some aircraft types.

"It does happen. When we ordered the [Embraer] E190, within a year there were four other lessors placing orders. We very much take that into consideration and we believe this will happen for the A220," he says.

But for Plueger, the Airbus approach is also changing, especially under its new leadership of Guillaume Faury, the chief executive officer, and Christian Scherer, chief commercial officer.

"About 30 years ago, Christian was the Airbus contract officer at ILFC and eventually became our salesman. I believe the new leadership is focused on not flooding the marketplace with lessors," says Plueger.

He thinks Airbus is more focused on taking orders, with lessors best able to place aircraft in advance of the specification time.

"In fact, Airbus does what we do: enhance the marketplace, have a strong relationship already with airline customers. Many lessors have big balance sheets now. A big balance sheet is not the key. The key is focusing on airline relationships, being flexible and fast enough to move aircraft," he says.

Plueger concludes: "I do believe you will see a more disciplined Airbus in that regard."

What does the future hold for **Air France's A380s?**

'Bleak' and 'critical' are words used about the Airbus A380s that are set to be offloaded by Air France. **Oliver Clark** reports.

The decision by Air France-KLM to accelerate the phase out of the 10 Airbus A380s operated by Air France raises questions about the aircraft's fate once they leave the fleet from 2022.

Having already announced the phase-out of three of Air France's leased A380s, the Franco-Dutch airline group said at the end of July that the remaining five owned and two leased aircraft would also leave the fleet to be replaced with new-generation aircraft.

Air France-KLM's chief executive officer, Benjamin Smith, said during the carrier's first-half earnings call that having just seven A380s in operation was "sub-optimal" and would require a minimum of one aircraft to be kept in reserve.

An upcoming cabin refurbishment programme would cost "upwards" of €35 million ($39 million) for each aircraft, while adding maintenance costs would increase the cost to €85 million per aircraft.

"Therefore, an early phase-out of the Air France A380 fleet will result in substantial capex savings estimated at €400 million," says Smith.

At the same time, the SkyTeam carrier group revealed that it expected to incur €400 million of costs as a result of the early phase-out, "mainly due to the acceleration in the depreciation of the aircraft".

This comes after Lufthansa's decision to sell six of its A380s back to Airbus, while Qatar Airways is planning to phase out its A380s at 10 years' maturity.

So where could Air France's A380s go next? *Airfinance Journal*'s Fleet Tracker shows that the five leased A380s come from investment manager Dr Peters Group. The carrier says it owns the remaining five.

Speaking to *Airfinance Journal*, Dr Peters Group says it is looking at "all possible options", including placing the five leased aircraft with other operators and possibly even selling them.

Two of the A380s will be returned over the coming year. Another A380 will return in mid-2021 and the leases on the remaining A380s will run until 2022 and 2024, says the German asset manager.

"Until the expiry of the contracts with Air France, the leasing income is secured. However, this new development is regarded as critical," says a Dr Peters Group spokesperson.

"Following the reduction of the A380 fleets planned by various airlines, Air France's withdrawal from the market will not make it any easier to continue marketing the A380," he says.

"Yet we must state that the market has become considerably more challenging since the production stop communicated by Airbus," he adds.

If the outlook is challenging for the leased aircraft, what about the A380s owned by Air France?

Avitas data shows that the youngest A380 owned by Air France is a 2011-built aircraft, delivered in 2012, with a generic market value of $93.5 million and the same generic base value.

The base value by 2022 is estimated to be $67.8 million, while its distressed value would be $41.3 million by that date.

In an interview with *Airfinance Journal*, Rob Morris, global head of consultancy at Ascend by Cirium, describes the outlook for the five owned A380s as "bleak".

Morris says that a fleet of less than 10 A380s becomes "unsustainable", while alternative aircraft present a much better seat-mile cost ratio.

"Frankly, the somewhat bleak outlook that one personally foresees is a relatively early retirement for the aeroplanes," adds Morris.

Declining value

Quoting Cirium data, Morris says that the youngest of Air France's owned A380s is expected to have a half-life base value (HLBV) in 2022 of $72 million. Today, the half-life current market value (HLCMV) is estimated to be $100.2 million and its HLBV is $106.7 million.

"The fact that we have CMV some 6% below BV today is already a statement of our view of balance of demand over supply," he says. In terms of the aircraft's future market value on the downside, Cirium assigns the aircraft an E7 rating over the current five-year horizon.

"That means we expect future depreciation to be between 11% and 12% annually and, more crucially, we see a 30% downside risk in the market value over base. This is all expressed at 95% confidence," says Morris.

"This means that in 2022, when I think the aircraft is scheduled to be removed from service, we have 95% confidence that the market value will lie between $76.4 million and $54.6 million (assuming 2% annual inflation). All of these numbers assume half-life," he adds.

Noting Air France-KLM's disclosure of a €400 million charge for accelerated depreciation, Morris says this equates to about $90 million for each aircraft, although there will be variations based on their respective ages.

He expects the airline to depreciate them to a point of "no residual" value by 2022. Such a scenario is not without its advantages, though.

"They are going to have a whole bunch of A380s that they own that are on their books for close to zero... they can use them as and when with a relatively low seat-mile cost because there is no capital ownership cost in there anymore," says Morris.

Secondary market

One option for Air France could be moving the aircraft into the secondary market. While many A380 operators are phasing out the aircraft, large operators of the type such as Emirates Airline are committed to it for now, and British Airways (BA) has hinted it could be in the market for more.

The IAG-owned carrier has 12 A380s in service and IAG chief executive, Willie Walsh, said at a Oneworld event earlier this year that he was "very pleased" with them.

Mark Lapidus, chief executive officer of Amedeo, tells *Airfinance Journal* that he believes BA could be a "potential candidate for these aircraft down the road".

Morris is sanguine about the A380's prospects for part-outs.

"How many A380s can you part out to support an in-service fleet of 300? Not that many. How many engines can you lease out? Not that many," he says.

While Air France has several years to decide how to dispose of its A380 fleet, it seems that finding new homes for the aircraft could prove a significant challenge.

DAE continues to transform unsecured debt ratio

Strong liquidity is key to the Gulf lessor's ambitious plans.

Dubai Aerospace Enterprise (DAE) signed three loan agreements to raise $490 million in August. The lessor says the loans have maturities of between three and seven years.

"We continue to bolster our liquidity cushion to support our growth ambitions and opportunities. Our very strong balance sheet and solid operating model continue to attract lenders, new and existing, to DAE," says its chief executive officer, Firoz Tarapore.

DAE had increased its unsecured debt to total debt ratio to almost 60% at 30 June. This compares with 26% at 30 June 2018.

The lessor continues to change its capital structure by including a higher percentage of unsecured debt. It tells *Airfinance Journal* that the unsecured debt ratio target is 70%.

DAE has been a regular debt issuer over the past two years. In 2017, it issued $2.3 billion in senior bonds to finance partly its AWAS acquisition. The bonds included $500 million of 4% notes due in 2020, $800 million of 4.5% bonds due in 2022 and $1 billion of 5% bonds due in 2024.

Last year, the lessor signed about $2.2 billion of unsecured transactions.

In May 2018, DAE raised $480 million through a four-year revolving credit facility. The transaction closed in October 2018 and eight additional banks entered the deal using the accordion feature to bring the facility to $800 million.

Last December, the Dubai-based lessor signed a four-year unsecured revolving credit facility worth $535 million, which can be increased to $600 million. The previous month, BNP Paribas and Credit Agricole-CIB were involved in another new revolver with a five-year term for a total of $720 million.

In addition, DAE Funding, the wholly owned subsidiary of Dubai Aerospace Enterprise, priced $500 million of senior unsecured notes due 2021 and $500 million of senior notes due 2023.

Since the beginning of 2019, DAE has amended its four-year December 2018 facility to $600 million.

It also boosted liquidity by signing a new $440 million revolving credit facility with a group of 12 lenders led by First Abu Dhabi Bank and HSBC Bank Middle East.

> *"Our very strong balance sheet and solid operating model continue to attract lenders, new and existing, to DAE."*
>
> **Firoz Tarapore**, chief executive officer, DAE

The lessor reported a $197 million profit for the six months to 30 June, up from $195 million in the first half of 2018, during a period when the lessor's fleet increased slightly.

Total revenue increased to $727 million for the six months ended 30 June from $711 million in the same period the previous year. Total lease revenue increased to $683 million, from $676 million for the six months ended 30 June 2018.

DAE said this increase was primarily because of increased maintenance revenue relating to end-of-lease compensation payments, partly offset by lower revenue resulting from increased bad debt provisions and a decrease in the number of revenue-generating aircraft in the fleet during the first half.

Expenses for the six months ended 30 June increased to $359 million from $351 million for the six months ended 30 June 2018. This increase was principally because of higher depreciation and amortisation expenses. This was partially offset by lower general and administrative expenses over the six months ended 30 June, compared with the previous period.

Cash and cash equivalents stood at $217 million at 30 June. Net cash generated from operating activities was $656 million, an increase from $638 million.

During the January-June period, the lessor purchased eight aircraft, from 15 in the same period a year earlier. It sold 18 aircraft, from eight sold in the same period in 2018. Of the 18 aircraft sold, 16 were sold to third parties where management of the aircraft was retained by DAE.

First-half gain on disposal of aircraft increased to $33 million from $19 million. Total fleet size rose to 357 from 354 at the start of the period.

Net finance costs increased to $188 million for the six months ended 30 June from $155 million for the six months ended 30 June 2018. DAE says the increase was because of lower finance income, which related primarily to the movement in fair value of derivatives.

Net debt to equity reached 2.67 times by 30 June, from 2.57 times at the end of 2018.

Its fleet of 357 aircraft comprises 302 that are owned – including seven on finance lease – 51 managed on behalf of various third parties and four that are "committed" aircraft.

DAE drew down on $1.72 billion of borrowing in the period, as well as closing an Asian revolving credit facility for $440 million and $490 million in unsecured facilities. In June, the lessor repurchased about 4% of its common shares owned by Emaar Properties. DAE is now 100% owned, directly and indirectly, by the Investment Corporation of Dubai (ICD), the principal investment arm of the Government of Dubai.

Back **on track**

After almost going out of business a few years ago, Indian low-cost carrier (LCC) SpiceJet has been clawing its way back to the top. **Dominic Lalk** speaks to its chief financial officer, Kiran Koteshwar.

SpiceJet recorded a Rs2.6 billion ($37 million) unaudited net profit in the first quarter of 2019, reversing a Rs381 million loss in the same period a year before, as revenues rose to Rs31.5 billion from Rs22.5 billion and expenses were up to Rs28.8 billion from Rs22.3 billion.

The results would have been vastly better but for the painful grounding of the Boeing 737 Max programme, SpiceJet chief financial officer (CFO), Kiran Koteshwar, tells *Airfinance Journal* in an exclusive interview.

"Basically, if we didn't have the Max situation, we would have achieved a much greater profit than $37 million. We continue to incur extra expenses for which we have not been compensated yet. So far, we've only received cost recognition, for the additional lease rentals, as a kind of compensation from Boeing but no actual cash has come in yet," says Koteshwar.

"We have lost a lot of money, that's for sure, but we haven't disclosed the daily or monthly loss figure owing exclusively to the Max grounding while we're still negotiating with Boeing," he adds.

Nevertheless, in its latest financial update, SpiceJet recognised Rs1.2 billion towards aircraft and supplemental lease rentals as other income. This is a part recognition of the total reimbursements SpiceJet is expecting from embattled US manufacturer Boeing for the prolonged grounding of the airline's 13 737 Max 8 aircraft.

"All this rests on the fact that The Boeing Company has already considered a $5 billion write-off in their books anyway, which means this money is going somewhere in some form of compensation. It will be easiest to just apply this to the lease rentals," says Koteshwar.

SpiceJet will, however, not abandon Boeing and the 737 Max programme after several other carriers including Flyadeal and Far Eastern Air Transport have walked away from their Max commitments.

"We're partners. We still believe in the 737 Max. We look forward to a swift return to service that will help SpiceJet increase its margins," says Koteshwar. "If you're pressing me for an answer, realistically I would say my best guess is that the Max will be flying again in January or February but definitely by April 2020.

"The impact on our capex is minimal. After the downfall of Jet, as a fellow Boeing operator, we took some of those aircraft. Those were not capex-related because there was nothing to be paid upfront because the aircraft were staying in India. It was a win-win situation for us and the lessors," Koteshwar says.

The airline addressed the Max situation by increasing the utilisation of its 737NGs and, more importantly, inducting 32 additional aircraft over the span of just six weeks. No fewer than 28 of those aircraft came from Jet, comprising 23 737-800s, four 737-700s and a single 737-900.

"The Jet situation caused a very unique environment. Suddenly, there were about 80 NGs available in India overnight. That's why the lessors at that point agreed to short 24- to 26-month leases, and that made a lot of sense because once an aircraft is out of service for a while it is extremely costly to make it airworthy again. So the focus was to get those aircraft back in service as soon as possible, sometimes within days," says Koteshwar.

"They moved 30 to 40 aircraft in a matter of 25 to 30 days. It was so quick. But the lessors were quite happy because once an aircraft has been grounded for a while, the lessors need to put in a minimum of $500,000 to $600,000, if not $1 million, to get them airworthy again. The engine checks and logistics, they're a nightmare for the lessors," says the SpiceJet CFO.

Over the past 18 months, the leasing community has been voicing concerns about the tradability of assets. A primary concern is a lack of technical capabilities, particularly among smaller Asian lessors and their limited relationships outside the region.

"If it's any consolation, at least the Jet collapse showed that assets are still relatively moveable at this point," a lessor representative recently told *Airfinance Journal*. "That was just for Jet though. It won't be this easy if the flag carrier collapses too, let alone one of the big players in South East Asia."

This all worked out to SpiceJet's benefit though, including the 28 immediately-available aircraft and routes taken over from Jet.

"Take Mumbai as an example. After Jet disappeared we were able to increase our slots from 35 to 85 a day," notes Koteshwar, who adds that the official figure hovers somewhere around the 110 mark.

As *Airfinance Journal* went to press, SpiceJet's fleet stood at 107 aircraft, which comprised 73 737s, three 737 freighters and 31 De Havilland Dash8s.

SpiceJet plans to add between five and 10 737NGs and three Dash8 aircraft in the October-December quarter.

"October-December is peak season and by then we need to add more aircraft again. In my guidance, I said we'd be adding five to 10 aircraft and I'm happy to confirm to you that we have just secured five of those aircraft," Koteshwar reveals.

They will be 737NG wetleases from Antalya, Turkey-based leisure carrier Corendon Airlines for "between three to six months because we think the Max will come back in March or April at the latest", says Koteshwar.

SpiceJet says it is challenging to secure 737NG leases in the current market.

"It's difficult to get new aircraft leases in this environment. The lessors are quite tight-lipped. The options are not coming in right now. A lot of airlines like us are extending their aircraft leases, so obviously there's no liquidity in the NG market," complains Koteshwar.

"Case in point, we've had three aircraft that were supposed to leave the fleet this year but then we've extended those for another couple of years because there's no point in giving up aircraft when you know there are no available alternatives," he says.

Despite the shortage, Koteshwar says 737NG lease rates have remained stable. "We haven't seen any premiums on the NG since the Max situation unfolded."

Nonetheless, SpiceJet is bemoaning a lease term mismatch. "The lessors are looking to place these aircraft for at least six to eight years but nobody wants to take them for that long, especially because some of them are quite old now," says Koteshwar.

"It is true that we are working on a widebody strategy, but there are absolutely no concrete plans at this stage."

Kiran Koteshwar, chief financial officer, SpiceJet

The LCC hopes that its 28 short-term operating leases (ex-Jet; 24 to 26 months) and upcoming Corendon wetleases will bridge the capacity gap until it is allowed to resume 737 Max deliveries.

With the induction of the 28 former Jet aircraft, SpiceJet introduced SpiceBiz, a business-class offering. The airline's foray into premium-class flying will be short-lived, says Koteshwar.

"We just took the Jet aircraft as they were and that was with a business cabin. In August and September, we will be converting all those aircraft to our standard 189-seat configuration. Honestly, as an LCC, business class is not our cup of tea," he adds.

SpiceJet, which has its headquarters in Gurugram in northern India, operates to 52 domestic and 10 international destinations. It is the largest airline provider of domestic flights under the UDAN scheme, providing air connectivity to the remotest corners of the country. As *Airfinance Journal* went to press, SpiceJet operated 51 daily UDAN flights to 12 domestic destinations.

In the first quarter to 30 June, SpiceJet marked another milestone with the launch of Guwahati-Dhaka flights under the International Air Connectivity Scheme (IACS), India's first IACS flight route.

The carrier continues to lead the market with regards to capacity management. For 50 months in a row, SpiceJet has achieved the highest load factors in Indian aviation, a feat unparalleled globally. In the quarter to 30 June, the LCC's load factor averaged 93.8%.

In 2018, the LCC launched SpiceXpress, a dedicated freighter division. The cargo operator now has three 737-700BDSFs after adding a third in the past quarter. SpiceXpress has nine scheduled departures six days a week to Hong Kong from Delhi, Kolkata and Guwahati and one domestic rotation connecting Hyderabad, Delhi, Mumbai, Bengaluru and Chennai.

SpiceXpress hopes to have 20 dedicated 737-700 freighters by 2022.

On the passenger front, SpiceJet hopes to stabilise yields and add more destinations before year-end, particularly international routes. The LCC added its 10th international destination in the quarter ended 30 June, a daily service connecting Mumbai with the Saudi capital Riyadh.

"India is a peculiar market. If you don't grow you don't get good yields. You need to have capacity growth," laughs Koteshwar. "We had a slight yield gain when Jet went down but I think that effect is going to wear off in the current quarter. In India, if the fare isn't right people will just stop travelling. It's that price-sensitive."

In August, various Indian media outlets reported that SpiceJet was eyeing long-haul flights with former Jet A330s to the UK. The SpiceJet CFO denies reports that they have applied for slots at London Heathrow and Manchester airports.

"We haven't applied for any slots at Manchester or Heathrow. That's just not true. Absolutely not," Koteshwar says.

So why did SpiceJet not jump on the opportunity when Jet left the market? "You have to blame me for that! I am a very conservative guy. I know what works and doesn't work at an LCC.

Long-haul flying is a very complex operation. There are countless examples from around the world where you can see that if you have a too complex fleet and operation it simply doesn't work and you're going to fail," says Koteshwar. "Either you set up an entirely separate entity for this purpose or you don't even consider it," he adds.

"It is true that we are working on a widebody strategy, but there are absolutely no concrete plans at this stage," says Koteshwar. "Is it a safe assumption that it will be Boeing widebodies to match our regional and domestic fleet? No, absolutely not.

"There are two options," he adds. "The 787 is definitely a good aircraft to have. If we wanted to do eight to 14 hours that would be a great aircraft.

But if we're looking at sectors under eight hours then we would be focusing on the A330 family. So it all depends on the business plan.

Do we want to go as far as the USA and Australia or do we want to do shorter hauls, such as flights to China and northeast Asia?"

Bonded-tax leasing model works in Sichuan

Sichuan Jinshi Leasing finalised its first aircraft leasing transaction via the Sichuan Free Trade Zone in May. The "bonded tax + finance lease" model opens up many opportunities to the western China-based lessor, **Elsie Guan** reports.

A new Airbus A330 aircraft, on a 10-year finance lease from Sichuan Jinshi Leasing to Sichuan Airlines, arrived at the Sichuan Free Trade Zone (SCTZ) on 24 May. The A330-300 was the first aircraft leased and delivered via the SCTZ.

Jinshi Leasing, which was established in 2014, has a registered capital of Rmb1 billion ($140 million). It covers businesses which include finance lease, business consulting, commercial factoring related to finance lease and mechanical equipment leasing, Yunzhong Li, the lessor's general manager, tells *Airfinance Journal*.

The lessor's aviation department, which was established in 2016, owned nine aircraft, two engines and one simulator in its fleet as of 30 June. The nine aircraft comprise eight new aircraft – A320s, A330s and Boeing 737s – and a second-hand A319. Li says Jinshi has been assisting state-owned mainland Chinese carriers in selecting aircraft types.

Jinshi's customers include Sichuan Airlines, Chengdu Airlines and Shenzhen Airlines. Li adds that a deal with China Southern should materialise before the end of the year.

"For the time being, we have only cooperated with mainland Chinese carriers, but we aim to expand to partnerships with foreign carriers in the future," says Li. The Chengdu-based lessor has five shareholders: Sichuan Jinding Financial, Sichuan Airlines, Deyang Industrial Investment Group, Guangyuan Investment Holding and Sichuan Hengzhan Investment. Sichuan Hengzhan Investment is a privately owned company, while the remaining four shareholders are Chinese state-owned or local provincial-owned companies.

Although Jinshi Leasing can not compete with the large leasing companies in terms of asset value

and volume, it still has its own advantages being located in western China.

"We have Sichuan Airlines as one of our shareholders and we could help the carrier lower the cost of introducing aircraft," says Li.

Jinshi Leasing works with its partners with the aim of decreasing its financing costs and has been cooperating with mainstream banks.

Li says that among the lessor's financing partners are two Chinese policy banks – the China Development Bank and the Exim Bank of China. The lessor also has the China Construction Bank, the Agricultural Bank of China and some joint-stock banks as its financing partners.

The company also seeks benefits on taxation. Taxation can be converted from a carrier's financial costs to its rental costs in its financial statements. Meanwhile, rental costs could be included in the value-added tax (VAT), which in turn allows the carrier to save costs on the introduction of the aircraft.

"Favourable policies from the free-trade zone [FTZ] helps a lot in the aircraft leasing business," says Li.

The A330 was the first transaction between Sichuan Airlines and Jinshi Leasing. A special purpose vehicle (SPV) established by Jinshi Leasing acted as the lessor, while Sichuan Airlines acted as the lessee.

"The completion of the first transaction between Jinshi Leasing, Sichuan Airlines and the SCTZ broke through a variety of restrictions, demonstrating feasibilities of aircraft leasing businesses in the SCTZ in this free-trade zone," says Li.

SCTZ, which was officially established in 2017, consists of Tianfu new area, Chengdu Qingbaijiang railway port area in Chengdu the south Sichuan port area in Luzhou. By the end of March 2018, the free-trade zone had attracted 34,000 new companies with registered capital exceeding Rmb400 billion with investments from more than 300 foreign companies.

"Bonded tax + finance lease" is a unique aircraft leasing model in China, applying in leasing large-scale products such as aircraft and marine vessels in the comprehensive bonded areas and free-trade zones established in, among other areas, Tianjin, Shanghai, Xiamen, Guangzhou and Sichuan.

> *"The completion of the first transaction between Jinshi Leasing, Sichuan Airlines and the SCTZ broke through a variety of restrictions, demonstrating feasibilities of aircraft leasing businesses in the SCTZ in this free-trade zone."*
>
> **Yunzhong Li**, general manager, Sichuan Jinshi Leasing

A lessor usually sets up an SPV in a bonded area to isolate capital risks from the parent company. The SPVs will carry out businesses such as leases, import and export of goods, and foreign exchange loans for both domestic and overseas markets.

In essence, this model is a kind of finance lease. However, compared with traditional finance lease models, lessees do not need to pay import tariffs and VAT at one time, saving cost expenditures and cash outflow under the convenience of tax incentives and process improvements.

China's bonded-tax + finance lease model initially started in aviation leasing in 2009, when the Tianjin Dongjiang Free Trade Zone (DFTP) successfully introduced two Boeing aircraft. DFTP created a marketing model for other leasing companies to enter into the aircraft leasing business. Fujian, Shanghai and Guangdong free-trade zones followed its lead.

Tianjin Free Trade Zone, Shanghai Free Trade Zone, Guangdong Free Trade Zone and Fujian Free Trade Zone are the four leading free-trade zones on the bonded-tax + finance lease business. The trade zones have given their registered companies a variety of tax incentives in order to promote the development of the model.

Sichuan Free Trade Zone

Aircraft differ from other types of products on finance lease in terms of its volume and runway needed. SCTZ and Chengdu's customs authorities had not tapped into aircraft business previously because they were restricted by the Chinese government's leasing policies and SCTZ's infrastructure capacity.

Li says the bonded tax + finance lease model in Sichuan has developed at slower pace than those in the eastern coastal cities such as Tianjin, Shanghai, Xiamen and Guangzhou. Among the major aircraft leasing FTZs, DFTP is the most mature one. According to a DFTP filing, the number of commercial aircraft introduced via the DFTP had reached 1,200 as of July, and those aircraft account for one-third of all commercial aircraft in China.

Between January and June 2019, Pudong airport's comprehensive bonded area, which is a part of the Shanghai Free Trade Zone, integrated 21 aircraft with a total value of Rmb11.9 billion, and attracted six new registered leasing companies. As of August, there have been 450 financial leasing companies registered in the Pudong airport bonded area.

SCTZ was in the third batch of free-trade zones established in the past two years. Although Chengdu is a western city, it is regarded as "the fourth aviation city" in China, after Beijing, Shanghai and Guangzhou, says Li.

"Chengdu is developing aviation leasing under the Sichuan government's expectation to establish good cooperation with our free-trade zone, airport economic demonstration zone and customs special supervision zone," he adds.

Li started his career as an engineer in a Chinese state-owned research institution, and worked for a commercial bank before establishing Jinshi Leasing. He founded Jinshi Leasing with the aim to become a larger leasing platform.

"We keep developing our resources, such as strengthening our connections with banks and providing career training for our teams. I believe that we will not be limited to do aircraft finance lease transactions only in the future. We hope to be involved in aviation materials, operating leases, or general aviation," Li says.

In with the **new**

DBJ's aviation finance team has its work cut out. The onus is on aviation co-heads Yu Kimura and Shumpei Tsuda to bring fresh liquidity to the market via innovative financing solutions such as AFIC and Balthazar, reports **Dominic Lalk**.

On 1 July, Yu Kimura and Shumpei Tsuda became the co-heads of Development Bank of Japan's (DBJ's) global aviation team, which has its headquarters in Tokyo. The duo replaced former global aviation head and deputy general manager, Rikan Miura, who was promoted to chief secretary to the bank's president but who will, nonetheless, continue to support DBJ's aviation finance business.

DBJ's aviation team has its work cut out for them, Kimura and Tsuda tell *Airfinance Journal* in an exclusive interview. Over the next 18 months, the focus will be on bringing fresh and "innovative" liquidity to the market via new products, including Japanese Aircraft Insurance Consortium (AFIC) and Balthazar supported transactions.

"In June, we closed the first AFIC-sponsored transaction for El Al. Miura-san and his team have been working for a very long time to make this happen. We're very proud to have achieved this deal. The news was very well-received around the world, but of course particularly here in Japan, especially among regional banks," says Kimura.

AFIC is a finance instrument developed to meet the rising global demand for aircraft. Under the scheme, major overseas insurance companies insure Boeing aircraft purchases by airlines and leasing companies to cover defaults on principal and interest payments.

"New products like the AFIC bring in new liquidity and I think we're proud to say that we've been fairly creative in that space. We're at the front of the line for these kind of new transactions. It is a difficult market to bring in new sources of liquidity when there's already loads and loads of liquidity abounding, but still we've been doing that," adds Tsuda.

DBJ has funded the world's first insurance-backed Japanese operating lease with call option (Jolco) financing.

Under the deal, DBJ provided loans to Israeli flag carrier El Al to purchase a Boeing 787-9 aircraft. AFIC protected the bank against credit default risk for the duration of the loan. The Jolco was arranged by SBI Leasing Service and ABL Aviation.

AFIC was formally launched globally by insurance broker and risk adviser Marsh in June 2017, while Japanese AFIC is offered by Sompo Japan Nipponkoa Insurance and Sompo International, in collaboration with Marsh.

"We have plans to sell the majority of our loan portion to some regional banks. We're in the middle of that process and have seen quite a bit of appetite from the regional players," says Kimura.

"Regional banks are quite comfortable joining this transaction because they can rely on the credit of Sompo Japan, which is very, very high," he adds.

Nevertheless, Kimura and Tsuda say that certain hurdles remain.

"They are all interested, but whether they can join is a different matter. Sometimes, the origin country of the airline could be an issue for them. Even though the transaction is covered by AFIC or Sompo Japan, some regional banks don't like to put their exposure in certain countries because they feel there's some risk associated with that country. This sometimes even happens when it's a guaranteed transaction," says Kimura. "Not all regional banks are that conservative, but sometimes it could be an issue. We need to help educate and support these smaller players."

Tsuda adds: "The regionals are on a slow journey toward doing more business globally. Their primary role is to fund companies that are doing business in their region/prefecture. For them, going globally a decade ago was pretty much unimaginable, but that's changing a bit now. So, for some players who are still catching up, they can only lend to investment-grade-rated companies. For some, they've relaxed that to internal ratings, and for some who are more advanced especially in the aircraft finance business, they can do without any ratings. But for the credit ratings, the country's sovereign rating is always sort of a cap for the airline ratings."

Regional banks in Japan continue to sit on significant deposits. As *Airfinance Journal* went to press, there were 105 regional banks in the country. Together, they have outstanding loan balances of ¥234 trillion ($2.2 trillion). The top five regional banks by outstanding loan balances are Bank of Yokohama ($103 billion), Chiba Bank ($93 billion), Fukuoka Bank ($80 billion), Shizuoka Bank ($80 billion) and The Nishi-Nippon City Bank ($66 billion).

"The way we've marketed that product [AFIC] is for it to be an entry ticket to doing more, like more airline credit transactions. Not necessarily fully covered transactions, but more commercial transactions. That's sort of where we want to get to," says Tsuda.

Another form of financing DBJ is working on is Balthazar. Marsh has been working as exclusive broker with Airbus, lenders and a pool of highly rated insurers to launch Balthazar, a non-payment insurance product for lenders and investors funding new Airbus aircraft.

"In June, we closed the first AFIC-sponsored transaction for El Al. Miura-san and his team have been working for a very long time to make this happen. We're very proud to have achieved this deal. The news was very well-received around the world, but of course particularly here in Japan, especially among regional banks."

Yu Kimura, co-head of global aviation team, Development Bank of Japan

Yu Kimura

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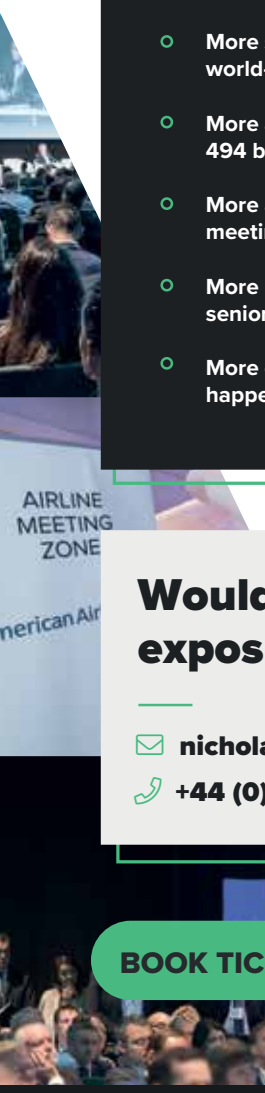

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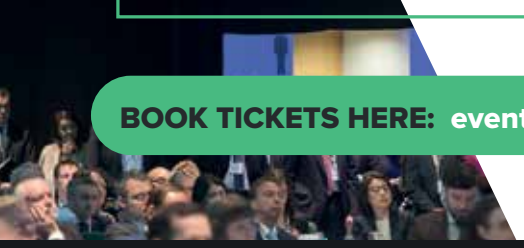

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“There have only been a few transactions that have been mandated in that space so far but I believe this Airbus product will grow, just like the Boeing AFIC solution. Balthazar is a good product for airline financing activities.”

Shumpei Tsuda, co-head of global aviation team, Development Bank of Japan


Shumpei Tsuda

The insurers will typically provide 100% coverage with terms of up to 12 years. Balthazar aims to provide greater flexibility by allowing parties to use their own transaction documents and covering a range of structures, including tax leases.

In February, Turkish Airlines became the first carrier to use Balthazar, combined with a French tax lease, for the financing of five Airbus A321neo aircraft. BNP Paribas acted as overall arranger in the 12-year transaction and committed up to $225 million for the five aircraft, scheduled for delivery this year.

A second Balthazar transaction, involving another Turkish carrier, Pegasus Airlines, was mandated to Societe Generale and closed in the second half of this year.

“There have only been a few transactions that have been mandated in that space so far but I believe this Airbus product will grow, just like the Boeing AFIC solution. Balthazar is a good product for airline financing activities. DBJ has held discussions with Airbus and Marsh on Balthazar. We haven’t closed any deals but we are discussing prospects. We want to bring more Japanese investors to AFIC, Balthazar or any other structures,” says Tsuda.

In 2017, DBJ said it planned to increase its focus on the capital markets and start taking equity in individual aircraft. Thus far, that plan has not worked out because of a “very hot” asset value environment.

“I am actually the one responsible for aircraft investments,” says Kimura. “In the past two to three years, we have been looking for opportunities in the market but the returns have been compromised, going down very much, to a degree where we cannot consider making investments. We have been chasing transactions but the process is very, very slow.”

The DBJ aviation team is bemoaning a significant influx of new aircraft investors, which is affecting returns.

“A lot of investors have been coming into this space, making a lot of investments in aircraft. That makes the returns very compressed. There’s probably a bit more supply than demand so the returns are rather poor. But on the upside, I think we’re very close or have reached the peak in terms of asset values,” says Kimura.

Another issue is that DBJ does not have “a lot of capacity” for investments in individual aircraft. “Many lessors want to sell portfolios, not just single aircraft, which is why it’s difficult for DBJ to make any bids. In other words, we cannot compete very well,” says Kimura. His counterpart was quick to jump in and add: “Let’s put a positive spin to it. I think you can say we’re being selective and patient,” laughs Tsuda.

Initially, DBJ’s focus was on acquiring young narrowbodies with leases attached to “good” airlines but the aviation co-heads soon realised that that was a “very narrow target” so they changed their criteria to include “slightly older narrowbodies, around 10 years of age, mid-life aircraft”.

Kimura says: “We could also potentially look at weaker-credit airlines. But, of course, we must study the airline’s credit and business model carefully. Our targets have become wider, but unfortunately the market is still too competitive for us at the moment. I don’t think the market is going to consolidate or crash any time soon. But it might happen, and that would probably be a good time for investments in aircraft.”

Although DBJ’s focus is undoubtedly on narrowbodies, larger aircraft could also be considered under certain circumstances. “It really depends on the transaction. If the lease attached to the widebody is very good, very covered, then our return is covered by the lease. In that case, we could consider widebodies as well,” says Kimura.

Although DBJ has been active in the capital markets previously – participating in a yen-denominated enhanced equipment trust certificate transaction and a US Ex-Im bond conversion deal for Turkish Airlines in 2015 – the bank has not tapped capital market products in recent times.

“We don’t think there is a big enough gap between the loan providers and institutions who want to invest in a bond format. In Japan, unlike in the US, those investors actually overlap. The institutionals do invest in loan formats here as well but the investor base is not as deep. With the pricing where they are, it doesn’t add up for the issuers to go that route. They’re getting enough volume and liquidity in the bond market as it is,” says Tsuda.

Another priority for DBJ’s aviation finance team over the next 18 months will be to make its two junior funds it set up with Novus Aviation Capital “successful”. One is a fund for Airbus aircraft and the other is for Boeing units.

In 2017, after the success of Tamweel Aviation Finance (TAF), Novus announced the launch of a second junior debt fund dedicated to the financing of Airbus aircraft. Tamweel Aviation Finance II (TAF II) is a partnership between Airbus, Development Bank of Japan, Norddeutsche Landesbank (Nord/LB) and Airbus Group Bank and provides junior and mezzanine financing solutions to both airlines and leasing companies.

“DBJ strongly believes junior loans will support finance activity for airlines and lessors. We believe that this fund will make great contributions to the industry,” says the bank.

In 2018, a consortium comprising DBJ, Novus, Nord/LB and The Boeing Company launched Cedar Aviation Finance, a junior debt fund designed to provide airlines and lessors with higher loan-to-value financing for the acquisition of Boeing aircraft.

“Like I said, we’ve been pretty innovative recently and you will see this trend continue going forward, so stay tuned,” say Kimura and Tsuda.

“We’re building our capabilities gradually to be able to do more transactions where we take on more risk, whether it’s more assets per transaction, older assets or lower-credit airlines. We’re building our risk-taking capabilities,” says Tsuda.

“Even though we haven’t done any direct investments in aircraft because the market is very hot, we’re gathering a lot of data. We’re really creating a network on the trading side, with the leasing companies. We have much better visibility now, especially on asset pricing, which is going to be key for us going forward when looking at transactions on the debt side with more risk,” he adds.

“DBJ is not a profit-driven company,” says Tsuda. “Of course, we should make money, but we can wait for the right time to come.”

Down but **not out**

Avianca Brasil's bankruptcy has done nothing to dent lessor appetite for the Latin American market, reports **Oliver Clark**.

The demise of Avianca Brasil earlier this year may have sent shock waves through the South American aviation market, but lessors remain positive about Brazil and the wider Latin American region's long-term prospects.

"We are very bullish on the Brazilian market given the size of the economy, the longstanding policy commitment to airline liberalisation and the strong competitive models of LATAM, Gol and Azul," Firoz Tarapore, chief executive officer of Dubai Aerospace Enterprise (DAE), tells *Airfinance Journal*.

Tarapore says the reasons for the airline's grounding were specific to Avianca Brasil, rather than presenting a wider market problem.

While in some cases lessors were prevented from "immediately" repossessing their aircraft, "ultimately all assets were released", he says. DAE did not have any aircraft with the São Paulo-based carrier, adds Tarapore.

SMBC Aviation Capital's senior vice-president and regional manager of airline marketing for the Americas, John Burtz, is equally upbeat about prospects in Brazil, a market the lessor has been involved in since 2005.

"Considering the size of Brazil, and with the remaining players embracing sustained profitability over market share, we see the country more positively today than in a very long time," he tells *Airfinance Journal*.

"That is not to say that there are not things to worry about, but that can be said of any aviation market in the world," says Burtz.

Other lessors see a lingering impact of the Avianca Brasil grounding.

"The response of the courts in Brazil ultimately resulted in aircraft repossessions, but the Cape Town [Agreement] provisions on this occasion took much more time [to implement] than expected," says Felipe Campos, Avolon's head of Latin America.

"This impacted the leasing community as it increased the losses generated by the default of Avianca Brasil. We believe that the vast majority of the lessors expect to keep doing business in Brazil, but, as a direct impact of the Avianca delays, the security packages for airlines might increase," he adds.

> *"We are very bullish on the Brazilian market given the size of the economy, the longstanding policy commitment to airline liberalisation and the strong competitive models of LATAM, Gol and Azul."*
>
> **Firoz Tarapore**, chief executive officer of Dubai Aerospace Enterprise (DAE)

Exposure

As of 20 August, *Airfinance Journal*'s Fleet Tracker shows that AerCap had the largest number of aircraft leased in the region totalling 90. This is followed by GECAS with 83, NAC with 77, SMBC Aviation Capital 61, DAE Capital and ACG with 46 each, Avolon with 42, Aircastle 41, Jackson Square Aviation 31 and ICBC Leasing 29.

Lessors have 24 aircraft on direct order from the original equipment manufacturers (OEMs) assigned to Latin American-based carriers, with SMBC Aviation Capital accounting for 19 of these and GECAS five.

In terms of airline aircraft orders, by country, the highest number of orders are bound for Brazil, which accounts for 148 of the total – Mexico comes next with 120, Colombia has 91, Chile, 67, Panama 55 and 18 are bound for Argentina.

The most popular aircraft model is the Airbus A320 family, with 225 on order. Boeing 737s account for a further 206, while Embraer has 30 orders, ATR has 10 and Sukhoi has orders for four Superjets.

DAE has 12 customers in the Latin America region, half of which are low-cost carriers (LCCs). Tarapore says the majority of these customers have their own order pipelines and represent a "strong opportunity" for sale and leaseback business.

Burtz says SMBC Aviation Capital has a 25% exposure to Latin America on a fleet count basis. He says the lessor has been able to capture a "significant" amount of the growth cycle in the region and plans to continue making future investments through sale and leasebacks or the placement of its own aircraft with airlines in the market.

Avolon's Campos says that Latin America was "key" to the lessor's beginning in 2010 when a number of sale and leaseback transactions were closed. It continues to seek to grow in the market.

Growth outlook

Avianca Brasil aside, Tarapore sees "strong potential" in the Brazilian market, along with the other "larger, deregulated markets" such as Mexico, Colombia and Chile.

Meanwhile, LCCs and ultra low-cost (ULCC) carriers are increasingly penetrating the Argentinean, Chilean and Peruvian markets, he says.

While he views the overall Latin American market as having consolidated around a few large players – namely, Avianca, Gol, LATAM and Azul – in recent years, Tarapore believes there remains "untapped opportunities" for niche players looking to offer overlooked connectivity.

The process of deregulation has also created growth in the form of new LCCs developing in the region, he adds.

Tarapore describes the Latin American region as "poised for strong growth" in the coming years with manufacturer forecasts suggesting Latin American air traffic will grow at more than 4% a year over the next 20 years – higher than growth rates in more established markets such as the US and Europe. As a result, manufacturers expect more than 2,700 deliveries to the region over the next 20 years, more than doubling the current fleet.

Major carriers in the market have been actively renewing their fleets in recent years, and the average age of the commercial fleet today is in line with global averages at about 9.5 years, says Tarapore.

Avolon's Campos says growth opportunities in the region differ over time and can alter "dramatically" as a result of changes to governments and air transport policies.

While Chile, Argentina, Mexico and Peru showed a "high level of growth" in 2018, this year might be different, adds Campos.

"We maintain a positive view of the overall market as we believe there is a lot of potential for growth in the most populated countries of the region – Brazil, Mexico, Colombia, Argentina, Peru, Venezuela, Ecuador and Bolivia," he says.

Campos says airlines in Latin America are "severely impacted" by high fuel prices and this is driving demand to renew their

fleets with the most fuel-efficient aircraft available. He anticipates that up to 750 aircraft will need to be replaced over the next decade.

SMBC Aviation Capital's Burtz says the growth opportunities in the region stem from the "unique" way in which the larger airlines in the region have organised their operations.

LATAM, Avianca, Sky Airline, Jetsmart and Viva Latinamerica are just a "handful" of the carriers that have established separate air operator's certificates in different jurisdictions in order to serve multiple countries and build extensive networks, he says.

As a result, the airlines are developing at a "very fast pace" and are expected to continue doing so, adds Burtz.

He expects a "reasonable" number of 737, 737NG and Classic aircraft to be replaced with Max and Neos over time.

The lessors are in agreement that narrowbodies, specifically the A320 and 737, are the most popular aircraft types in the region and will continue to be so.

In its 2019-38 commercial market outlook published in June, Boeing predicts there will be 2,690 aircraft deliveries into the Latin American market, worth a combined $500 billion.

The US manufacturer says passenger traffic has grown by an average of 5.9% each year since 2010 and it expects an average growth rate of 5.2% over the next 20 years.

In its 2018-37 global market forecast, Airbus estimates that carriers in the Latin America and Caribbean region will need 2,720 new passenger and freighter aircraft to meet rising demand.

The European OEM sees the need for 2,420 small and 300 medium, large and extra-large aircraft, valued at $349 billion, over the next two decades.

Market trends

DAE's Tarapore views Latin America as a market that has already significantly liberalised, with most of the larger markets now substantially deregulated.

"This has bred stronger regional competitors that are more stable regionally and more competitive on intercontinental routes," he says. DAE expects the pace of liberalisation to continue.

While the market has largely consolidated around several key players, there are a number of start-up niche operators, particularly in the LCC and ULCC sectors, says Tarapore.

"Operators such as Viva Aerobus and Viva Colombia are already making their mark while Chile is seeing strong LCC competition between Sky Airline and Jetsmart. Argentina has seen several new start-ups as its market has begun to deregulate. We believe it is important

"Operators such as Viva Aerobus and Viva Colombia are already making their mark while Chile is seeing strong LCC competition between Sky Airline and Jetsmart."

Firoz Tarapore, chief executive officer of Dubai Aerospace Enterprise (DAE

to keep a close eye on opportunities presented by niche start-up carriers spotting gaps in market supply across the continent," he says.

While LCCs have expanded in the region, Tarapore does not see this as necessarily a major threat to the established flag carriers.

"Many of the leading Latin American carriers have cost bases that are broadly competitive with LCC carriers and we do not expect the LCCs to damage the strong business profiles of these carriers," he says.

"Where LCCs may be more of a competitive threat will be to older, less-efficient, flag carriers in smaller countries that do not have the market breadth to build truly competitive cost bases," adds Tarapore.

While Avolon's Campos sees a "clear movement" to liberalisation, he says it generally takes a long time for governments to move in that direction, often because of debate around protectionism.

He believes there are opportunities for new players to emerge but the market conditions offer some challenges.

"There are a number of airlines that have started or will start operations soon in the market, but, unlike Europe or USA, there are not always secondary airports, straight forward legislation for baggage, etc, so this can present major challenges for new operators, particularly if they are LCCs," says Campos.

SMBC Aviation Capital's Burtz says he hopes Argentina continues on the path of liberalising that it has very recently begun and that Peru and Brazil are also beneficiaries of supportive government aviation policies.

He does not see a "high probability" of a lot of new entrants in Latin America, highlighting the risk of overcapacity. That said, Burtz has been impressed with the performance of the region's newest start-ups.

Risk factors

In its July economics Americas bulletin, International Air Transport Association (IATA) painted a mixed picture of the outlook for Latin American carriers.

While airlines in the region reported "record" passenger load factors in April 2019 of 82.2%, the airline association notes that the profit margin of airlines in Latin America fell "sharply" in 2018, dropping to an average of 2.7%, from 6.2% in 2017.

IATA expects airlines in the region to deliver a net profit of $200 million in 2019, reversing a $500 million loss the year before. It attributes to the recovery of the Brazilian economy helping to offset higher oil prices. With a $0.50 profit per passenger, the region's net margin is expected to be a "thin" 0.4%, it says.

Tarapore says the Latin American market continues to exhibit challenges for airlines in terms of managing currency risk, fuel cost risk and potential economic volatility, but he believes that, on the whole, airlines in the region are "significantly" stronger than they were in the past, having built more robust and efficient networks on the back of a liberalising aviation policy environment.

In terms of aircraft repossessions, he does not view Latin America as being "particularly more risky" than other markets in which it operates.

Avolon's Campos identifies currency fluctuations, fuel price and changes to governmental policies as the main risk factors in the region. Those carriers lacking regular income in US dollars and euros are especially vulnerable to forex risk, he notes.

Intra-Latin American traffic flows make up more than 85% of all traffic in the region, reflecting the "enormous growth" in cross-border activities in recent years. This has made it very susceptible to foreign exchange fluctuations, believes Campos.

Burtz identifies the same risk factors. But he says the Dublin-based lessor seeks to mitigate these effects by focusing on "our support on key regional players, strong management teams and strong financial backers as a way to mitigate the many things that we cannot control like fuel and foreign exchange".

Regional **aircraft master**

Martin Moller, chairman of Nordic Aviation Capital, tells **Olivier Bonnassies** that the lessor's links with ATR continue to flourish.

Nordic Aviation Capital's (NAC) latest ATR-600 announcement confirms the lessor's dominance of the segment. It signed a letter of intent for 105 aircraft at the Paris air show, comprising 35 firm aircraft, 35 options and 35 purchase options.

Deliveries, which are scheduled between 2020 and 2025, will extend the lessor's pipeline of new deliveries when its previous order, for up to 75 ATR aircraft in 2014, ends delivering next year.

NAC's chairman, Martin Moller, says the intention is to firm the aircraft order by September.

"It is a done deal," he tells *Airfinance Journal* in an exclusive interview.

Moller's confidence in the transaction is a testimony of its relationship over the years with the Franco-Italian manufacturer.

The Danish-based lessor has had a history of signing large aircraft orders with turboprop manufacturer ATR.

NAC has been leasing ATR aircraft since 2003 and acquired new ATR aircraft in 2009 through a purchase and leaseback transaction.

The lessor's faith in the ATR family was further underlined when it placed an order for 10 new ATR72-600s, plus options on a further 10 at the Paris air show in June 2010, with deliveries scheduled from December 2012.

Three years later, it ordered the new -600 series through a 35-aircraft order, both for the ATR72 and the ATR42 model.

In the past, NAC has ordered five to seven ATR72 aircraft for each ATR42 delivery. "If you look at the production rates, ATR delivers about 10 to 12 ATR42s a year," he notes.

"Our order has certain clauses, but we have some flexibility as to switching models within a relatively short notice period. ATR has become very flexible over the year, which is appreciated," he adds. "We felt it was the right time to show our continued commitment to the product".

Moller says that the lessor has more than 200 ATR aircraft in its portfolio, when including the used aircraft acquired over the years.

Taking all NAC's commitments (firm and options) into account, the number of aircraft on order now rises to more than 200 new aircraft, as the world's largest regional aircraft lessor continues to expand its fleet to meet the need for short-haul turboprops.

> *"We have taken delivery of over 100 ATR aircraft over the past 10 years, and this commitment will take us to over 200 ATR aircraft."*
>
> **Martin Moller**, chairman, Nordic Aviation Capital

"We have taken delivery of over 100 ATR aircraft over the past 10 years, and this commitment will take us to over 200 ATR aircraft," he says.

NAC has a significant share of the ATR42-600 market, and the presence of the short take-off and landing (STOL) version in its portfolio would further consolidate its dominance in the 42- to 50-seat market.

"We have a contract that includes flexibility between the models. There aren't any direct options for the ATR42STOL model, but we can certainly consider the possibility.

"I am confident that once this aircraft is available, we will commit to it. We believe there will be a requirement for this aircraft in the future, and we will have this type of aircraft in our portfolio," he says.

Moller explains that a number of routes operated by the Bombardier Dash8-100/-200 models are going to be impacted as the aircraft comes to the end of its economic life.

"We have had several customer enquiries for this model, but this aircraft will only be available from 2023," he adds.

"Our market segment is different from the narrowbody and widebody market: for two-thirds of our customers, the definition of long term planning is four to six months."

In that regard, he argues that, in 2023, the availability of the ATR42STOL version is "too far away". He adds: "By then we won't know where we will be in the cycle.

"From a leasing company standpoint, we would like to be closer to that time [2023], to place an order. We place orders because we think it is good business. We don't do it for the PR side."

Different OEM mindset

Leasing companies tend to balance their portfolios by ordering aircraft in the same segment to serve the market best.

Over the years, NAC could have balanced its orderbook and placed direct orders with Bombardier but, in the end, it placed its faith in the ATR models.

"We like the Q400; it is a great aircraft. In terms of performance, the Q400 is more a regional jet than a turboprop.

"When we looked at ATR and Bombardier [in the early 2010s] we sensed there were two different philosophies. We choose

ATR, partly because of their association with Airbus and Leonardo, who back then understood the lessor's mindset. They knew how to work with lessors and how to support the leasing community," he explains.

"Our feelings with Bombardier were different: if we had placed an order, we would have immediately become a competitor to their sales force. Therefore, we felt more comfortable letting Bombardier sell the aircraft to airlines first, and then acquire the aircraft under a purchase and leaseback basis. That strategy worked very well for us."

In 2012, NAC had the likes of Fokker 50, Saab 2000 and classic Dash8s in its portfolio.

"There was an old generation of analogue turboprop aircraft that has served operators and communities very well for a long time. However, they faded out, and we had to provide operators with the aircraft they wanted," he explains.

The ATR72-600 became very popular in a short period of time. The Q400 has a limited number of operators; those established have been loyal to the programme. Availability has been low over the years, even in the context of big airline bankruptcies. The Q400 has been a good performer in the portfolio."

The key to the success of a lessor is that they must have 100% knowledge of the product, says Moller.

"You need to know the product you invest in so that you can be confident about what you are offering to customers. We became the large turboprop player by knowing our products," he adds.

The NAC portfolio is 60% turboprop-led, and the remaining 40% are regional jets, but Moller sees this ratio changing in the future.

"The regional jet is a broader market than the turboprop market, and it is growing faster. The addressable market for turboprops is about 2,000 aircraft whereas it is close to 6,000 aircraft for the regional jet market.

Also, the dynamics are changing. As much as there is strong demand for small turboprop and regional jets, the market is going for larger variants.

"While the dynamics are entirely different from the narrowbody market, the regional aircraft market still requires larger aircraft," he observes.

As regional players operate in a relatively short-term planning horizon, Moller says NAC constantly keeps aircraft in inventory to meet demand.

"If we did not have them, we would not be in the position to help our customers," he adds.

A220 exposure

At June's Paris air show NAC finally committed to the Airbus A220 models with a letter of intent covering 20 aircraft. The lessor is already an A220 customer, having acquired seven aircraft from Air Baltic under a finance lease agreement with Export Development Canada guarantee.

> *"Our market segment is different from the narrowbody and widebody market: for two-thirds of our customers, the definition of long term planning is four to six months."*
>
> **Martin Moller**, chairman, Nordic Aviation Capital

Moller said in 2013 that it was not a matter of if NAC will order the then CSeries, but more a matter of when.

"I have known about this aircraft since 2006 and I have believed in it for many years. I like the design and its economics. We were waiting for this programme to mature before placing direct orders."

For Moller, the A220s are both a regional and narrowbody family of aircraft. "It is the result of the industry moving into larger aircraft. The E195-E2 is another example: it is a larger aircraft than its predecessor," he says.

"It is what the airlines need to defend their position in the market. Lessors should not supply to lessees what they like, but what lessees need. We are confident that airlines will appreciate the new technology and economics of the A220 family."

He adds: "There was a period of time when we would get A220s at short notice, but given the various orders placed over the past 18 months, we now see that availability is more sparse. It was time for us to secure the delivery positions we wanted."

Moller says the A220 family is more on the airlines' radar. Airbus's marketing machine has benefited the product and given more confidence to customers.

Changing market

Servicing the world's growing regional aircraft fleet is a top priority for Moller.

The regional aircraft market has evolved over the past 10 years and is more challenging today, especially with competing low-cost carriers (LCC).

"It is a changing market. As the largest regional leasing company, you need to read and analyse the market carefully. You must deliver what the market wants, not what we want.

"When I started in the business, many regional aircraft featured 19 seats, and you no longer see them," he adds. Moller recognises that operators are becoming capacity providers in some regions. "That's the way it is going and we have to make sure we can serve them."

Other airline models are becoming hybrid, he says, adding that Air France's Hop! has performed very well in addressing costs. "Hop! is no different; they are in-house capacity providers."

Moller says the market has been pessimistic about regional airlines.

"I cannot remember the last time regional airlines had a positive outlook, yet the sector has grown at a tremendous rate. Personally, the regional airline field will continue to play a significant role for the major carriers in every region of the world."

The LCC is a segment Moller admires. "It is a different type of regional operation. They only operate a one-type aircraft fleet and they are part of growing connectivity in the regions."

He adds: "I am impressed by the model and its success. LCCs have really earned their space as a regional player in the market."

New partner

Last year was intense for Moller on the shareholder structure. GIC, Singapore's sovereign wealth fund, acquired a minority stake in NAC from Denmark's private equity company EQT.

The transaction comprised a partial sale by NAC's existing shareholders and the injection of new capital to strengthen further the lessor's balance sheet and solidify its strong position in regional aircraft leasing.

"Back in 2012, we formulated a strategy that would provide more fire power. Based on that strategy, we invited EQT in late 2015 to join as a shareholder," he says.

Within a year of EQT being on board, Moller said the company received enquiries about opportunities to buy into the company.

The number of enquiries increased over the years, perhaps reflecting where we were in the cycle, recalls Moller.

"They decided to launch a formal process in spring 2018, which distracted me from the company. As an investor and chairman, I was interested in making sure we had an equally good partner on board," he says.

EQT will remain on board for another three or four years and Moller does not envisage any difference in its approach to the business.

"Both EQT and GIC are very professional investors. When you buy into something that works well, rule number one is not to change anything."

He adds: "They understand our business well and our primary focus: the operators we serve."

Keeping **MoM**?

Will Boeing still launch its NMA aircraft to serve the middle of the market after Airbus stole the show in Paris with the A321XLR? Appraisers give their views.

It is an irony that is probably not lost on Boeing that having long talked about the potential for a new aircraft type to fill a perceived gap in the middle of the market (MoM), it now finds itself in a race to catch up with Airbus, which unveiled a rival product in the form of the Airbus A321XLR at this year's Paris air show.

Boeing has long grappled with how best to service the middle of the market, broadly defined as aircraft with a range of 4,000 to 5,000 nautical miles (nm) and between 200 and 300 seats – a segment the US company historically served with its now ageing fleet of 757s and 767s.

Rough outlines and design concepts for Boeing's 797, or the New Midsized Aircraft (NMA), have been circulating for several years. Media reports suggest the US manufacturer is planning a widebody aircraft, in two versions, with a range of between 4,000nm and 5,000nm with a 200- to 270-seat capacity.

Such a design would sit between the largest variant of the 737 Max, the -10, which can accommodate up to 230 seats, and in its longest range version, the -7, which can operate to 3,850nm, and the smallest 787, with 248 seats and a range of 7,305nm.

In January, *Airfinance Journal* quoted Boeing managing director marketing, Kemp Harker, as saying the NMA would come into service in the next decade. He added there was market demand for between 4,000 and 5,000 aircraft of the type.

> *"I have been saying it for a year now that we understand Boeing was close to launching the NMA before all the Max problems."*
>
> **Doug Kelly**, senior vice-president of asset valuation, Avitas

In April, Boeing's chief executive officer, Dennis Muilenberg, said the company was still exploring the "prospects" for a new MoM aircraft.

Speculation that Boeing would formally launch the NMA during this year's Paris air show proved to be wrong.

Whether this was because the original equipment manufacturer was too pre-occupied in the PR crisis after the 737 Max grounding, or felt the timing was not right, or it had not finalised its plans, is not clear.

Worse was to come. Airbus took the opportunity to unveil a longer-range version of the aircraft on the first day of the air show.

Dubbed the A321XLR, the aircraft – which is due to come into service in 2023 with launch customer Air Lease – can accommodate 180 to 220 seats in a typical configuration and has a range of 4,700nm, 15% longer than the A321neo. The European manufacturer booked 43 firm orders for the type during the show, along with 79 commitments and 99 conversions from the A321neo to the XLR model.

Airbus says the aircraft will offer lower fuel burn and allow airlines to operate a single-aisle class aircraft on longer and thinner routes and open up new markets that could not previously be operated economically.

Demand

Doug Kelly, senior vice-president of asset valuation at Avitas, says the "challenge" for Boeing in developing the NMA will be to build a widebody aircraft that has got narrowbody economics.

With Boeing still dealing with the grounding of the 737 Max and with Airbus making inroads into the MoM market, will the Chicago-based manufacturer press on with its NMA plans and if so how much demand is there for such a programme?

"We do think there is a gap there – now there is an argument about what the size of that gap is and how many airplanes you are talking about," says Kelly.

"I have been saying it for a year now that we understand Boeing was close to launching the NMA before all the Max problems. We kind of expected them to do it probably at the [Paris] air show this year if it was not for the Max issues and groundings," he adds. Kelly says he agrees with estimates that there is a market for

> *The market has to have confidence and faith that when Boeing proposes the NMA they deliver what they promise on paper, and one way of incentivising people to believe that promise is to offer them a great commercial deal.*

Rob Morris, global head of consultancy, Ascend by Cirium

4,000 to 5,000 aircraft in this segment. Of this, Kelly believes the A321XLR will "take a share" of somewhere between 1,000 and 2,000 orders.

Mike Yeomans, head of valuations at IBA, shares the same view about the size of the market, but says the NMA will be "fighting for market space" not only with the XLR at the "lower end" but also with the A330neo at the "upper end".

Rob Morris, global head of consultancy at Ascend by Cirium, believes the demand will depend "on what the NMA is to some extent. If it's 240 to 280 seats, a 4,000nm to 5,000nm-range aircraft optimised economically for that kind of payload range performance that is being talked about, then I think the 4,000 to 5,000 demand that we see Boeing talking about looks maybe about right", he says.

"To some extent, we argue what we see that market as already being served by aircraft that are in production, albeit they might not have the optimised payload range and economics that a clean paper design could have," he adds.

The appraisers agree that while the A321XLR will take a share of the market, it will not be able to capture the whole market. There is also the risk of the cannibalisation of existing 737 Max and 787 orders.

Another question is what the timeframe will be for the programme.

Kelly says Boeing had originally targeted a 2025 entry into service, but even if the manufacturer was to unveil it at the end of the year, the NMA is unlikely to go into production before 2026.

Morris says there is probably an 80% chance of the NMA being launched in 2020. All this depends on the return of the 737 Max, with Ascend working to the hypothesis that this will happen in November.

If this timescale proves to be correct, Morris says Boeing will likely know about it by September.

"I suspect that the Boeing board may be considering the NMA in October," he adds.

If this happens, the board could then give its commercial team authority to offer the NMA, the equivalent of a soft launch, and seek out non-binding offers to develop a launch case for the aircraft shortly after that, says Morris. In terms of potential customers, most appraisers are in agreement that the major US full-service carriers are obvious potential targets for the NMA.

Morris says any aircraft that lowers the potential average seat cost will be "welcomed broadly". Chinese and Asian carriers could use it for medium-range routes, he believes.

Design and delivery

Kelly of Avitas says the big challenge for Boeing will be developing a widebody aircraft "but with single-aisle economics".

He says that in 2010 Boeing took out a patent for what he calls a "near elliptical design" for the cross-section of the NMA aircraft, which involves squeezing down the fuselage in a "very unique" way.

"You can have a twin-aisle and you squeeze it down so you no longer have that cargo capability that you do on a typical widebody," he says.

"A typical widebody, it's more round cross-section that gives you a lot more cargo capability in the belly of the aircraft, but this aircraft, the NMA, is going to be designed more as a 757 replacement so you don't need the widebody cargo capability," he adds.

"The one big challenge in all this obviously is design itself. If you design widebodies, airplanes by definition are typically slightly more inefficient economically than single aisles and this aircraft sits right on the cross over between single aisle and widebody," says Morris.

IBA's Yeomans says that the early indications from Boeing are that it plans to offer an "enhanced experience" with the NMA, including higher load factors, "more personal space and less cramped conditions". He says the question is will airlines, and by extension passengers, be prepared to pay for such enhancements.

Price

Assuming that Boeing goes ahead with the NMA, how should it be priced? The appraisers suggest that a price ranging between $70 million and $90 million an aircraft would make sense.

In order for its economics to remain "competitive" with Airbus, Kelly believes that Boeing needs to set a maximum sticker price of $80 million for the NMA.

Yeomans estimates the price will be about $70 million or up to $80 million. Going up to $90 million would be too high because the NMA must be able to compete with the A321XLR at about $60 million.

"I think you can attract a premium for a NMA but not $20-$30 million premium," he says.

Morris says that given the NMA will sit between the A321LR and A321XLR at $60 million to $65 million and the 787-8 at $90 million to $100 million, it will need to be priced between $80 million and $90 million to be attractive.

Obviously, customers will not pay the sticker price for the aircraft, especially if they place large orders. But Morris believes that Boeing may also offer 737 Max operators a reduced price for the NMA by way of "soft compensation" for the impact of the groundings.

"The market has to have confidence and faith that when Boeing proposes the NMA they deliver what they promise on paper, and one way of incentivising people to believe that promise is to offer them a great commercial deal," says Morris.

Economics and single-aisle

Morris predicts that it could cost Boeing between $12 billion and $14 billion to develop the NMA.

If his prediction of the price of the NMA and the number of orders the US manufacturer can expect to capture holds true, Morris says the prospects of Boeing recouping the cost of development "looks quite challenging".

But making a profit may not be the only factor Boeing has in mind. Avitas's Kelly suggests the NMA might be an important testing ground for developing a single-aisle successor to the 737.

"The reason why the NMA is important for Boeing and why they have to do it is to provide the learning for the new narrowbody replacement because remember their goal for narrowbody production rates is to get up to 70 aircraft a month," says Kelly.

"You cannot do a brand new airplane unless you are totally confident that you can build this and do it and get up to speed on the production to 70 airplanes a month.

"The NMA becomes that test case for Boeing. It's a lower risk if things don't work out, there's not as big a risk as you still have the Max. You still have the 787. So for Boeing it's not as great a risk as doing the narrowbody replacement," he adds.

Questions abound for Boeing regarding the NMA, from whether it will prioritise the larger version or the smaller version, what engine supplier or suppliers it chooses, to how long certification could take in a post-737 Max regulatory environment.

CFM maintains its dominance

CFM56-7B engine tops this year's engine poll.

The engine market follows the aircraft market and this year's engine poll result reflects difficulties in the narrowbody sector.

However, the narrowbody engine market has improved over the past 12 months. Engine availability is limited and shop visit capacity has dried up, say sources. Engine lead time has increased and operators now have to wait for several months to get an engine into the shop.

The V2500-A5 and CFM56-5B models have increased in scoring in the past 12 months in terms of investor appeal, remarketing potential and residual value, according to this year's engine poll.

One participant says those engines are a good indicator of the shortness in supply in the market.

"Airlines have been using spare engines to avoid shop visits and even if they sent engines to the shop, there was a problem with capacity. In a way, airlines have been forced to lease more engines," he says.

Coupling this with aircraft lease extensions in the marketplace, operators have had to adapt to keep their engines longer.

Once again CFM products led the engine poll in the narrowbody sector.

The LEAP-1A scored 5.9 out of seven for investor appeal, 5.7 for remarketing potential and 5.9 for residual values.

However, the LEAP-1B, which powers the Boeing 737 Max family, again led the way, scoring the highest for investor appeal. It came third in remarketing potential and second for residual values. "The issue is being able to get them. There is a queue. Rates are competitive and difficulties are in setting maintenance reserves for operations," says one participant in the poll.

The PW1100G scored slightly less than in 2018, although the consensus was that scores would be improved this year because Pratt & Whitney continues to solve the engine's technical problems.

This year's engine poll showed the continued resurgence of the mature narrowbody engines. Over the years, the mature engine saw increased activity as airlines and lessors retired older aircraft to make way for new models. The green time on mature engines is also perceived as having improved over the years.

The 737 Classic aircraft are an example: last year about 40 737-300/-400/-500s were broken up.

Investor appeal for the CFM56-3C model has dropped year-on-year but remarketing potential and residual value has remained stable, the poll shows.

According to *Airfinance Journal*'s Fleet Tracker, 30 737NGs were taken out of service in 2018.

The -7B model was the top engine performer in two of the three categories this year: remarketing potential and residual value. It scored 6.36 for remarketing potential and 6.09 for residual value versus 6.0 and 5.8, respectively in 2018.

The grounding of the 737 Max has had an effect on operators. Demand for the 737-800 model, which was strong already, is expected to increase a notch as airlines seek interim uplift.

According to Fleet Tracker, there were 145 737-800s in storage or between operators at mid-April 2019. About 65 aircraft were Jet Airways aircraft that were being released. The active fleet was about 4,780 units. The 737-800 storage level is likely to disappear if the Max problems continue, says sources.

The -7B model has consistently performed above the -5B over the past few years in all three categories. This is not surprising given the engine's exclusive status on the 737NG family and because it powers one of the world's most popular narrowbody aircraft.

The -5B engine models have maintained second place in the narrowbody mature market and its popularity is still growing: 5.9 for investor appeal (versus 5.8 in 2018), 6.18 for remarketing potential (versus 5.8 in 2018) and 5.82 for residual value (versus 5.7 in 2018).

"There is a lot of demand for this engine from airlines and OEMs [original equipment manufacturers], especially now with the issues with the Neo and the Max models," comments one participant.

"The -5B still remains an engine to have and to buy for lease pools as the latest-generation single-aisles cannot be easily acquired," observes another.

Once again there is a clear distinction in the IAE V2500 engine family because the -A5 model significantly outperformed the older V2500-A1 in the poll, nearly doubling its score in all three categories.

GEnX wins 787 votes

Another success story this year is the engine that powers the 787 model. The more successful of the two, according to the *Airfinance Journal* engine poll survey, is the GEnX, which came top in all three categories: investor appeal, remarketing potential and residual value.

The other engine option, Rolls-Royce's Trent 1000, also performed well and second in two categories.

Regional aircraft

	Investor appeal (out of 7)	Remarketing potential (out of 7)	Residual value (out of 7)
CF34-8C (CRJs)	3.50	3.75	3.38
CF34-8E (E170/175)	3.88	3.88	3.63
CF34-10E (E190/195)	3.90	4.20	3.90
PW1919 (E190/195-E2)	3.63	3.25	4.25
PW127F (ATR72-500)	4.00	4.00	3.71
PW127M (ATR72-600)	4.50	4.75	4.25
PW150A (Q400)	3.88	3.88	3.75

Source: Airfinance Journal, April 2019

Narrowbodies aircraft

	Investor appeal (out of 7)	Remarketing potential (out of 7)	Residual value (out of 7)
BR715 (717)	1.43	1.71	2.14
CFM56-3C (737 Classic)	1.80	2.70	2.10
CFM56-5A (A320)	2.30	2.60	2.60
CFM56-5B (A320)	5.91	6.18	5.82
CFM56-7B (737NG)	6.09	6.36	6.09
CFM Leap-1A (A320neo family)	5.90	5.67	5.90
CFM Leap-1B (737 Max family)	6.10	5.80	5.90
PW1100G (A320neo family)	5.40	5.22	5.30
PW1500G (A220 family)	4.20	3.80	4.70
PW2000 (757)	3.00	3.71	3.43
PW6000 (A318)	0.71	0.86	0.86
RB211-535 (757)	2.63	3.38	2.63
IAE V2500-1 (A320 family)	1.45	1.55	1.55
IAE V2500-A5 (A320 family)	5.73	5.91	5.82

Source: Airfinance Journal, April 2019

However, it scored behind the Trent XWB, GEnX and the CF6 engines for remarketing potential, reflecting the problem Rolls-Royce has had over the past year with the grounding of some 787s.

"GEnX-1B engines are highly sought after. A number of GECAS transactions for single-sale and portfolios have occurred," says one participant in the poll.

Another participant says the rating for the GEnX-1B engine model reflects the fact that there is little demand for the GEnX-2B model, as it is a niche market.

The GE90 engines scored lower than a year ago. "Lots of -300ERs will come into the market in the future and it is expected that there will be an oversupply of engines," says one participant, adding that the type is not attractive to investors.

In this year's *Airfinance Journal* Investor's Poll, the 787-9 was the clear winner in the twin-aisle category.

Its notable market popularity significantly outstrips the other options, with the A350-900 trailing behind. However, both scored less than previously, which reflects a certain malaise in the widebody market. Still, the ubiquity of both among airlines makes them tried-and-tested favourites of the investor community year after year.

The Trent XWB came third in two of three categories, reflecting the popularity of the A350 models.

At the other end of the table are the engines powering the Airbus A340 families. The worst performer is the Trent 553. According to Fleet Tracker, there were 10 aircraft in service all with governments, except one aircraft operated by Azerbaijan Airlines at the end of April 2019. Another 19 aircraft of the type were in storage.

The larger A340-600 Trent 556 engine is not far off. There are 28 aircraft in storage and about 60 in service. "Those engines have their value floor," says one source but there is higher demand for the CFM56-5C4/P model.

In between the Trent engines are the JT9D engines that scored the lowest for remarketing potential. Values are believed to be in the $2 million to $2.5 million range, according to one participant.

The PW4000 engine family scored higher than last year. The PW4000-100 variant is in a better place than a few years ago, says one source, with shop visits helping. The PW4000-94 engine model behaved as per the CF6-80C2. An engine fresh from performance restoration is estimated between $6 million and $7 million for the PW4000-112 variant.

Widebodies aircraft

	Investor appeal (out of 7)	Remarketing potential (out of 7)	Residual value (out of 7)
CF6-80 (747-400s, 767s)	3.70	4.20	3.90
CFM56-5C (A340)	2.30	2.70	2.90
GE90 (777s)	3.89	3.78	4.11
GEnX (787s, 747-8s)	5.10	4.50	5.40
GP7200 (A380)	2.71	2.57	2.71
JT9D (747s, 767s)	1.00	1.14	1.14
PW4000 (747-400s, 767s, 777s, A330s)	3.40	3.80	3.50
RB211-524 (767, 747-300, -400)	1.38	1.75	1.75
RB211-535 (757)	2.63	3.38	2.63
Trent 553 (A340-500)	1.00	1.00	1.14
Trent 556 (A340-600)	1.14	1.14	1.29
Trent 700 (A330s)	3.00	3.11	3.00
Trent 800 (777s)	1.88	1.88	1.75
Trent 900 (A380)	1.71	2.00	2.00
Trent 1000 (787s)	4.00	4.00	4.14
Trent 7000 (A330-900neo)	3.86	3.86	3.71
Trent XWB (A350s)	4.67	4.11	4.22

Source: Airfinance Journal, April 2019

Regionals

The Pratt & Whitney PW127M engine is the best-performing in-production regional aircraft in the investor appeal, remarketing and residual value categories, according to the poll.

The aircraft's popularity among operators is clearly having a knock-on effect on the market for its engines, which is particularly good news for Pratt & Whitney. The ATR72-600 reclaimed top spot in the regional aircraft market this year scoring 3.4 overall, a marginal increase over the previous year.

The turboprop is now a mature aircraft and will have had more than eight years of service in 2019. As the aircraft penetrates more markets, lessors are still in this model. Nordic Aviation Capital remains the largest leasing company for ATR aircraft, but lessor Avation is also a committed customer for the ATR72-600s.

The PW127F engine came second in the investor appeal and remarketing category, showing an appetite for the ATR72-500 model in the second-hand market.

The CF34-10E engine came second in remarketing potential, due to continued trading of Embraer 190/195 aircraft in the marketplace.

Another new entrant in this year's engine poll is the PW1919 engine, which entered into service in the first half of last year on the E2 family. The engine family received strong scores as investors believe the asset represents a good investment.

Embraer E195 – Boeing lends a hand

In contrast to the pattern for the first generation of Embraer E-Jets, the larger E195-E2 is outselling the E190-E2, but sales remain sluggish compared with the competition, writes **Geoff Hearn**.

The E195 is the largest member of the E-Jet family from Brazilian manufacturer Embraer. The first-generation E-Jet family consists of four principal variants, grouped in two size categories. The original E170 model and the slightly larger E175 offer about 70 to 80 seats 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 models.

The E195 has been 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 (GTF) engines and a 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.

The new family includes only three models as part of a rationalisation of seating capacity. The E195-E2 remains the largest variant and is extended by three seat rows compared with the original. The biggest E-Jet is scheduled to enter service this year. The Brazilian Civil Aviation Agency, as well as the FAA and EASA, granted the aircraft type certification in April.

Boeing's role

Embraer has entered into a strategic partnership with Boeing, which is targeting increased sales of the Embraer commercial jet programmes. The partnership is in the form of a joint venture comprising the commercial aircraft and services operations of Embraer, in which Boeing will hold an 80% ownership stake and Embraer will hold the remaining 20%.

Despite the branding of the new organisation as Boeing Brazil, the agreement looks as if it will leave Embraer's marketing team much more involved than appears to be the case for its Bombardier counterparts in the tie up with Airbus.

The second generation E195 was certified in April

John Slattery, chief executive officer of the newly named organisation, has insisted to *Airfinance Journal* that Boeing did not dictate dropping the Embraer name, but that it was a joint decision.

As the largest model in the Embraer range, the E195 perhaps stands to gain the most from Boeing's presence in the mainstream single-aisle market, but as yet there does not seem to have been a jump in sales comparable with that achieved by Airbus since the rebranding of Bombardier's CSeries into the A220.

The E195-E2 has a firm backlog of 124 aircraft and is by a distance the most popular variant in the E2 family with more than twice the orders of the E190-E2. With the first-generation E175 continuing to sell well and no orders for its replacement, the largest member of the second-generation family looks likely to be the most popular model for the foreseeable future.

Views on values

Olga Razzhivina, senior Istat appraiser, Oriel, sees some challenges for the E195 and by implication to residual values for the aircraft.

"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 like Delta Air Lines, which has stood by its CSeries/A220 order. However, many airlines, such as United, seem to favour moving to larger aircraft."

In this context, Razzhivina thinks that the absence of a larger model in the family could have a negative impact on Embraer sales.

Razzhivina believes the well-publicised problems of the GTF engine are having an impact on the prospects for the Embraer models.

"The uncertainty about operating cost of the PW1000 engines may also play a role in the E2's lacklustre sales performance," she says. Understanding and being able to control maintenance costs is one of the key factors for operators. High engine maintenance cost relative to the size of the aircraft was a key factor in deciding to exit the E195 for airlines like Air Canada and Jetblue Airways."

She points out that fleet commonality is a significant factor in airline selections, particularly in the light of widely forecast pilot and mechanic shortages. Razzhivina describes the overall E2 backlog as "underwhelming" and says Oriel would like to see more orders to support normal value retention. Oriel values the E2 at just over $29 million with a corresponding lease rate of $245,000 a month.

Razzhivina suggests that timing could also be a problem for the Embraer model

Values

E195 current market value ($m)

Build year	2006	2010	2014	2018	E2 value
CV view	12.19	14.94	20.92	25.83	37.19
Oriel view	9.45	11.25	14.65	23.95	29.44

Based on standard Istat assumptions.

E195 indicative lease rates ($000s/month)

Build year	2006	2010	2014	2018	E2 rate
CV view	110	135	175	235	280
Oriel view	140	160	180	220	245

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

Aircraft characteristics

	E195	E195-E2
Seating/range		
Max seating	124 at 30-inch pitch	146 @ 28-inch pitch
Typical seating	116 at 31/32-inch pitch	132 @ 31-inch pitch
Maximum range	2,300 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	16,150 litres	17,450 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)	24	5
In storage	8	None
On order	1	124

Source: *Airfinance Journal Fleet Tracker/Air Investor*

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 2019*

because the decision to launch it was taken in an environment of high fuel costs, but as oil prices have subsided, airlines are under less pressure to commit to new orders for more fuel-efficient replacements. Razzhivina believes the original E195 is likely to benefit from any lack of interest in its E2 successor.

This does not, however, seem to be the case so far. Gueric Dechavanne, vice-president, commercial aviation services, Collateral Verifications (CV), says market demand for the first-generation E195 has softened recently as more used aircraft have become available. In addition, Dechavanne believes the introduction of newer more-efficient aircraft such as the A220s may further undermine the future values of the original E195 models. CV believes that new entrants to the market, such as the newly branded Mitsubishi SpaceJet, could further add to pressure on E195 values. The impact of Mitsubishi's takeover of Bombardier's CRJ programmes is as yet unknown, but it does look likely to strengthen the Japanese manufacturer and could help make the SpaceJet a serious competitor to the second-generation E-Jets.

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.

New markets

The US has long been the mainstay of Embraer's orderbook, with about 45% of sales concentrated in North America. This looks likely to continue with the current-generation E175 continuing to notch up sales, but the Brazilian manufacturer is keen to expand into new markets and with growth rates in Europe steady at best, the company has its eye on Asia and particularly China as key areas.

Despite the publicised slowdown in China's gross domestic product growth rate, the annual increases in commercial aviation passenger numbers has continued at a double-digit rate. According to Embraer's latest market forecast, this growth is accompanied by the emergence of local requirements from second- and third-tier cities. The Chinese authorities have responded with a series of favourable policies to support the development of regional aviation.

Guan Dongyuan, president of Embraer China, says this will create great market potential for aircraft with up to 150 seats – a market in which he says the Brazilian manufacturer has a nearly 70% share with a base of eight operators.

The so-called Rule 96 policy requires start-up airlines to operate at least 25 regional jets before moving into larger aircraft, which Embraer says encourages new carriers to focus on regional markets. The manufacturer says that three years after its establishment, the rule is gaining traction.

An Embraer spokesperson tells *Airfinance Journal* that the company believes there is a growing business-friendly environment developing in China, particularly when it comes to the commercial aviation industry. The spokesperson points to the Civil Aviation Administration of China's plan that more than 50 new airports will be built during the 13th Five-Year Plan. This implies that, by 2035, another 140 airports will be constructed and most of the newly built airports will have a regional focus.

The spokesperson adds: "With the increased number of airports, the market calls for more regional aircraft with an appropriate number of seats to develop new routes."

The importance that Embraer places on China is reflected in its decision to make the country the first destination in the global tour on which the E195-E2 is embarking.

China is the first stop on the E195-E2's world tour

Small widebodies face shrinking market

The centre of gravity of the widebody market looks to be moving away from the smallest models on offer. **Geoff Hearn** looks at the prospects for Airbus's new A330-800 and Boeing's more established 787-8 in the light of this trend.

The future for smaller widebody aircraft looks uncertain even as Airbus's latest offering in the category nears certification and entry into service. This segment of the market consists of two aircraft types – the Airbus A330-800, which is replacing the A330-200, and the Boeing 787-8, the smallest member of the so-called Dreamliner family.

A330-800

Airbus formally launched re-engined versions of its A330-200 and A330-300 models at the 2014 Farnborough air show. The replacement models were designated as the A330-800 and A330-900 respectively and, in line with the company's single-aisle family, 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 Boeing's 787 family.

The A330neos are the same size as the aircraft they replace, but incorporate an A350-style cabin, which allows an increase in capacity.

The Rolls-Royce Trent 7000 is the only engine available on the A330neo variants and contributes much of the fuel burn savings that new models offer over their respective predecessors. A new nacelle design will add to the improvements obtained by the installed engine.

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

The larger A330-900 entered service in 2018, with the smaller/longer-range -800 scheduled to join it about the end of this year.

787-8

The 787 was launched in April 2004 as the 7E7. Boeing's 787 family initially comprised three models, but the short-range 787-3 was dropped leaving the 787-8 and larger 787-9 as the two models on offer. Boeing subsequently launched the higher capacity 787-10 during the 2013 Paris air show.

The A330-800 made its first flight in November 2018

The 787-8 entered service in 2011

Key data

Model	787-8	A330-200	A330-800neo
Maximum seats	350	406	406
Typical seats two class	242	210-250	220-260
Typical range (nm)	7,650	7,270	8,150
Entry into service	2011	1998	2019 (target)
Delivered	363	563	0
Orders backlog	81	12	14
List price 2019 ($m)	248.3	243.3*	265.1*

Source: Airfinance Journal Fleet Tracker/Air Investor plus additional research
** Assumes 2% increase over 2018.*

The 787 was a radical departure from traditional commercial transport aircraft in terms of materials and systems architecture. Composites comprise about 50% of the primary structure of the 787 (including wing spars and floor beams) and reduce weight by about 20% compared with earlier airframe designs. The radical approach contributed to development delays and a troubled entry into service.

The 787 family offers a choice of two new-technology engines, the General Electric GEnx 1B and the Rolls-Royce Trent 1000 series, both delivering significantly improved fuel consumption and reduced noise and emissions compared with previous-generation engines. The 787-8 was the lead variant, entering service in 2011.

Orders

The 787-8 has enjoyed sales success despite its troubled development programme and entry into service. However, the backlog is declining and the larger 787-9 has become the default choice of airlines with total orders (835) approaching double the number achieved by the original 787 variant despite having entered service about three years later.

Boeing may not be overly concerned at this development given the 787-8 still has about 80 unfilled orders and has gone a long way to covering development costs. Airlines opting for a larger more-expensive version is hardly a major headache.

For Airbus, the fate off its smallest and newest A330 variant is more concerning given the additional investment that will have been required to develop the aircraft. The A330-200 has been relatively successful, albeit that the A330-300 had become the default variant, achieving close to 800 sales compared with the 575 of the -200 variant.

With sales barely into double figures so close to entry into service, the future of the -800 is called into question, 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 that the company claims can be fitted. The headline Airbus figure is for a 4,000-nautical mile sector and the company says 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.

Indicative relative cash operating costs (COC)

	787-8	A330-200	A330-800
Relative trip cost	84%	Base	95%
Relative seat cost	96%	Base	91%

Indicative relative total direct operating costs (DOC)

	787-8	A330-200	A330-800
Relative trip cost	88%	Base	103%
Relative seat cost	90%	Base	98%

Assumptions: 2,000 nautical sector, fuel price $1.97 per US gallon. Fuel consumption, speed, maintenance costs and typical seating layouts are as per Air Investor 2019. Capital costs based on estimated 2019 list prices.

As the earliest model, the A330-200 is taken as the baseline for the *Airfinance Journal* calculations. The 787-8 was an all-new design and entered service more than 10 years later than the Airbus model. Given this advantage, the cash operating cost advantage of more than 15% indicated by the *Airfinance Journal* model is to be expected.

The 787-8, although smaller than the A330-200, is able to offer lower seat-mile costs, which is an indication that the aircraft is a genuine step-change in operating economics.

The advantages are offset by increased capital costs, but the 787's economics justify a price premium, albeit not as large as Boeing would claim.

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 A330-200 is now clearly uncompetitive in terms of cash operating costs. The A330-800 looks competitive purely in cost terms, but this is not as yet reflected in its sales figures. The A330-800 looks much less competitive if list prices are used to calculate total direct operating costs.

The causes for the lack of orders are a matter of debate, but the answer may lie in the competitiveness of the larger A330-900 and the general trend to larger aircraft in the segment that have inherently lower seat-mile costs.

The A330-800 has a lower fuel burn than the A330-900, but the difference is not massive and the influence of fuel costs is lessened in the current moderate fuel price environment.

Airfinance Journal estimates the -900 has a 5% advantage over the -800 in terms of operating cost per seat. The A330-800's major advantage is its range, which many carriers do not require and, in any case, Airbus has been improving the A330-900 capability in this area.

An empty middle

The move away from the 787-8 and the lack of sales for the A330-800 appear at odds with a requirement for a new middle of the market aircraft (MoM) that Boeing has talked of launching. If there is a pressing requirement for a 757/767 replacement, as United Airlines, among others, has suggested, it seems surprising that the smallest variants of the latest twin-aisle families are not proving more popular, albeit that they are significantly larger than the ageing Boeing pair.

However, United is said to be looking at the A330-800 and a decision in the Airbus model's favour would go a long way to re-establishing the type, after the demise of the order from Hawaiian Airlines, which opted for the larger 787-9.

Despite the apparent preference of airlines for the larger -9 variant, Boeing continues to make positive statements about the requirement for an aircraft that straddles the top of the narrowbody sector and bottom of the twin-aisle market *(see Keeping MoM? page 27)*.

The company is, of course, preoccupied with its 737 Max problems, which makes it unlikely that there will be any imminent announcements on the NMA. This may well preclude a United order because the carrier is said to be looking for a replacement aircraft in about the mid-2020s.

Airbus, though, believes the recently launched A321XLR further reduces the middle-of-the-market requirement and is pinning its hopes on the A330-800 gaining momentum as the A330-200 fleet, which numbers about 600 aircraft, starts to age with early models approaching 20 years of service. Airbus also sees the A330-800 picking up sales because increasing numbers of 767s are coming up for retirement.

Boeing can probably afford to be more relaxed about further sales of the 787-8 than is the case for Airbus when it comes to the A380, but then the US manufacturer has its share of problems on other models.

Rating agency unsecured ratings

Airlines

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

Source: Ratings Agencies - 12th August 2019

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+(evolving)	-	A-(stable)	A(stable)
Avolon Holdings Limited	BBB-(stable)	Baa3(stable)	BBB-(stable)	BBB+(stable)
AWAS Aviation Capital Limited	-	Ba2(stable)	BB+(stable)	-
BOC Aviation	A-(stable)	-	A-(stable)	-
Dubai Aerospace Enterprise	BBB-(stable)	Ba1(stable)	BB+(stable)	BBB+(stable)
Fly Leasing	-	Ba3(stable)	BB-(stable)	BBB(stable)
ILFC (Part of AerCap)	BBB-(stable)	Baa3(stable)	-	-
Park Aerospace Holdings	BBB-(stable)	Baa3(stable)	-	-
SMBC Aviation Capital	A-(stable)	-	A-(stable)	-

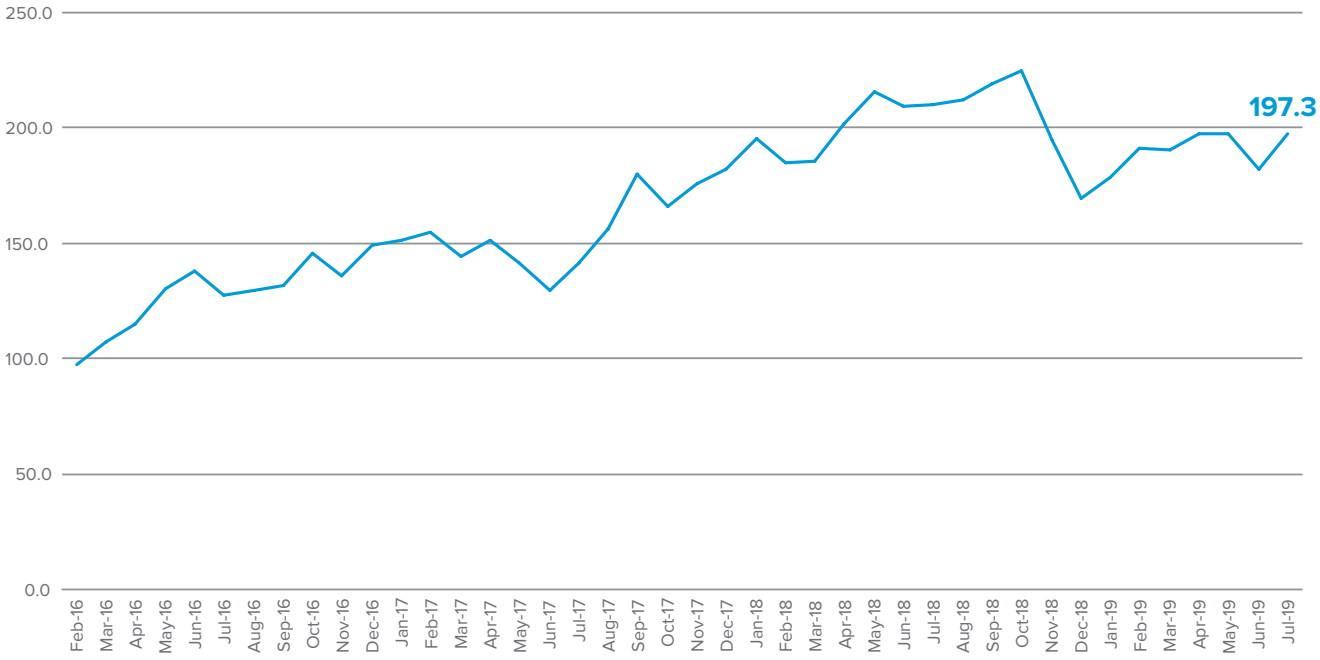
Source: Ratings Agencies - 12th August 2019

Manufacturers

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

Source: Ratings Agencies - 12th August 2019

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



Source: US Energy Information Administration

Recent commercial aircraft orders (April-June 2019)

Customer	Country	Quantity/Type
Air Lease	USA	5 787-9
Qatar Airways	Qatar	5 777F
Korean Air	South Korea	20 787
Nordic Aviation Capital	Denmark	20 A220
Accipiter	Ireland	20 A320neo
Atlantic Airways	Denmark	2 A320neo
Saudi Arabian Airlines	Saudi Arabia	30 A320neo family
Skywest	USA	7 E175

Saudi Arabian Airlines ordered 30 A320neo family

Based on *Airfinance Journal* research up to 21/08/2019

Aircraft list prices - new models

Model	$ million
Airbus (2018)	
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

As of 12/08/2019

Current production aircraft values ($ millions)

Model	Current market value*
Airbus	
A220-100	33.2
A220-300	37.8
A319	34.3
A319neo	37.2
A320	43.7
A320neo	49.3
A321	51.8
A321neo	57.1
A330-200	85.9
A330-200 Freighter	94.4
A330-300	98.2
A330 900 (neo)	110.4
A350-900	149.4
A350-1000	169
A380	219.2
Boeing	
737-800	46.3
737-900ER	48.6
737 Max 8	51.3
737 Max 9	52.5
747-8I	155.6
747-8F	183
777-300ER	153.9
787-8	118.5
787-9	143.6
787-10	150.5
ATR	
ATR42-600	16.2
ATR72-600	20.2
Bombardier	
CRJ700	24.1
CRJ900	26.2
CRJ1000	28.2
Viking Q400	20.7
Embraer	
E175	28.5
E190	32.1
E190-E2	34.5
E195	33.9
Sukhoi	
SSJ100	23.3

*Based on Istat appraiser inputs for Air Investor 2019

Lease rates ($'000 per month)

Model	Low	High	Average
Airbus			
A220-100	204	262	233
A220-300	276	303	289.5
A319	230	283	256.5
A319neo	266	293	279.5
A320	295	353	324
A320neo	340	383	361.5
A321	350	424	387
A321neo	380	444	412
A330-200	640	745	692.5
A330-200 Freighter	657	715	686
A330-300	690	833	761.5
A330 900 (neo)	801	872	836.5
A350-900	1,050	1,195	1,122.5
A350-1000	1,233	1,342	1,287.5
A380	1,503	1,950	1,726.5
Boeing			
737-800	310	364	337
737-900ER	330	394	362
737 Max 8	350	394	372
737 Max 9	368	404	386
747-8I	990	1,264	1,127
747-8F	1,178	1,570	1,374
777-300ER	1,050	1,300	1,175
787-8	815	931	873
787-9	950	1,200	1,075
787-10	1,053	1,146	1,099.5
ATR			
ATR42-600	117	153	135
ATR72-600	144	185	164.5
Bombardier			
CRJ700	153	220	186.5
CRJ900	170	235	202.5
CRJ1000	182	255	218.5
Viking Q400	140	200	170
Embraer			
E175	205	240	222.5
E190	230	275	252.5
E190-E2	239	263	251
E195	211	280	245.5
Sukhoi			
SSJ100	153	205	179

Commercial aircraft orders by manufacturer

	Gross orders 2019	Cancellations 2019	Net orders 2019	Net orders 2018
Airbus (31 July)	246	-167	79	747
Boeing (31 July)	139	-227	-88	893
Bombardier	15	0	15	47
De Havilland of Canada	6	0	6	0
Embraer	41	0	41	47
ATR	40	0	40	52

Based on Airfinance Journal research and manufacturer announcements until 23/08/19

Fake news or MDC as source of Boeing's problems

Adam Pilarski, senior vice-president at Avitas, writes a highly personalised defence of Boeing in an age of pseudo facts.

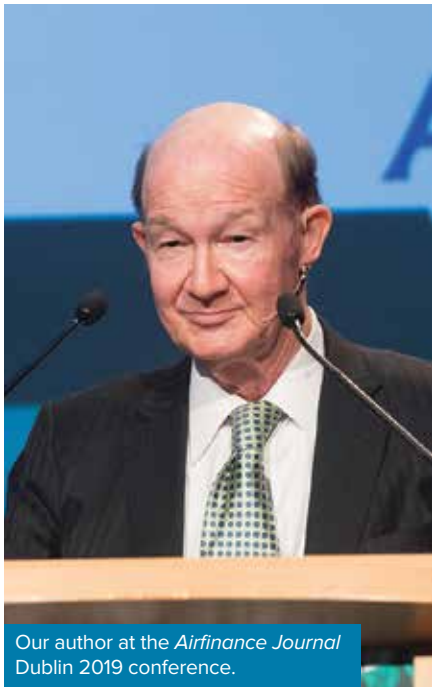
The tragic events surrounding the 737 Max temporary grounding led to a plethora of ridiculous speculations and falsehoods. Let me start by saying that I believe the Max is an outstanding product in the best tradition of Boeing's century of glorious history. It will fly again and will continue performing magnificently for its many customers.

Unfortunately, we are living in an age of new realities when sometimes obviously nonsensical statements are accepted as facts. Postulations as bizarre as that the previous US president was a Muslim and was not even born in the USA were accepted by a surprisingly large part of our population.

In our industry, we see many totally ridiculous theories being promoted by some journalists and web chat groups claiming how Boeing abandoned its long and proud tradition of technical excellence in favour of enhancing shareholders' returns. Nothing could be further from the truth. Boeing continues, and will continue, to produce excellent products for hopefully another few centuries.

The issue I have problems with is how some explain that Boeing's problems with the Max trace their origin to the 1997 merger of McDonnell Douglas (MDC) and Boeing. Most people know that it was a merger or, more accurately, an acquisition of MDC by Boeing. That seems to be supported by the fact that the name Boeing prevailed, that all top people came from its ranks and that virtually all the MDC commercial products in short order disappeared. It turns out that a substantial number of Boeing employees still to this day believe that what actually happened was MDC used Boeing's money to purchase said company and subjugate it to its will.

While a funny statement, what evidence is being presented? The proof some bring out is that Harry Stonecipher (the last MDC president) was made president and chief executive officer of Boeing after Phil Condit was let go a few years later. I personally remember these events clearly as I lived through them. A belief (still popular among Boeing employees) that Stonecipher was an MDC agent defies logic. He was brought in during autumn 1994 with the role of selling MDC. He was not an MDC man. He had 27 years of GE history, seven years of Sundstrand experience and just 33 months of MDC tenure. He had no loyalty to MDC, its people or interests. He did what he was hired to do which was sell us to the highest bidder. To call him an MDC person strains belief.



Our author at the *Airfinance Journal* Dublin 2019 conference.

"Let me start by saying that I believe the Max is an outstanding product in the best tradition of Boeing's century of glorious history. It will fly again and will continue performing magnificently for its many customers."

How is this related to the Max problems? Some recent articles suggest the following conspiracy story. They claim that Boeing was always a pure engineering company, while MDC was run by bean counters and business types who only valued money. When it acquired Boeing, according to the conspiracy theorists, MDC eventually dragged the company down to its level by limiting its objectives to maximising profits, further stretching existing products and compromising technology and eventually even safety for the almighty dollar. Dirty MDC money-grubbing soulless operators soiled the once pristine Boeing, they allege.

The facts do not support such claims. In today's world, this does not matter much. In reality, MDC was making all its money on the military side. I analysed data fitting approximately to my stay at MDC (I have financial data for the period between 1978 and 1995). At that time, MDC military was profitable every single year for an average annual profit of $350 million. Douglas Aircraft (DAC) was often losing money: in nine out of the 18 years for an average annual loss of $287 million. Taken together, DAC had average losses of $92 million. Old DAC was purely an engineering company.

The founder, Donald Douglas, was its first chief engineer. When I was hired, the president, John Brizendine, was another previous chief engineer. His office was adorned (like the White House) with paintings of all the previous occupants, all chief engineers. We knew how to engineer aircraft; too bad we had no investments from HQ but luckily, because the military side was making money, it did not matter that we were losing money. Airlines used to tell me that our products were over-engineered, hence lasted much longer than the competition, but were also heavier and less fuel-efficient. We were a hobby of the McDonnell family that was supported by continuous government contracts with guaranteed profits.

How you get from this reality to baseless pseudo facts that MDC was the bean counters' Mecca is truly beyond me. It appears to be part of the new realities we live in where 'facts' have a different meaning to history.

AIRFINANCE JOURNAL

An ***Airfinance Journal*** special supplement

Airline top 50 2019

Top 50 airlines[1]

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	Air Arabia	31-Dec-18	$1,141	4.8	28.5%	27.8	43.3%	1.7	7	5	8	8	7	7.0	→
2	Japan Airlines	30-Jun-19	$14,189	9.8	20.8%	27.1	32.8%	-0.8	5	4	8	7	8	6.6	↗
3	Allegiant Travel Company	30-Jun-19	$1,749	15.9	24.6%	8.1	38.4%	1.9	3	4	8	8	7	6.5	↑
4	Ryanair	31-Dec-18	$8,751	6.9	25.7%	15.6	28.4%	1.1	6	5	8	6	7	6.5	↘
5	Spirit Airlines	30-Jun-19	$3,636	5.6	25.2%	3.8	33.4%	2.7	7	5	7	7	6	6.3	↑
6	Air Tahiti Nui	31-Dec-18	$321	15.0	14.7%	4.2	40.6%	-0.2	3	2	8	8	8	6.2	↘
7	International Airlines Group	30-Jun-19	$28,123	11.5	18.7%	3.7	31.8%	0.2	5	3	7	7	8	6.2	↘
8	Luxair Group	31-Dec-18	$672	6.3	4.6%	44.3	38.5%	-3.6	6	1	8	8	8	6.2	→
9	Air Canada	30-Jun-19	$14,193	14.5	17.5%	4.0	31.4%	1.3	4	3	8	7	7	6.1	↑
10	Cebu Pacific	30-Jun-19	$1,551	4.9	32.2%	3.3	28.9%	2.6	7	6	6	6	6	6.1	↗
11	Air Caledonie International	31-Dec-18	$193	15.5	1.0%	-2.9	57.0%	-53.5	3	1	8	8	8	6.0	→
12	Copa Holdings	31-Mar-19	$2,635	8.2	22.1%	4.5	29.2%	2.6	6	4	8	6	6	6.0	↘
13	Westjet	30-Jun-19	$3,707	8.1	16.2%	3.7	31.9%	1.8	6	3	7	7	7	6.0	↗
18	Wizz Air	31-Mar-19	$2,562	5.0	29.6%	2.2	56.8%	2.0	7	5	4	8	6	5.9	→
14	Hawaiian Airlines	30-Jun-19	$2,826	10.9	21.5%	4.4	19.1%	1.7	5	4	8	4	7	5.7	↘
15	Southwest Airlines	30-Jun-19	$22,338	10.8	19.6%	25.6	17.8%	0.1	5	3	8	4	8	5.7	→
16	Air Greenland	31-Dec-18	$204	22.2	16.7%	34.1	24.5%	-1.2	1	3	8	5	8	5.6	↗
17	British Airways	31-Dec-18	$15,947	13.6	22.8%	9.4	19.2%	1.3	4	4	8	4	7	5.6	→
19	Alaska Air Group	30-Jun-19	$8,440	8.0	19.3%	4.6	19.3%	1.7	6	3	8	4	7	5.5	→
20	Skymark Airlines	31-Mar-19	$834	7.2	37.2%	2.6	15.2%	2.6	6	7	5	4	6	5.5	↗
21	Skywest Airlines	30-Jun-19	$3,101	11.9	33.6%	3.7	17.7%	3.6	5	6	7	4	5	5.5	↗
22	Atlantic Airways	31-Dec-18	$82	5.9	17.8%	3.6	29.3%	3.7	7	3	7	6	5	5.4	↑
23	Frontier Airlines	30-Sep-18	$2,094	4.5	25.8%	2.0	30.5%	3.4	7	5	4	7	5	5.4	↘
24	Air New Zealand	30-Jun-19	$3,685	8.4	19.3%	5.2	18.2%	2.7	6	3	8	4	6	5.3	↘
25	Republic Airlines	31-Mar-19	$1,296	8.0	30.9%	3.8	20.0%	4.0	6	6	7	4	4	5.3	→
26	Finnair	30-Jun-19	$3,359	9.8	15.9%	2.2	33.3%	1.1	5	3	4	7	7	5.2	→
27	Jetblue	30-Jun-19	$7,953	9.8	17.5%	7.6	11.4%	1.0	5	3	8	3	7	5.2	→
28	Pegasus Airlines	31-Mar-19	$1,526	5.4	25.7%	2.5	26.3%	5.7	7	5	5	6	4	5.2	→
29	Qantas Airways	30-Jun-19	$12,145	11.0	18.3%	7.3	12.0%	1.6	5	3	8	3	7	5.2	→
30	Spring Airlines	31-Dec-18	$1,900	4.6	19.1%	2.7	37.3%	4.7	7	3	5	8	4	5.2	→
31	VietJet Air	31-Dec-18	$1,455	2.9	31.4%	2.2	23.6%	3.5	8	6	4	5	5	5.2	↘
32	Volaris	30-Jun-19	$1,557	4.4	24.1%	1.0	26.5%	-0.6	7	4	2	6	8	5.2	↗
33	Easyjet	31-Mar-19	$7,417	7.7	11.1%	3.3	21.1%	1.3	6	2	6	5	7	5.1	↓
34	Grupo VivaAerobus	30-Jun-19	$553	4.5	33.2%	1.2	32.9%	5.5	7	6	2	7	4	4.9	↗
35	Lucky Air	31-Dec-18	$1,029	5.9	25.2%	1.1	84.1%	5.2	7	5	2	8	4	4.9	↗
36	SIA Group	31-Dec-18	$11,966	6.7	19.6%	4.1	9.4%	3.0	6	3	8	2	6	4.9	→
37	United Continental Holdings	30-Jun-19	$42,485	14.8	17.4%	5.2	12.8%	2.2	4	3	8	3	6	4.9	→
38	Jet2.com	31-Mar-18	$2,911	15.0	10.7%	2.2	30.1%	1.0	3	2	4	7	7	4.8	→
39	Lufthansa Group	30-Jun-19	$41,173	11.6	12.3%	10.9	9.2%	1.1	5	2	8	2	7	4.8	→
40	Tway Airlines	31-Dec-18	$646	10.3	26.4%	1.4	35.1%	4.3	5	5	2	8	4	4.8	↗
41	EVA Airways	31-Dec-18	$5,832	5.3	20.1%	2.4	26.8%	4.5	7	4	4	6	4	4.7	→
42	Delta Air Lines	31-Dec-18	$44,438	15.4	17.9%	11.3	4.0%	1.4	3	3	8	1	7	4.6	↘
43	Jazeera Airways	30-Jun-19	$314	6.4	33.8%	1.7	15.6%	3.9	6	6	3	4	5	4.6	→
44	Mesa Air Group, Inc.	31-Mar-19	$705	8.6	37.1%	2.2	11.1%	4.7	6	7	4	3	4	4.6	↑
45	Turkish Airlines - USD	30-Jun-19	$13,019	7.7	17.6%	4.6	14.5%	5.6	6	3	8	3	4	4.6	↘
46	Air France-KLM	31-Mar-19	$29,632	11.0	15.1%	2.8	15.7%	2.7	5	3	5	4	6	4.5	→
47	ANA Holdings	31-Mar-19	$18,698	9.7	22.0%	3.5	14.3%	3.3	5	4	6	3	5	4.5	↘
48	KLM - Royal Dutch Airlines	31-Dec-18	$12,183	9.9	19.2%	3.5	8.6%	2.4	5	3	7	2	6	4.5	→
49	Tianjin Airlines	31-Dec-18	$1,878	5.0	20.4%	1.2	67.2%	7.0	7	4	2	8	3	4.5	→
50	Aegean Airlines	31-Dec-18	$1,338	10.0	20.3%	1.8	21.7%	3.4	5	4	3	5	5	4.3	→

Source: Airfinance Journal's The Airline Analyst

[1] *As rated by AFJ Financial Ratings on 30 August 2019 based on data from The Airline Analyst*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*compared to first-generation E195.

Top 50 by **size of current fleet**

		Fleet size			%	Fleet value ($m)		
Rank	Airline	Leased	Owned	Total	Leased	Leased	Owned	Total
1	American Airlines	430	661	1091	39.41%	10,171	20,666	30,837
2	Delta Air Lines	191	795	986	19.37%	4,179	15,886	20,065
3	United Airlines	150	657	807	18.59%	1,991	17,726	19,717
4	Southwest Airlines	122	661	783	15.58%	2,034	15,348	17,382
5	China Southern	217	404	621	34.94%	8,126	17,428	25,554
6	China Eastern	101	469	570	17.72%	3,966	19,104	23,070
7	Skywest Airlines	103	391	494	20.85%	671	4,869	5,541
8	Air China	106	330	436	24.31%	4,936	15,119	20,055
9	Ryanair	66	354	420	15.71%	2,508	10,544	13,052
10	Fedex	21	382	403	5.21%	335	11,438	11,772
11	Lufthansa	35	271	306	11.44%	840	10,219	11,059
12	Turkish Airlines	67	232	299	22.41%	3,118	11,631	14,749
13	British Airways	97	181	278	34.89%	3,587	6,528	10,115
14	Emirates	139	132	271	51.29%	14,955	14,692	29,647
15	Hainan Airlines	132	126	258	51.16%	7,895	6,526	14,422
16	Jetblue	49	205	254	19.29%	679	5,537	6,216
17	UPS	4	247	251	1.59%	30	6,293	6,323
18	Aeroflot	250		250	100.00%	10,375		10,375
19	Alaska Airlines	77	170	247	31.17%	1,981	4,893	6,874
20	All Nippon Airways	26	216	242	10.74%	1,256	12,163	13,419
21	Indigo	184	50	234	78.63%	6,105	1,867	7,971
22	Air France	117	109	226	51.77%	4,502	3,795	8,297
23	Qatar Airways	98	124	222	44.14%	7,740	12,772	20,512
24	Air Canada	114	91	205	55.61%	2,206	6,624	8,830
25	Republic Airlines	32	160	192	16.67%	514	2,399	2,913
26	Saudia	74	115	189	39.15%	3,471	8,268	11,738
27	Shenzhen Airlines	33	155	188	17.55%	879	5,323	6,202
28	Endeavor Air	170	9	179	94.97%	1,502	6	1,508
29	Easyjet	74	101	175	42.29%	1,264	3,586	4,850
30	Korean Air	23	150	173	13.29%	1,705	9,907	11,611
31	Xiamen Airlines	74	98	172	43.02%	2,740	4,073	6,814
31=	Expressjet	59	113	172	34.30%	434	137	571
33	Japan Airlines	21	147	168	12.50%	612	7,256	7,869
34	Cathay Pacific Airways	41	123	164	25.00%	2,920	10,656	13,576
35	Sichuan Airlines	65	91	156	41.67%	3,044	3,191	6,235
36	Garuda Indonesia	132	20	152	86.84%	4,965	512	5,478
37	LATAM Brasil	117	34	151	77.48%	4,460	949	5,409
38	Air India	89	58	147	60.54%	3,849	2,450	6,299
39	Azul Linhas Aereas	126	19	145	86.90%	3,090	393	3,484
39=	Mesa	78	67	145	53.79%	1,439	755	2,194
41	SAS	104	36	140	74.29%	2,754	560	3,313
42	Eurowings	121	17	138	87.68%	2,464	285	2,749
43	Singapore Airlines	26	111	137	18.98%	1,914	9,176	11,091
44	PSA Airlines	136		136	100.00%	1,651		1,651
45	Qantas	29	106	135	21.48%	987	4,153	5,141
45=	LATAM Chile	79	56	135	58.52%	3,699	2,244	5,942
47	Tianjin Airlines	115	17	132	87.12%	2,417	666	3,084
47=	Spirit Airlines	49	83	132	37.12%	1,556	3,007	4,563
49	Easyjet Europe	129		129	100.00%	3,803		3,803
50	Westjet	38	89	127	29.92%	789	2,700	3,489

Source: Airfinance Journal's Fleet Tracker

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

		Manufacturer									
Rank	Airline	Allison	BMW RR	CFM International	Engine Alliance	GE	IAE	P&W	Rolls-Royce	Other	Total
1	American Airlines	65		490		127	240	56	113		1091
2	Delta Air Lines		91	419		102	50	300	24		986
3	United Airlines	10		343		101	175	116	62		807
4	Southwest Airlines			783							783
5	China Southern			321		63	156	50	31		621
6	China Eastern	1		381		23	105		60		570
7	Skywest Airlines					480		14			494
8	Air China			242		35	52	24	83		436
9	Ryanair			420							420
10	Fedex					244		93	66		403
11	Lufthansa			114		35	64	25	67	1	306
12	Turkish Airlines			94		69	91	17	28		299
13	British Airways			17		39	127		95		278
14	Emirates				90	155			26		271
15	Hainan Airlines			169		38		7	44		258
16	Jetblue					60	193	1			254
17	UPS					100		112	39		251
18	Aeroflot			160		19			22	49	250
19	Alaska Airlines			239		7	1				247
20	All Nippon Airways			57		67		47	71		242
21	Indigo			13			116	105			234
22	Air France			120	10	94			1	1	226
23	Qatar Airways			6	10	123	31		52		222
24	Air Canada			95		98		2	10		205
25	Republic Airlines	6				186					192
26	Saudia			64		80	1	5	39		189
27	Shenzhen Airlines			135			41	6	6		188
28	Endeavor Air					179					179
29	Easyjet			174		1					175
30	Korean Air			35	10	65		63			173
31	Xiamen Airlines			156		12			4		172
31=	Expressjet	133				39					172
33	Japan Airlines			50		101		16	1		168
34	Cathay Pacific Airways					66		6	92		164
35	Sichuan Airlines			34			85	19	18		156
36	Garuda Indonesia			77		32		17	26		152
37	LATAM Brasil			62		24	56	3	6		151
38	Air India			78		45	16	8			147
39	Azul Linhas Aereas			31		62		43	9		145
39=	Mesa					145					145
41	SAS			85		20	23	4	8		140
42	Eurowings			90		8	18	18	4		138
43	Singapore Airlines				1	27		7	102		137
44	PSA Airlines					136					136
45	Qantas		5	75		42			13		135
45=	LATAM Chile			58		17	26	7	27		135
47	Tianjin Airlines	13		9		60	20	24	6		132
47=	Spirit Airlines						120	12			132
49	Easyjet Europe			129							129
50	Westjet			120		7					127

Source: Airfinance Journal's Fleet Tracker

Top 50 by **firm order backlog**

		Manufacturer							
Rank	Airline	Airbus	ATR	Boeing	Bombardier	Embraer	Mitsubishi	Comac	Total
1	Indigo	338	32						370
2	AirAsia	368							368
3	Lion Air	178		187					365
4	VietJet Air	112		200					312
5	United Airlines	45		194		32			271
6	Delta Air Lines	258			9				267
7	Wizz Air	251							251
8	Southwest Airlines			250					250
9	American Airlines	114		101	9	21			245
10	Flydubai			236					236
11	Emirates	50		156					206
12	Turkish Airlines	110		87					197
13	Norwegian Air Shuttle	93		97					190
14	Qatar Airways	83		94					177
15	Lufthansa	136		40					176
16	Frontier Airlines	172							172
17	SpiceJet			142	20				162
18	Jetblue	154							154
19	Republic Airlines	40*				100			140
20	Jet Airways	1		135					136
21	Ryanair			135					135
22	Gol Transportes Aereos			119					119
23	Qantas	109		6					115
24	Easyjet	112							112
25	Goair	109							109
26	Etihad Airways	43		62					105
27	Volaris	104							104
27=	Skywest Airlines					4	100		104
27=	Iran Air	97	7						104
30	Avianca Brasil	95		2					97
31	Fedex		30	61					91
32	Aeroflot	14		25					90
33	Singapore Airlines	28		54					82
33=	Air Canada	45		37					82
35	All Nippon Airways	32		34			15		81
36	AirAsia X	76							76
37	Pegasus Airlines	73							73
38	Jetsmart Airlines	72							72
38=	Flynas	72							72
40	Japan Airlines	30		7			32		69
40=	Hainan Airlines			49				20	69
42	Azul Linhas Aereas	17				51			68
42=	Garuda Indonesia	16	3	49					68
44	LATAM Chile	59		8					67
44=	British Airways	37		30					67
46	Cathay Pacific Airways	44		21					65
46=	China Southern	26		34				5	65
46=	Saudia	65							65
49	Alaska Airlines	30		32					62
50	Korean Air	30		31					61

Source: Airfinance Journal's Fleet Tracker

** The order was cancelled in July 2019.*

Airfinance Journal's 2018 deals of the year awards

At *Airfinance Journal's* 2018 global awards in New York in May, two airlines won awards for strong treasury performance and return on invested capital.

Airline Treasury Team of the Year: **AirAsia**

The AirAsia Group wins the Airline Treasury Team of the year prize after a very busy 2018.

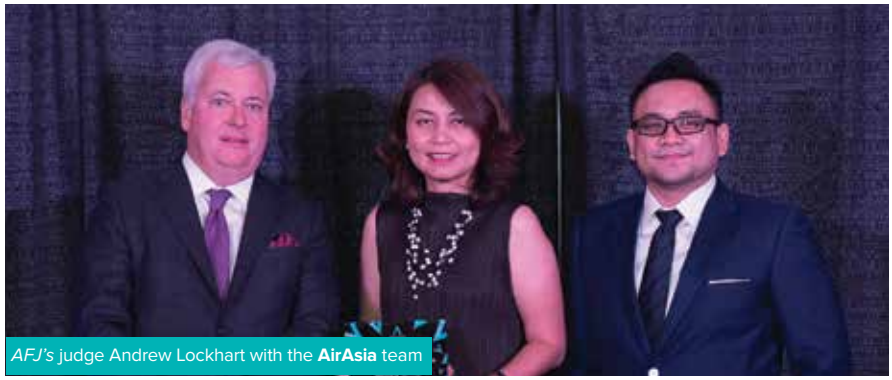
In addition to managing the AirAsia Group Berhad group of airlines operations, the team handled two major aircraft divestment portfolio projects from its aircraft leasing business (Asia Aviation Capital). The team was instrumental and dedicated in closing:

1. M&A process of project Aladdin, or sale of a large portfolio to Fly Leasing,
2. M&A process of project Alibaba, or sale of a medium size portfolio to Castlelake.

Project Aladdin was a major merger and acquisition transaction, which also represented the first partnership of this scale between an aircraft operating lessor and an airline. The transaction involved existing and future aircraft portfolios and engines on lease to a diversified group of AirAsia Group lessees. In spite of the scale and complexity of the transaction, as well as time zone differences between US and Asia, negotiation and signing of transaction documentation was completed in four months. The team was instrumental in implementing the transaction structure, which was unique to the transaction. Combination of conditional sale and straight sale agreements were designed to facilitate the entire underlying assets transfer.

The sale of the other 25-aircraft portfolio, project Alibaba, was completed late in December. Asia Aviation Capital entered into a sale and purchase agreement with AS Air Lease Holdings 5T DAC and AS Air Lease, two entities controlled by Castlelake for the disposal of Merah Aviation Asset Holding, which owned 25 aircraft to be leased to AirAsia Berhad for an aggregate consideration of $768 million.

The AirAsia team was concurrently coordinating with four banks (BNP Paribas, Citibank, Commonwealth Bank of Australia and Deutsche Bank), to arrange the financing in support of eventual buyer's acquisition of the underlying aircraft portfolio.



AFJ's judge Andrew Lockhart with the **AirAsia** team

Airline of the Year: **Southwest Airlines**

Airfinance Journal selects its Airline of the Year on a 100% objective and quantitative basis using data from The Airline Analyst. The parameter used is Return on Total Capital (EBIT/Average of Adjusted Net Debt and Equity) which clearly conveys the airline that had the most success during the year in generating returns not just on its capital but also its resources such as aircraft and staff.

The winner for 2018 is Southwest Airlines which generated a phenomenal 27.6% Return on Total Capital. Runner-up was IAG and third-placed was Ryanair.

Southwest's performance was driven by an Ebitdar Margin of 20.2% and an EBIT of $3.1 billion. Unit costs ex-fuel declined 0.4% and the RASM-CASM margin was a highly creditable 1.9 cents. Leverage (Adjusted Net Debt/Ebitdar) was an extremely low 0.22x, more than fitting for its Investment Grade Status. Return on Assets was 12%, significantly higher than its US peers. During the year it returned $2.3 billion to shareholders in the form of stock buy-backs and dividends.

Southwest Airlines is a deserving winner of this award for 2018.

Southwest's performance was driven by an Ebitdar margin of 20.2% and an EBIT of $3.1 billion. Unit costs ex-fuel declined 0.4% and the RASM-CASM margin was a highly creditable 1.9 cents.

Industry overview: **Key financials**

As shown in Figure 1 the airline industry had mixed fortunes in 2018/19. Revenues of $704 billion were 8.1% higher than the prior year while net income declined 27% to $27 billion. Some airlines made heavy weather of the challenging market situation: the number of loss making airline groups in our study increased to 43 from 28, almost one third of our total sample.

As we noted last year, operating profitability was a cause for concern. Ebitdar margin was a full two percentage points lower at 18.5% reflecting tough competition, pockets of excess capacity and higher costs, especially fuel and staff costs.

Capital structure measures were also mixed. The leverage trend continued to be favourable, despite the record capital expenditure. Adjusted net debt was flat at $475 billion and leverage (measured as adjusted net debt/Ebitdar) increased only marginally from 3.6x to 3.5x. Fixed charge coverage though declined from 2.7x to 3.1x despite the record low interest rates.

Liquidity as a percentage of revenues, also declined, now equivalent to less than two months' worth of liquidity. Given the cost to carry, a number of airlines have

"The airline industry had mixed fortunes in 2018/19. Revenues of $704 billion were 8.1% higher than the prior year while net income declined 27% to $27 billion. Some airlines made heavy weather of the challenging market."

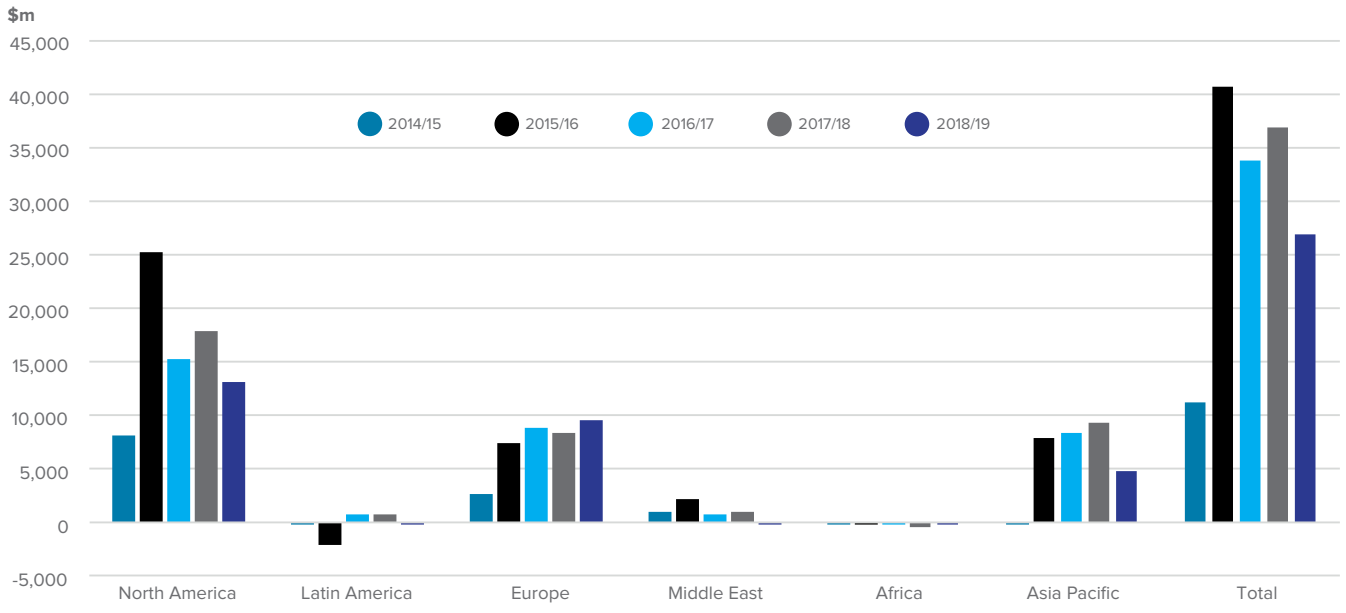
Figure 1: Global airline industry[1] key financials

	Financial periods ending in				
$m	2014/15	2015/16	2016/17	2017/18	2018/19
Total Revenue	589,317	598,967	626,050	650,929	703,807
% change		1.6%	4.5%	4.0%	8.1%
Ebitdar	96,404	126,001	134,443	133,335	130,303
% change		30.7%	6.7%	-0.8%	-2.3%
Net Income	11,234	40,568	33,836	36,868	26,977
% change		261.1%	-16.6%	9.0%	-26.8%
Adjusted Net Debt	392,283	424,159	477,521	472,521	474,994
% change		8.1%	12.6%	-1.0%	0.5%
Net Fixed Charges	34,731	37,973	42,552	43,269	47,630
Ebitdar Margin	16.4%	21.0%	21.5%	20.5%	18.5%
Ebitdar/Net Fixed Charges (x)	2.8	3.3	3.2	3.1	2.7
Unrestricted Cash/Total Revenues	16.0%	16.5%	16.8%	16.8%	14.7%
Adjusted Net Debt/Ebitdar (x)	4.1	3.4	3.6	3.5	3.6
Parent groups with positive net income	19,254	45,795	37,259	39,711	32,010
Parent groups with negative net income	(8,020)	(5,227)	(3,423)	(2,843)	(5,034)
Total	11,234	40,568	33,836	36,868	26,977
Parent groups with positive net income	74	93	101	105	96
Parent groups with negative net income	44	29	27	28	43
Number of parent groups[2]	118	122	128	133	139

[1] *Aggregate values for airline groups included in study*
[2] *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, Republic, Avianca Brasil, Primera, Jet Airways, Wow) and financials for additional airlines becoming available.*

Source: The Airline Analyst

Figure 2 - Net income by major region



Source: The Airline Analyst

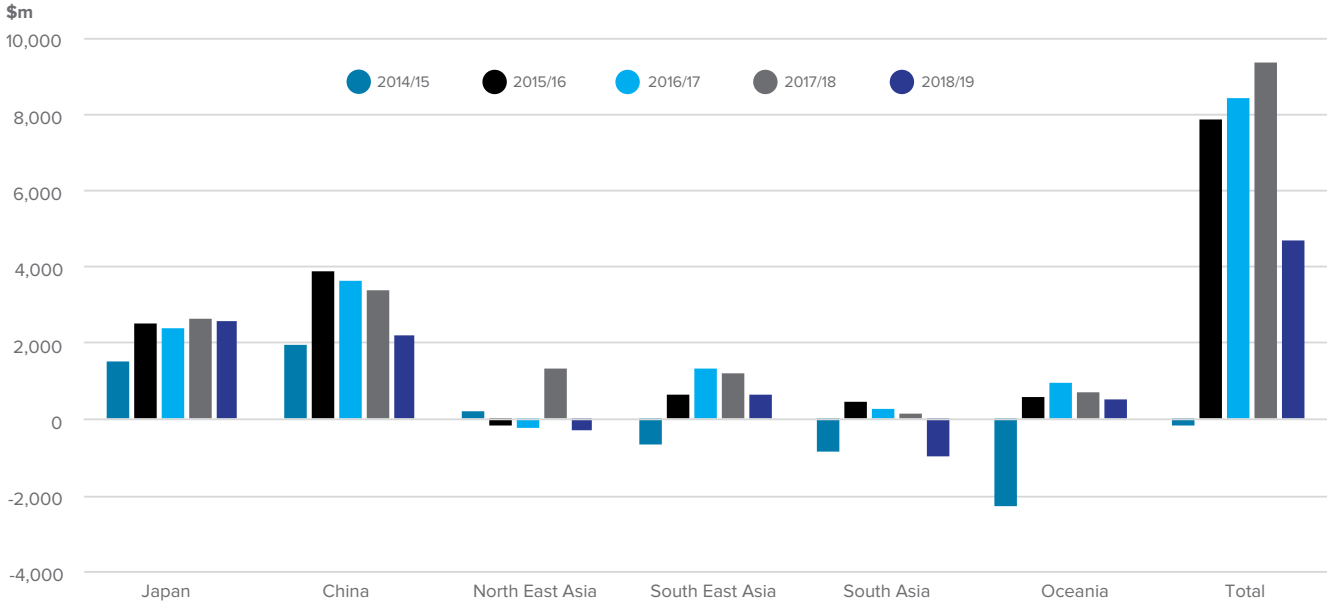
been reducing cash on balance sheet in favour of committed liquidity facilities. Another factor reducing liquidity has been special dividends and stock buy backs by a significant number of airlines.

Figure 2 shows net income broken down by region and illustrates clearly that the decline in profitability in the latest year was primarily driven by North American and Asia-Pacific carriers. Europe was the strongest region, led by strong performers like British Airways, Ryanair and Wizz Air. The Middle East airlines had another tough year and Latin America was loss making in aggregate, as was Africa.

> *"Overall, Asia-Pacific net income declined by 50%."*

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 and the decline for China over the last three years. North East Asia, South East Asia and Oceania were quite weak. South Asia was loss-making. Overall, Asia-Pacific net income declined by 50%.

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-2018
2	Aegean Airlines	31-Dec-2018
3	Aeroflot	31-Dec-2018
4	Air Arabia	31-Dec-2018
5	Air Astana	31-Dec-2018
6	Air Busan	31-Dec-2018
7	Air Calin	31-Dec-2018
8	Air Canada	31-Dec-2018
9	Air China	31-Dec-2018
10	Air Corsica	31-Mar-2018
11	Air Europa	31-Dec-2018
12	Air France	31-Dec-2018
13	Air France-KLM	31-Dec-2018
14	Air Greenland	31-Dec-2018
15	Air India	31-Mar-2018
16	Air Italy	31-Dec-2018
17	Air Malta	31-Mar-2018
18	Air Mauritius	31-Mar-2019
19	Air New Zealand	30-Jun-2019
20	Air Seoul, Inc.	31-Dec-2018
21	Air Serbia	31-Dec-2018
22	Air Tahiti Nui	31-Dec-2018
23	Air Transport International	31-Dec-2018
24	Air Transport Services Group	31-Dec-2018
25	Air Vanuatu	31-Dec-2018
26	AirAsia	31-Dec-2018
27	AirAsia X	31-Dec-2018
28	Alaska Air Group	31-Dec-2018
29	Allegiant Travel Company	31-Dec-2018
30	American Airlines Group	31-Dec-2018
31	Amerijet International	31-Dec-2018
32	ANA Holdings	31-Mar-2019
33	Asiana Airlines	31-Dec-2018
34	Atlantic Airways	31-Dec-2018
35	Austrian Airlines	31-Dec-2018
36	Avianca Holdings	31-Dec-2018
37	Azul S.A.	31-Dec-2018
38	Bangkok Airways	31-Dec-2018
39	Biman Bangladesh	30-Jun-2018
40	Blue Panorama	31-Dec-2018
41	British Airways	31-Dec-2018
42	Brussels Airlines	31-Dec-2018
43	Bulgaria Air	31-Dec-2018
44	Bulgarian Air Charter	31-Dec-2018
45	Cargojet Airways	31-Dec-2018
46	CarGolux	31-Dec-2018
47	Cathay Pacific	31-Dec-2018
48	Cebu Pacific	31-Dec-2018
49	China Airlines	31-Dec-2018
50	China Eastern Airlines	31-Dec-2018
51	China Express	31-Dec-2018
52	China Southern Airlines	31-Dec-2018
53	Chorus Aviation	31-Dec-2018
54	Comair Limited	30-Jun-2018
55	Compass Airlines	31-Dec-2018
56	Copa Holdings	31-Dec-2018
57	Croatia Airlines	31-Dec-2018
58	DAT A/S	31-Dec-2018
59	Delta Air Lines	31-Dec-2018
60	EastarJet	31-Dec-2018
61	Easyjet	30-Sep-2018
62	EgyptAir Holding	30-Jun-2018
63	EL AL	31-Dec-2018
64	Emirates	31-Mar-2019
65	Enter Air	31-Dec-2018
66	Envoy Air	31-Dec-2018
67	EuroAtlantic Airways	31-Dec-2018
68	EVA Airways	31-Dec-2018
69	Evelop Airlines	31-Dec-2018
70	ExpressJet	31-Dec-2018
71	Finnair	31-Dec-2018
72	Flybe	31-Mar-2018
73	Flydubai	31-Dec-2018
74	Frontier Airlines	31-Dec-2018
75	Garuda Indonesia	31-Dec-2018
76	GoJet Airlines	31-Dec-2018
77	Gol	31-Dec-2018
78	Grupo Aeromexico	31-Dec-2018
79	Grupo VivaAerobus	31-Dec-2018
80	Hainan Airlines	31-Dec-2018
81	Hawaiian Airlines	31-Dec-2018
82	Horizon Air	31-Dec-2018
83	IAG	31-Dec-2018
84	Iberia	31-Dec-2018
85	Icelandair	31-Dec-2018
86	Indigo	31-Mar-2019
87	Interjet	31-Dec-2018
88	Japan Airlines	31-Mar-2019
89	Jazeera Airways	31-Dec-2018
90	Jeju Air	31-Dec-2018
91	Jet Airways	31-Mar-2018
92	Jet2.com	31-Mar-2018
93	Jetblue	31-Dec-2018
94	Jetstar Asia	30-Jun-2018
95	Jin Air	31-Dec-2018
96	Juneyao Airlines	31-Dec-2018
97	Kalitta Air	31-Dec-2018
98	Kenya Airways	31-Dec-2018
99	KLM - Royal Dutch Airlines	31-Dec-2018
100	Korean Air	31-Dec-2018
101	LATAM Airlines Group	31-Dec-2018
102	Lucky Air	31-Dec-2018
103	Lufthansa Group	31-Dec-2018
104	Lufthansa Parent	31-Dec-2018
105	Luxair Group	31-Dec-2018
106	Mesa Air Group	30-Sep-2018
107	Miami Air	31-Dec-2018
108	Neos	31-Oct-2018
109	Nok Air	31-Dec-2018
110	Nordic Regional Airlines	31-Dec-2018
111	Norwegian Air Shuttle	31-Dec-2018
112	Omni Air	31-Dec-2018
113	PAL Holdings	31-Dec-2018
114	Pegasus Airlines	31-Dec-2018
115	Polar Air Cargo	31-Dec-2018
116	PSA Airlines	31-Dec-2018
117	Qantas Airways	30-Jun-2019
118	Qatar Airways	31-Mar-2018
119	Royal Brunei	31-Mar-2018
120	Royal Jordanian	31-Dec-2018
121	Ryanair	31-Mar-2019
122	SAS	31-Oct-2018
123	Scoot Tigerair	31-Mar-2019
124	Shandong Airlines	31-Dec-2018
125	Shenzhen Airlines	31-Dec-2018
126	SIA Cargo	31-Mar-2018
127	SIA Group	31-Mar-2019
128	Sichuan Airlines	31-Dec-2018
129	SilkAir	31-Mar-2019
130	Skymark Airlines	31-Mar-2019
131	SkyWest, Inc.	31-Dec-2018
132	Solaseed Air	31-Mar-2019
133	Southwest Airlines	31-Dec-2018
134	SpiceJet	31-Mar-2019
135	Spirit Airlines	31-Dec-2018
136	Spring Airlines	31-Dec-2018
137	SriLankan	31-Mar-2018
138	StarFlyer	31-Mar-2019
139	Sun Country Airlines	31-Dec-2018
140	SunExpress	31-Dec-2018
141	Swiss International	31-Dec-2018
142	TAM	31-Dec-2018
143	TAP Group	31-Dec-2018
144	Thai AirAsia	31-Dec-2018
145	Thai Airways	31-Dec-2018
146	Tianjin Airlines	31-Dec-2018
147	Transat A.T.	31-Oct-2018
148	Turkish Airlines	31-Dec-2018
149	United Airlines	31-Dec-2018
150	UPS Airlines	31-Dec-2018
151	USA Jet	31-Dec-2018
152	USA Jet	31-Dec-2018
153	Utair	31-Dec-2018
154	VietJet Air	31-Dec-2018
155	Vietnam Airlines	31-Dec-2018
156	Virgin Atlantic Airways	31-Dec-2018
157	Virgin Australia	30-Jun-2018
158	Volaris	31-Dec-2018
159	Vueling Airlines	31-Dec-2018
160	Westjet	31-Dec-2018
161	Widerøe	31-Dec-2018
162	Wizz Air	31-Mar-2019
163	Xiamen Airlines	31-Dec-2018

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 163 airlines whose financials are available in the public domain and which have released financial statements for periods ending between March 2018 and June 2019. The data includes the 31st March 2019 releases for ANA Holdings, Japan Airlines, Ryanair, Singapore Airlines and SpiceJet and the 30 June 2019 financials for Air New Zealand and Qantas.

Of the 163, 24 are separately reporting subsidiaries such as British Airways, Iberia, Vueling, Austrian Airlines, Swiss, Air France and KLM, meaning that we have 139 airline groups in the study.

The sample does not include airlines whose financial statements are not available publicly, or those whose most recent available financials are for periods prior to March, 2018. There are two notable Middle East omissions from the data set this year: Qatar Airways and Oman Airways, neither of whom has yet published its 2018/19 financials. Also, last year's study included some airlines that are no longer flying, e.g. Primera Air, Jet Airways and Wow Air. However the sample is estimated to include airlines representing around 85% of global RPKs.

Weaknesses in the methodology are acknowledged. Foremost among these is the fact that different airlines report to different year-ends. As a consequence, the comparisons are not like-for-like regarding the economic or fuel price environment prevailing in their respective financial periods. Note that in The Airline Analyst itself, we offer the ability to create comparisons for the same financial periods by aggregating quarterly data, when available, but this is not possible for the full sample of airlines. In addition, while in the majority of cases the financial statements are consolidated, in some only parent unconsolidated financials are available. One other weakness is the need to convert to a common currency and the validity of the exchange rate chosen. We have converted into US$ using the spot rates prevailing at 16 August 2019. 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.

The Haves and the Have Nots

Headed by the "big three" US carriers, total revenues in our sample of 139 airline groups whose financials are available in the public domain are $704 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 $667 billion or 83% of the total sample. The degree of concentration within the Top 50 is apparent - the top 10 airlines account for 47% of the Top 50's revenues.

Of the total sample of 139 parent groups, 96 recorded aggregate positive net income of $32 billion, down from $39.7 billion last year while 43 reported losses aggregating $5 billion for a net positive figure of $27 billion, down from $36.9 billion last year. Overall, the net profit margin for all airline parent groups combined was 3.8%, down from 5.7%.

As we can see from the Top 50 by Net Income Margin, 12 airlines achieved a margin in excess of 10%, headed by AirAsia, British Airways, VietJet Air, Wizz Air and IAG. Other LCCs including Ryanair, Spring Airlines and Southwest also have strong representation at the top of the list.

Nine US carriers, including Delta and United but not American made it onto the list. Indicative of the continuing stress on network business models, none of Cathay Pacific, Emirates, LATAM, Air France-KLM or Singapore Airlines had a net income margin high enough to make the cut.

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

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

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

	Network	LCC	Regional	National	Leisure	Cargo	Total
Europe	22	6	9	7	5	1	50
North America	8	3	10	0	5	9	35
South East Asia	5	7	2	1	1	1	17
China	13	3	0	0	0	0	16
Latin America	6	4	0	0	0	0	10
Middle East	4	2	1	0	0	0	7
North East Asia	2	4	1	0	0	0	7
South Asia	2	2	0	2	0	0	6
Oceania	3	0	0	1	2	0	6
Japan	2	3	0	0	0	0	5
Africa	2	0	1	1	0	0	4
Total	**69**	**34**	**24**	**12**	**13**	**11**	**163**

Source: The Airline Analyst

Analysis: **Revenue and income**

Top 50 by Total revenue

Rank	Airline	$m
1	American Airlines Group	44,541
2	Delta Air Lines	44,438
3	United Airlines	41,303
4	Lufthansa Group	40,394
5	Air France-KLM	29,393
6	IAG	27,055
7	Emirates	26,324
8	Southwest Airlines	21,965
9	China Southern Airlines	20,291
10	Air China	19,369
11	ANA Holdings	19,338
12	Lufthansa Parent	18,099
13	Air France	17,820
14	China Eastern Airlines	16,287
15	British Airways	15,953
16	Cathay Pacific	14,165
17	Japan Airlines	13,973
18	Air Canada	13,587
19	Turkish Airlines	12,976
20	Qantas Airways	12,154
21	KLM - Royal Dutch Airlines	12,144
22	SIA Group	11,778
23	Qatar Airways	11,619
24	Korean Air	10,780
25	LATAM Airlines Group	10,368
26	Hainan Airlines	9,574
27	Aeroflot	9,314
28	Ryanair	8,533
29	Alaska Air Group	8,264
30	Jetblue	7,658
31	Easyjet	7,189
32	Thai Airways	6,428
33	Asiana Airlines	5,948
34	Iberia	5,840
35	EVA Airways	5,739
36	Air New Zealand	5,485
37	China Airlines	5,445
38	Swiss International	4,948
39	Avianca Holdings	4,891
40	SAS	4,632
41	Norwegian Air Shuttle	4,493
42	Shenzhen Airlines	4,397
43	Garuda Indonesia	4,373
44	Xiamen Airlines	4,258
45	Vietnam Airlines	4,191
46	TAM	4,082
47	Indigo	3,927
48	Virgin Australia	3,667
49	TAP Group	3,596
50	Westjet	3,560

Top 50 by Net income

Rank	Airline	$m
1	Delta Air Lines	3,935
2	IAG	3,198
3	British Airways	2,548
4	Southwest Airlines	2,465
5	Lufthansa Group	2,398
6	United Airlines	2,129
7	Japan Airlines	1,417
8	American Airlines Group	1,412
9	ANA Holdings	1,041
10	Air China	1,039
11	Ryanair	981
12	Turkish Airlines	753
13	KLM - Royal Dutch Airlines	634
14	Qantas Airways	603
15	Swiss International	551
16	SIA Group	493
17	AirAsia	470
18	Air France-KLM	453
19	Alaska Air Group	437
20	Easyjet	436
21	China Southern Airlines	409
22	Air New Zealand	390
23	China Eastern Airlines	381
24	Lufthansa Parent	376
25	Wizz Air	323
26	Cathay Pacific	299
27	SkyWest, Inc.	280
28	Iberia	272
29	Emirates	237
30	Hawaiian Airlines	233
31	VietJet Air	231
32	Spring Airlines	212
33	CarGolux	211
34	EVA Airways	209
35	Xiamen Airlines	201
36	Jetblue	188
37	LATAM Airlines Group	182
38	Juneyao Airlines	174
39	Vueling Airlines	166
40	SAS	165
41	Allegiant Travel Company	162
42	Spirit Airlines	156
43	Shenzhen Airlines	130
44	Finnair	113
45	Jet2.com	108
46	Azul S.A.	104
47	Vietnam Airlines	101
48	Aeroflot	100
49	Pegasus Airlines	88
50	Copa Holdings	88

Top 50 by Net income margin

Rank	Airline	%
1	AirAsia	18.4%
2	British Airways	16.0%
3	VietJet Air	15.8%
4	Wizz Air	12.6%
5	IAG	11.8%
6	Ryanair	11.5%
7	Spring Airlines	11.5%
8	Southwest Airlines	11.2%
9	Swiss International	11.1%
10	Omni Air	10.8%
11	Skymark Airlines	10.3%
12	Japan Airlines	10.1%
13	Allegiant Travel Company	9.7%
14	Luxair Group	9.4%
15	Bulgarian Air Charter	9.3%
16	Delta Air Lines	8.9%
17	SkyWest, Inc.	8.7%
18	Juneyao Airlines	8.6%
19	Grupo VivaAerobus	8.5%
20	Hawaiian Airlines	8.2%
21	Jazeera Airways	8.1%
22	CarGolux	8.0%
23	Air Malta	7.9%
24	Air Transport Services Group	7.8%
25	GoJet Airlines	7.7%
26	Air New Zealand	7.1%
27	Vueling Airlines	6.4%
28	Pegasus Airlines	6.1%
29	Easyjet	6.1%
30	Lufthansa Group	5.9%
31	China Express	5.8%
32	Turkish Airlines	5.8%
33	Aegean Airlines	5.6%
34	Jeju Air	5.6%
35	ANA Holdings	5.4%
36	Kalitta Air	5.4%
37	Air China	5.4%
38	Cebu Pacific	5.3%
39	Alaska Air Group	5.3%
40	KLM - Royal Dutch Airlines	5.2%
41	United Airlines	5.2%
42	Enter Air	5.1%
43	Solaseed Air	5.0%
44	Qantas Airways	5.0%
45	Comair Limited	5.0%
46	Mesa Air Group	4.9%
47	Xiamen Airlines	4.7%
48	Spirit Airlines	4.7%
49	Iberia	4.7%
50	Chorus Aviation	4.6%

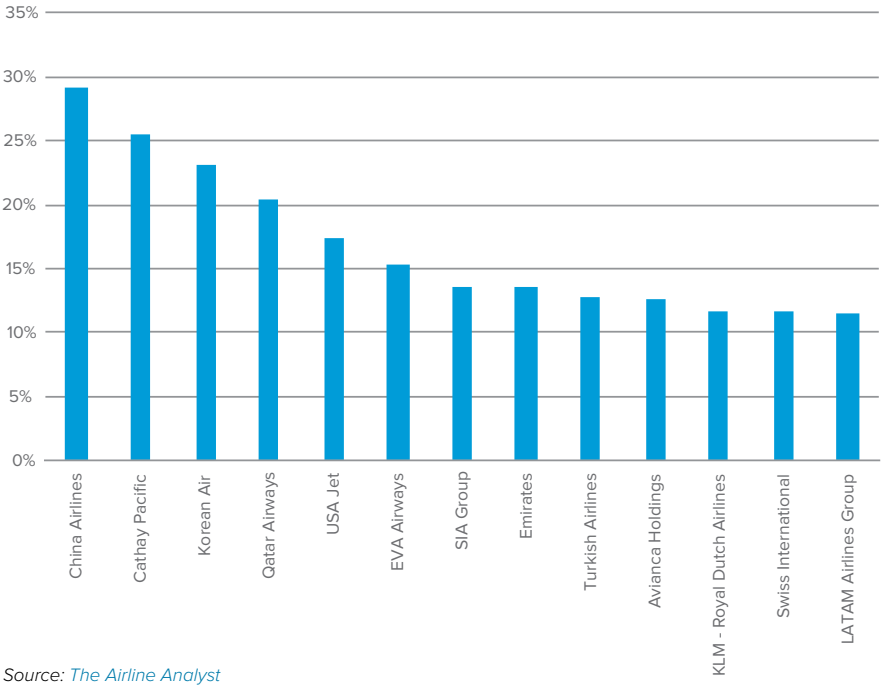
Cathy Pacific is number one by cargo revenue

Top 50 by Cargo Revenue

After a number of difficult years, growth has returned to the air cargo sector. The Top 50 by Cargo Revenue ranking is dominated by the network carriers from Europe and Asia. Cathay Pacific is in number one position this year with revenue of $3.6 billion, 25.5% of total revenues, followed by Emirates in the number two spot with $3.4 billion, 14% of its total revenues. Dedicated freight carrier CarGolux is in 4th place. Other dedicated cargo providers in the list include Kalitta Air, Polar Air Cargo, Amerijet International and ABX Air. Many of these enjoyed bumper years of growth as a result of US military airlift to Iraq and Afghanistan but have since experienced 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 remain a very high percentage of total revenues, as shown in the table. The carriers of the territory of Taiwan, South Korea and Hong Kong SAR top the list.

Cargo revenues as % of total revenues



Source: The Airline Analyst

Top 50 by Cargo revenue

Rank	Airline	$m
1	Cathay Pacific	3,611
2	Emirates	3,555
3	Lufthansa Group	2,884
4	CarGolux	2,561
5	Air France-KLM	2,536
6	Korean Air	2,494
7	Qatar Airways	2,363
8	Turkish Airlines	1,647
9	Air China	1,611
10	SIA Group	1,603
11	China Airlines	1,590
12	ANA Holdings	1,511
13	KLM - Royal Dutch Airlines	1,423
14	China Southern Airlines	1,417
15	IAG	1,300
16	United Airlines	1,237
17	LATAM Airlines Group	1,187
18	American Airlines Group	1,013
19	Japan Airlines	940
20	Kalitta Air	907
21	EVA Airways	882
22	Delta Air Lines	865
23	Thai Airways	727
24	Qantas Airways	657
25	Avianca Holdings	619
26	Air Canada	604
27	Swiss International	579
28	Polar Air Cargo	540
29	China Eastern Airlines	512
30	Air New Zealand	370
31	Cargojet Airways	337
32	Iberia	308
33	Aeroflot	288
34	Hainan Airlines	275
35	Garuda Indonesia	268
36	Amerijet International	265
37	Jet Airways	257
38	Grupo Aeromexico	238
39	ABX Air, Inc.	232
40	Finnair	230
41	TAM	203
42	Alaska Air Group	198
43	PAL Holdings	195
44	Air India	179
45	Air Transport International	178
46	Southwest Airlines	175
47	SAS	169
48	TAP Group	149
49	USA Jet	120
50	Xiamen Airlines	116

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	3,932
2	Omni Air	4,461	731
3	Air Calin	N/A	380
4	Miami Air	1,864	371
5	Emirates	5,119	365
6	Air Greenland	1,318	365
7	EL AL	4,075	327
8	British Airways	3,248	304
9	Qatar Airways	N/A	287
10	KLM - Royal Dutch Airlines	3,151	283
11	Air New Zealand	2,161	276
12	SIA Group	3,902	271
13	Cathay Pacific	3,683	263
14	Air Mauritius	4,256	263
15	Kenya Airways	3,135	260
16	Copa Holdings	3,441	257
17	EVA Airways	3,856	252
18	Air Canada	2,920	240
19	United Airlines	2,339	238
20	Lufthansa Parent	2,312	236
21	ANA Holdings	1,681	233
22	Icelandair	2,949	232
23	Royal Jordanian	N/A	226
24	StarFlyer	990	226
25	Japan Airlines	1,611	226
26	Air France-KLM	2,797	226
27	China Airlines	2,674	221
28	Hawaiian Airlines	2,339	220
29	Thai Airways	2,973	214
30	IAG	2,397	212
31	Swiss International	2,459	209
32	Delta Air Lines	1,883	207
33	American Airlines Group	1,826	200
34	Lufthansa Group	1,999	199
35	TAP Group	2,414	196
36	Air Europa	2,414	192
37	Qantas Airways	2,284	190
38	Finnair	2,610	189
39	Jetblue	1,939	175
40	Sun Country Airlines	2,264	168
41	Alaska Air Group	1,921	167
42	Austrian Airlines	1,576	161
43	Air China	2,010	155
44	PAL Holdings	2,509	154
45	Air Astana	2,222	152
46	Southwest Airlines	1,591	152
47	Grupo Aeromexico	1,985	149
48	Aeroflot	2,570	146
49	Turkish Airlines	1,984	145
50	Avianca Holdings	1,434	134

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

Source: The Airline Analyst

Top 50 by Passenger yield[1]

Rank	Airline	Ave. trip length[2] (km)	US cents
1	Air Transport International	3,895	100.9
2	Air Greenland	1,318	27.7
3	StarFlyer	990	22.8
4	Miami Air	1,864	19.9
5	Omni Air	4,461	16.4
6	Flybe	529	15.6
7	Bangkok Airways	767	14.4
8	Japan Airlines	1,611	14.0
9	ANA Holdings	1,681	13.8
10	Croatia Airlines	768	13.5
11	Air New Zealand	2,161	12.8
12	Delta Air Lines	1,883	11.0
13	American Airlines Group	1,826	10.9
14	Austrian Airlines	1,576	10.2
15	Lufthansa Parent	2,312	10.2
16	United Airlines	2,339	10.2
17	Lufthansa Group	1,999	9.9
18	Southwest Airlines	1,591	9.5
19	Hawaiian Airlines	2,339	9.4
20	British Airways	3,248	9.4
21	SAS	1,328	9.3
22	Avianca Holdings	1,434	9.3
23	Jetblue	1,939	9.0
24	KLM - Royal Dutch Airlines	3,151	9.0
25	Luxair Group	1,113	8.9
26	Azul S.A.	1,045	8.9
27	Nok Air	692	8.9
28	IAG	2,397	8.8
29	Alaska Air Group	1,921	8.7
30	Swiss International	2,459	8.5
31	Qantas Airways	2,284	8.3
32	Kenya Airways	3,135	8.3
33	China Airlines	2,674	8.3
34	Air Canada	2,920	8.2
35	Aegean Airlines	1,033	8.2
36	TAP Group	2,414	8.1
37	Air France-KLM	2,797	8.1
38	Virgin Australia	1,564	8.0
39	EL AL	4,075	8.0
40	Korean Air	N/A	8.0
41	Air Europa	2,414	7.9
42	Icelandair	2,949	7.9
43	Allegiant Travel Company	1,441	7.7
44	ExpressJet	789	7.7
45	Air China	2,010	7.7
46	Grupo Aeromexico	1,985	7.5
47	Shenzhen Airlines	1,516	7.5
48	Copa Holdings	3,441	7.5
49	Sun Country Airlines	2,264	7.4
50	Turkish Airlines	1,984	7.3

[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, Omni Air International and Miami Air take three of the top four airlines on this list based on their limited and very specialised non-scheduled passenger activity. The next in the ranking are scheduled airlines: Air Calin, Emirates, Air Greenland, 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 which has an average trip length of only 1,318 kilometres. 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 46 there are no LCCs appearing on this ranking, reflecting their relatively short average stage length and low fares.

Air Calin did well in 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 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. Other prominent carriers making the list include Air New Zealand, Delta, American, British Airways, Air France-KLM and SAS with their relatively short average trip length.

ANA Holdings 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 139 airline groups. The phenomenon of Emirates' growth is evident from their ranking in 4th place, up from 8th six years ago, edging out Lufthansa, Air France-KLM and IAG. The Chinese majors come in at numbers 8, 9 and 11. LATAM at number 23 is the largest of the Latin American carriers. Low-cost carrier Southwest comes in at number 10 and Ryanair at number 12.

Top 50 by Passenger Load Factor

Heading the list for the second time is Ryanair at 95.2%, followed by Easyjet, Wizz Air, SpiceJet 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 all three US, and two of the European "mega" carrier groups.

Top 50 by RPKs

Rank	Airline	RPKs (m)
1	American Airlines Group	372,016
2	United Airlines	370,399
3	Delta Air Lines	362,493
4	Emirates	299,967
5	Lufthansa Group	284,561
6	Air France-KLM	283,797
7	IAG	270,657
8	China Southern Airlines	259,194
9	Air China	220,528
10	Southwest Airlines	214,561
11	China Eastern Airlines	201,486
12	Ryanair	176,989
13	Air France	176,121
14	Lufthansa Parent	159,569
15	British Airways	152,177
16	Turkish Airlines	149,169
17	Air Canada	148,639
18	Aeroflot	143,151
19	SIA Group	140,838
20	Hainan Airlines	138,909
21	Cathay Pacific	130,630
22	Qantas Airways	127,492
23	LATAM Airlines Group	119,077
24	KLM - Royal Dutch Airlines	107,676
25	Easyjet	98,522
26	ANA Holdings	91,481
27	Alaska Air Group	87,988
28	Norwegian Air Shuttle	85,124
29	Jetblue	81,739
30	Korean Air	80,189
31	Thai Airways	72,315
32	Japan Airlines	70,855
33	Indigo	69,811
34	Iberia	61,352
35	TAM	60,161
36	Wizz Air	55,994
37	AirAsia	55,962
38	Shenzhen Airlines	53,855
39	Asiana Airlines	52,706
40	Swiss International	50,204
41	Spirit Airlines	49,284
42	Jet Airways	48,664
43	Garuda Indonesia	48,511
44	EVA Airways	48,368
45	Air India	45,970
46	Westjet	44,398
47	Avianca Holdings	43,730
48	Grupo Aeromexico	43,438
49	China Airlines	41,748
50	PAL Holdings	40,003

Top 50 by Passenger load factor

Rank	Airline	Load factor
1	Ryanair	95.2%
2	Easyjet	94.0%
3	Wizz Air	92.9%
4	SpiceJet	91.9%
5	Jet2.com	90.9%
6	Grupo VivaAerobus	90.0%
7	KLM - Royal Dutch Airlines	89.1%
8	Spring Airlines	89.0%
9	Nok Air	88.6%
10	Air France-KLM	87.9%
11	Jeju Air	87.9%
12	Air France	87.1%
13	Indigo	86.2%
14	Juneyao Airlines	86.2%
15	Norwegian Air Shuttle	85.8%
16	Iberia	85.7%
17	Delta Air Lines	85.5%
18	Pegasus Airlines	85.5%
19	Frontier Airlines	85.4%
20	Vueling Airlines	85.4%
21	Scoot Tigerair	85.3%
22	Hawaiian Airlines	85.3%
23	Thai AirAsia	84.9%
24	Jetblue	84.8%
25	Hainan Airlines	84.5%
26	AirAsia	84.5%
27	Volaris	84.5%
28	Qantas Airways	84.2%
29	Cathay Pacific	84.1%
30	Cebu Pacific	84.0%
31	Jetstar Asia	84.0%
32	Asiana Airlines	83.9%
33	Spirit Airlines	83.9%
34	Westjet	83.8%
35	Alaska Air Group	83.7%
36	Aegean Airlines	83.7%
37	United Airlines	83.6%
38	Jet Airways	83.6%
39	EL AL	83.6%
40	Southwest Airlines	83.4%
41	Copa Holdings	83.4%
42	IAG	83.3%
43	Air Canada	83.3%
44	LATAM Airlines Group	83.1%
45	Avianca Holdings	83.1%
46	SIA Group	83.0%
47	Air Europa	83.0%
48	Swiss International	82.8%
49	Air New Zealand	82.8%
50	Aeroflot	82.7%

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 of 12 months ago and current strike experience 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 China Express, Scoot Tigerair, Wizz Air and Interjet.

They are then followed by creditable performances by other LCCs and leisure carriers (including AirAsiaX, Air Astana, Hainan Airlines, PAL Holdings and Cebu Pacific). With cost pressures in China, none of the Chinese "Big 3" make the Top 50. Their average staff cost increased to almost $40k, up from $32.4k five years ago.

The developed "mega" carrier groupings also do not qualify for a Top 50 ranking. Lufthansa's ratio is 27.5% (up from 25.4%) while IAG and Air France-KLM are 16.1% (up from 16.5%) and 29.2% (down from 29.6%) respectively. After big increases last year, the US majors saw their cost ratios decline slightly in 2018/18. Delta's ratio is 27.1%, United's 27.7% and American Airlines is 31.1%. Southwest is an unexpectedly high 34.8%, 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, low-cost subsidiaries Scoot Tigerair and Silkair all are on the list. The major Latin American carriers had quite varied results. Copa's ratio increased was 16.6%, up from 13.2% two years ago, Avianca's ratio was 15.6% while LATAM improved to 17.6% from 19.9%.

Vietnam Airlines ranked well in the Top 50 by staff costs

Top 50 by Lowest staff costs

Rank	Airline	Ave cost per employee ($k)	Employee costs as % of revenue
1	**Polar Air Cargo**	122.8	1.6%
2	**Vietnam Airlines**	4.3	2.2%
3	**Enter Air**	22.9	2.8%
4	**China Express**	N/A	3.3%
5	**Bulgaria Air**	N/A	5.1%
6	**USA Jet**	95.7	5.8%
7	**Cargojet Airways**	26.3	7.5%
8	**Scoot Tigerair**	47.7	8.2%
9	**Wizz Air**	57.6	8.6%
10	**Blue Panorama**	55.9	8.8%
11	**Interjet**	N/A	9.0%
12	**AirAsia X**	42.5	9.3%
13	**Air Astana**	15.4	9.5%
14	**Evelop Airlines**	58.2	9.7%
15	**Hainan Airlines**	37.3	9.9%
16	**PAL Holdings**	42.9	9.9%
17	**Air Seoul, Inc.**	49.3	10.1%
18	**VietJet Air**	42.1	10.2%
19	**Nok Air**	N/A	10.5%
20	**Pegasus Airlines**	28.0	10.7%
21	**Vueling Airlines**	86.7	11.0%
22	**Aegean Airlines**	55.1	11.2%
23	**Air Italy**	N/A	11.2%
24	**Volaris**	33.9	11.4%
25	**Air Europa**	70.6	11.4%
26	**Biman Bangladesh**	N/A	11.4%
27	**SpiceJet**	N/A	11.6%
28	**Jet2.com**	45.8	11.7%
29	**Grupo VivaAerobus**	N/A	11.7%
30	**Indigo**	22.3	11.8%
31	**Bulgarian Air Charter**	N/A	11.8%
32	**Air Vanuatu**	15.7	12.1%
33	**CarGolux**	156.6	12.2%
34	**Air Serbia**	N/A	12.4%
35	**Neos**	68.7	12.5%
36	**Air India**	28.4	12.6%
37	**Air Busan**	49.9	12.6%
38	**Ryanair**	69.4	12.8%
39	**Garuda Indonesia**	71.8	12.8%
40	**Jet Airways**	27.2	13.0%
41	**Royal Jordanian**	N/A	13.0%
42	**Emirates**	57.0	13.1%
43	**Aeroflot**	31.5	13.5%
44	**Jin Air**	63.4	13.5%
45	**Turkish Airlines**	53.1	13.7%
46	**Asiana Airlines**	N/A	14.2%
47	**Kenya Airways**	42.6	14.2%
48	**Easyjet**	77.1	14.4%
49	**Jazeera Airways**	66.4	14.5%
50	**SilkAir**	71.7	14.7%

Source: The Airline Analyst

Analysis: **RASK-CASK margin**

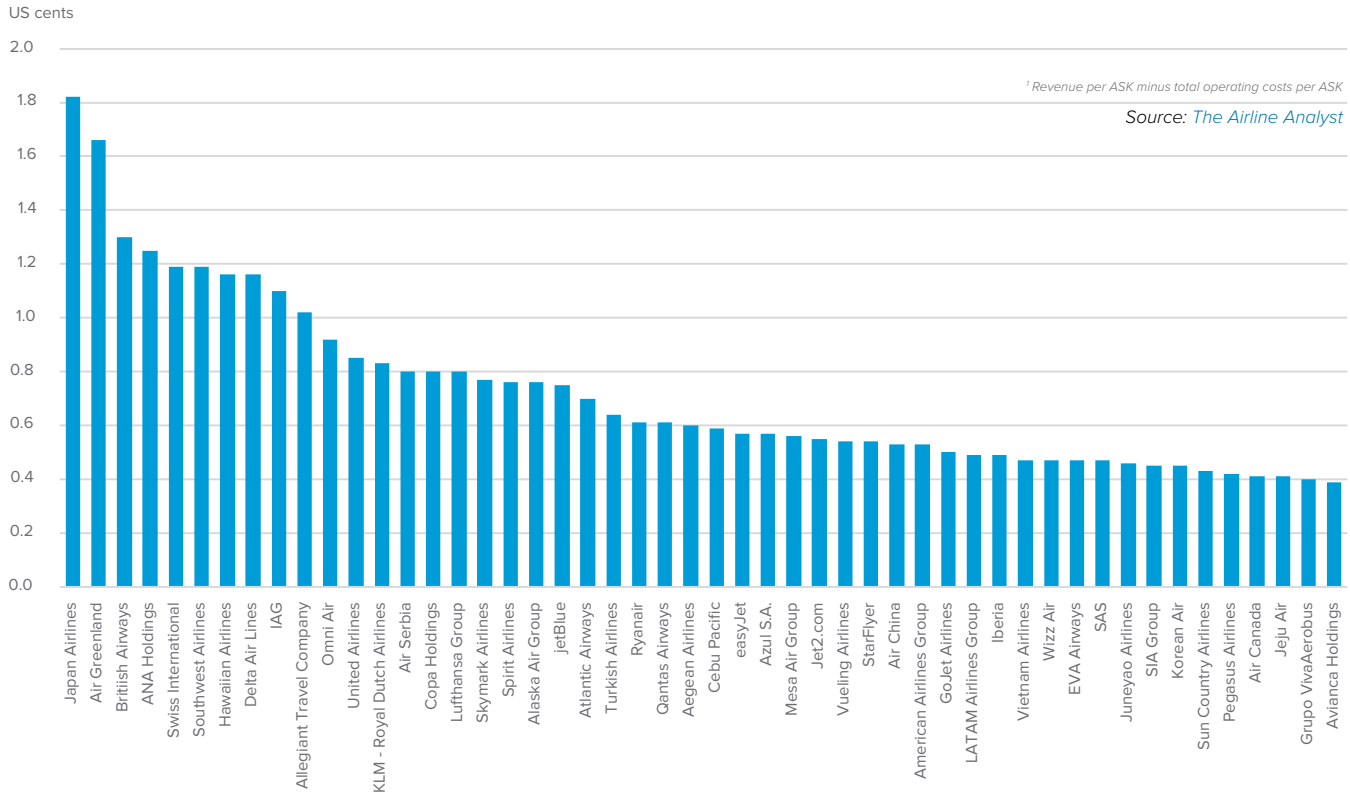
Japan Airlines heads the Top 50 by RASK-CASK margin

Top 50 by RASK-CASK

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

In the ever-competitive airline industry, very slim margins and competitive advantages mean the difference between success and failure. Having a marginally higher cost structure can be sustainable if it is supporting a premium revenue structure such as with British Airways or the US majors. However if it is not, the strength of competitive forces will root out the airline's weakness over time. This year only 10 airlines achieved a margin in excess of one US cent, down from 22 last year. Excluding the US airlines, Japan Airlines, a major network carrier, topped the list at 1.82 followed by Air Greenland and British Airways. ANA Holdings came fourth. Copa was the highest ranked Latin American carrier in 14th position. Outside these leaders Swiss was the highest ranked of the major European airlines. IAG ranked 9th this year and Lufthansa Group 16th but Air-France-KLM did not make it into the Top 50.

Top 50 by RASK-CASK margin[1]



[1] Revenue per ASK minus total operating costs per ASK

Source: The Airline Analyst

Analysis: **Ebitdar margin**

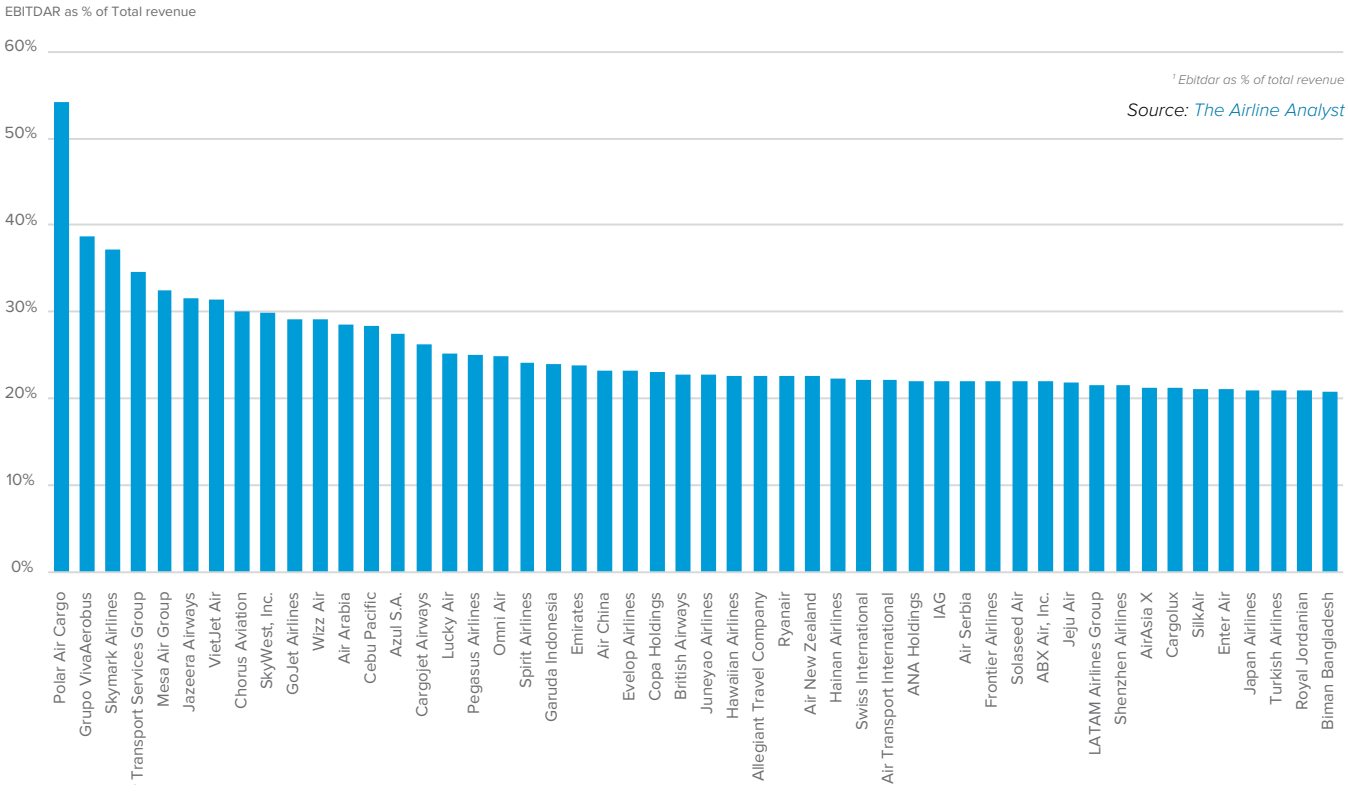
Polar Air Cargo heads the Top 50 by Ebitdar margin

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 139 airline groups declined from 20.5% last year to 18.5%. The passenger carriers on the list are headed by Grupo VivaAerobus, Skymark, Mesa Air Group and Jazeera Airways. Some other LCCs also had great results such as VietJet Air, Wizz Air, Air Arabia and Cebu Pacific. Azul, Garuda Indonesia, Emirates, Air China, Copa and British Airways are the highest ranked network carriers. Unlike last year when all three Chinese "majors" were in the Top 50, only Air China made the list.

Top 50 by Ebitdar margin[1]



[1] Ebitdar as % of total revenue

Source: The Airline Analyst

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 in Leverage or including rent in the fixed charges that must be covered by Ebitdar. For those airlines that have already adopted the new leasing accounting standards IFRS 16 or ASC 842 we use estimated rent for calculation of these ratios.

Top 50 by Lowest Leverage

Leverage for the Top 50 ranges from zero for those airlines with no or negative Adjusted Net Debt such as Japan Airlines to a high of 3.8x for Icelandair. As to be expected, the list includes all airlines with investment grade credit ratings. Majors near the top of the list include Southwest, Ryanair, Finnair, Easyjet, Lufthansa Group, Qantas (very strong recovery over last 3-4 years), British Airways and Delta. Air France-KLM made the list for the first time since we first published "Airline Top 50" six years ago but American, Cathay Pacific, Emirates, SAS and Turkish Airlines 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	CarGolux	0.2
2	Southwest Airlines	0.2
3	USA Jet	0.2
4	Swiss International	0.3
5	Ryanair	0.7
6	Bulgarian Air Charter	0.8
7	Finnair	1.0
8	Easyjet	1.0
9	Jet2.com	1.0
10	Lufthansa Group	1.1
11	Qantas Airways	1.2
12	British Airways	1.3
13	Delta Air Lines	1.4
14	Air New Zealand	1.5
15	Jetblue	1.5
16	IAG	1.6
17	Air Arabia	1.7
18	Cebu Pacific	1.7
19	Air Canada	1.8
20	Hawaiian Airlines	1.9
21	Wizz Air	2.0
22	Iberia	2.0
23	Alaska Air Group	2.2
24	Allegiant Travel Company	2.3
25	Copa Holdings	2.4
26	KLM - Royal Dutch Airlines	2.4
27	Westjet	2.5
28	Skymark Airlines	2.6
29	United Airlines	2.6
30	Air France-KLM	2.6
31	Kalitta Air	2.8
32	Austrian Airlines	2.8
33	Omni Air	2.9
34	Enter Air	2.9
35	SIA Group	2.9
36	Spirit Airlines	3.1
37	Air China	3.1
38	ABX Air, Inc.	3.1
39	Comair Limited	3.1
40	ANA Holdings	3.2
41	Aegean Airlines	3.4
42	Jin Air	3.4
43	VietJet Air	3.5
44	Vueling Airlines	3.5
45	Jeju Air	3.6
46	Air France	3.6
47	Frontier Airlines	3.7
48	Atlantic Airways	3.7
49	SkyWest, Inc.	3.8
50	Icelandair	3.8

[1] *Adjusted net debt/Ebitdar*

Top 50 by Highest Fixed Charge Cover[1]

Rank	Airline	Times
1	Luxair Group	44.1
2	Air Greenland	34.0
3	Air Arabia	28.0
4	Japan Airlines	26.0
5	Southwest Airlines	24.0
6	Swiss International	19.6
7	Lufthansa Group	18.3
8	Ryanair	12.5
9	Delta Air Lines	11.3
10	British Airways	9.4
11	Allegiant Travel Company	8.3
12	Jetblue	7.7
13	Qantas Airways	7.3
14	Air Transport Services Group	7.3
15	Bulgarian Air Charter	7.2
16	Air New Zealand	6.1
17	IAG	5.1
18	Copa Holdings	4.9
19	Easyjet	4.8
20	CarGolux	4.7
21	United Airlines	4.7
22	Hawaiian Airlines	4.5
23	Turkish Airlines	4.5
24	Alaska Air Group	4.3
25	Westjet	4.3
26	Air Tahiti Nui	4.2
27	SIA Group	4.1
28	Kalitta Air	3.8
29	Atlantic Airways	3.6
30	SkyWest, Inc.	3.6
31	KLM - Royal Dutch Airlines	3.5
32	Spirit Airlines	3.5
33	ANA Holdings	3.5
34	Cargojet Airways	3.5
35	Air Canada	3.4
36	Air China	3.2
37	ExpressJet	3.2
38	American Airlines Group	3.1
39	Korean Air	3.1
40	Cebu Pacific	2.9
41	Air France-KLM	2.9
42	Comair Limited	2.9
43	Pegasus Airlines	2.9
44	China Eastern Airlines	2.8
45	Chorus Aviation	2.8
46	China Airlines	2.8
47	Iberia	2.7
48	Spring Airlines	2.7
49	Cathay Pacific	2.7
50	Skymark Airlines	2.6

[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 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 American, Cathay Pacific, Korean Air and two of the Chinese majors make this list despite their higher leverage (China Southern 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 remains off the list after dropping out last year.

Luxair 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. Included in the top are a number of very successful LCCs and airlines with a sovereign "halo" like Royal Brunei and Air Malta. At the other end of the scale, many market participants consider that liquidity of three months of revenues is the minimum level required for comfortable operation of an airline. That is equivalent to a figure of at least 25% of revenues as a liquidity buffer. This year 31 airlines (down from 39) achieved this level. Three out of the top 10 are from China, including Hainan Airlines at the figure of 42%, which may surprise given the continuing scrutiny of 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 though all have large committed liquidity facilities.

Wizz Air did well in the Top 50 by Highest liquidity

Top 50 by Highest liquidity[1]

Rank	Airline	%
1	Lucky Air	84.1%
2	Tianjin Airlines	67.3%
3	Air Calin	57.2%
4	Wizz Air	56.7%
5	Royal Brunei	49.6%
6	Air Corsica	44.5%
7	Air Arabia	43.3%
8	Air Malta	42.8%
9	Hainan Airlines	42.0%
10	Ryanair	41.1%
11	Air Tahiti Nui	40.6%
12	Luxair Group	38.5%
13	Spring Airlines	37.3%
14	Finnair	36.7%
15	Japan Airlines	35.1%
16	Spirit Airlines	33.3%
17	Pegasus Airlines	33.0%
18	Qatar Airways	31.5%
19	Frontier Airlines	31.4%
20	AirAsia	30.9%
21	Jet2.com	30.1%
22	Grupo VivaAerobus	29.9%
23	Atlantic Airways	29.4%
24	Bangkok Airways	28.5%
25	Copa Holdings	27.0%
26	Westjet	27.0%
27	EVA Airways	26.8%
28	Air Serbia	26.2%
29	Air Canada	26.1%
30	IAG	25.7%
31	Indigo	25.7%
32	Air New Zealand	24.5%
33	Air Greenland	24.3%
34	Allegiant Travel Company	23.8%
35	VietJet Air	23.6%
36	Easyjet	23.3%
37	Cebu Pacific	22.8%
38	Vueling Airlines	21.8%
39	Aegean Airlines	21.7%
40	SAS	21.5%
41	Volaris	21.5%
42	CarGolux	21.4%
43	SkyWest, Inc.	21.4%
44	Jin Air	21.0%
45	Icelandair	19.9%
46	China Express	19.3%
47	British Airways	19.2%
48	SIA Group	18.9%
49	Jeju Air	18.5%
50	Virgin Australia	18.5%

[1] *Unrestricted cash as % of total revenues*

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 $335 billion as of 16 August 2019, down from $438 billion last year. Delta continues to be the top ranked airline with a market capitalisation of $34 billion, followed by two of its US rivals.

China contributes three of the top 15 while the "mega" European carriers of IAG, Lufthansa, and Air France-KLM make it into positions 5, 12 and 23, respectively. Azul is now the highest ranked Latin American carrier in 11th position, followed by LATAM in 18th and Copa in 29th.

Southwest leads the LCC stakes, ahead of Ryanair (7), Easyjet (17), Spirit (27), Wizz Air (32), Allegiant (41), and Air Arabia (44). The two major Japanese carriers come in at numbers 8 and 9.

Top 50 by Return on Invested Capital
The Top 50 by Return on Invested Capital ranking shows a wide range of results. In the top 10 are some small carriers with limited capital bases but nevertheless deserving of praise. Examples include jet2.com and Air Serbia. Among the larger carriers, the best performance came from Swiss at 26.4%, British Airways at 21.5%, KLM at 18.3%, Lufthansa at 17.3%, Japan Airlines at 16.9% and Hawaiian with 16.7%. A total of 34 generated returns in excess of 10%, up from 32 last year. As before, many of the long established network carriers like LATAM, Singapore Airlines and Cathay Pacific earned returns that are unlikely to have exceeded their cost of capital.

Top 50 by Market capitalisation[1]

Rank	Airline	$m
1	Delta Air Lines	33,929
2	Southwest Airlines	25,689
3	United Airlines	22,600
4	Air China	15,678
5	IAG	15,281
6	American Airlines Group	14,790
7	Ryanair	14,656
8	ANA Holdings	12,761
9	Japan Airlines	12,719
10	China Southern Airlines	11,508
11	Azul S.A.	11,185
12	Lufthansa Group	10,378
13	China Eastern Airlines	9,709
14	SIA Group	8,253
15	Indigo	7,709
16	Alaska Air Group	7,496
17	Easyjet	6,359
18	LATAM Airlines Group	6,246
19	Qantas Airways	5,738
20	Cathay Pacific	5,589
21	Air Canada	5,286
22	Jetblue	4,914
23	Air France-KLM	4,505
24	Hainan Airlines	4,464
25	Turkish Airlines	4,201
26	Spring Airlines	4,121
27	Spirit Airlines	3,924
28	Air New Zealand	3,571
29	Copa Holdings	3,321
30	Juneyao Airlines	3,181
31	VietJet Air	2,814
32	Wizz Air	2,786
33	Korean Air	2,595
34	Gol	2,495
35	AirAsia	2,374
36	SkyWest, Inc.	2,285
37	EVA Airways	2,209
38	China Airlines	1,901
39	PAL Holdings	1,850
40	Aeroflot	1,638
41	Allegiant Travel Company	1,622
42	Westjet	1,543
43	Air Transport Services Group	1,349
44	Air Arabia	1,296
45	Hawaiian Airlines	1,282
46	Virgin Australia	1,256
47	Finnair	1,007
48	Jet Airways	964
49	Norwegian Air Shuttle	879
50	Thai Airways	859

[1] *Closing prices 16 August, 2019*

Top 50 by Return on invested capital[1]

Rank	Airline	ROIC
1	USA Jet	27.9%
2	CarGolux	27.3%
3	Swiss International	26.4%
4	Bulgarian Air Charter	26.3%
5	Jet2.com	24.3%
6	British Airways	21.5%
7	Air Serbia	20.0%
8	Air Greenland	18.6%
9	KLM - Royal Dutch Airlines	18.3%
10	Lufthansa Group	17.3%
11	Japan Airlines	16.9%
12	Hawaiian Airlines	16.7%
13	IAG	15.9%
14	Finnair	15.6%
15	Evelop Airlines	15.0%
16	Vueling Airlines	14.3%
17	Enter Air	14.2%
18	Cebu Pacific	12.4%
19	Delta Air Lines	11.8%
20	Southwest Airlines	11.7%
21	Air Canada	11.6%
22	Comair Limited	11.5%
23	Air Malta	11.5%
24	Qantas Airways	11.5%
25	Air New Zealand	11.0%
26	Neos	10.9%
27	Jetblue	10.9%
28	Iberia	10.3%
29	Frontier Airlines	10.3%
30	Omni Air	10.2%
31	Air Europa	10.1%
32	Aegean Airlines	10.1%
33	Skymark Airlines	10.0%
34	United Airlines	10.0%
35	Allegiant Travel Company	9.8%
36	Air Arabia	9.7%
37	GoJet Airlines	9.6%
38	Wizz Air	9.5%
39	SAS	9.4%
40	Pegasus Airlines	9.3%
41	Easyjet	8.9%
42	Solaseed Air	8.9%
43	SkyWest, Inc.	8.8%
44	Air France-KLM	8.7%
45	American Airlines Group	8.6%
46	Chorus Aviation	8.5%
47	Alaska Air Group	8.3%
48	Jin Air	8.1%
49	Turkish Airlines	8.0%
50	Kalitta Air	7.9%

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

Source: The Airline Analyst

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