March/April 2019

AIRFINANCE JOURNAL

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DAE weighs up growth options

Firoz Tarapore explains why he is concerned with the narrowbody order backlog

JOLCO OVERVIEW | MAS INTERVIEW

REGIONAL AIRCRAFT SUPPLEMENT

A four-engine **farewell**

On 14 February, Airbus declared it would stop producing the A380 from 2021. **Jack Dutton** carries out a valedictory autopsy and asks why we now prefer smaller, new-technology aircraft.

The lifecycle of a product has become much shorter now, Emirates chief executive Tim Clark said in an interview at the 2013 Dubai air show. Although Clark was referring to the cabin configuration of the Airbus A380 at the time, the same philosophy could be applied to the whole aircraft.

From day one, the A380 was an expensive project, which was one of the main reasons why the programme was short-lived. In October 2007, the first A380 was delivered to Singapore Airlines, 18 months late and significantly over budget. Just over 12 years – or a lease and no renewal – later, on Valentine's Day this year, came the death knell for the superjumbo. Emirates – the A380's market maker – cancelled 36 orders for the aircraft, instead ordering 40 A330-900s and 30 A350-900s. Only 234 A380s were delivered out of the meagre 313 orders for the aircraft.

Without Emirates, Airbus probably would have cancelled the programme several years ago. Dubai based carrier accounts for 109 of the 234 A380s delivered, according to *Airfinance Journal*'s Fleet Tracker. And of the 144 non-Emirates orders that the A380 won, half (72) were cancelled before the Emirates decision that killed the programme. Without a stretched version or an engine update and with no real secondary market, the programme was doomed to fail.

When the A380 was launched in 2005, it was touted as the future of aviation and a solution to growing global air traffic that Airbus forecast would double every 15 years. In its Global Traffic Forecast 2006-25, Airport Council International (ACI) said that global traffic would double by 2025, rising to more than nine billion passengers a year. The International Air Transport Association projection for global passenger traffic this year is 4.58 billion and, although 2025 is still six years off, ACI's numbers feel like a gross overestimate. The A380 was a worthy competitor to the Boeing 747, although the US-manufactured aircraft had a much longer lifespan (more than 40 years longer).

Adam Pilarski, senior vice-president of Avitas, wrote in *Airfinance Journal* in February last year that Airbus's motive for launching the A380 was not because it thought that people would rely more on flying between the largest cities on the largest available aircraft. Instead, he said it was to take at least 50% market share from Boeing, meaning that the A380 was more of a strategic move for Airbus than an effort to meet notional future demands of passengers. Regardless of what Airbus's true motives were, the plethora of new-technology aircraft offering range, capacity and fuel savings, such as the A350, A330neo and A321LR, fragmented markets that might have gone through hubs to fill the A380. This was also the case with the arrival of the 787 and the 737 Max. Over the years, we saw more companies – including Qantas and Virgin Atlantic – cancel A380 orders. With the average age of the A380 fleet being only 5.9 years, the long-term value proposition of the aircraft and its engines after programme termination is unclear.

Widebody pressure

It is not just the A380 that has been under pressure recently, but the widebody market in general. The market has seen a drop in demand, with more than 80 orders cancelled in 2018, according to Buckle Up, a recent white paper from Avolon. Twin-aisle aircraft deliveries doubled between 2010 and 2017, but numbers have been tapering off since then.

There have been few sales and not much leasing demand for widebodies recently and few lessors will speculatively order them in the current market. Many carriers with a surfeit of widebodies on order have overestimated their capacity. In 2018, airlines cancelled orders for 35 Boeing widebodies, comprising 27 787s and eight 777s, according to the US manufacturer. Carriers cancelled orders for 48 Airbus widebodies last year, including six A330-800s, four A330-900s and 22 A350-900s, reports the manufacturer. More widebody deferrals will follow, and some of those aircraft will likely end up in major growth markets such as China.

For a few years now, the market has been migrating from four-engine to twin-engine widebodies. While the superjumbos hold more passengers than their newer rivals, the volatile fuel price environment jeopardises their economics. Furthermore, towards the end of an aircraft's lifecycle, engines increasingly dictate its value, meaning four engines can be more of a headache than two if the assets lose value.

Larger hub airports, such as Singapore and Dubai, have been offering more flights to medium-sized airports that aircraft such as the A380 would not typically fly to. The rise of low-cost carriers has also put pressure on some of the larger legacy carriers, which typically would buy aircraft such as A380s and 747s. Slowing growth and overcapacity concerns have made it more attractive to order smaller but newer widebodies to reduce costs.

Like the A380 programme, my tenure at *Airfinance Journal* has come to an end. It has been a privilege covering this industry since November 2014, but it is time for a new challenge. You have been a great readership and I would like to thank you all for your support over the years. I wish you all the best and hope to keep in touch in the future.

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Printed in the UK by Buxton Press, Buxton, Derbyshire.

Airfinance Journal (USPS No: 022-554) is a full service business website and e-news facility with printed supplements for $3,565/€2,854/ £2,095* a year by Euromoney Institutional Investor PLC. (*£ and € prices are subject to VAT).


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Bird & Bird hires aviation partner

Law firm Bird & Bird has appointed Richard Sharman as an aviation finance partner, based in its London office.

Sharman joins from the London office of Clifford Chance, where he was a senior associate.

Sharman handles aviation and other transportation transactions on behalf of financial institutions, aircraft leasing companies, airlines, arrangers and equity investors. His deals include commercial debt financings, operating leasing, structured tax-based financings, equity funds, export-credit, asset portfolio sales and purchases, joint ventures and Islamic financings. His experience also covers secondary debt trading, repossessions and restructurings.

Bird & Bird has been growing its aviation practice recently. The firm has hired Simon Gough, formerly a senior tax partner at Dentons & DLA, whose experience includes advising on aviation finance transactions, and Pierpaolo Mastromarini, an aviation finance/export credit lawyer based in Italy.

Bird & Bird will soon be adding to the team in Frankfurt led by Matthias Winter.

BOC Aviation announces senior appointments

Graham Lees has been appointed as director and head of revenue at BOC Aviation's New York office. He heads the firm's airline leasing and sales activities for North and Central America, and is responsible for managing senior relationships with the airframe and engine manufacturers on all revenue-related areas.

Lees has been with BOC Aviation since 2002. His most recent role was head of aircraft sales at the firm's Singapore headquarters.

Andrew Taylor succeeded Lees as Singapore aircraft sales head. Taylor previously was executive vice-president for aircraft sales at BOC's New York office.

"BOC Aviation has enjoyed 25 years of excellence, and this was accomplished through the hard work of our staff. We place great emphasis on talent management and succession planning and our latest appointments reflect the depth of our staff capabilities," says Robert Martin, BOC Aviation managing director and chief executive officer.

He adds: "Graham and Andrew together bring almost 60 valuable years of combined industry experience to our global management team with experience across all of the core revenue competencies of the aircraft operating leasing business."

Elbers reappointed KLM CEO

Pieter Elbers has been reappointed as chief executive officer (CEO) of KLM after reports that Air France-KLM directors could replace him prompted resistance from the Dutch side of the airline group.

Senior KLM managers had warned of potential industrial action should Elbers be forced out.

But the group's directors reappointed Elbers, who had the support of the Dutch government, at their meeting on 19 February.

In a letter, the KLM managers had complained about a "lack of a clear strategy for Air France-KLM and the roles of the airlines within the group", under new group CEO Ben Smith.

This concern, though, also seems to have been heeded, with a group CEO committee being set up to decide the strategy for the whole company.

Smith will chair the committee, which will also include Air France's CEO Anne Rigail, group chief financial officer Frédéric Gagey, as well as Elbers.

Scurrah to replace Borghetti at **Virgin Australia**

John Borghetti, Virgin Australia chief executive officer (CEO), will step down earlier than expected after the company named Paul Scurrah as its new CEO and managing director.

Scurrah replaces Borghetti on 25 March, when he will also become an executive member of the airline's board.

The search for Borghetti's replacement began in June 2018, when the current CEO said he would step down after 1 January 2020.

Starting his career in aviation at Australian Airlines, Scurrah also has held positions at Qantas and Ansett Australia.

Since 2013, he has been CEO of Australia's biggest port and supply chain operator, DP World Australia.

Scurrah's appointment was unexpected given that he was not one of the four candidates in the running for the job, according reports last summer, which made Tigerair Australia CEO Merren McArthur and group executive Rob Sharp the two most likely internal candidates for the role.

Ryanair adopts group structure led by O'Leary

Ryanair is moving to a group structure "not dissimilar to that of IAG" as it restructures its various subsidiaries.

Under the new arrangement, to be implemented over the next 12 months, Ryanair DAC, Laudamotion, Ryanair Sun and Ryanair UK will each have their own chief executive officer (CEO), with Michael O'Leary serving as group CEO.

O'Leary's replacement as CEO of Ryanair DAC will be announced later this year.

In his new role as group CEO, for which he has signed a five-year contract, O'Leary will focus on the development of the group.

Meanwhile, David Bonderman and Kyran McLaughlin have agreed to lead the Ryanair board of directors for one more year until summer 2020, but neither of them wants to be considered for re-election at the September 2020 annual general meeting.

Stan McCarthy, who joined the board in May 2017, has agreed to become deputy chairman from April 2019, and will move to the position of chairman in summer 2020.

Nordica names finance chief

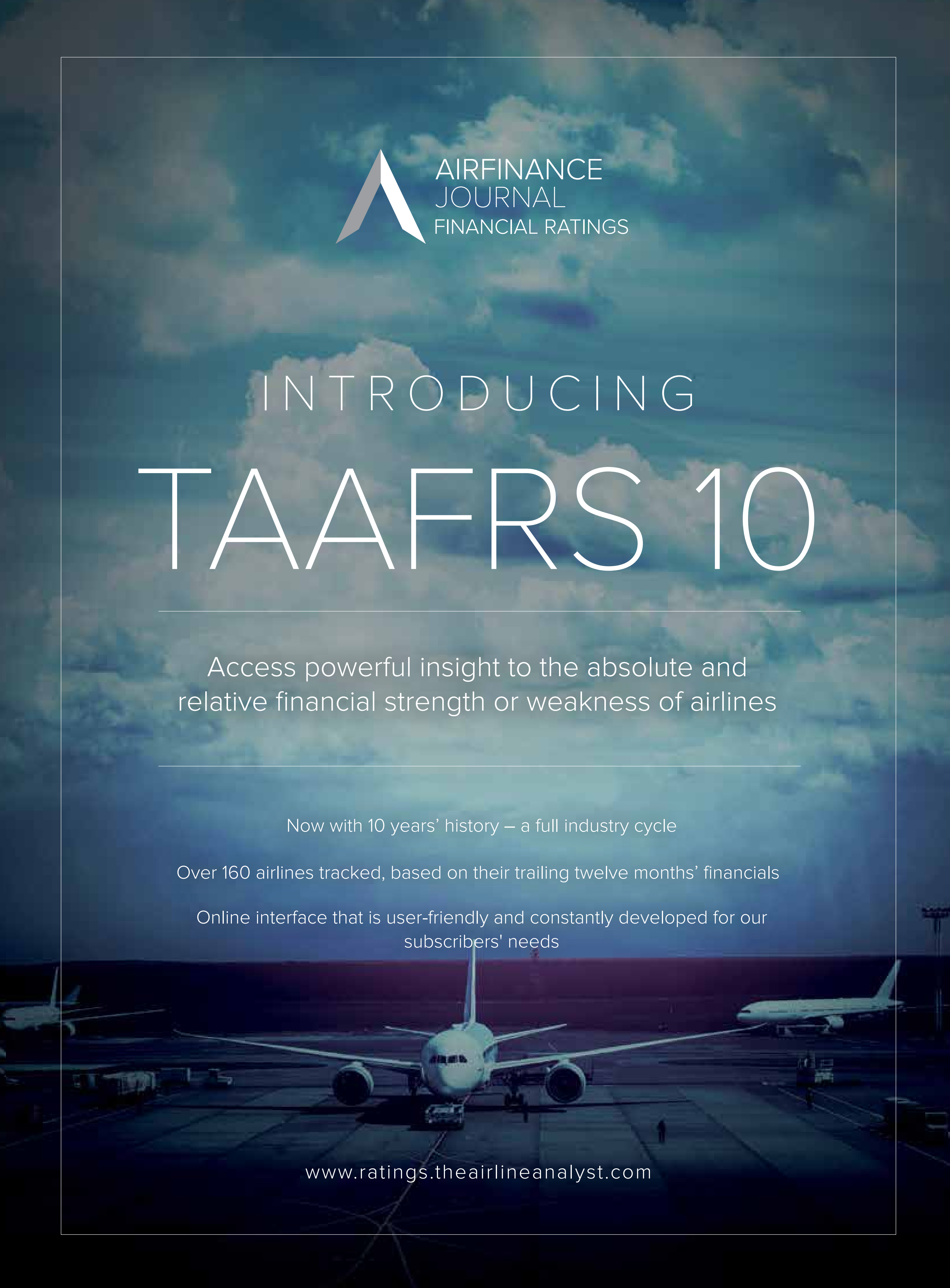
Kristi Ojakäär

Nordic Aviation Group (Nordica), Estonia's national airline, has appointed Kristi Ojakäär as head of finance.

Ojakäär previously worked as finance manager for Olympic Entertainment Group and was Microsoft's director of finance for the Baltic states.

Established in 2015, Nordica is fully owned by the Republic of Estonia. The company's headquarters are in Tallinn.

The Estonian carrier operates Bombardier CRJ700/900 aircraft, as well as ATR72-600s.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Peach to overtake Jetstar as Japan's biggest LCC

Dominic Lalk speaks to Peach chief financial officer Junya Okamura about what the Vanilla merger means for the carrier.

ANA confirmed industry expectations in 2018 when it announced the two low-cost carriers (LCCs) in its portfolio would be merged into Japan's biggest budget airline. The process of integrating Peach Aviation and Vanilla Air began last year and will close in October, Peach chief financial officer Junya Okamura tells *Airfinance Journal*.

From March, ANA will start transferring employees from Vanilla to Peach and "implement aircraft conversions", says Okamura.

Peach now operates 23 Airbus A320s after adding three more aircraft to the fleet from Fuyo General Lease (FGL) under sale and leaseback deals in 2018. All the aircraft in the Peach fleet are on lease to the airline.

Peach has sale and leaseback deals with SMBC Aviation Capital and FGL for seven A320s, and has three of the type from Avolon, two from Aviation Capital and one each from GECAS, MC Aviation Partners and JP Lease Products & Services.

"We are aiming to increase the aircraft in our fleet to around 50 by 2020," Okamura says, confirming that the carrier's updated orderbook comprises three A320s, 26 A320neos and two A321LRs.

With 23 A320s in the Peach fleet as *Airfinance Journal* went to press, three more to be delivered this year, another 28 aircraft on order and 15 leased in the Vanilla fleet, Okamura needs to decide soon which of the excess units to cut. "We like to use our aircraft efficiently, so probably we will not take over some older aircraft. We are still deciding carefully which ones to keep and which ones to let go," explains the Peach finance chief.

The seven oldest A320s in the Peach fleet are of 2011 and 2012 vintage, while Vanilla's three oldest aircraft were manufactured in 2013.

The first 10 A320neo-family aircraft will be delivered from mid 2020. "We are studying different finance structures for these aircraft at the moment. We are considering putting them on the balance sheet, but keep studying other structures," he says.

Peach is using internal funds for the required predelivery payments for all 10 aircraft.

Of the 10 A320neo-family aircraft to join the fleet in the next few years, two will be long-range A321LRs.

"We are reviewing several options on how to use these aircraft most efficiently. At the moment, we are considering mid-haul routes with the A321LR," says Okamura. Peach had previously flagged routes of seven to nine hours as the optimal utilisation for the two A321LRs on order, which would enable the LCC to tap the popular Japan-Hawaii and Japan-Bali leisure markets.

Peach has no plans for widebody operations for the time being, despite ANA rival Japan Airlines (JAL) investing ¥20 billion ($180 million) in an as yet unnamed long-haul, low-cost carrier. That carrier hopes to launch in spring 2020 with high-density Boeing 787-8s and will target routes currently untouched by mainline JAL.

We are aiming to increase the aircraft in our fleet to around 50 by 2020.

Junya Okamura, chief financial officer, Peach Aviation

Purpose of the integration

ANA says its LCC integration will enhance the strengths the two LCCs have today, creating a stronger competitive advantage to promote further not only Japanese domestic services, but also capture the strong demand for visitors to Japan. The merged entity is particularly focused on contributing to the Japanese government's goal of 40 million people visiting the country in 2020.

With target revenues of ¥150 billion and an operating profit of ¥15 billion for fiscal year 2020, ANA believes the merger will result in increased operational efficiency and a reduction of unit costs. The parent group will maintain the strategic independence of the integrated LCC and position the airline as an important pillar for greater profits and opportunities for future expansion. "The ultimate goal is for Peach to become the leading LCC in Asia," says Okamura.

"Peach will remain the leading LCC in Japan and become the third-largest airline in the country, after ANA and JAL. Vanilla resources such as pilots, cabin crew and MRO [maintenance, repair and overhaul] technicians will be integrated into Peach," adds Okamura. The plan is for Peach to overtake JAL affiliate Jetstar Japan as Japan's low-cost market leader.

Peach Aviation, a consolidated subsidiary of ANA, is based at Osaka's Kansai airport and in 2012 became the first low-cost carrier to be launched in Japan. After the merger, the shareholders in the carriers will be ANA (77.9%), Hong Kong's First Eastern Holdings (7%) and Innovation Network (15.1%).

Vanilla is fully owned by ANA. It rose from the ashes of an ANA/AirAsia joint venture and has struggled to produce consistent returns.

For the time being, Peach remains profitable, although its bottom line is on the decline. In the airline's latest financial year to 31 March 2018, Peach reported an operating income of ¥54.7 billion, up from ¥51.7 billion the previous year, but its operating profit dropped to ¥5.87 billion from ¥6.3 billion and net profit was down 24.6%, to ¥3.7 billion.

Asia-Pacific airlines **still face M&A challenges**

Fuel price, foreign exchange and uncertainties of the US-Sino trade dispute will play on airlines' minds this year. Andrew Herdman, director-general of the Association of Asia Pacific Airlines, shares his 2019 industry outlook with **Elsie Guan**.

Airline mergers and acquisitions (M&A) and ownership changes are common in aviation. These transactions can differ greatly between continents and cultures but they also share a number of characteristics.

In Europe, Ryanair is moving to a group structure "not dissimilar to that of IAG" as it assigns respective chief executive officers (CEOs) to its Ryanair DAC, Ryanair Sun and Ryanair UK subsidiaries.

Andrew Herdman, director-general of the Association of Asia Pacific Airlines (AAPA), tells *Airfinance Journal* that European airlines such as IAG and Lufthansa are able to bring other airlines into their groups rather than just subsidiaries, as is the case in AirAsia and Lion Air groups. He adds that European carrier ownership structures help their members invest within groups, but it is quite difficult to have such groups in Asia.

In February, All Nippon Airways (ANA) confirmed it will invest $95 million for a 9.5% minority stake in Philippine Airlines (PAL), to expand the group's international network and strengthen its partnerships with foreign carriers.

"If you talk about one airline investing in another airline of a different country, the foreign airline can only have a minority stake, and it cannot have control. This is to comply with the requirements of bilateral government air services agreements. So the appetite for buying small stakes in other airlines is not that great, because when you have a small stake, you don't have much influence," says Herdman, who notes history indicates that purchasing a small shareholding from other foreign airlines often does not work out.

Most shakers and movers in the industry think ownership control regulations should be abandoned. However, this would often require changes to air services agreements, according to Herdman, as these agreements between countries often specify that airlines must be majority-owned and controlled by nationals of the country the airline is registered in. "Overall, cross-border M&A activity is quite limited," he says.

Globally, LCCs constitute about 25% of the total seat capacity, and probably about 15% of the revenue.

Andrew Herdman, director-general, Association of Asia Pacific Airlines

In the interim, there are many forms of cooperation indigenous to the aviation industry. Two airlines that have no ownership overlap at all can sign cooperation agreements.

"Airlines have a practice of competing against and cooperating with each other at the same time. They form alliances for market cooperation, feed passengers to each other, conclude various types of commercial agreements with each other. So historically, there is a lot of cooperation amongst airlines even without investment in one another," says Herdman.

As director-general of AAPA, Herdman is committed to expanding the role of the association as the leading trade organisation for airlines in the Asia-Pacific region.

In Japan, Japan Airlines and ANA still dominate the market. "The penetration of low-cost carriers [LCC] in Japan is still rather low," he says, adding that the Japanese market is a mature and high-income market with high service expectations.

"Globally, LCCs constitute about 25% of the total seat capacity, and probably about 15% of the revenue. That means full-service network carriers still generate an overwhelming 85% of the revenues globally. We see some long-haul LLCs. But it's tough to capture that market from full-service carriers, which are already very cost competitive," he adds. Herdman stresses that most of the revenue is still in full-service, medium- and long-haul carriers, rather than LCCs.

Having held the director-general position in AAPA since November 2004, Herdman addresses a wide range of both regional and global policy issues affecting the industry. He expects that profit margins at Asian airlines in 2018 will be similar to 2017 levels.

"Last year, the oil price kept rising for the first three quarters and it was very difficult to pass on the high fuel cost to passengers in the form of higher average fares. In the fourth quarter, the oil price fell sharply, and that provided some relief but we haven't seen all the results coming through from the airlines. The cargo business had a very strong 2017, and 2018 still saw some growth. But the monthly growth rate has moderated somewhat," says Herdman.

According to a *Wall Street Journal* report, Chinese and US negotiators are focusing on producing a broad outline of a trade agreement ahead of a possible summit in the coming weeks, indicating there are still substantial gaps between what Beijing is willing to offer and what the US is willing to accept.

"Until recently I would have said the customer sentiment is not too affected," says Herdman, "but I think consumer confidence is beginning to be affected in China. In some Asian markets that is also starting to show, affected by the uncertainty of the global economy and the uncertainties arising from trade disputes. That is a concern for 2019."

Ageing fleets, fuel and maintenance **to challenge regionals**

After OEM consolidation, KBRA believes that regional aircraft will now benefit from the much larger network and marketing opportunities provided by Airbus and Boeing.

Regional operators and lessors are facing challenges that include managing their ageing fleets, and the corresponding maintenance costs, and volatile fuel prices, according to Kroll Bond Rating Agency (KBRA).

In a report on the regional aviation market, the ratings agency says that in the largest regional market, the United States, airlines must contend with scope clause restrictions and pilot shortages.

It states: "While smaller regional airlines and aircraft lessors exposed to emerging markets could be more prone to market-specific economic or geopolitical risks, on the whole, KBRA believes positive market trends will prevail". That said, KBRA notes that newer regional aircraft with limited in-service time have untested liquidity in the secondary markets unlike most narrowbody aircraft. Therefore, the rating agency remains cautious as to their value in distressed markets, as well as for secondary and tertiary leases.

KBRA expects continued growth in the regional market globally, supported by strong demand in the emerging economies of Asia-Pacific (particularly China), Latin America, CIS (Commonwealth of Independent States) and the Middle East, which will require new regional routes as global connectivity continues to expand. Demand is further underpinned by US and European airlines seeking to maximise capacity utilisation.

OEM consolidation

Last year Boeing and Airbus took steps to establish dominant positions in regional aircraft production through acquisitions of Embraer and of Bombardier's CSeries. KBRA deems this as "a significant event for the industry with positive long-term benefits coming from economies of scale". At the same time, new market entrants from Asia and Russia have made strides, with the promise of more competition in the long term.

KBRA believes that Boeing could help improve production at Embraer, which had previously projected a decline to 85 to 95 commercial aircraft deliveries in 2018 compared with 101 in 2017.

Despite a cancellation for 24 Embraer 190s by jetBlue, which opted to replace its current fleet of E190s with Airbus A220s, Embraer's orderbook remains strong, with US-based Republic Airways the largest customer at 100 orders, followed by Brazil-based Azul at 57.

To the extent these acquisitions entrench a duopoly, there is always a risk of less competition and innovation, as well as higher overall prices for regional airline and lessor buyers. However, KBRA believes the regional aircraft markets will now benefit from the much larger network and marketing opportunities provided by Airbus and Boeing, as well as greater aftermarket support – which are positives for the buyers. Moreover, new entrant aircraft original equipment manufacturers (OEMs), including COMAC and Mitsubishi, have observed recent momentum in orders, which portends a healthy level of market competition going forward.

Leasing

The regional aircraft leasing space continues to be dominated by Nordic Aviation Capital (NAC), with a fleet of 455 aircraft, more than double its next largest direct competitor, GECAS. Smaller companies focusing exclusively on the regional market include Falko, Chorus Aviation and TrueNoord, while larger commercial lessors such as GECAS, DAE Capital, ICBC Financial Leasing, AerCap and Avolon are seeking to reduce or at least not increase their exposure to regional fleets – leaving this segment to more specialised regional lessors.

KBRA says the segment continues to provide attractive risk-return characteristics, which has led to institutional investor interest in regional aircraft of varying ages through asset-backed securities (ABS) structures, which provides market liquidity.

Excluding NAC, other lessors specialising in regional aircraft do not have the capital base to commit to large orderbooks and must grow more opportunistically through the sale and leaseback market. Additionally, regional lessor customers typically possess lower overall credit quality, which could lead to higher default and re-leasing risk. These factors mean growth and utilisation rates can be more volatile than for their narrowbody- and widebody-focused peers. Even so, recent customer defaults have been isolated and well managed, including Republic Airways, which emerged from bankruptcy protection in 2017 and is now Embraer's largest customer.

KBRA expects the aircraft leasing industry to remain highly competitive in the short-term, driving further consolidation, particularly as the high-touch nature of regional aircraft leasing is better served by more specialised lessors with appropriate scale. Main risks to the sector include pressure on airline profitability from more volatile fuel prices, regional currency depreciation and higher funding rates with potential negative impact on lessors. Rising interest rates can both constrain access to healthy, functioning capital markets and

Wideroe's E190-E2

Air Baltic CS300

also pose a short-term funding mismatch because lease rates generally lag movements in rates by a few quarters.

Financing gains diversity
KBRA expects continued strong demand and financing availability for the 70- to 150-seat regional aircraft and 70-plus-seat turboprop segments, driven by strong passenger growth forecasts, increased demand for point-to-point routes, rapid growth in the global middle-class population and increased business travel in emerging regions.

The healthy funding environment for new and used aircraft is expected to continue as more capital market participants become familiar with the embedded value of these aircraft, says the ratings agency. Inherent risks of the regional aircraft market that could hinder expectations include the cyclical nature of the airline industry, overall economic conditions and event risk. Additionally, market-specific factors such as pilot shortages or regulatory constraints with particular impacts on regional markets could cause market disruptions. However, the regional aircraft markets – particularly for turboprops and aircraft serving connecting routes to main hubs – were historically less severely impacted during market downturns than long-haul markets. This was proven by lower depreciation of regional aircraft than for narrowbody or widebody aircraft during market turbulence, as these aircraft are more economical to purchase and operate.

The expansion of capital market financing options remains evident as the market has seen a number of ABS and secured transactions involving both regional aircraft and turboprops, as more investors become comfortable with the asset type. Importantly, some public enhanced equipment trust certificates have included regional aircraft in their overall pools, which both diversifies portfolios and creates more options for financing of such aircraft.

Jet Airways struggles for survival

After the Indian airline's board approved a rescue plan in late February, its principal shareholders and banks are scrambling to save the carrier. But lessors are threatening the airline with contract cancellations and repossession of aircraft. **Dominic Lalk** reports.

For a quarter of a century, Jet Airways set the bar in Indian aviation. The airline, which has its headquarters in Mumbai, quickly surpassed national carrier Air India in terms of network coverage and passenger acceptance. Jet also survived Kingfisher Airlines, an ambitious premium carrier that had bitten off more than it could chew and eventually was declared bankrupt.

India will become the third-largest aviation market by 2024-25, according to the latest International Air Transport Association data. Given this enormous potential, why are India's airlines struggling to make ends meet? Most in the industry would point to a toxic mix of notorious bureaucracy, onerous taxation, rising oil prices, extremely low yields and a depreciating rupee.

Some airlines have been hit harder than others – Jet Airways as a full-service legacy carrier with a lot of excess fat was arguably hit the hardest.

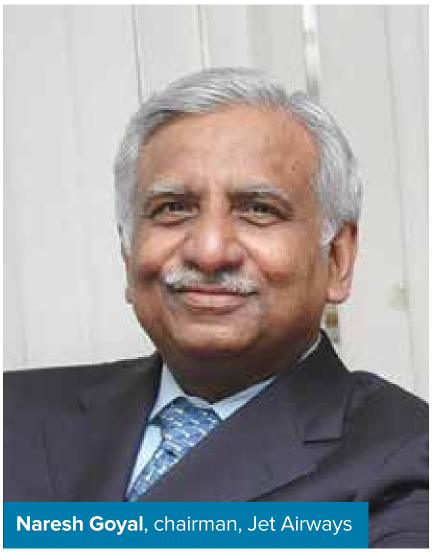
How is Jet trimming the fat? On 21 February, the carrier's board approved the Bank-led Provisional Resolution Plan (BLPRP), hoping to close an Rs85 billion ($1.2 billion) "funding gap" through proceeds from aircraft sales, sale and leasebacks, refinancing of aircraft, new loans and additional equity, including a Rs1.15 billion debt-for-equity swap, which was agreed to by a consortium of lenders led by the State Bank of India (SBI).

In a joint statement on 25 February, Jet's two largest shareholders, founder and chairman Naresh Goyal and Etihad Aviation Group chief executive officer Tony Douglas, backed the BLPRP.

It remains unclear when the debt-for-equity swap will take place or what effect it will have on Goyal's 51% stake and Etihad's 24% shareholding.

Many have called for the resignation of Goyal as Jet chairman. The criticism is that he treats the airline as a prestige project and has little impetus to run it as a profitable business. Others are taking a view that no matter the circumstances, Etihad must refrain from sinking further funds into Jet.

"Jet's future is bleak. Why it is in such a state is the result of many factors, including its corporate ownership, aircraft fuel prices are a killer, domestic fiscal policies, the list goes on. I'm not sure if it will come out of this unscathed even if Goyal goes. No way Etihad will inject more cash as they, too, are facing a cash crunch," says Shukor Yusof, founder of aviation consultancy Endau Analytics.



Naresh Goyal, chairman, Jet Airways

Abu Dhabi-based Etihad bought a 24% stake in Jet for $379 million in 2013. Several media reports have stated that Goyal will quit the restructured carrier's board if Etihad offers the "right price". The Middle Eastern carrier has told lead lender SBI it expects to purchase an additional 25% of Jet for Rs150 a share, a valuation that "did not go down well with Goyal".

> *"Jet's future is bleak. Why it is in such a state is the result of many factors, including its corporate ownership, jet fuel prices are a killer, domestic fiscal policies, the list goes on."*
>
> **Shukor Yusof**, founder, Endau Analytics

None of this instils much confidence in Jet's turnaround.

It is no secret that several lessors are threatening Jet with contract cancellations and repossession of aircraft. GECAS, Jackson Square Aviation and SMBC Aviation Capital are considering putting new Boeing 737 Max deliveries to Jet on hold. The carrier has committed to 225 Max aircraft.

This comes after a January meeting attended by Goyal, Etihad management, as well as representatives from GECAS, SMBC Aviation Capital, Aircastle, Avolon, DAE Capital, BOC Aviation and Jackson Square Aviation. Jet says the meeting was cordial, but *Reuters* sources claim the atmosphere was tense and that there was "an ill-tempered showdown between the airline and some leasing firms".

A degree of scepticism, if not panic, among the leasing community is understandable. After all, Jet operates 113 aircraft, of which 104 are leased. GECAS has the biggest exposure with 17 aircraft seconded to Jet, followed by Aergo Capital and Aircastle with seven units each leased to the cash-strapped carrier.

The latest financial disclosures from Jet do not alleviate fears of a hard landing. In February, Jet reported the results for its third quarter ended 31 December. During the three-month period, Jet's earnings before interest, taxes, depreciation, amortisation and restructuring or rent costs declined Rs9.98 billion year-on-year, to Rs530 million. This translates into a net loss of Rs732 million for the quarter, reversing a net profit of Rs186 million posted for the same period last year.

Jet has only nine aircraft on its balance sheet, comprising seven 777-300ERs and two 737NGs. Even if Jet chief executive officer Vinay Dube succeeds in convincing Goyal to sell these assets, the proceeds are unlikely to exceed $505 million (according *Airfinance Journal* Fleet Tracker market value estimates), a far cry from the $1.2 billion "funding gap" acknowledged by the Indian carrier.

AVIC Leasing seeks low capital costs

AVIC International Leasing is one of the Chinese lessors which tapped the Jolco market in 2018. Jun Li, its deputy general manager, tells **Elsie Guan** the company is getting ready to become more international.

In August 2018, AVIC International Leasing closed a Japanese operating lease with call option (Jolco) deal for one Boeing 787-9 on lease to Abu Dhabi-based Etihad Airways. The Shanghai-based lessor joined a growing list of Chinese lessors – which included CMB Leasing, CCB Leasing and China Aircraft Leasing – closing their first Jolco deals.

Jun Li, deputy general manager of AVIC International Leasing, tells *Airfinance Journal* that Jolco was a "new test" for the lessor to finance its aircraft, making AVIC International Leasing gain more exposure to investors and attract their attention and interests.

As a subsidiary of Chinese state-owned Aviation Industry Corporation of China, AVIC International Leasing was established as an aircraft lessor with a strong aviation-related background compared with other Chinese lessors. Li says AVIC International Leasing has signed lease agreements for about 320 aircraft and had delivered 295 as of 31 December 2018. At the end of last year, AVIC International Leasing's assets totalled Rmb130 billion ($1.9 billion), of which aircraft assets accounted for one-third.

"We have business cooperation with more than 90% of Chinese domestic airlines. All over the world, we also have more than 10 international airline customers," says Li. Among AVIC International Leasing's lease types, finance leases account for approximately 70% of all transactions, with operating leases taking the remainder.

AVIC International Leasing has established different platforms in Ireland, Hong Kong and Shanghai for tax-efficiency purposes.

Li says that the lessor is expected to establish a pilot leasing subsidiary in Dongjiang Free Trade Port (DFTP) as a supplement of AVIC International Leasing's aircraft business. "Although we are still in negotiation with the DFTP about details of the pilot affiliate, it is essential for us to establish a platform. This will strengthen our future corporation.

"We are always eager to establish professional and international platforms to expand our leasing businesses. Besides, the ability to acquire low-cost capital is vital for us too," says Li, who adds that financing cost is the first thing for him to think about; the other one is if AVIC International Leasing can acquire long-term cooperation with its partners.

According to *Airfinance Journal*'s Leasing Top 50 in 2018, BOC Aviation and ICBC Financial Leasing ranked sixth and eighth, respectively, for number of aircraft by beneficial owners. CDB Aviation, BOC Aviation and ICBC Financial leasing ranked at seventh, eighth and 10th respectively for their orderbooks.

"Chinese lessors have been expanding quickly, but there are still some problems we need to face and deal with," says Li.

China's aircraft leasing industry has gone through some significant changes in the past 10 years, after the entrance of many leasing companies with different backgrounds. "I think the last 10 years also reflect that Chinese lessors have been adapting to the development of the market," says Li.

Li believes a mature lessor should have the following characteristics: first is the quality of financing. Many lessors are concerned about how to acquire the most capital at the lowest cost. Li says that obtaining favourable financing terms can pose a challenge for leasing companies.

Second, when an airline does not renew its lease, being able to guarantee the residual value and being able to place the aircraft with a new lessee at a reasonable price can pose a significant challenge to lessors. "After your aircraft have undergone multiple life cycles, the way you remarket them is a key step to think about," says Li.

According to "Accounting Standards for Enterprises No. 21 – Lease" updated and issued by the Ministry of Finance of the People's Republic of China in December 2018, aircraft on operating lease will be included into airlines' financial results. "Compared with the previous off-balance-sheet method, the new accounting lease standards will affect airlines' decisions, which in turn affect lessors' decisions," he says.

"But I think the aircraft leasing industry has many genes – it can always create new lease structures following the development of the market and overthrow old structures," says Li, adding that AVIC International Leasing is looking for opportunities to work with future industry innovators.

Malaysia Airlines' long road to recovery

Creditors and lessors take note: there are bountiful opportunities ahead as Malaysia Airlines firms its future fleeting plans. Malaysia Aviation Group chief executive officer, Izham Ismail, gives **Dominic Lalk** an update from Kuala Lumpur.

Malaysia Airlines Berhad (MAB) is emerging from the most agonising period in its seven-decade history. After the losses of MH17 and MH370 in 2014, customers abandoned the legacy carrier, forcing the Malaysian government into rescuing the troubled airline.

MAB has not turned a profit in nine years. The airline was declared "technically bankrupt" in 2015 by the then chief executive officer (CEO), Christoph Mueller. Two CEOs and a delisting from Bursa Malaysia later, the airline group is not out of the woods yet, but current boss, Izham Ismail, "is confident that 2020 will be a much better year" for MAB.

The carrier's fleet of 84 aircraft is financed by a mix of operating leases and finance leases. The airline is sourcing 56 aircraft from 15 global leasing companies, including 12 Boeing 737-800s from NBB Leasing, six Airbus A350-900s from Air Lease and six A330-200s from AerCap. Those three lessors have the most exposure to the Malay flag carrier.

First Max

The airline's turnaround hinges on a successful fleet transition and related cost savings.

"We will be receiving the first 737 Max in July 2020, with four more due that year. The remaining 20 will join the fleet gradually thereafter, about five aircraft per year," Ismail tells *Airfinance Journal*, adding that the airline is still considering 25 additional Max options.

"Our fleet-renewal plan is still being negotiated. We are restrategising slightly, so there's been a bit of a delay with that. I hope to make the announcement at the end of the second quarter, maybe the third quarter," says the group CEO exclusively to *Airfinance Journal*.

The plan is for the Max aircraft to replace the 48 737-800s in MAB's fleet one for one.

"When the Maxs arrive, the NGs will leave. We have eight NGs that'll come off lease next year onward. Theoretically, the NGs could stay with the organisation for the next 10 to 15 years, but we are cognisant that older aircraft need more provisioning when it comes to MRO [maintenance, repair and overhaul], so ideally we'd like to replace them," says Ismail.

"We will be receiving the first 737 Max in July 2020, with four more due that year. The remaining 20 will join the fleet gradually thereafter, about five aircraft per year."

Izham Ismail, Group chief executive officer, Malaysia Aviation

Asked if he was also considering the A320neo family, Ismail jokes: "I'll say we're open to that so that Boeing will come back with a good offer for the 25 737 Max options."

Financing options

Ismail says the aviation group is looking to put about half of the 25 confirmed Max aircraft on its balance sheet. "In terms of financing for the Max, it will be a mix of owned and leased, about 60/40 owned versus leased, maybe 50/50," he adds.

"We continue to work with the best options available to us in the marketplace, whether it's operating leases, finance leases or term loans. All our aircraft-related debt is structured on a tranche or amortised basis."

Ismail says MAB has been offered some "attractive term rates" over the past six months. "When we enter into negotiations with bankers and lenders, it's often a mixed bag. There's strong competition among the lenders so that gives us some negotiating power. Recently, the term rates have been quite good," he says.

MAB has previously tapped the Japanese operating lease with call option (Jolco) market. At one time, the airline was exposed to 23 Jolco financings but Ismail says the results were lacklustre.

"To be honest, the Jolcos we had previously signed didn't give us great returns. Notwithstanding that, I'm not ruling out a return to the Jolco market if the terms are good. Right now, we've only got six Jolco transactions left, they are about to be novated from the old company MAS [under administration] to MAB."

A330 replacements

Ismail says the 21 A330s (15 -300s and six -200s) in the fleet "will be ready to leave in 2023 or 2024". As such, the "burning questions" in his head are: "Do we need the 25 extra Max aircraft or should we rather look at more widebodies? Can I do with extending the remaining NGs for another 10 years or so? Do I need more A350-900s? What do I do with the A380s going forward?"

The current fleet comprises six A380s, six A350-900s, 21 A330s, three A330Fs and 48 737-800s.

For the A330 replacement, MAB is considering the A330neo or additional A350s. The airline had agreed in principle to acquire eight 787-9s but that deal "lapsed" last September. Many in the industry said the deal would add unnecessary complexity to the airline's all-Airbus widebody fleet. More extreme was the criticism that the order was politically motivated.

"Our widebody renewal plan is still on, but more on that at the end of the second quarter," says Ismail.

From late 2017, MAB started taking delivery of six A350s from Air Lease. They have been replacing A380s on the airline's double daily Kuala Lumpur-London Heathrow route, as well as being rostered on services to Osaka and Tokyo.

In 2018, MAB added six former Ai Berlin A330-200s on six-year operating leases from AerCap to the fleet.

"The ex-Air Berlin aircraft have been fantastic. We deploy them to Auckland, Guangzhou and are slowly beginning to penetrate India with them. Also, during peak periods of the day we send them to Bangkok, Jakarta and Bali. We wanted to roster them on Kuala Lumpur-Singapore, the third busiest route in the world, but Singapore would not give us the slots requested," notes Ismail.

That incident was not the first time in recent memory that MAB got caught in cross-border politics.

On 1 December, the same day it was due to move operations from Changi airport to Seletar airport, MAB regional subsidiary Firefly had to suspend all flights to Singapore. The reason? The turboprop operator failed to gain approval from Malaysia's civil aviation regulator for operations from Seletar because Malaysia opposes Singapore's plan to implement an instrument landing system at Seletar, arguing the move would "stunt development" around the Pasir Gudang industrial area, including imposing height restrictions on buildings and affecting port activities.

"Seletar has been a headache. We are proposing a new way to the governments now. If all goes well we should have our ATRs back in Seletar in late March or early April. It makes a dent in the bottom line. Top line is approximately RM2 million ($500,000) a month. For an airline turning around even one ringgit is important, so this is a priority," he says.

The Asia-Pacific, particularly Asean (Association of Southeast Asian Nations), continues to suffer from overcapacity. More supply than demand worries airline chiefs in the region. Add the growing China-US trade tensions to the mix and you have a perfect recipe for uncertainty and reticence.

"2019 will continue to be challenging for us. The China-US trade tensions, the volatility of fuel and foreign exchange, as well as intense competition in the market with excess ASKs [available seat-miles] especially here in Asean are real concerns," says Ismail.

"At MAB, we define the Asia-Pacific as the East Coast of India all the way to Australia and New Zealand. In the majority of this market, the ratio between full-service carriers [FSCs] and low-cost carriers [LCCs] is approximately 75/25, with FSCs still accounting for the bulk of routes and revenues. As you know, when you come closer to home, the situation is quite different. In Asean, LCCs dominate with more than 57% of the market share," he notes.

"The capacity supply in Kuala Lumpur is sitting at approximately 1.8 times more than demand. It is extremely challenging," he adds.

The way out? Flying further afield. "Our strategy is to remain relevant in those markets swarmed by LCCs, but at the same time to take our business to other markets in Asean of four- to nine-hour flights where there is less competition," Ismail says.

"We are going to tweak the network, but will stay clearly focused on the Asia-Pacific for the next two to three years, growing the organisation at 3% to 4% per annum. Once the situation is stabilised, we can look at 5% to 6% growth and long-haul again, maybe in five years or so," says the CEO, who adds he has observed a yield improvement over the past three months. "Our January yield was quite good," he adds.

MAB still bleeds, but the hemorrhaging is under control. "We have strong willpower but candidly, if you ask me will we break even in 2019, then I will say most likely no."

But there is a silver lining. Ismail says: "We've already achieved a successful turnaround on the qualitative portion of our business. Customer satisfaction, staff morale, they are all up significantly and that's because for the past year we've put these qualitative measures over revenue and cost."

Amal Airlines

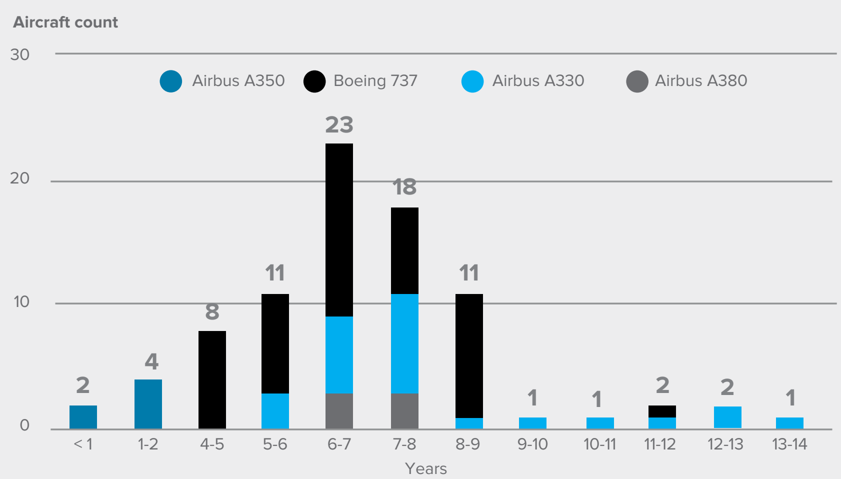
In mid-February, MAB officially launched an independent A380 affiliate, Amal Airlines, offering flights between South-East Asia and Saudi Arabia for Hajj and Umrah pilgrims.

Amal operates up to three daily flights from primarily Malaysia, Indonesia and Thailand to Jeddah and Madinah with a fleet of three A380 aircraft.

"The aim is to establish an air transport system and infrastructure dedicated for Hajj and Umrah for Muslims, not just from these three countries but also other Asean countries," says Malaysia Aviation Group chief executive officer, Izham Ismail.

He adds that Amal's performance has been "very promising" since its launch last year, with bookings up about 20% month-on-month.

Age profile of fleet selection



DAE weighs up growth options

Firoz Tarapore, the Dubai-based lessor's chief executive officer, tells **Jack Dutton** why he thinks it is no longer the right time to make an aircraft order from the OEMs.

When DAE's Kestrel asset-backed securitisation (ABS) hit the market in December, it priced widely, with a senior tranche spread of 215 basis points (bps) over swaps and a class B priced at 345bps. The global ABS markets were relatively choppy towards the end of 2018 and there were concerns about whether those markets would continue to stay open.

Although Firoz Tarapore, DAE's chief executive officer, was more than aware of this, he insists that his company is not in the ABS market just to take advantage of rates. Instead, it is part of the company's broader strategy to be present in as many markets as possible.

"For us, the pricing wasn't the greatest, but within the context of what we needed to get done and the fact that the market was able to get it done, we were able to put that behind us," he says. "I think it was a pretty good outcome from our perspective. We would have liked a lower rate and therefore a better financial outcome."

Like DAE's other ABS deals, the E-notes were pre-sold. Recent structural developments in the 144A format tradable equity have led to many more investors being able to buy E-notes in aircraft ABS, seen in deals such as GECAS's STARR and ALC's Thunderbolt II transaction.

Although Tarapore sees this as a positive market development, he says: "I think the movement around what do you pay for privilege is still not quite settled." He adds that it will take watching the pricing on a few more similar transactions before DAE decides to adopt that structure.

"There are some structural things we can do to help that and hopefully with a few more transaction data points the values will settle down."

Order off the table for now

Speaking to *Airfinance Journal* in September 2017, only days after DAE's acquisition of rival lessor AWAS had closed, Tarapore talked up the prospect of making a substantial aircraft order from the original equipment manufacturers (OEMs) to secure further growth. But since then he has changed his tact, saying that an OEM order at present as "extremely unlikely".

"At this point, an order is extremely unlikely because the disconnect between what the OEMs want for the new products relative to what the market is affording is just not sustainable. I think this is something of the OEMs' own doing because, as of now, one of the OEMs has 22 lessors on its main narrowbody programme and the other one has about 15 lessors on its main narrowbody programme."

He adds that "indiscriminate selling" by the OEMs to lessors which have not secured end-customers for the aircraft makes it harder for lessors which have made OEM orders to make any money.

"And make money relative to the gigantic risk they are taking by committing to some insane price for aircraft that deliver three, four, five years into the future, with no assurances from the OEMs that this completely insane competitive dynamic will be addressed. This is a hard situation to commit multiple billion dollars of capital; we can't do it."

He adds that at some point DAE would be keen to make an OEM order, but not under current market conditions. Tarapore adds that the lessor is able to grow inorganically and showed this when it acquired AWAS, a leasing platform roughly twice DAE's size at the time. The acquisition trebled its fleet to 332 aircraft. DAE now has about 350 aircraft in its fleet, owned and managed.

Tarapore says that if the OEMs stay overbooked for lessor orders, he does not see the situation changing soon.

"If they continue to have 15 to 20 lessors on the programme at all times, that's a very difficult environment in which you expect people to commit capital at a per-unit price. That's actually higher than the per-unit price they intentionally sell to the end-customer. That makes no sense whatsoever and I think that model, in due course, will blow up in their faces."

Many regard the CFM56-7B as the most successful engine in commercial aviation history, lasting more hours on-wing than any other engine in the business.

"Just think about that from an operator perspective," says Tarapore. "You have to walk away from that to get into something and you get the privilege of paying two times the cap cost to get 15% of fuel savings and unknown maintenance costs. A true cost of a maintenance event won't actually come through eight to 10 years in the future."

He adds: "When it comes off-wing, there's a global network of overhaul providers at a cost structure that's very competitive. An operator would have to really, really make a gut-wrenching decision to do this."

Bet on Jet

It is not just lessors which have placed significant orders with OEMs, but airlines too. There are concerns in the market that there are some airlines with large orderbooks which may not have the financial firepower to take all of their deliveries.

One of these airlines is India's embattled carrier Jet Airways, which has a sizable order for 225 Boeing 737 Max aircraft. Despite the carrier starting 2019 with a debt default and lessors threatening to repossess its aircraft, Tarapore is optimistic it will recover.

"Jet is a very powerful retail brand in-country and, in my opinion, it's a fabulous airline. I think the shareholders and the lenders have an incentive to work out the issues because the ultimate power of that franchise is very, very good and, in our opinion, because of the role that Jet plays in the economy, there will be a solution and Jet will re-emerge as an absolutely terrific airline."

On 2 January, *Airfinance Journal* reported that the airline had defaulted on repayment of loans to several Indian banks.

DAE Capital has six aircraft on lease to Jet, says Tarapore.

Jet operates 113 aircraft and leases 104 of them, according to *Airfinance Journal*'s Fleet Tracker.

On 14 January, *Airfinance Journal* reported that lessors had been threatening Jet with contract cancellations and aircraft repossessions. GECAS, Jackson Square Aviation and SMBC Aviation Capital were reported to be considering putting new 737 Max deliveries to Jet on hold. Along with the 225 737 Max 8s, Jet had nine 787-9s and five Airbus A330-200s on firm order.

However, on 15 January, it was reported that Etihad, which owns a 24% stake in the Indian carrier, would increase its shareholding to 49%. Reports suggested that Etihad would buy the additional equity from Jet's founder, Naresh Goyal, who would subsequently stand down as the carrier's chairman. Additional investment from Etihad would offer a lifeline for the carrier.

"We continue to be very supportive of the efforts of the airline, the shareholders and the lenders that are trying to come up with a solution," says Tarapore.

Other carriers with new-technology orders, such as Norwegian Airlines and Pegasus Airlines, have been experiencing late deliveries or deferred deliveries because of engine and supply chain issues. One source told *Airfinance Journal* that Pegasus has agreed to lease some older 737-800s, in lieu of the airline receiving all of the A320neos for this year.

Tarapore says such delays mean it is easier for lessors to place older aircraft types with lessees, because the assets are in high demand. However, he sees a buck in this trend in the coming months.

"Now that's changing and that dynamic is not going to be there anymore and it's

"When it comes off-wing, there's a global network of overhaul providers at a cost structure that's very competitive. An operator would have to really, really make a gut-wrenching decision to do this."

Firoz Tarapore, chief executive officer, DAE

rapidly going to a steady state so within that, if there's another Air Berlin-type bankruptcy event, it may take a little bit longer for all of us to place our product out there with other airlines."

However, Tarapore says pricing in the market will still ensure that there will be no issues moving narrowbodies around.

"We do expect a fair number of bankruptcies in 2019 but I think not something that would be substantial. Some of the names that are in the news today will actually work their issues out. But the market is volatile," says Tarapore.

He adds that when fuel prices unexpectedly spiked up to $80 in September last year, it took a while for airlines to adjust and restore their profitability. Tarapore says that any unexpected movement in the near term could pose challenges.

"I think there's that tension between market share and fuel surcharges that they'll have to manage. Ultimately, I think the industry will do fine but, in the meantime, it's almost like people are relearning some of the lessons that they've learned already in 2012."

GECAS interest

Tarapore says the lessor is still interested in acquiring other leasing companies as a means of growth. He adds that DAE would be interested in trying to bid for GECAS if the leasing outfit is put up for sale.

"If they do decide that GECAS isn't going to be part of GE going forward, I think that is such a phenomenal franchise, there will be an incredible level of interest in acquiring that franchise, even though the size of the acquisition is large by historical standards," says Tarapore.

GECAS is estimated to be worth $25 billion at book value. However, if GE decides to sell the aircraft lessor, the buyer will need to raise additional debt because of the funding structure of the company.

"But the quality of what you get for that is so phenomenal, I think there will be intense competition. It's fair to say that we would be part of that mix. We'd give it our best shot to see whether we would be successful in making something happen," he adds.

Tarapore says that DAE has not yet made a bid for GECAS and he is speaking "from an outsider's perspective".

He adds: "Let's see what Larry [Lawrence Culp, chief executive officer of GE] decides to do and once that's firmed up, in our opinion, there will be incredible interest in that platform because it is the best that's out there."

Sale-and-leaseback competition

Tarapore says that, although the sale and leaseback market is slightly less competitive than it was last year, very few deals make sense for DAE in that market right now. However, because of the longevity of AWAS, at any given point in time, DAE is in dialogue with between 250 and 275 airlines, which creates "opportunities that are not the generic sale and leaseback RFP [request for proposal] type".

He adds: "The feedback we get back from our clients is that the absolute insanity that used to exist is not there anymore, but while it's still too many bids that they get, it's not the same number that they used to get."

Speaking at *Airfinance Journal*'s Asia Pacific 2018 conference last November, Lune Wang, director and deputy general manager of Beijing-based Comsys (Tianjin) Leasing, said lease rate factors (LRFs) on narrowbody aircraft deals have dipped below 0.5%.

"New aircraft are difficult in terms of lease rates. LRFs come to the 0.5 to 0.6 range, but I heard today of 0.49," she added.

Tarapore says it is extremely difficult to make any return at that rate.

"You can't make any money at 0.49 because 0.49 means 6%. At 6%, if you include cost of funds, depreciation and margin, you're effectively underwriting a loss for 10 years or however long that lease is. You can't do that," he says.

"Some people can, I guess. If your cost of funds is zero and your depreciation is 4% and you want to make 1%. Fine, you can write that business and if someone gives you 100% leverage from your parent, okay, maybe that's good business but not for us," he adds.

Financing strategy

As far as funding goes, DAE looks to remain active in all the main markets, including unsecured and secured financings such as ABS deals.

The company raised more than $2 billion in unsecured revolving credit facilities (RCFs) in the past three months of 2018 from a mixture of international and regional banks. One RCF, which closed in October, raised $800 million from Al Ahli Bank of Kuwait, which was lead arranger and bookrunner along with UAE-based First Abu Dhabi Bank, Noor Bank (also lead arranger) and eight other banks, showing a strong demand from Middle Eastern banks to finance aviation credits.

Tarapore believes that more Middle Eastern banks will finance aviation companies and aircraft as they get more comfortable with the asset class. DAE is also evaluating the sukuk market as a means of raising capital for DAE.

However, Tarapore is in no rush to grow the business; last year, DAE sold more aircraft than it bought.

"I don't know what the number will be at the end of 2019," he says. "If we see an incredible opportunity we will act on it, if not, we will continue to sell stuff. We shore up our balance sheet to make sure that if a large opportunity comes around, our balance sheet is super strong and able to deal with it."

He adds: "We are not publicly listed and our owner is a very patient owner so we don't have any quarter, annual or linear growth pressures, like some of our competitors in that category. Our only requirement is when we commit capital, we commit it based on our underwriting discipline."

Icelandair mixes rejuvenation with long-stay 757s

Bogi Bogason, the chief executive officer of Icelandair Group, speaks to **Dominic Lalk** about the Jolco product and the increasingly competitive airline landscape.

Icelandair is facing a challenging 2019 as it seeks to trim fat to stay competitive at a time of low airfares, high fuel prices and operational challenges.

Delivery stream

The airline group, which has its headquarters in Reykjavik, will take delivery of six Boeing 737 Max aircraft this year, comprising three Max 8s and three Max 9s. Five additional narrowbodies – two Max 8s and three Max 9s – will join the fleet in 2020, followed by a Max 8 and a Max 9 in 2021.

The airline is also considering operating its ageing 757s into the 2030s.

Speaking to *Airfinance Journal*, Icelandair group president and chief executive officer, Bogi Bogason, confirmed that all six aircraft joining the fleet this year will be financed by sale and leaseback (SLB) deals with Asian lessors.

"One of the Max deliveries last year was under a SLB deal with Bocomm [Leasing] and three more will follow this year. It's a mix of Max 8s and 9s.

For the other three this year, we signed a deal for two with SMBC [Aviation Capital] and another with BOC Aviation," says Bogason. The airline took the first of those aircraft – a 737 Max 9 – from BOC Aviation in late February.

Icelandair plans to introduce another five 737 Max aircraft next year, comprising three Max 9s and two Max 8s. "For 2020, we've got another SLB with BOC Aviation. We're still working on the other four," notes Bogason. The lease period on the BOC aircraft is 12 years but includes a purchase option 30 months into the lease.

The Icelandic flag carrier extended its cooperation with BOC Aviation, which has its headquarters in Singapore, late last year when the parties not only signed the two sale and leasebacks, but also agreed financing of predelivery payments on all 11 Boeing aircraft to enter the fleet in 2019 and 2020. In all, the financing amounts to $200 million over the period.

Icelandair strengthened its cash position by $160 million at the end of 2018 as a result of the agreement, because it had previously made predelivery payments from its own funds.

The carrier signed an agreement with Boeing for 16 737 Max 8 and 737 Max 9 aircraft in 2013 with an option to purchase eight additional aircraft. Last year, the carrier took delivery of its first three Max 8s.

Opting for Jolcos

Two of those aircraft were financed under Japanese operating lease with call option (Jolco) financings arranged by SMBC. The third aircraft was financed via a sale and leaseback with Shanghai's Bocomm Financial Leasing as part of a four-aircraft transaction, with the remaining three aircraft from that deal due at Keflavik airport before the summer peak. The lease terms are nine years.

"We are very satisfied with the Jolco product and we are looking to again tap that market for the 2020 deliveries," says Bogason. Addressing a proposed tax law change in Japan that could affect and potentially spell doom for the tax deductibility of interest for leasing entities in Jolco financings, Bogason remains unfazed for now.

"There have been talks on and off about this for many years. Of course, if the structure changes that will have an impact. But we don't know at this stage so let's see what happens," he says.

The mainline Icelandair fleet numbered 29 aircraft as *Airfinance Journal* went to press, comprising 20 757-200s, two 757-300s, three Max 8s and four 767-300ERs. Icelandair Cargo has two 757-200Fs, while Loftleiðir Icelandic (the group's charter and ACMI provider) has five 757-200s, two 767-300ERs, three 737-800s and a 737-700. Furthermore, Air Iceland Connect operates three Bombardier Q200s and three Q400s.

Holding onto 757s

Bucking the global trend, Bogason says Icelandair's 757s could remain in active passenger service for up to 15 more years, despite their age and associated high maintenance and fuel costs.

"We are currently reviewing our long-term fleet strategy, but the 757s could stay until 2035 if that makes sense business wise. We've been upgrading those aircraft. It's a perfect aircraft for our network because we fly on average fairly long sectors compared to other 757 operators, so our cycle ratio is quite low. You could say the 757s are quite healthy in our operation," says Bogason.

"The way we see it, it's a good strategy to have a mix of new and a bit older aircraft with lower capital and ownership costs. Depending on the market going forward, we can phase them out sooner or we can keep flying them for quite some time," he adds.

In 2015-16, Icelandair added four 767-300ERs to its fleet – three were purchased and a fourth is on operating lease from GECAS. The Icelandic airline is satisfied with its maiden widebodies.

"The 767s are doing very well for us on high trunk routes both to Europe and North America. Also, they're very good cargo wise. There's strong demand for that cargo space from the seafood industry here in Iceland," he says.

Bogason, who was previously Icelandair's group chief financial officer, says the performance of Icelandair in 2018 was "unacceptable". Actions taken to improve operations in 2019 include a "network imbalance correction", implementation of an improved revenue management system, strengthening of sales and marketing activities, as well as increased emphasis on ancillary revenue.

The group reported a net loss of $56 million for the year ended 31 December, 2018, reversing a 2017 net profit of $38 million.

Total income for the year was $1.51 billion, up 7% year on year, while the group's earnings before interest, tax, depreciation and amortisation (Ebitda) dropped to $77 million last year from $170 million in 2017. Icelandair's fourth quarter was particularly challenging, with Ebitda in the October-December period negative by $35 million.

As of 31 December, Icelandair had cash reserves of $300 million.

"2018 was a difficult business year. Results fell short of our projections at the beginning of the year, which was characterised by strong competition, low and frequently irrational fares and significant fuel price increases," says Bogason.

"Our mission is to improve the company's profitability and strengthen our operations for the future. Changes in the company's organisational structure have already been made to reflect our emphasis on our core operation, which is aviation. We are currently taking a number of measures, both on the revenue and expense side, which should result in improved operations in 2019," he adds.

The company expects a "worse financial performance in the first quarter of 2019 than the first quarter 2018", as average airfares have not risen and the timing of Easter will have an impact on demand.

"We haven't provided a guidance for 2019 because there's so much uncertainty in the market. The booking trend is now later than it used to be so there's more uncertainty regarding the peak summer season, so we need to see and decided not to come out with a guidance. We're optimistic that this year will be much better than last, though. We're slashing costs and are expecting huge improvements," says Bogason.

"2018 was a difficult business year. Results fell short of our projections."

Bogi Bogason, chief executive officer, Icelandair Group

Icelandair's long-term business objective "remains unchanged with an average 7% Ebit ratio". The company forecasts significant improvements in profitability in 2019 because of several strategic and operational actions.

The airline group comprises nine subsidiaries in aviation and tourist services but hopes to end the year with just seven affiliate companies. The sales process of Icelandair Hotels is expected to be finalised in 2019, and it has been announced that the sales process of Iceland Travel is being prepared.

Despite its uncertain outlook, Icelandair is looking at mergers and acquisitions. On 7 February, the group announced that Jens Bjarnason, managing director of corporate affairs, will "focus on an international investment project for the group", without disclosing any specifics.

Over the past two years, Bjarnason has been leading the group's 51% acquisition of TACV – Cabo Verde Airlines. The new entity – Loftleiðir Cape Verde – will focus on the development of the Cape Verdean archipelago as a transfer hub for flights connecting Europe, North and South America and Africa, although the deal has not closed yet.

"We have been working with the government there. We started advising them on the private sale and the infrastructure of the airline. We've been leasing aircraft to them through our Loftleiðir division. It was Loftleiðir that discovered TACV, or Cabo Verde Airlines as it is known now.

"Cooperation happened and developed. We now have a purchase option for 51% in cooperation with some other investors here in Iceland. We have submitted our bid for that stake and further discussions are underway but it actually hasn't been finalised. As is commonplace with a deal like this, a few conditions need to be in place before things can be finalised," adds Bogason.

Loftleiðir is leasing two 757-200s to Cabo Verde Airlines, which that carrier deploys on its routes from the Cape Verde capital of Praia to Boston in the US and the Brazilian cities if Fortaleza, Recife and Salvador de Bahia.

"If it gets ratified we will not incorporate the Cape Verde division since we're not the majority owner as we're doing it with other Icelandic investors. But the plan with the local people there is to build up a healthy airline in Cape Verde, some kind of hub-and-spoke network as we operate here in Iceland. The potential is definitely there but a lot of things need to happen before anything can be confirmed. It's a big task," says Bogason.

Not Wowed

In November, Icelandair's planned acquisition of local ultra-low-cost rival Wow Air failed to materialise, after both companies agreed not to go ahead with the deal. The transaction was too risky, says Bogason.

"We began our due diligence but we didn't have a lot of time. The result of our research was that it was simply too risky. The capital requirements were too high and so the risk of the investment was too high as we saw it. That was the main reason. The other reason was that there were a few conditions that needed to be met in a certain timeframe and as we saw it, it was very unlikely that those conditions would be met given the time constraints, so we walked out of the deal at the right time," he adds.

US private equity firm Indigo Partners quickly emerged as a new potential investor to come to Wow Air's aid. Late last year Indigo agreed to buy a 49% stake of Wow for up to $75 million. Indigo managing partner and airline turnaround specialist Bill Franke says the deal could close by March.

"In the last two years we've seen some changes in the European landscape," says Bogason. "We've seen airlines being very aggressive growth wise, buying market share with very low prices. Now we're seeing a change in direction, with airlines needing to focus on profitability rather than growth. There's not enough room for the capacity we've seen in the market and one of those capacity drivers was right in our neighbourhood. The result we all know." Bogason adds: "There's definitely a chance they'll survive, but we'll need to see."

This year is shaping up to be critical for airlines. A growing number of carriers are feeling the pinch from rising fuel prices, labour costs and rising interest rates. After the collapse of Monarch Airlines and Primera Air, many in the industry are watching Wow Air, Jet Airways and Hong Kong Airlines closely.

Bogason, though, is quite clear: "We won't be among them [airline failures], don't worry."

Lessors need to ‘**tread carefully**’ with widebodies

Although prudence is required, Patrick Hannigan, chief commercial officer and president of CDB Aviation, tells **Jack Dutton** there are still some sale and leaseback opportunities on twin aisles.

CDB Aviation had a busy end to 2018. At the end of last year, the Chinese lessor closed a sale and leaseback deal for Airbus A330-300s with Hainan Airlines. The deal took only 27 days to close, with all eight aircraft delivering during that time and in the month of December.

"We executed the deal from start to finish in 27 days with great cooperation between Hainan Airlines, Airbus and the CDB Aviation team," says Patrick Hannigan, CDB Aviation's chief commercial officer and president. "The airline needed the aircraft, Airbus wanted deliveries to happen before year-end and we wanted to put our capital to work. We were all aligned."

CDB Aviation also closed other sale and leasebacks on A330neos last year, and provided predelivery payment financing for the aircraft.

Despite the company's recent success at executing widebody deals, Hannigan says lessors should "tread carefully" in that market.

CDB Aviation is taking delivery of 25 aircraft from the original equipment manufacturers (OEMs) this year, including 13 A320neos and 12 Boeing 737 Max aircraft, which are placed with airlines, according to Hannigan.

Although it has no widebodies delivering from the OEMs this year, *Airfinance Journal* reported on 24 January that CDB Aviation was looking to close another deal to acquire an A350-900 as part of a sale and leaseback transaction. Hannigan says the lessor is also looking at acquiring other A350-900s.

Hannigan insists that CDB Aviation does not have a bias between Airbus and Boeing widebodies; it depends on what deal opportunities arise.

"We are financing A350-900s, in a limited way. It's a great aircraft and I think a long lease with a good carrier is important and that's how we approach the financing of these aircraft. We're absolutely open for business on the financing side for both Airbus and Boeing new-technology widebodies and even on existing technology widebodies as long as they're priced appropriately."

> *We're absolutely open for business on the financing side for both Airbus and Boeing new-technology widebodies and even on existing technology widebodies as long as they're priced appropriately.*

Patrick Hannigan, chief commercial officer and president, CDB Aviation

He adds that there has not been as many opportunities for CDB Aviation to finance Boeing widebodies compared with Airbus widebodies.

"After the strong launch campaigns – particularly for the Boeing 787 – we haven't seen as many airline orders supporting either the Airbus or the Boeing new-technology widebody programmes in recent times. The 787 had a fantastic launch but there haven't been a lot of orders in recent times and likewise with the A330neo," says Hannigan.

He adds that this is partly because of some engine delays from Rolls-Royce on the Trent 1000 and 7000 models, which power the 787 and A330neo, respectively.

"The problem is that [the widebody orders] stopped after a period of time and it really hasn't picked up, so a lot of airlines have already bought these aircraft and we will be talking to them about financing. Do we want to order these aircraft speculatively and try and compete against the OEMs in the market where there's not orders coming from the airlines... the answer is probably no."

He adds: "There's a lot of change going on in the widebody space and for an operating lessor you need to tread carefully in that space. We are seeing technological change, and the end of the existing widebody programmes: the A330 and 777-300ER. You are seeing a lot of widebody redeliveries coming out of the large Asian and Middle Eastern carriers that puts more supply into the market and pushes down lease rates on existing and new-technology aircraft.

"We'd like to see it settle down before we look speculatively at widebodies. That's not to say we won't do it. If the market is there to take aircraft at decent risk-adjusted returns for lessors, we will do that business – for a certain percentage of our fleet, but we're not seeing many of those opportunities at the moment."

CDB Aviation has 29 widebodies – 26 A330s and three 777s – in a fleet of 231 aircraft flying. Hannigan says he wants to keep the percentage of widebodies at about 20%.

Natixis sees frothy ABS market

Gareth John, the French bank's global head of aviation, tells **Jack Dutton** why is not too concerned about interest rates this year.

Paris-based Natixis continues to shift its aviation business focus from commercial banking to investment banking and equity capital market products. Gareth John, the bank's managing director and global head of aviation, says it is looking to become more of a "strategic partner" and less of a "transactional lender" to its clients.

Natixis has been increasing its presence in warehouse deals, portfolio bridges and unsecured bank debt. On the capital markets side, it remains active on debt bonds, sukuks and asset-backed securitisations (ABS).

"To accelerate this shift in the business model, in each of the three regions – Americas, EMEA [Europe, Middle East and Africa] and APAC [Asia-Pacific] – we've hired a person who is exclusively focused on providing these non-balance-sheet solutions," says John an interview with *Airfinance Journal*. "Additionally, on the ABS side, we're looking to dedicate more resources to support a higher level of securitisation deal flow."

When asked about the trends he is seeing on transactions, John says that he continues to see a decline in margins and a weakening of covenants. Loan-to-value ratios are drifting higher, sweeps and margin step-ups are being delayed. John is seeing more borrower-friendly financial triggers such as debt-service coverage ratios and more liberal eligibility and concentration criteria.

"There are a large number of ABS warehouses out there," he says. "We're seeing increasing requests for this and we're currently in discussion with at least 10 counterparties looking for ABS warehouses. Proven repeat ABS issuers continue to be oversubscribed; however, even the newer lessors who have never issued before are finding appetite for their warehouses."

John adds that new banks are coming into the aviation finance warehouses.

"It's definitely a market where you are seeing banks – who have historically not been aviation banks but are ABS banks – starting to get involved. Over the last 12 to 18 months, we've seen banks that have historically had very little, if any, presence in the aviation market now getting quite aggressive in terms of the warehouses."

Some market observers refer to these banks as "tourist banks", because they are not likely to be active in the sector for long. Aviation ABS is a frothy market right now, so many banks are chasing that business.

Unlike some of the newer competitors, Natixis has been in the aviation business for 40 years. It has been in and out of cycles and John says it continues to be dedicated to the sector.

He is slightly concerned at the lower portfolio diversity and weaker financial strength of some lessees in recent ABS deals. "If you look at most of the bankruptcies that have happened over the last year or so, a number of those aircraft have been financed in the ABS market. You're currently seeing it on Avianca Brazil, Germania and Jet Airways – there's a fair number of those aircraft in existing ABS deals."

However, he maintains that most of the deals have been well structured and the ratings agencies have taken into consideration their stress runs and have shown decent assumptions around remarketing periods and expenses.

Addressing the recent volatility in the macromarkets, John says that some bond issuers had put their deals on hold in January to see how the market settled out.

"In November and December, the markets were very volatile. The US Fed's recent statements and actions have gone a long way to convince the market that interest rates are pretty much going to remain where they are for the next 12 months at least. If you look at Fed futures, they are actually pricing in a stronger probability of a rate cut this year than a rate hike."

However, he points on that the United Airlines enhanced equipment trust certificate launched on 29 January priced on top of its secondaries.

"That market is pretty efficient now, but on the unsecured bond issuance side, some issuers are waiting. I think the market for the first part of this year is going to be very windowy, in that there's going to be windows where you're going to want to hit the market." He adds: "I think you'll see a lot of lessors accessing the ABS market, as that market continues to be strong. Last year was a record year, and given the number of issuances that are being discussed now, I think 2019 will be on a similar pace to last year."

John says the strength of the US dollar, "especially with some of the more emerging market airlines, is something to keep an eye on. Similarly, we should monitor oil price volatility – especially in regions that are a lot more price sensitive, such as Asia. In general, we need to watch slowing economies. We're paying close attention to the Avianca Brazil situation and the testing of the Cape Town Treaty".

Aviation still offers relative value compared with other asset types. John believes the private equity demand in the sector will remain strong, but expects the inflows at a reduced pace compared with what there has been over the past couple of years. He adds that new equity needs to favour established management teams with a strong track record of repossessing and remarketing aircraft. He expects some equity to exit the market as lessor consolidation takes its course.

Over the past decade, the aviation market has got deeper. John points out that the average assets owned by each of the top 10 leasing companies now amounts to about $15 billion on average, compared with $5 billion a decade ago.

"Size and scale are increasingly more important, and I think you'll see some consolidation as a result of that. Some lessors need to increase the size of their fleet, so you're going to see some further consolidation there, not just in terms of portfolio purchases but potentially on the platform side as well," he says.

Although John does not believe a global downturn is imminent, he foresees a gradual decline in the health of the industry over the next 12 to 18 months. He says: "I think that's more of a correction than a downturn."

> *"Size and scale are increasingly more important, and I think you'll see some consolidation as a result of that. Some lessors need to increase the size of their fleet so you're going to see some further consolidation there."*

Gareth John, global head of aviation, Natixis

New names and **portfolio deals** hit market

The white hot Japanese operating lease with call option market is showing an appetite for new credits, such as Virgin Australia, and the soaring competition that has led some arrangers to focus on funding other assets.

Thierry Pierson slept at the office instead of going home when closing a recent transaction for a new Japanese operating lease with call option (Jolco) name. The lessee was a Brisbane, Australia-based airline more than 16,000 kilometres and nine time zones away from his Swiss office.

Pierson, who is managing director of Jolco arranger Asset Brok'Air, would often force himself to wake up in the early hours of the morning to answer emails, but the ordeal was worth it because it introduced a new name for ravenous Jolco equity investors to sink their teeth into: Virgin Australia Airlines. Fellow Australian carrier Qantas has already been a keen user of the Japanese tax lease market, closing multiple Jolcos, but this is the first time the flag carrier's compatriot Virgin Australia has tapped that market.

In an interview with *Airfinance Journal*, Pierson says it is a good time for Virgin to come to the Jolco market given the airline's financial health.

"They have recovered from their loss and are making a turnaround," he says.

"The duopoly in Australia is clearly established and Qantas has no reason to be aggressive to gain market share, so it's a market that is really stabilised now. The age of the fleet in Virgin is much younger than the age of the fleet in Qantas. They have no interest to compete and have to put their money on new acquisitions rather than market share."

The deal comes on the back of another innovative transaction for SAS Group that closed in early October. This deal is the first Jolco transaction closed with SAS Group's Gorm Asset Management.

Although the Airbus A320neo is Swedish-registered, the Jolco package was structured so that SAS could transition the aircraft to any of SAS Group's operating platforms, including Scandinavian Airlines Ireland, in a "seamless manner".

Simon Collins, a partner at White & Case's Hong Kong office, says that when the Jolco product first emerged, there was a focus on top-tier credits, often those with routes to Japan. Now, the market has shifted and continued strong demand from Japanese equity investors means arrangers are able to introduce more new airline and operating lessor names to this market.

"Credit is still important, but the market is open to a much broader range of airlines and lessors. Ultimately, the decision must rest on if the equity house can feel confident they can sell down to their investors. They have to take a read on that," says Collins.

A European banking source active in the Jolco market says competition is "very, very tough" and it is difficult to do transactions only for "classic names".

Indeed, the soaring competition has led this arranger to increase its focus on other Jolco assets.

"We are shifting part of our focus to the shipping side now. Shipping is not an easy market. It's difficult, but there's some demand from the shipping side who are attracted by 100% financing provided by Jolco, and we are now looking at such opportunities," says the source.

Takamasa Marito, joint general manager and global head of marketing at Tokyo Century, is optimistic that the Japanese equity market demand for the Jolco product will remain robust.

> *"Credit is still important, but I think the market is open to a much broader range of airlines and lessors. Ultimately, the decision must rest on if the equity house can feel confident they can sell down to their investors."*
>
> **Simon Collins**, partner, White & Case

"In 2019 we have the Rugby World Cup in Japan," he said, at a panel at the *Airfinance Journal* Asia Pacific 2018 conference late last year, "and the following year we have the Olympics. So there's very little reason to believe the Japanese economy is going to go into a downturn, which then probably means there will be sufficient corporates wanting to shelter taxes."

Shinichi Watanabe, executive officer and general manager, global aviation and maritime finance department, says that because the Jolco product offers one of the cheapest and most stable sources of funding, "a number" of airlines are showing interest in coming into the market.

"As an arranger, of course, we also care about the sustainability of this market. We are keen to make sure that investors understand the nature of the product," he says, speaking on the same panel as Marito.

Watanabe adds that both airlines and investor education is fundamental to the product.

"We have to make sure that airlines understand the structure of the product because this is invested by small- to medium-sized corporates who are not really familiar with the sector, who care about their tax position, their business. That means, of course, especially for the small-ticket investors we have to be really mindful of that. But, on the other hand, we've got a growing number of large-ticket investors which may invest, say, $10 million equivalent of equity by one shot," he says.

Watanabe says those investors could be categorised as "a bit more semi-professional".

He adds: "Then, in that case of course the arranger like us tries to make them a bit more... information about the industry and the company and make sure they understand the risk and also the industry."

Bob Melson, a partner at K&L Gates, tells *Airfinance Journal* that while the Jolco market remains "buoyant", the insufficient number of suitable lessees is "causing a headache for some banks and equity arrangers".

He says: "Moreover, it can be difficult for new lessee credits to be accepted by the Jolco market due to the conservative nature of these tax-driven markets and inherent obstacles to market these products."

Portfolio transactions

With no sign of the massive equity demand in the Jolco market going away any time soon, the Holy Grail for Jolco arrangers would be to pull off a portfolio transaction.

"In theory, it's possible, but it's difficult,"

says Asset Brok'Air's Pierson, adding that portfolio transactions for Jolcos are "very complex".

Collins and Keisuke Imon, a partner at White & Case Tokyo, say that if the Jolco market could routinely merge portfolio financing with Jolco equity it could be a "game changer". It could potentially double or triple the size of overall Jolco equity financing.

"It seems clear there would be strong interest from the airlines and lessors for financing bigger portfolio aircraft through Jolcos. However, a key structural challenge relates to accepting cross-default and cross-collateralisation," says Collins.

By definition, cross-collateralisation is used when the collateral for one loan is also used as collateral for another loan.

If the debtor was unable to make either loan's scheduled repayments on time, the affected lenders can eventually force the liquidation of the asset and use the proceeds for repayment. Cross-default is a provision in a bond indenture or loan agreement that puts a borrower in default if the borrower defaults on another obligation.

"Generally, cross-default means a financing can be terminated or accelerated because there's been a default on another aircraft. We've seen Jolco deals where Japanese equity have accepted cross-default – for example, in relation to export credit financed aircraft," says Imon.

However, he adds, cross-collateralisation appears to be more challenging.

"In general terms, accepting cross-default does usually make cross-collateralisation easier to accept, because debt and equity have first priority security in relation to their aircraft and so have protection against the effects of cross-collateralisation in the event a default occurs on another aircraft. However, there is a specific challenge for the Jolco product. Japanese equity would want to show that, if the purchase option is not exercised, they will benefit from any residual value once secured debt is cleared from the aircraft they own. If such residual value is in fact cross-collateralised against other aircraft in which they do not have an equity stake, it presents a confused picture," says Imon.

A further issue with the portfolio financing is the inflexibility of the Jolco.

"It's usually difficult and expensive to unwind a Jolco ahead of the purchase option date," says Collins. "This could be mitigated somewhat by having multiple purchase options, but these are still usually at fixed dates, whereas with a portfolio, the airline/lessor would usually prefer more flexibility to be able to sell some aircraft as and when desirable."

Portfolio transactions also increase the underwriting risk for the equity.

"The equity houses that arrange these deals are essentially underwriters as regards the equity from day one, and if they're doing portfolio deals they have a bigger underwriting risk," says Collins.

A source at one Japanese equity house says portfolio transactions are possible, so long as the head lessee credit is strong enough.

"If the head lessee credit is weak, I don't think it would work, but as long as the head lessee credit is very good, or excellent, the investor might not care about the credit or the sub-lessees," says the source.

Chinese lessors

More and more Chinese leasing companies have been tapping in the Jolco market recently. The latest new name is AVIC Leasing, which closed a Boeing 787-9 Jolco financing last August with debt provided by DVB Bank and equity arranged by FPG AIM.

Lessors are attracted to the Jolco product for similar reasons airlines are, but the inflexibility of the structure may be an issue.

"If Chinese leasing companies pay attention to the total economics, they may constantly come to the Jolco market – but they have to sacrifice the flexibility of aircraft," says Brian Koguchi, general manager at Sumitomo Mitsui Trust Bank, speaking on the same panel as Tokyo Century's Marito and SMBC's Watanabe at *Airfinance Journal* Asia Pacific conference late last year.

"If Chinese leasing companies take a lessee position but the underlying asset is sold to another company, they have to early terminate the Jolco transaction. That will bring them a lot of penalty, so I honestly don't know how many will come to the Chinese market next year. But my sense is Chinese lessors are trying to raise unsecured financing now. Maybe Chinese leasing companies will use the Jolco market less this year compared with last year."

SMBC's Watanabe says that having Chinese lessors come to the Jolco market is good for the product's long-term sustainability.

"To make sure that this market is sustainable in the long term, we have to make sure that the Chinese lessors also do understand the economics, and the good points and bad points of this. This is a long-term fixed funding at low cost. For most lessors it's critical to have the flexibility of trading aircraft."

Watanabe adds that airlines raising funding through Jolcos could limit flexibility in aircraft trading, given the fixed nature of the product. "This year, we've noticed that Chinese lessors are quite active in using this [financing] as one of their funding sources. I think it's not a bad idea. It would give investors the opportunity to have more variety. In that sense, it's good."

> *"An aircraft leasing company may, in some cases, outwardly appear as a better suitor for a Jolco in that, firstly, it will have ample experience to remarket and repossess the aircraft in a default scenario of the corresponding sub-lessee."*
>
> **Bob Melson**, partner, K&L Gates

K&L Gates' Melson says equity arrangers have increasingly looked to aircraft leasing companies to be Jolco lessees, a role "traditionally filled by creditworthy airlines".

He adds: "An aircraft leasing company may, in some cases, outwardly appear as a better suitor for a Jolco in that, firstly, it will have ample experience to remarket and repossess the aircraft in a default scenario of the corresponding sub-lessee.

"Secondly, a well-organised leasing company will typically have a portfolio of aircraft across a range of airlines and jurisdictions which hedges against jurisdiction and airline risk."

Melson's colleague Sebastian Smith, also a partner at the firm, adds: "However, one has to remember that whilst the equity arrangers may be on board, the equity investors (typically successful Japanese high net-worth family-owned companies) do not generally have the aviation finance expertise of those marketing these Jolco products. Instead, they may prefer to go for Jolcos associated with traditional brand name airlines, such as strong flag carriers.

"Whilst those marketing the Jolco product may be quick to rebut such an argument by raising the fact that the aircraft leasing company will still be subleasing these aircraft to strong airline credits, this may still be insufficient to sway some Japanese investors," adds Smith.

"The upshot of all of this," he says, "is that we are seeing the Jolco market expand, or looking to expand, into territories or with airlines that have never been considered before, creating a more diverse and international playing field. We are aware of over a handful of new Jolco airline lessees in just the past two years and we expect this trend to continue."

Tax changes: opportunity or disaster?

Japan is mulling changes that could affect tax deductibility for leasing entities in Jolco financings. **Dominic Lalk** speaks to White & Case Hong Kong partner Simon Collins to find out more.

The Japanese tax authorities are considering a tax law change that would affect the tax deductibility for interest payments for leasing entities in Japanese operating lease with call option (Jolco) financings. How and to what degree the proposed changes could affect future Jolco transactions is the subject of debate among stakeholders.

Further to the recommendations of Action 4 in the final report of the Base Erosion and Profit Shifting (BEPS) project released by the OECD in October 2015, the Japanese ruling party submitted a draft tax law proposal in December 2018, which is expected to rattle the Jolco market.

The wider scope of the draft law consists of restricting the tax deductibility 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).

"Currently, the limitations on deductions apply only to interest payments to related persons but if the amendment is implemented, limitations will also apply to net interest payments to offshore third parties, including banks," says White & Case Hong Kong partner Simon Collins.

"The proposal is to limit deductions on interest paid to offshore parties to 20% of earnings. The OECD's recommendation was 30%, so it seems the Japanese are proposing a stricter limitation," adds Collins.

"Let's say you've got a syndicated loan from three banks, one is Japanese and two are German. If the German banks book the loan in Germany then they are taking advantage of the terms of the Germany / Japan double-tax treaty which exempts interest paid on the loan from any withholding tax."

Following the proposed change in law, you need to consider the ratio between the interest the Japanese entity is paying offshore as against its Ebitda. "Even if you take earnings as calculated simply between money from the rentals as

> *The Jolco market as a whole seems more or less to be on a wait-and-see position until the final draft of the law is released.*

Simon Collins, partner, White & Case

against interest paid out under the loan, you can very quickly get to close to 20% or over 20%," says Collins.

"A further complication is in year one: if you also take into account all the fees paid out – and I don't know if you do – then your total earnings is a very small number that year and you almost certainly will be way over the 20% limitation. But what does this mean for an existing Jolco if such rules apply to existing Jolcos and the rules are not 'grandfathered' (applied only to new deals). It seems that while there is clearly a 'change of law' it does not lead to (i) any increased cost for lenders, (ii) any new withholding or tax cost, or (iii) any other cost or loss incurred by lessor that might be passed through to the lessee. The change in law will affect the Japanese investors by creating a reduced tax loss, but that alone is not a termination event under a usual Jolco deal," Collins adds.

Two other issues which might have further impact:

1. Will the regulations permit a carry-forward for any non-permitted deductions in a given year?
2. Will the regulations consider excluding interest payable to treaty lenders from the limitations?

Airfinance Journal understands that the final version of the draft will be voted on at the end of March. If implemented, the tax law change will be effective in April 2020. There will be no grandfathering rights and no claw-backs.

"The Jolco market as a whole seems more or less to be on a wait-and-see position until the final draft of the law is released," says Asset Brok'Air's Jean-Gael Duboc. "From our end we do not see this as a dramatic hit to the Jolco industry. Instead, this is an opportunity to further grow the business with a larger footprint in Japan," he adds.

"I think if this has any impact at all, it is for new deals as the tax deferral available to Japanese investors may be less attractive than before," says Collins. "However, the Jolco still remains an effective tax planning tool for the Japanese investor and with the lack of alternatives available, while this may cause a pause, I do not expect a significant long term slowdown in the Jolco market," he concludes.

ATRs looking for **new markets**

ATR72 and ATR42 values are holding up reasonably well, and the manufacturer has some interesting ideas to help the aircraft expand its market.

ATR72-600

Commercial turboprop sales have been volatile over the years, but ATR has weathered the worst of times and continues to place significant numbers of aircraft. The suitability of the type for new route development is a key pillar of the turboprop market and the ability to continue in this role will be a major factor in any continuing success. The manufacturer has a good record of developments to support the aircraft and its latest thinking involves helping airlines make use of data to develop new routes that ATR products will be able to serve and develop.

ATR models

The ATR42 is a twin turboprop, short-haul regional aircraft developed and manufactured by ATR (Avions de Transport Régional), a joint venture formed by French aerospace company Aérospatiale (now Airbus) and Italian aviation conglomerate Aeritalia (now Leonardo). The original ATR42-300 entered service at the end of 1985.

The -500 series was a major upgrade with new more powerful engines, new propellers, increased design weights and an improved passenger cabin.

The -600 is the latest version, which in common with its larger and more widely sold stablemate, the ATR72-600, incorporates further significant improvements in performance and available payload. A new cabin design and updated avionics are also part of the latest upgrade.

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

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

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

ATR says the -600 variants have reduced maintenance costs compared with their predecessors.

Market views

The outlook for the two ATR models appears quite different. Gueric Dechavanne, vice-president, commercial aviation services, Collateral Verifications (CV), says the market for the ATR72-600 has remained fairly stable over the past 12 months although the high number of aircraft stored, which stands at around 10% of the fleet, is becoming more of a concern to those looking to place used aircraft. CV has seen values and lease rentals drop slightly for the type but nothing yet that could be viewed as significant.

Dechavanne says: “Depending on the level of increase in availability and storage trends for the aircraft in the near term, there may be some further softening in the values and lease rates over the next 12 months as parties trying to place used aircraft find the market more challenging.”

Values

Current market values ($m)

Build year	2012	2014	2016	2018
ATR42-600	9.77	10.88	13.18	17.00
ATR72-600	12.35	14.26	16.08	20.65

Indicative lease rates ($000s/month)

Build year	2012	2014	2016	2018
ATR42-600	110	120	130	140
ATR72-600	132	147	162	180

** Source: Collateral Verifications.*

Aircraft characteristics

	ATR42-600	ATR72-600
Seating/ range		
Max seating	50	78
Typical seating	48	70
Maximum range	800 nm	825 nm
Technical characteristics		
MTOW	18.6 tonnes	22.8 tonnes
OEW	11.5 tonnes	14 tonnes
MZFW	16.7 tonnes	20.8 tonnes
Fuel capacity	5,700 litres	6,370 litres
Engines	PW127M	PW127M
Thrust	2,160 shp	2,475 shp
Fuels and times		
Block fuel 200nm	560kg	610kg
Block fuel 500nm	1,210kg	1,310kg
Block time 200nm	55 minutes	58 minutes
Block time 500nm	122 minutes	125 minutes
Fleet data		
Entry into service	2012	2011
In service	38	438
Operators (current and planned)	18	94
In storage	None	45
On order	21	215

Source: *Airfinance Journal Fleet Tracker*

The demand for the ATR72 has continued over the past 12 months because of its attractive operating economics, reliability and original equipment manufacturer support. Not unlike the Bombardier Q400, this aircraft does very well for operators on shorter routes. CV says it has come across many operators of ATR72-500s looking to replace their ageing aircraft with newer, more efficient variants, such as the -600s. Operators are also continuing to right size their fleets on shorter routes, by introducing aircraft such as the ATR72, to try to take advantage of the attractive turboprop operating economics they offer.

CV also believes there is interest in the freighter conversion market of older ATR72s, which should allow the type to see some increased level of stability in values.

The ATR42-600 has recently gained some traction with the commitment from US carrier Silver Airways, but CV believes, this aircraft will continue to be a niche model, judging by the small fleet and lack of appetite from other operators and investors.

Dechavanne says: "Should Silver perform well while operating this aircraft, it may lead to additional orders from other US carriers, but we still do not believe that this will be in very high numbers."

Overall, CV believes the ATR market will remain challenging for the next 12 months, but the aircraft continues to be attractive to many operators and investors, which should bode well for the long-term success of the fleet.

Route creation – key ATR quality

Their suitability for developing new markets and routes has long been a key selling point of the ATR models and the manufacturer is taking this to new levels with the introduction of what it describes as a Route Creation Tool. In its marketing literature, ATR suggests that to expand networks and boost profits, regional operators have a choice between competing on routes where there are already other operators, or opening new routes. While the latter may involve more investment and risk, it also has the potential to generate far greater profits over the long term because any airline that opens up a new route is likely to become the market leader for that destination.

ATR suggests the potential for new routes is huge, estimating that some 2,700 new regional turboprop routes could be created worldwide over the next 20 years.

The European manufacturer has combined its experience of regional markets with data analytics to develop a tool that can help operators better predict the best routes to choose. The Route Creation Tool uses data from 20,000 existing routes, combined with 40 variables to estimate the potential of a million city pairs. These variables include – for each airport/city pair – the distance and road time between them, each airport's size/traffic levels, populations, plus macroeconomic data such as gross domestic product. The data is used to create a gravity model that shows the potential of both existing and currently unexploited routes. It gives the estimated number of seats which could be flown on each route, thus helping airlines to choose the optimum aircraft type and to build a network strategy.

How much of an impact on aircraft sales and/or values this tool will have is open to debate, but given route development is at the core of ATR's business, operators and investors may well want to take advantage of its existence.

ATR42-600

Bigger rivals

After the comparison of the A320neo and 737 Max 8 in the January/February issue, *Airfinance Journal* looks at how the competition between the larger 737 Max models are faring against the A321neo.

Airlines have been moving to larger variants of the single-aisle families offered by Airbus and Boeing. The lack of success of the Airbus A319neo and the Boeing 737 Max 7 is the most obvious sign of this trend. The baseline A320neo and 737 Max 8 models have racked up impressive sales, but the move to larger variants, particularly the A321neo, is clear from their increasing share of sales.

Boeing's launch of the Max 10 can be seen as an acknowledgement that the Max 9 was uncompetitive against the A321neo in this increasingly important sector and risked ceding market share in the same way that the 737-900 had been outsold by the original A321.

A321neo

The Neo (new engine option) version of the A321 is the largest member of Airbus's upgraded and re-engined single-aisle family. The manufacturer claims a per-seat fuel improvement of 20% compared with the original A321 model. The new variant also offers a range improvement of up to 500 nautical miles (nm), which can be traded off against a payload increase of up to two tonnes. Although the Neo variant is not stretched from the original A321, Airbus is offering increased seating capacity by optimising cabin space with increased exit limits and a new cabin door configuration. The manufacturer cites the maximum capacity of the new model as 244 seats – 24 more than the still-in-production original A321 offers.

The A321LR, a new long-range version of the A321neo, adds another string to Airbus's bow in the competition. The manufacturer's specifications show the aircraft will be able to fly routes of up to 4,000nm with 206 passengers.

The LR model, if successful, could further influence Boeing's strategy as its range and capacity encroach on the US manufacturer's much-discussed New Midsize Aircraft (NMA) project. At the time of the first delivery to Israeli carrier Arkia last November, Airbus reportedly had 110 orders from 10 operators for its latest single-aisle variant. JetBlue is among the airlines considering the model.

737 Max 9 and 737 Max 10

The 737 Max 9 replaces the next-generation (NG) 737-900ER. The Max 9 offers an increase in range of more than 500nm over the -900ER, but Boeing has elected to retain the cabin dimensions of the NG model.

The 737 Max 10 is a further development, which allows Boeing to match the A321neo's key characteristics in terms of seat count and operating cost. The Max 10 is a basic stretch of the Max 9 and, as such, will have 300nm less range. Boeing says this is not critical for the vast majority of single-aisle routes, although some analysts believe it risks leaving a market gap for the A321neo – particularly the new LR version.

Boeing has had some success with the Max 10, although many of the orders were announced at or soon after the model's launch. The most recent (August 2018) sale announcement for the type was with Virgin Australia, who will be converting some of its Max 8 orders to the larger variant. The manufacturer is, however, bullish about the aircraft's prospects and claims that the Max 10 "will offer operators the lowest cost per seat-mile of any commercial aircraft". If this proves to be the case, the current 500 or so orders are likely to increase.

Orders

Looking at orders for individual single-aisle models can be misleading in terms of indicating how successful the manufacturers have been, because the respective models do not line up exactly in terms of capacity and/or range. The overall battle for single-aisle market share is relatively evenly balanced, with Airbus having sold more than 6,000 of its latest-generation models and Boeing close to 5,000.

Airbus A321neo

Boeing 737 Max 10

Key data

Current and next-generation single-aisle models

Model	A321neo	737 Max 9	737 Max 10
Thrust per engine (lbf/kN)	27,000- 33,000	27,300	27,300
Max seating	244	220	230
Typical seats single class*	206	178-193	188-204
Typical range (nm)	3,995	3,215	3,300
(Target) entry into service	2017	2018	(2020)
In service	121	21	None
Orders backlog	2,153	329	537
2018 list price ($m)	129.5	124.1	129.9

**Manufacturer definition of typical.*
Source: Airfinance Journal research/Fleet Tracker, February 2019

However, it is difficult to avoid the conclusion that Airbus is winning the battle for market share in the large single-aisle category. The combined total of Max 9 and Max 10 orders is below the 1,000 mark, compared with an A321 figure of more than 2,000.

The lessors also seem to be bullish on the A321, with a January order by SMBC Aviation Capital for 15 coming after Avolon's confirmation in December that it will take 25 A321neos as part of a 100-aircraft order for Airbus single-aisle models.

Seating and costs

As ever, the manufacturers' claims on the relative operating costs of their respective models are at odds. Boeing's suggestion that the Max 10 has the lowest cost per seat-mile of any commercial aircraft contrasts with Airbus's claim that the A321 is the most efficient single-aisle aircraft. It is difficult to see how both these statements can be true. The key may be in different views of seating capacity, which is always a major point of contention when calculating unit costs.

There is an industry consensus that the A321neo has a small advantage over the Max 10 – typically accommodating two to three additional seats. The advantage is to some extent borne out by the manufacturers' literature. The upper limit of the typical seating range quoted by Boeing is 204 compared with a single figure of 206 that Airbus uses in its documentation.

The maximum seating quoted by manufacturers has often been of academic interest as the respective layouts have been implausibly cramped. But there is undeniably a trend for airlines to push the limits of what passengers will accept and the difference between the A321's ability to squeeze in 244 passengers compared with the 230 that can be crammed into the Max 10 may prove significant in some sales campaigns.

Passengers tend to focus on seating comfort and, although seat-pitch is their primary concern, the wider cabin of the A320 family affords a marginally wider seat in the standard six-abreast configurations. The combination of seat-width advantage and Airbus's ability to come up with innovative ways of enhancing capacity may be a contributing factor to the A321neo's success.

Indicative relative cash operating costs (COC)

	A321neo	737 Max 9	737 Max 10
Relative trip cost	Base	97%	98%
Relative seat cost	Base	103%	99%

Indicative relative total direct operating costs (DOC)

	A321neo	737 Max 9	737 Max 10
Relative trip cost	Base	96%	99%
Relative seat cost	Base	103%	101%

Assumptions: 500 nautical-mile sector, fuel price $2 per US gallon. Fuel consumption, speed, maintenance costs and typical seating layouts are as per Air Investor 2019. Capital costs based on list prices.

Operating costs

Airfinance Journal has used its own model in an attempt to verify the accuracy of the manufacturers' claims. The results suggest the cash-cost differential per trip between the Max 10 and the A321neo is marginally in the Boeing aircraft's favour and remains so even when the A321's seat advantage is considered. Results for the Max 9 suggest that to remain competitive in the sector Boeing needed to develop the Max 10.

Given the recent slight dip in fuel prices, *Airfinance Journal* has used a fuel price of $2 per US gallon for the purposes of this study. The reduction from the $2.20 level used in the A320neo versus 737 Max 8 comparison in the January/February issue has little impact on the relative costs of the latest-generation aircraft. However, it does reduce the advantage of the new-generation aircraft over the aircraft they replace, making capital costs more difficult to justify.

An area of uncertainty, particularly with regard to the advantages of the new-generation aircraft over those they replace, is maintenance costs. Despite in-service trials and tribulations experienced by the new-generation aircraft, the airframe and engine manufacturers continue to claim that they will provide savings in maintenance costs. Maintenance costs are notoriously difficult to predict and most airlines will be inclined to enrol in manufacturer schemes, especially for engines. Such schemes are expensive but the predictability they offer is of significant value, particularly for small- to medium-sized operators. Such schemes also offer a more reliable basis for comparing the costs of competing types than the often-optimistic claims of manufacturers.

Market perception and values

Istat appraiser Oliver Stuart-Menteth, managing director, Fintech Aviation Services, believes Boeing had to launch the Max 10.

"When Boeing released the Max 9 the market was decidedly cool with many questioning whether a product that more closely competed against the long-range A321neo ACF [Airbus Cabin Flex] was ever going to be released. The decision to launch the Max 10 was a commercial necessity and provides the market a Boeing product that offers similar seating capacities to that of the Airbus model," he says.

Market sentiment has been far more robust for the Max 10, while the backlog for the Max 9 has since been whittled away through customers up-gauging to the larger variant. The A321neo continues to experience strong demand accounting for more than 35% of the Airbus single-aisle orders.

Stuart-Menteth adds: "Although there is significant focus by the respective OEMs [original equipment manufacturers] to develop the Max 10 and Neo LR to potentially operate Boeing 757-200 routes, by offering auxiliary fuel tanks and various performance-improvement packages, it should be appreciated that 95% of all operators will deploy the aircraft on sectors of less than 1,500nm. In reality, both the A321neo LR and the Max will struggle to operate 4,000nm with more than 180 passengers, underlining the requirement for a purpose-built NMA."

Fintech view of values and lease rates

Model	Current market value (Jan 2019)	Lease rates ($'000/month)
A321neo ACF	57.8	405-435
A321neo ACF LR	60.5	425-455
737 Max 9	52.6	360-390
737 Max 10	55.2	390-425

Rating agency unsecured ratings

Airlines

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

Source: Ratings Agencies - 21st February 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+(pos)	-	A-(stable)	A(stable)
Avolon Holdings Limited	BB(pos)	Ba1(pos)	BB+(stable)	BBB+(stable)
AWAS Aviation Capital Limited	-	Ba2(stable)	BB+(stable)	-
BOC Aviation	A-(stable)	-	A-(stable)	-
Dubai Aerospace Enterprise	-	Ba1(stable)	BB+(stable)	-
Fly Leasing	-	Ba3(stable)	BB-(stable)	BBB(stable)
ILFC (Part of AerCap)	BBB-(stable)	Baa3(stable)	-	-
Park Aerospace Holdings	BB(pos)	Ba2(pos)	-	-
SMBC Aviation Capital	A-(stable)	-	A-(stable)	-

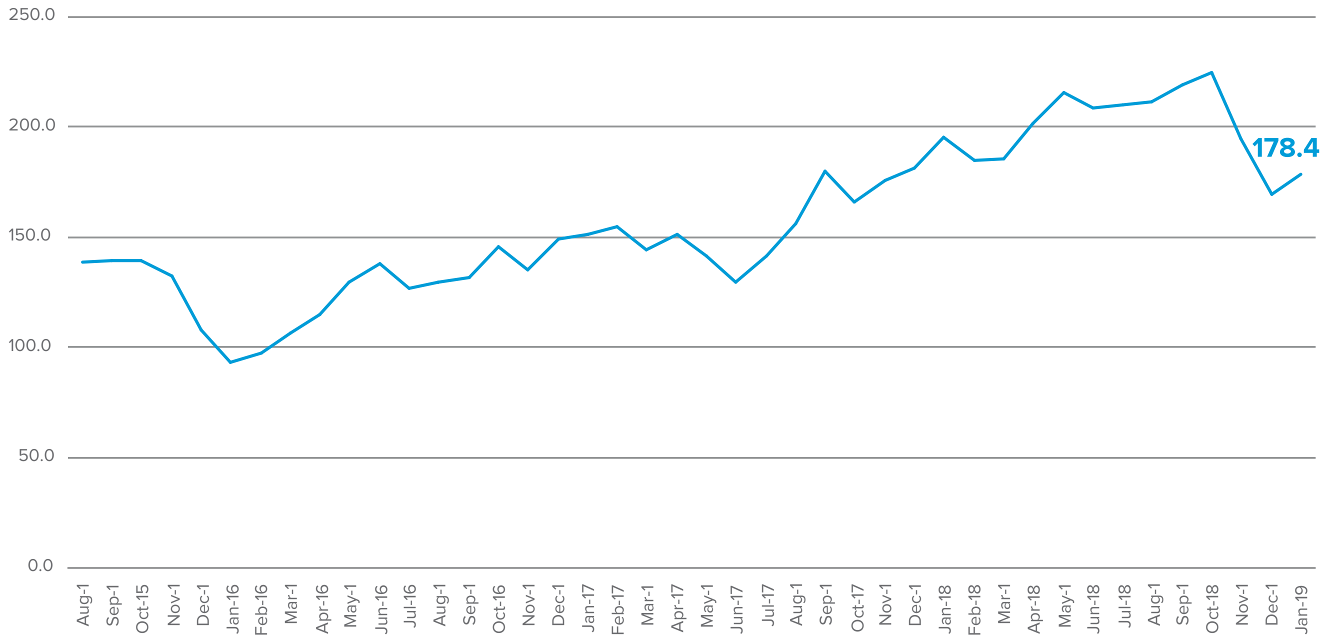
Source: Ratings Agencies - 21st February 2019

Manufacturers

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

Source: Ratings Agencies - 21st February 2019

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



Source: US Energy Information Administration

Recent commercial aircraft orders (December 2018-February 2019)

Customer	Country	Quantity/Type
Air Vanuatu	Vanuatu	2xA220-100; 2xA220-300
MEA	Lebanon	4xA321neo
Chorus Aviation	Canada	9xCRJ900
SkyWest	USA	9xE175
ANA	Japan	20x737 Max 8; 18xA320neo
United	USA	24x737 Max; 4x777-300ER
Emirates	UAE	40xA330-900; 30xA350-900
Delta Air Lines	USA	15xA220-300
jetBlue	USA	60xA220-300
Moxy Airways	USA	60xA220-300
ICBC Leasing	China	80xA320 family
Aurigny	UK	3xATR72-600
CALC	Hong Kong	50x737 Max
Azul	Brazil	21xE195-E2
Air Kiribati	Kiribati	2xE190-E2
MEA	Lebanon	4xA330neo
BOC Aviation	Singapore	2xA350-900; 3x777-300ER
Avation	Singapore	8xATR72-600
Republic	USA	100xE175
Avolon	Ireland	100xA320neo
Nordic Aviation Capital	Denmark	3xE190

Based on *Airfinance Journal* research up to 26/02/2019

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 26/02/2019

Current production aircraft prices and values ($ millions)

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

*Based on Istat appraiser inputs for Air Investor 2019

Lease rates ($'000 per month)

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

Commercial aircraft orders by manufacturer

	Gross orders 2019	Cancellations 2019	Net orders 2019	Net orders 2018
Airbus (31 January)	0	13	-13	747
Boeing (31 January)	46	3	43	893
Bombardier	9	0	0	47
Embraer	0	0	0	47
ATR	3	0	0	52

Based on Airfinance Journal research and manufacturer announcements until 25/02/19

Are we more accurate in predicting **short- or long-term future**?

Adam Pilarski, senior vice-president at Avitas, explains why it is easier to predict long-term growth in the Asian market than passenger growth at St Louis Lambert airport.

A puzzling question is the relationship of the time horizon of a forecast and its accuracy. Most people assume that the further in the future an event is being forecast, the less likely it will occur since so many things change with the passing of time. This goes for aviation variables as well as for life overall. We are more comfortable predicting the future of our favourite sports team in the coming weekend than prognosticating its future in a decade.

In January, I spoke at the 98th annual meeting of the Transportation Research Board in Washington DC. The session I attended dealt with forecasting techniques in aviation. Participants were the usual cross section of economists from government, academia, trade associations, consulting firms and manufacturers. I used to attend these January meetings regularly a few decades ago and was amazed how little has changed in the topics discussed.

Many speakers raised the subject I mentioned above. There was a consensus that accuracy diminishes greatly the further in the future we try to predict some variables. The rationale was that we kind of know what will happen next year but there are too many variables that can dramatically change over time.

A speaker showed airport traffic forecasts for an unnamed city to illustrate his point. I looked up passenger statistics for two cities I am familiar with that fit his story: St Louis in Missouri and Cincinnati, Ohio (the airport is actually in Kentucky not that this matters). St Louis grew in the 1990s from about 20 to 30 million passengers. Based on such growth, extensive growth plans were developed to facilitate the anticipated increase in passengers and forecasts of about 45 million were used for the period covering two decades. The number of passengers in that period did not grow by 50% but rather fell to 15 million in 2018.

The picture for Cincinnati was similar with traffic almost doubling from 1992 to 2004. Capital expenditure plans were developed and the airport was being readied to accommodate further significant increases in passenger throughput. Alas, this is not what has occurred. Today's traffic in Cincinnati is less than half the level experienced 15 years ago.

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

> *Most people assume that the further in the future an event is being forecast, the less likely it will occur since so many things change with the passing of time.*
>
> **Adam Pilarski**, senior vice-president, Avitas

What has happened? Passengers who want to fly have a choice of arriving at their destination in multiple ways. They can select different airlines and different airports.

The above-mentioned specific examples were heavily dependent on the cities being hub cities for major airlines. St Louis was a big hub for TWA and Cincinnati was used by Delta as a significant hub. I do remember flying to Paris from Los Angeles (LAX) via Cincinnati in 1994. As readers probably remember, TWA went bankrupt and was absorbed by American Airlines, which had its own hubs and neglected St Louis. Delta had a strategy of using Comair as a feeder and grew Cincinnati significantly but eventually changed course and abandoned Comair.

The underlying traffic did not disappear though. I would still go to Europe from LAX, just not via Cincinnati. Forecasts made assuming no change in the industrial structure of the airline industry proved to be wrong. I understand and empathise with forecasters whose job it is to predict traffic for a specific city and airline since changes in connection patterns can wreak havoc with their forecasts. It is a fact that forecasters do not have the tools to predict reliably changing traffic patterns – hence, the longer the forecast horizon, the higher the chance of the forecast going off the rails.

There is an alternative view, though, which I subscribe to. It is counter intuitive, but forecasting the short term is less accurate than the long term.

The variables I am interested in can be predicted quite robustly by using proper economic theory and econometric techniques. So, as an example, let me go back to 1980 and my predictions about the rising dominance of Asian traffic in the world. I was convinced then that Asia's market share of world traffic would increase significantly for decades to come. This was because virtually all economists predicted Asian economies outperforming the rest of the world in growth. Also, the many geographical factors (large country sizes, long distances, many islands) and socio-cultural ones (large populations, ethnic ties) assured me that Asia would experience a historical period of catching up with the rest of the world.

Today, this may seem obvious to the reader but this was not the case in 1980 when my view was not universally accepted. My conclusion did not assume specific forecasts for given cities (say, Narita traffic for 1982). It was a very general view that, over the coming years, economic forces would prevail and inevitably lead to huge traffic growth in Asia. This could manifest itself in various structures and city pairs. My prediction dealt with fundamentals, not short term or local details that can change rapidly.

AIRFINANCE JOURNAL

An *Airfinance Journal*

special supplement

Regional aircraft 2019

CRJ 'important' to Bombardier

Regional aircraft lessor, TrueNoord's chief executive officer Anne-Bart Tieleman, speaks to **Jack Dutton** about the CRJ programme and why Embraer is still selling loads of E1s.

Coming to market with a new aircraft, the CRJ550, at the start of February was a smart move from Bombardier, according to the chief executive officer of regional aircraft lessor TrueNoord.

In an interview with *Airfinance Journal*, Anne-Bart Tieleman says: "It's clearly a very niche product facilitating the US market, but I think from Bombardier's perspective, it's quite smart. They've created a new product on an existing platform so it won't be a high capital cost investment for them and they still have a new product to offer."

The Canadian manufacturer launched the product, which will have 50 seats in three classes, with US carrier United Airlines, committing to 50 units.

Tieleman says Bombardier may get more appetite from other US airlines because it is "very scope clause-minded".

He adds that TrueNoord would consider the aircraft in the future, but will not until there is more technical information available, such as costs and the secondary market footprint for the aircraft.

"It works in the US, but does it work somewhere else? I don't know. That is something for Bombardier to explain," he adds.

Bombardier says there is a market for the CRJ550 of more than 700 aircraft, and Tieleman thinks this is a realistic forecast.

"You'd be surprised if you see how many CRJ200s and Embraer ERJ135s and ERJ145s still fly, especially in the US. It sounds like a lot of aircraft but I guess they've done their homework, so it doesn't surprise me." He adds this is also the case with the Airbus A319, of which many are flying in the US.

"Look how many A319s fly in the US and these will be candidates to be replaced with A220s. I think there's something like 1,400 or 1,500 A319s with US airlines. The 700 figure doesn't sound very exaggerated."

Importance of CRJ

Tieleman is a champion of the CRJ family, but he does not think that Bombardier's recent sales of the Q400 programme to Longview Aviation and the CSeries programme to Airbus will breathe a new lease of life into the CRJ. He has already been impressed with the Canadian manufacturer's efforts at selling the Q400s and CRJs since it sold the CSeries.

"I think the Q400s are out but from Bombardier's perspective, the CRJ product is quite important. It's built in the same factory that creates the business aircraft. Getting rid of that will only jeopardise production of airframes in this facility where in the end also the business jets are being built. Strategically, it would surprise me if Bombardier sells the CRJ. I don't think they will do that; they'll keep it and milk it until the product is really old."

Some of Bombardier's larger business jets have very similar airframes to the CRJ, meaning that the original equipment manufacturer can produce the CRJ on the cheap.

E1 versus E2

When it comes to the CRJ900's main competitor, some of the smaller aircraft in the Embraer E2, Tieleman is slightly sceptical, because E1 orders still show strong momentum. Despite this, Tieleman is interested in acquiring the aircraft to help grow TrueNoord's portfolio. The lessor has 20 E1s out of 31 aircraft in its fleet, according to *Airfinance Journal*'s Fleet Tracker.

"It wouldn't surprise if we see more E1 orders this year," he says. "In that respect, you could almost argue that the E2 has come too early to market because there's still a strong demand for E1 products, old as well as new. Of course, that's not something Embraer would like to hear, and they try to push the E2, but they will have a more difficult time than they initially imagined, because their biggest competitor is themselves with the E1."

The current economic environment and the relatively low price of fuel could be factors as to why the E2 is not gaining as much transaction as originally expected. Scope clauses also play a role, because the E175-E2, the family's medium-sized model, has not been certified. Issues with the geared turbofan that powers the E2s may also cause hesitance, though the engines on the E2s are not showing the same difficulties as the ones on the A320s.

> *I think the Q400s are out but from Bombardier's perspective, the CRJ product is quite important. It's built in the same factory that creates the business jets.*

Anne-Bart Tieleman, chief executive officer, TrueNoord

"You might see airlines stick with what they know and what they have, like BA for example flying the E1s from London-City airport. They might even increase their fleets so that they are continuing growing their business, not with new stuff but existing stuff that they know performs."

ATR: Important year ahead

The coming year is set to be key for ATR, says chief executive officer Stefano Bortoli.

With Bombardier pursuing a sale of its Q Series programme to Longview Aviation Capital, turboprop market leader ATR could end up with a quasimonopoly of the 50- to 80-seat market within a couple of years.

However, the Franco-Italian manufacturer's chief executive officer, Stefano Bortoli, prefers to focus on the short term and ATR's plan to add versatility to the -600 series.

The turboprop manufacturer made inroads in the freighter market in 2017, when FedEx Express launched ATR's factory-build freighter programme with an order for 30 new ATR72-600Fs plus 20 options. In 2018, though, ATR sold none of the type.

"We are engaged in a number of discussions with some customers. It will be a game-changer aircraft for the freighter market," Bortoli tells *Airfinance Journal*.

The FedEx Express aircraft will be the first ATR built specifically for cargo service, rather than converted from passenger aircraft. Deliveries will begin in 2020. Between now and then, the original equipment manufacturer (OEM) will aim to secure more customers.

Sporting a windowless fuselage, the new freighter will feature a forward large cargo door, a rear upper-hinged cargo door and reinforced floor panels. It will support both bulk cargo and unit load device (ULD) configurations, with a bulk capacity of 74.6m3, or space for up to seven LD3 containers in ULD mode.

Bortoli says the ATR72-600F model represents more than 10% of ATR's backlog.

"The FedEx contract comes with a large cargo door and this is driven by the new distribution model in cargo, which is feeding big aircraft with smaller aircraft to reach out to isolated places," he says.

In 2018, ATR recorded 52 firm orders. This was down from 113 sales the previous year but up from 2016 when it sold 36 aircraft.

Interestingly, the Toulouse-based manufacturer sold 23 ATR42-600s last year, whereas in 2017 it booked just one order for the ATR42-600. The previous year, ATR sold two ATR42-600s.

Looking ahead, Bortoli believes ATR will sell more aircraft in that size range compared with the past five years.

"We may not sell 20 aircraft a year, but more likely 12 to 14 aircraft a year, going forward," he says.

According to ATR's 2018-2037 forecast, 20% of future turboprop deliveries (or 630 aircraft) will come from the 40- to 60-seat market. That segment will feed off the upsizing in the 30-seat market, and the replacement of 50-seat regional aircraft.

To push for more sales, the manufacturer is expected to launch a short-take-off-and-landing (STOL) variant of the ATR42-600 for small island and fjord applications.

"There are a number of places with short airfield runways, because of limited land and space. Our intention is to have an aircraft that can take off and land within 800 metres," he says.

ATR aims to launch the STOL version this year. "We have a number of customers both from the airline and the leasing industry side. There is appetite for that aircraft," he adds.

At the 2017 Paris air show the manufacturer signed two memorandum of understanding contracts with two customers in China. They will be firmed up when the ATR42-600 is certified in China.

"Our goal is to certify the ATR42-600 in China in 2019 but there is an uncontrollable factor," he says. "The issue is political."

He adds: "We have toured the aircraft in China and there is appetite in the Chinese market. There are 3,000 aircraft in operation and less than 100 regional aircraft. There is a project by the China government to develop regional airports to unlock traffic and we have a number of prospects in China."

In ATR's latest forecast, the largest demand for turboprops is expected to emerge from Asia (43%), followed by Europe, Africa and the Middle East (31%) and the Americas (26%) over the next 20 years.

ATR estimates a market for 3,020 turboprop deliveries with nearly 80% (or 2,390 aircraft) of the total demand expected to come from the 61- to 80-seat category.

It thinks 60% of demand will be to fuel growth and 40% for replacement as aircraft retire.

The manufacturer argues that traffic growth in regional connectivity will come from traditional markets where less connected locations are being connected with direct regional new routes, and from emerging markets where the most viable solution for connecting people and transporting goods is turboprop transport.

This year could see a first return to the US passenger market for the manufacturer since 1995, when it won orders to American Express.

Florida-based Silver Air selected the ATR42/72-600 models for growth. The regional carrier operates a Saab 340B fleet and will lease the new ATR models from lessor Nordic Aviation Capital.

"Silver Air should start phase four of its certification procedure," says Bortoli.

This year ATR will also deliver the first ATR72-600 equipped with the Clearvision enhanced vision system, an upgrade for low-visibility conditions. The OEM has secured two customers: the UK-based Aurigny Air Services and French regional carrier Air Saint-Pierre.

Bortoli says ATR and Aurigny worked on a study which concluded that 50% of disrupted landings in Guernsey, where operations are regularly affected by fog in the English Channel, would have been avoided had the carrier been equipped with the Clearvision system.

ATR

ATR (Avions de Transport Régional) is a joint-venture partnership which was established in November 1981 between Aerospatiale (now Airbus) and the Italian company Aeritalia (now Leonardo). Production is based in Toulouse alongside Airbus's commercial aircraft facilities.

The company's fortunes have been closely linked to those of turboprops in general, even though the 50-seat regional jet mania of the 1990s caused a decline in demand for that type of aircraft.

But there has been a significant revival since 2006, not least because the economic advantages of fuel-efficient turboprops increase as fuel prices rise. The resurgence of commercial turboprop sales has been remarkable for a type of aircraft that many commentators and industry insiders thought had been made obsolete by the advent of the regional jet. ATR has been the principle beneficiary of this resurgence.

The Franco-Italian joint venture has sold more than 1,750 aircraft, of which about 1,550 have been delivered.

The leasing community has also shown an appetite for ATR aircraft. The manufacturer has attracted orders from GECAS, Air Lease, DAE Capital and Avation, as well as Nordic Aviation Capital, the largest regional aircraft lessor. ATR produces two models: the ATR72 and the ATR42.

The aircraft benefits from the inherent advantages of the turboprop design in terms of fuel efficiency, and relatively low emissions and cost efficiencies, particularly on shorter sectors.

The original ATR42 entered service at the end of 1985. The first commercial operations of the ATR72 followed four years later in 1989. Both aircraft types have been the subject of several major upgrades and current-production aircraft are designated as -600 models.

ATR introduced the high-capacity ATR72-600 version a couple of years ago. The model seats 78 passengers.

There has been much speculation since the beginning of the decade that ATR was planning to produce a larger model to take advantage of the return to favour of the turboprop, but the plans have not materialised.

Instead, ATR continued to sell the ATR72-600 models. The company has envisaged sufficient demand for a production rate of 100 aircraft deliveries a year, but its highest level of deliveries reached was 88 aircraft in 2015.

However, some recent evidence suggests the market has peaked and sales are becoming harder to come by. The problem is exacerbated by the increased participation of lessors, with leasing companies accounting for significant percentages of the manufacturer's order backlog. Nonetheless, in January, ATR issued briefings saying it had consolidated historical levels of turnover and deliveries, despite a challenging market environment.

Production stabilised at about 80 aircraft a year, compared with 51 aircraft in 2010.

In 2018, ATR booked firm orders for 52 aircraft: 23 ATR42-600s and 29 ATR72-600s. This compares with 113 aircraft in 2017 and 36 in 2016.

ATR recorded two leasing firm orders last year, totalling 23 aircraft. The leasing community's orders represented about 45% of the turboprop manufacturer's intake for the year.

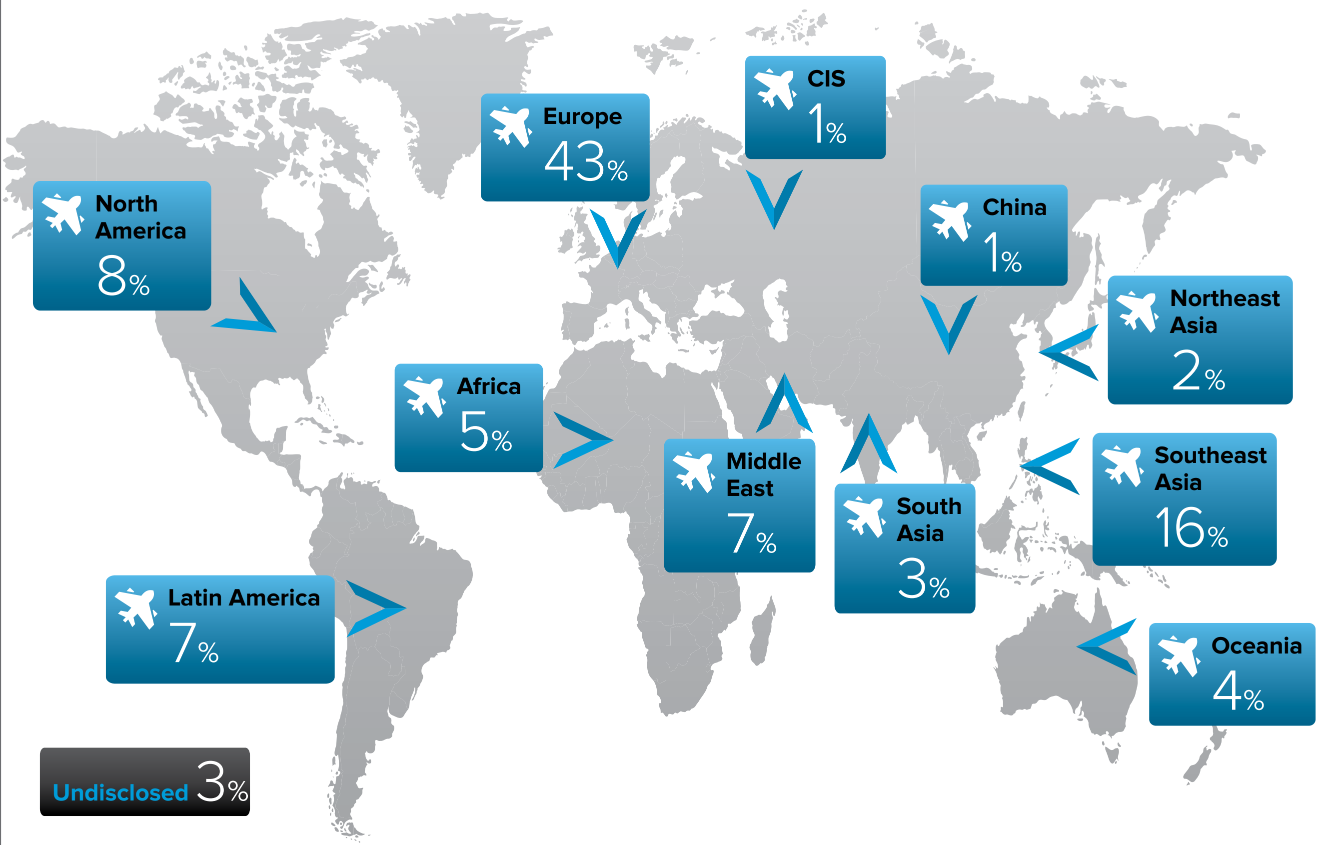
The manufacturer is looking at boosting sales further in the 50-seat market through the launch this year of the short-take-off-and-landing variant of the ATR42-600 for airlines operating at small airports.

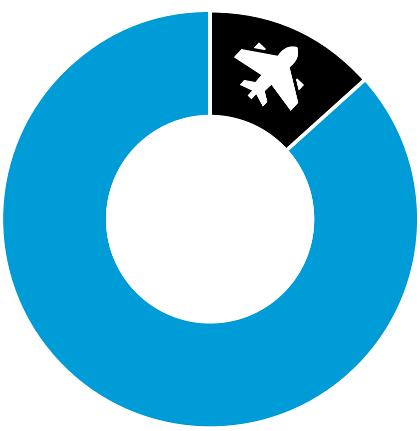
The coming year is also set to be key for ATR's new-build freighter. FedEx Express launched the manufacturer's factory-build freighter programme in 2017 with an order for 30 new ATR 72-600Fs plus 20 options.

Stefano Bortoli, ATR's chief executive officer, says demand for the large cargo door variant is driven by the new distribution model in cargo, "which is feeding big aircraft with smaller aircraft to reach out to isolated places".

ATR secured a solid backlog representing three years of production. *Airfinance Journal* estimates that the aircraft backlog stood at 206 units, at the end of last year.

ATR: Market share of current fleet by region





13.4%

of global regional aircraft fleet

1,276 ATR aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Bombardier

After purchasing the civil and military manufacturer Canadair from the Canadian government in 1986 and restoring it to profitability, Bombardier acquired the near-bankrupt Short Brothers aircraft manufacturing company in Belfast, Northern Ireland, in 1989.

This was followed in 1992 by the acquisition of the money-losing Boeing subsidiary de Havilland Aircraft of Canada based in Toronto, Ontario.

The manufacturer's origins date back from the 1940s when engineer Joseph-Armand Bombardier created L'Auto-Neige Bombardier Limitée. The company, which specialised in snowmobiles, was renamed Bombardier Limited in 1969.

Bombardier's most popular aircraft include its Q Series turboprops, its CRJ100/200s and CRJ700/900/1000 regional aircraft. As of 31 December 2018, Bombardier had sold 1,309 Q Series turboprops and had 52 units on backlog. The CRJ programme had sold 1,908 units and 45 aircraft were on backlog.

In 2004, Bombardier launched a feasibility study for a five-seat-abreast CSeries as the manufacturer targeted ageing DC9s, MD80s, Fokker 100s and BAe 146/Avro RJ models for replacement. The smaller version would carry 110 to 115 passengers and the larger 130 to 135 passengers over 3,200 nautical miles.

Bombardier's board of directors authorised marketing the models in March 2005, but a year later shelved the project citing market conditions not justifying the launch of the programme.

In February 2008, the board of directors authorised Bombardier to offer formal sales proposals to airline customers in the 100- to 149-seat market segment and subsequently launched the CSeries programme in July of that year.

Bombardier handed over the first CS100 aircraft to Swiss International Air Lines in June 2016. AirBaltic, the launch customer for the CS300 variant, received the first unit in December that year.

In October 2017, Airbus and Bombardier announced an agreement in which the European manufacturer will acquire a majority stake in the Bombardier CSeries programme.

Under the agreement, Airbus provides procurement, sales and marketing and customer support expertise to the C Series Aircraft Limited Partnership (CSALP), the entity that manufactures and sells the CSeries. At closing, Airbus acquired a 50.01% interest in CSALP. Bombardier and Investissement Québec owned about 31% and 19%, respectively.

The transaction was finalised on 1 July 2018, and Airbus renamed the CS300 as the A220-300 and the CS100 as the A220-100.

Last year was also important on the turboprop side. Bombardier entered into a definitive agreement to sell its Downsview property, the site of global business aircraft and Q400 regional turboprop production, to the Public Sector Pension Investment Board.

The manufacturer will continue to operate from Downsview for a period of up to three years after closing, with two optional one-year extension periods.

Last November, Bombardier announced the sale of the Q Series aircraft programme and de Havilland trademark to a wholly owned subsidiary of Longview Aviation Capital. The transaction is expected to close by the second half of 2019.

This leaves the Canadian manufacturer with an interest in the A220 series and the CRJ programme.

"The CRJ programme is close to our DNA," says Bombardier sales director Pierre Gagnon. "We are still bullish about it."

He adds: "Our CEO talks about looking at all the options, and it would have to be a good offer to do a deal. Perhaps more of a partnership, not an outright sale like the Q Series programme."

In November, Bombardier's president and chief executive officer, Alain Bellemare, said he wanted to keep producing CRJs to build up a backlog, but would reassess later on.

Bombardier is working on selling more CRJs. In February, it unveiled the CRJ550 aircraft, a new type certificate based on the CRJ700 model.

United is the launch customer of the triple-class, 50-seat regional aircraft and entry into service is scheduled for the second half of this year. United's CRJ550s will have 10 first-class seats, 20 extra-legroom economy seats and 20 economy seats.

The US major executed a letter of agreement with GoJet Airlines to operate these aircraft for 10 years. The current target is to have 25 in service by year-end and all 50 aircraft in service by the summer of 2020. The move is important because it addresses, for the first time, the 50-seat aircraft replacement market.

The Canadian manufacturer argues that there are about 700 ageing 50-seat aircraft in the North American market alone and that the new CRJ550 model is the only solution.

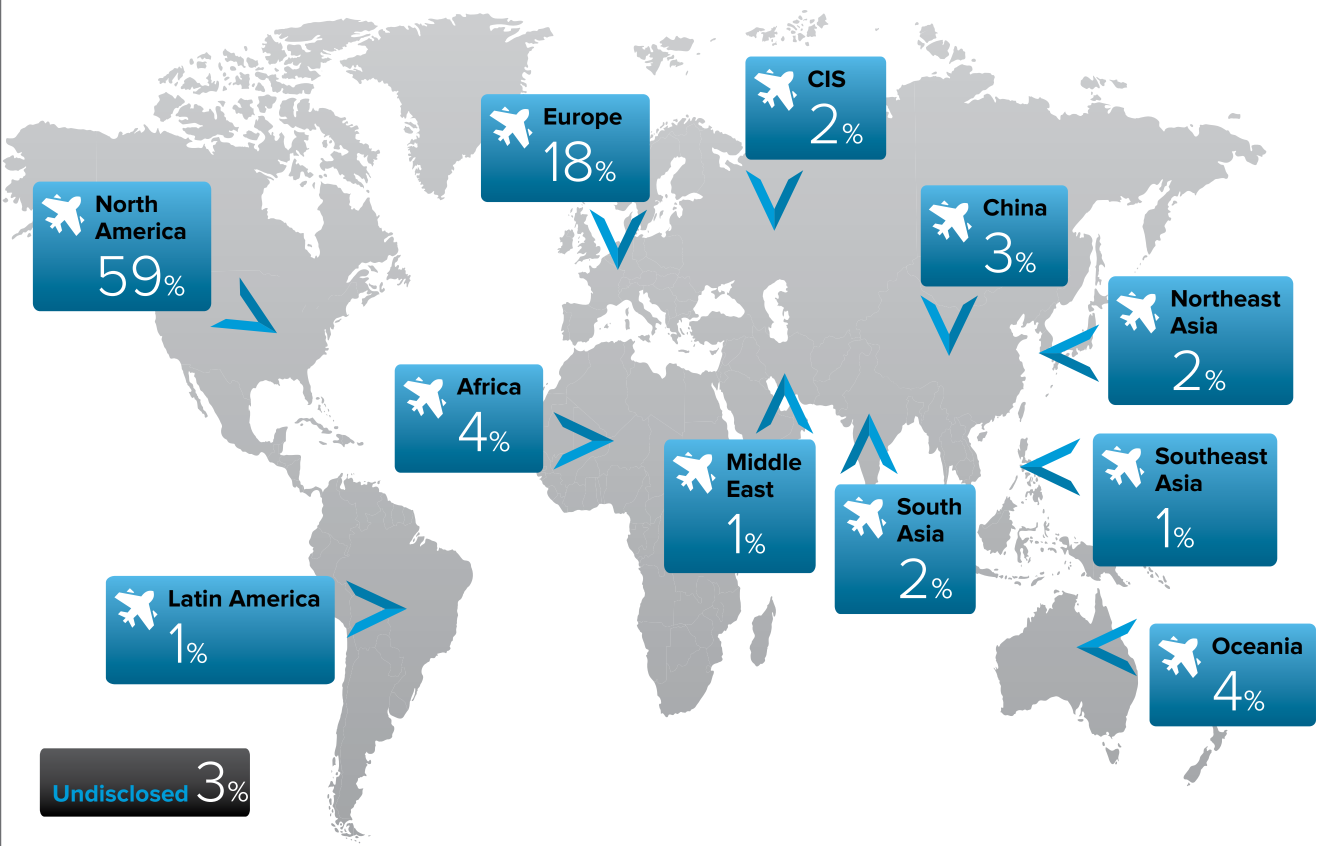
"Considering the fact that we are not expecting scope clauses to change anytime soon, we are confident that there is more than sufficient demand on the market for this new aircraft," the manufacturer tells *Airfinance Journal*.

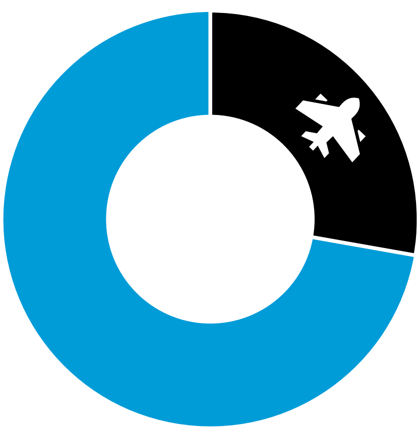
Airfinance Journal Fleet Tracker shows there are 254 CRJ700s in active service with the big three US carriers.

Demand for the CRJ550 variant is expected to come from the used market first. According to Fleet Tracker, there are 690 CRJ200s and Embraer ERJ145s in active service in the US that need replacement.

This should open the door for new sales.

Bombardier: Market share of current fleet by region





28.7% of global regional aircraft fleet

2,724 Bombardier aircraft in the current fleet

Source: *Airfinance Journal's* Fleet Tracker

Embraer

Embraer handed over 90 commercial aircraft last year, down from 101 deliveries in 2017. Even so, the original equipment manufacturer (OEM) met its 2018 guidance of 85 to 95 commercial aircraft deliveries.

The OEM's 2018 deliveries comprised 67 Embraer 175s, 13 E190s, five E195s, one E170 and four E190-E2 aircraft, including a first delivery to Air Astana via AerCap in December.

The Kazakh flag carrier has signed operating leases for five E190-E2 aircraft with the Irish lessor. The lease terms are six years.

Leasing companies dominate the E2 backlog. After the release of the year-end deliveries, Avianca announced plans to phase out its entire E190 fleet this year. The Bogota-based airline will remove 10 E190 aircraft.

At the same time, Mongolian carrier Hunnu Air agreed to add four E190s from CDB Aviation. The first unit will arrive in May, followed by further deliveries in 2020 and 2021.

Meanwhile, Brazil-based Azul, the launch customer for the E195-E2, converted a letter of intent (LOI) for 21 E195-E2s to a firm order. The LOI was signed at the Farnborough air show last July.

These new E-Jets are in addition to the 30 E195-E2s Azul ordered in 2015. When all units are delivered, the airline will operate the largest fleet of E195-E2s in the world with 51 aircraft.

Azul's first E2 arrives this year. A revised fleet plan released by the carrier on 6 February calls for it to acquire six E195-E2s while retiring 15 E195s in 2019.

In addition, Skywest Airlines has placed a firm order for nine E175s. It will operate the aircraft under contract for Delta Air Lines. Embraer will deliver five aircraft in the first half of 2019, with the remaining four in 2020.

Approval

Embraer's E-Jets E2 sales could benefit from the launch of a proposed joint venture with Boeing.

Embraer's shareholders' approved the strategic partnership on 26 February. Embraer shareholders also agreed to a joint venture to promote and develop new markets for the multi-mission medium airlift KC-390. Under the terms of this proposed partnership, Embraer will own a 51% stake in the joint venture, with Boeing owning the remaining 49%.

The Brazilian government had already approved the deal.

The two firms first unveiled their planned partnership in July 2018, at the time Airbus took control of the Bombardier CSeries programme, (now called the Airbus A220).

Boeing and Embraer are hoping to secure anti-trust approvals from regulators and to close the deal by year-end.

The new company would be based in Brazil with a president and chief executive officer, but Boeing will have management and operational control.

The partnership between the two manufacturers is due to produce $200 million in annual cost synergies, with $150 million for commercial aviation and $50 million for executive aircraft and defence.

Embraer will retain a 20% share in the commercial aviation joint venture with Boeing. It will hold a put option to sell the stake at the deal price adjusted for US inflation over 10 years. After that time, the stake may be sold at fair market value.

Boeing is paying $4.2 billion for the 80% stake in Embraer's commercial aviation business, the total value of which was increased to $5.26 billion in December.

In February, Pratt & Whitney delivered the first PW1900G production engines for Embraer's in-development E195-E2. The largest variant of Embraer's re-winged and re-engined E-Jets E2 family is scheduled to gain type certification by June.

The first aircraft will be delivered to launch operator Azul during the second half of the year. "We are excited to receive the GTF production engines for the initial serial production of the E195-E2, as we know first hand the advantages that these engines provide to our customers and the environment," says Fernando Antonio Oliveira, Embraer's E2 programme director.

"Delivering the first production engines for the E195-E2 is an important milestone for the programme," says Graham Webb, vice-president of commercial engine programmes at Pratt & Whitney.

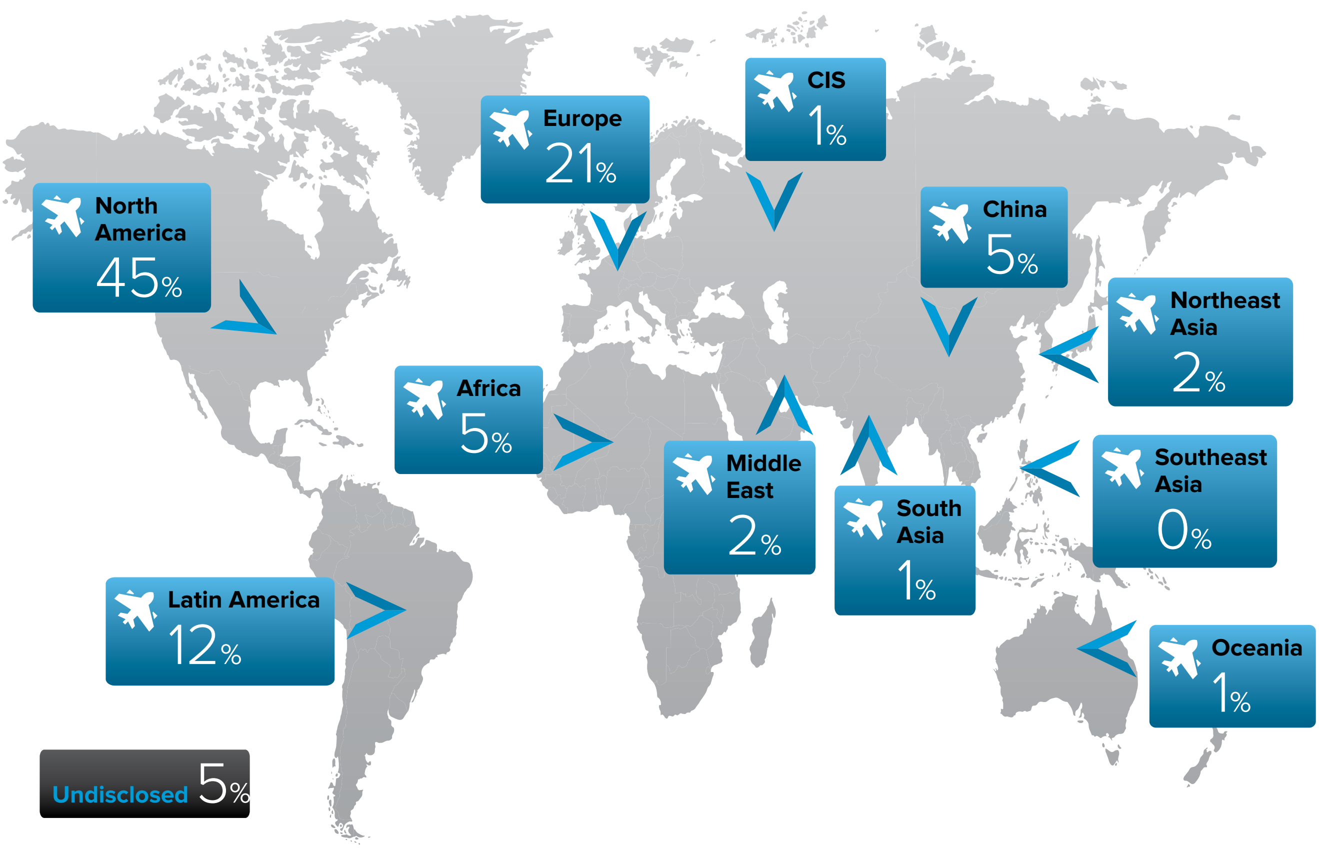
The E195-E2 aircraft has more than 24% reduction in fuel burn per seat than the previous-generation E195, with NOx emissions 50% below the ICAO CAEP/6 regulation and 19dB to 20dB of ICAO Chapter 4 cumulative noise margin, says Embraer.

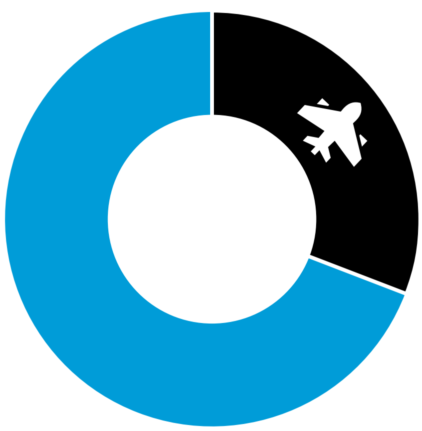
Embraer's E190-E2 aircraft, which is also powered by the Pratt & Whitney PW1900G engine, entered service in April 2018 with Widerøe, followed by Air Astana in December 2018.

The Brazilian manufacturer anticipates missing its targeted revenue range of $5.4 billion to $5.9 billion for 2018. Instead, it expects net revenues of $5.1 billion across its business segments when it releases its full-year financial results in early March.

Full-year operating profit is expected to hit $200 million, down from the forecast $270 million to $355 million. Embraer anticipates a full-year operating margin of 4%, shy of the 5% to 6% range it had previously forecasted.

Embraer: Market share of current fleet by region





31.2%
of global regional aircraft fleet

2,968 Embraer aircraft in the current fleet

Source: *Airfinance Journal*'s Fleet Tracker

Vehicles of **choice**

Regional carriers are under pressure, but careful fleet choices and optimised operations can deliver profits and stability, as **Bernie Baldwin** reports.

It is a tough challenge being a regional airline. When these carriers began, fares appropriate to the cost of the service were mostly accepted. As low-fare airlines have increased their market share, however, a larger percentage of the travelling population has expected – at times demanded – a low-price ticket from the regionals.

The irony in this is that regional airlines were early initiators of the low-cost business model, costs of course being what they spent rather than the price of a ticket. With smaller aircraft and their accompanying higher seat-mile costs, these carriers had to be nimble in all other aspects of the business model to ensure the eventual fare was acceptable to the market.

Aircraft for this sector still have higher seat-mile costs than the industry stalwarts, the Airbus A320 and Boeing 737 families. Therefore, it is vital to make the right fleet choice to maximise aircraft utilisation.

South African regional airline Airlink is undergoing a fleet transition as it phases out its Avro RJ85s and replaces them with Embraer 170s and 190s. Additionally, the carrier operates BAe Jetstream 41s, Embraer ERJ135s and ERJ140s.

> *“We recognised that many destinations entailed Etops [extended-range twin-engine operations] or Edto [extended diversion time operation] capability due to limitations as regards en-route diversions.”*
>
> **Rodger Foster**, managing director and chief executive officer, Airlink

Rodger Foster, Airlink’s managing director and chief executive officer, explains the strategy behind the choice of aircraft for the fleet. “The primary objective was the succession of the Avro RJ85 whilst also exploring ways in which Airlink’s horizons could be less limited, especially as regards our intra-Africa reach,” he begins. “We recognised that many destinations entailed Etops [extended-range twin-engine operations] or Edto [extended diversion time operation] capability due to limitations as regards en-route diversions. We wanted to continue operating regional aircraft and not get into the size of aircraft that our franchisor operates (namely narrowbody types such as the 737 or A320).

“We also required the aircraft to operate at some difficult airports with short and/or narrow runways, often in extremely hot conditions and sometimes when the runway is wet. The E-Jet family provided us with practicable solutions to extending our horizons, affording us Etops/Edto capability, whilst offering the best available performance at our most challenging airports,” he confirms.

The next challenge is to get the right mix in the use of each aircraft type. “We try to size the aircraft gauge to market. We have two gauges within the E-Jet family (the E190 with 98 seats and the E170 with 74 seats) and we have two gauges within the ERJ family (the ERJ135 with 37 seats and the ERJ140 with 44 seats). This gives Airlink useful flexibility,” says Foster.

In Europe, Spain’s Air Nostrum is a much-garlanded carrier which has a

renewable franchise agreement with Iberia to operate under the Iberia Regional brand. For its fleet, the company has always had a mix of jets and turboprops. "Many years ago the main differentiating factor was the economy, using turboprop aircraft on short routes and jets on the remainder. Nowadays our turboprop fleet is much smaller and limited to airports with restricted runways," explains Vicente Soler Pérez, director of financial planning and analysis.

"When choosing the turboprops and given the operation, we opted finally for a full ATR72-600 fleet for the limitations on the operation and economic advantage on short routes. Previously we had a combination of ATRs and Bombardier Q300 aircraft, the latter actually being our main turboprop," he adds.

"Regarding the jets, we have been using Bombardier aircraft since 1999. It has always been our aircraft of choice for performance, economy and the commonality of the CRJ family, which we deem is the most efficient given our network," adds Soler Pérez. When it comes to the usage of types, the turboprops take care of destinations which have runway restrictions, while the CRJs handle all other routes.

Since its creation, Azul has arguably changed the face of air transport in Brazil. Although it has grown to a point where it operates long-haul widebodies, its chief financial officer, Alex Malfitani, recalls the airline's establishment and the strategy behind what is still its core fleet selection.

"When we created Azul in 2008, two carriers were responsible for over 90% of the market share in Brazil. They had both built their fleets around large narrowbody aircraft, with 150 to 200 seats. But two out of every three flights in the country had less than 120 passengers on board. In other words, the incumbents were flying aircraft that were too large for the demand of most markets," says Malfitani. "Consequently, load factors in the industry were low – in the mid-60s – and only a few, high-density markets were served.

> *"The ATR makes even more sense in Brazil, where fuel prices are extremely high and where the low fuel burn of the turboprop provides a significant cost advantage."*
>
> **Alex Malfitani**, chief financial officer, Azul

"We realised that by having smaller aircraft, with lower trip costs, we would be able to serve medium- and low-density markets more efficiently than the competition. That led to the choice of the E195 for medium-density routes and the ATR72 for smaller markets," he adds. "The ATR makes even more sense in Brazil, where fuel prices are extremely high and where the low fuel burn of the turboprop provides a significant cost advantage. This strategy allowed us to build what is today the largest network in the country, with over 100 destinations served while competitors continue flying to only around half that number."

Azul's use of its aircraft per route sticks to a simple mantra. "Our strategy is having the right aircraft for the right market – as they say, horses for courses," says Malfitani. "Larger aircraft have smaller costs per seat but higher costs per trip. So you need to find the right balance between seat cost and trip cost. Therefore, we fly the E-Jets in high-frequency markets, medium-stage markets; we fly the ATRs in smaller, short-haul markets. And now that we have built a vast network, the A320neo became the solution to fly our higher-density, longer-stage markets.

"Incidentally, we could not be happier with the performance of the A320neo, and we are in the middle of a multi-year effort to transform our fleet by replacing all our old-generation Embraer E1s with A320neos and Embraer E2s. The fuel efficiency in these new aircraft will give us a reduction in unit cost between 25% and 30% compared to our current models, thus increasing our competitive advantage," he emphasises.

Obtaining maximum utilisation

With different types taking prominence on appropriate routes, clever scheduling will ensure that the number of hours flown each day by each aircraft is also optimised. According to Soler Pérez, the utilisation rates at Air Nostrum see the turboprops operating about 230 block hours a month, while the jets operate about 250 block hours a month.

The big question for an airline is whether it believes each aircraft is being used to its maximum. If not, it needs to consider the solutions required to bring about optimised utilisation.

Soler Pérez believes that with a fairly well established fleet, Air Nostrum is well placed in this area. "We feel we are close to maximum utilisations," he states. "Nevertheless, solutions to soften strong seasonality would be key in order to further improve utilisation."

At Airlink, the utilisation for each aircraft type is only settled on its smaller regional jets. "Our ERJs give us about 175 block hours per aircraft monthly across the fleet. The E-Jets are in the process of taking over from the Avros," says Foster, underlining how the larger aircraft in the fleet are still in a state of flux.

"Our E-Jets are not yet fully deployed and there is scope for schedule optimisation," he adds in reference to achieving maximum utilisation. "Full deployment will evolve in time once appropriate opportunities to augment the current activity has been identified and implemented – there are multiple opportunities."

Malfitani says Azul's aircraft utilisation for each type is among the highest in the industry. "In peak months, we fly the A320neo around 14 hours a day, the E-Jets approximately 11 hours a day and the ATRs around eight hours a day," he says.

He believes the airline has the ability to improve the utilisation even further. "We are always looking for opportunities to make Azul an even better airline. For example, we have recently enhanced a process we call Operation Azul, through which all of the operational teams collaborate to recover delays in a safe, efficient manner," he says.

"Our operations control centre determines when a flight needs to go Operation Azul based on our schedule and operational performance," adds Malfitani. "That triggers a series of pre-planned tasks which streamline our turnaround process and allows us to add precious minutes back to our schedule, all while maintaining our focus on safety, our number one value. Through efforts such as this we have been named the most on-time airline in Brazil for three years in a row."

CRJ550 – a new arrival

Many of the aircraft operated by these airlines are in a single-class configuration with some having a dual-class layout. In the USA, the desire for a seamless experience for passengers as they transfer from regional aircraft to mainline types (or vice-versa) has seen three-class layouts in the larger regional jets – E175, Bombardier CRJ900 – for a few years.

By the end of 2019, however, a three-class 50-seat CRJ will be operating with Trans States subsidiary GoJet Airlines under the United Express brand. This is being aided by the decision by Bombardier Commercial Aircraft to launch a new CRJ Series aircraft model – the CRJ550 – with a new type certificate based on the CRJ700. The move is likely to revitalise sales of this airframe, because the CRJ700 has had very few orders since the early part of the decade, the CRJ900 having taken the vast majority.

This is the third time that Bombardier has created, as Azul's Malfitani might put it, a horse for a course and they have all been aimed at operations in North America and driven by pilot scope clauses. In the early 2000s, a 44-seat version of the CRJ200, designated the CRJ440, was operated by Pinnacle Airlines (now Endeavor Air) as a way to satisfy the scope clauses of Northwest Airlines. As time went by, the scope clause changed and all the CRJ440s were converted back to the CRJ200 configuration.

The second such creation was the CRJ705, based on the CRJ900 airframe. These aircraft had 76-seats plus enough differences from the CRJ900 to satisfy the scope clause at Air Canada. Operated by Jazz Aviation, only 16 of the type were ever delivered and they too were converted back to the specification of the platform on which they were based once the regulations allowed.

Now comes the CRJ550, for which – as mentioned – separate certification is being sought. United Airlines' plans for the aircraft include a self-service snacks and drinks station plus increased legroom per seat, all designed to deliver the service levels in a regional aircraft that passengers in each class receive on larger types in the United fleet.

"In peak months, we fly the A320neo around 14 hours a day, the E-Jets approximately 11 hours a day and the ATRs around eight hours a day."

Alex Malfitani, chief financial officer, Azul

For the operator and its mainline partner, the CRJ550 is low risk. GoJet has operated the CRJ700 for many years and is thoroughly familiar with the type and its 99.5% industry-wide dispatch reliability.

The two-cabin, but three-class CRJ550 will feature 10 United first seats, 20 economy plus seats and 20 economy seats. It will eventually replace the existing single-cabin 50-seat aircraft that operate under the United Express banner and, according to United, "will bring a higher percentage of two-cabin departures to smaller cities across the carrier's network". United expects the CRJ550 to be flying from Chicago O'Hare, followed by Newark/New York, during the second half of the year.

Although Bombardier will be the first to market with a three-class 50-seater, such a configuration has been put before US carriers before. On its US demonstration tour in 2016, ATR featured in its promotional literature a 50-seat, three-class version of the ATR72-600. During its stopover in Charlotte, North Carolina, to coincide with the Regional Airline Association (RAA) Convention, this potential version was discussed with many leaders of RAA member airlines. When his opinion was sought during the convention, SkyWest's chief executive officer Chip Childs described it as "an outstanding configuration".

As *Airfinance Journal* went to press, ATR also proposed a response to the CRJ550 – the ATR72-600E in three class configuration, which the manufacturer expects to replace the existing fleet of ageing Bombardier RJ50s.

Regional airlines will always have a role to play in the airline industry. With the aircraft choices available plus smart utilisation and an intense focus on costs, there is every opportunity to fulfil that role profitably.