February/March 2017

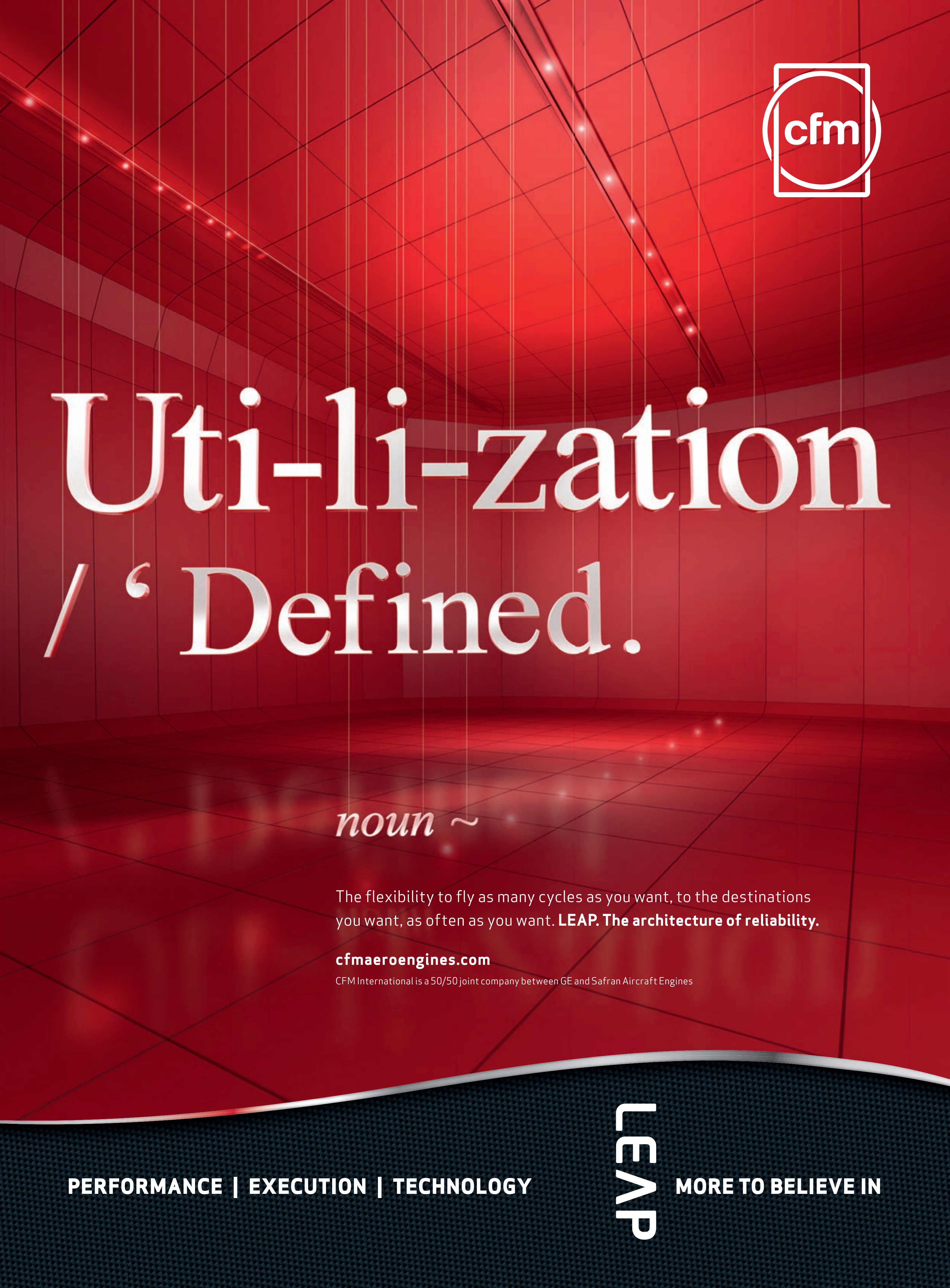
AIRFINANCE JOURNAL

YOUR ESSENTIAL INTELLIGENCE RESOURCE FOR AVIATION FINANCE

North Africa's shifting sands

Will the local carriers overcome the challenges in the region?

DENIS KALSCHEUR INTERVIEW | NEW NAMES IN KOREA | REGIONAL AIRCRAFT SUPPLEMENT


cfm
Uti-li-zation
/ ‘ Defined.
noun ~
The flexibility to fly as many cycles as you want, to the destinations you want, as often as you want. LEAP. The architecture of reliability.
cfmaeroengines.com
CFM International is a 50/50 joint company between GE and Safran Aircraft Engines
PERFORMANCE | EXECUTION | TECHNOLOGY
LEAP
MORE TO BELIEVE IN

Quick-learning Korean investors and factors African carriers need to be wary of

Jack Dutton outlines plans for the Inaugural Korea *Airfinance Conference* in March, and compares and contrasts two state-owned African carriers.

The next two months are busy ones for the *Airfinance Journal* team, with our second Africa Airfinance Conference in Johannesburg in February, as well as our Inaugural Korea Airfinance Conference in Seoul in March.

The Korean event will focus on domestic banks, institutional investors, security firms and asset managers to explore new structures and trends in dealmaking. Being relatively new to the aviation finance market, Korean investors have traditionally focused on the top-tier credits, but sources say that, as these investors become more educated with the assets, they are likely to start financing lower-tier credits. Michael Allen, our Asia-based senior reporter, speaks to financiers who work in the region on *page 16*.

The Africa conference will focus on the airlines and lessors which work in the region rather than the domestic investors. At a glance, the outlook for the continent looks fairly positive: Africa's gross domestic product (GDP) has been growing consistently for the past 20 years, outperforming the global economy, according to the African Development Bank Statistics Department. The department anticipates this continuing, projecting a GDP growth of 4.5% in 2017.

Yet despite these promising signs, the carriers in Africa have had varying success. Factors such as the state of the local economy, the geopolitical climate, the role of the government in an airline's strategy and competition from foreign carriers all have potential to turn a carrier that was once a success story into a financial basket case.

On *page 32* in our cover story, we focus on North Africa, speaking to Royal Air Maroc (RAM) about operating in a region where there is a lot of competition from the likes of easyJet and Ryanair. Because of recent terrorist attacks in other countries in the region, there has been a slight decrease in tourist traffic into Morocco from Europe. However, because of this, RAM says it has experienced less competition from low-cost carriers in the region over the past year.

Many of the main airlines in Africa are government owned. This can be polarising: some see government ownership as a hindrance, while others see it as something that adds stability to an airline. Take two very different cases in Ethiopian Airlines and South African Airlines. Both are government owned, but have different business models.

In its latest financial performance report, Ethiopian Airlines reported an increase of 12% in operating profit, making Br3.53 billion ($156 million) in 2015 compared with Br3.15 billion in 2014. The airline registered a 6% growth in revenue passenger traffic from a 7% capacity increase in available seat kilometres. The carrier's cargo business increased its capacity by 25%, which resulted in a 34% growth in traffic.

South African Airways, on the other hand, refused to post its financial results for the year ending 31 March 2015 until September 2016. The airline declared a R4.69 billion ($330 million) loss for that year and has not posted a profit since the 2011 financial year, when it made $54.5 million after tax, according to *The Airline Analyst*. The carrier is surviving on state-guaranteed loans and last year it suspended several senior staff, including its former acting chief executive officer, Thuli Mpshe, and airline treasurer, Cynthia Stimpel.

With Ethiopian Airlines, the local government is at arm's length from the airline's management, leaving the executive management to make the majority of the key decisions in running the airline. However, with South African Airways, its management is ever changing and often the major decisions are made by close allies of Jacob Zuma, the South African president. In this case, government intervention has hindered the progress of a carrier.

According to *Airfinance Journal*'s Fleet Tracker, 671 regional aircraft operate in Africa, making up 7% of the global regional fleet. Africa is a continent that relies heavily on regional connectivity and this number has the potential to increase hugely. But because of poor infrastructure and regulatory constraints, often, to fly from one African country to another, passengers need to fly out of Africa and connect to a flight in Europe or the Middle East – which is hardly practical. There is a lot of potential for African carriers to expand intra-regional networks through acquiring regional aircraft.

And investors in regional aircraft should look no further. This edition includes *Airfinance Journal*'s first regional aircraft supplement, which provides data from Fleet Tracker on the global regional aircraft fleet, as well as info on lease rates on the 50-seat regional aircraft market.

JACK DUTTON
Editor,
Airfinance Journal

Cover Story

News

Analysis and Interviews

Editor
Jack Dutton
+44(0)20 7779 8734
jack.dutton@euromoneyplc.com

Senior reporter
Joe Kavanagh
+1 212 224 3477
joe.kavanagh@euromoneyplc.com

Senior reporter
Michael Allen
+852 2842 6941
michael.allen@euromoneyplc.com

Consulting editor
Geoff Hearn
+44 (0)20 7779 8853
geoff.hearn@euromoneyplc.com

Managing director
Laura Mueller
+44 (0)207 779 8278
laura.mueller@euromoneyplc.com

Managing director
Olivier Bonnassies
+44 (0)207 779 8062
olivier.bonnassies@euromoneyplc.com

Group sub editor
Peter Styles Wilson

Advertisement manager
Chris Gardner
+44 (0)20 7779 8231
chris.gardner@euromoneyplc.com

Head of subscription sales
Chris Welding
T: +44 (0) 207 779 8015
chris.welding@euromoneyplc.com

Senior marketing executive
Sam Fairburn
+44(0) 20 7779 8257
samuel.fairburn@euromoneyplc.com

Managing director, The Ariline Analyst
Mike Duff
+44 (0)20 7779 8058
mduff@theairlineanalyst.com

Divisional director
Danny Williams

Production editor
Tim Huxford

Subscriptions / Conferences Hotline
+44 (0)20 7779 8999 / +1 212 224 3570
hotline@euromoneyplc.com

Customer Services
+44 (0)20 7779 8610
8 Bouverie Street, London, EC4Y 8AX

Directors: John Botts (Chairman), Andrew Rashbass (CEO), Sir Patrick Sergeant, The Viscount Rothermere, Colin Jones, Paul Zwillenberg, David Pritchard, Andrew Ballingal, Tristan Hillgarth

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

BOC Aviation's Fabian to lead Elix Aviation

Irish-based turboprop lessor Elix Aviation Capital has appointed Volker Fabian as its new chief executive officer, starting 1 March 2017. Fabian, who has more than has 20 years' experience in aviation finance and leasing, replaces Antonis Simigdalas, who stepped up to the role of chairman.

Fabian joins from BOC Aviation where he had been executive vice president of airline leasing and sales for the Europe and Africa region since May 2015.

Previously, he served as chief commercial officer of Intrepid Aviation for three years.

Elix Aviation Capital also announced that ex-co founders Antonis Simigdalas and Emmanuel Carousos will be supporting the company's next growth phase through their new mandates at the company's board of directors. The current deputy chief executive officer and chief Investment officer Carousos has been promoted to the board of directors where he will serve as executive director with responsibility for strategy, risk, and finance.

Volker Fabian, CEO, Elix Aviation Capital

"Volker is a strong leader, and brings a wealth of experience from the leasing and aircraft-finance markets. I look forward to working closely with him as Elix continues its journey towards further successes. I am also delighted that Emmanuel Carousos will join us on the board of directors where his insight and expertise will be of benefit to all of us," says Simigdalas.

Ex-ACG CEO joins Avolon board

Avolon has appointed ex-Aviation Capital Group's chief executive officer (CEO) and chairman Denis Kalscheur as a non-executive director of its board. Kalscheur joined the US-based lessor in January 2013. In December 2015, he stepped down from the CEO role and assumed the role of vice chairman. Avolon has also appointed two other non-executive directors to its board. The first appointment is Joe Nellis, managing director of the business development team at GE Capital, which oversaw the signing and closing of nearly $200 billion of transactions in a 24 month period as part of GE's transition to a more focused, digital industrial company.

The second appointment is Ciarán ÓhÓgartaigh, professor of accounting and Dean of University College Dublin College of Business. He has been published in international peer-reviewed journals on audit and accounting matters and he also serves on a number of audit committees including the Audit Committee of Ireland's department of finance.

Huijbers joins CALS as CEO

China International Aviation Leasing Service (CALS) has appointed Peter Huijbers as its new chief executive officer.

Further representatives from CALS executive team are chairman Jiedong Min, executive officer Mr. Li and general manager and chief economist Dr. Wang.

Huijbers was most recently the head of marketing at Hong Kong Aviation Capital. He has over 30 years aviation industry experience, and prior to HKAC was employed in senior commercial positions at BMW Rolls-Royce, Lufthansa Technik as well as being managing director at Nordcapital Aviation.

His experience covers the full spectrum of technical, commercial and capital markets and he has dealt extensively with the senior management of airlines, lessors, banks, aircraft investors and closed-end funds globally.

Huijbers will be based in the CALS headquarters in Shanghai.

CMIG Aviation Capital makes senior hires

CMIG Aviation Capital, the Dublin office of Chinese leasing company of CMIG Leasing, has expanded its platform, sources indicate.

Sixiang Gao (Peter Gao), former Bocomm Leasing deputy GM aviation, has been named as president and chief executive officer.

Luo Le, former director/senior vice-president marketing of Bocomm's Irish company JY Aviation Leasing, has joined as managing director marketing. JY Aviation has not yet hired a replacement for Luo Le, but plans to do so as well as make additional hires to expand the team, sources say.

Huang Zheng, former managing director and head of aviation at Ping An Leasing, has been hired as executive vice president and chief operating officer. Joe Tian Ye, Ping An Leasing's deputy head of aviation, has been promoted to head of aviation.

Yiping Ke, senior trading manager, aviation at Bocomm Leasing, has also joined the team. Sources could not confirm his role at the time of publication.

Luo Le will be based in Dublin. The positions of the other three have not yet been finalised, though *Airfinance Journal* understands that Gao is likely to base himself in either China or Hong Kong.

The company's Dublin office, which was established in December 2016, will do most of the leasing, but CMIG also intends to establish a Hong Kong platform.

CMIG Aviation Capital is affiliated with China Minsheng Investment Group (CMIG), a Beijing-based company which owns Shanghai-based CMIG Leasing in Shanghai.

ALAFCO hires Aengus Whelan

Operating lessor ALAFCO has hired Aengus Whelan as the head of trading, beginning in January.

Whelan previously served ten years as the executive director of aviation finance at Standard Chartered Bank in Dublin.

The Kuwait-based lessor told *Airfinance Journal* in September that it was looking to hire more staff in Dublin, after it appointed Jane O'Callaghan as chief commercial officer to head the office in August.

The lessor is also in the market taking bids on a mixed portfolio of narrowbody aircraft with leases attached, sources indicate.

ALAFCO, which recently boosted it credit line by $50 million with a local lender, is excepting proposals on an 11-unit portfolio, including five Boeing 737-800s on lease to Turkish Airlines through 2018, and two Boeing 737-900ERs with Ukraine International Airlines.

The 737-900ERs, which have leases running through 2021, carry the longest lease terms in the portfolio, say sources.

The portfolio also includes two Airbus A320s with VietJet, another A320 with Royal Jordanian and a single A320 with IndiGo. The lessor was not available for comment at time of publication.

Bombardier: Buchholz moves to SVP strategic initiative role

Bombardier has announced that its chief procurement officer Nico Buchholz will move to the position of senior vice president, strategic initiatives with immediate effect.

Jim Vounassis will assume the chief procurement officer responsibilities in addition to continuing to lead the company's operations transformation as Bombardier's chief transformation officer and procurement officer.

"Nico, who joined Bombardier in September 2015 and served as the company's chief procurement officer, has been instrumental in establishing a more centralised, focused and efficient procurement organisation," said Alain Bellemare, president and chief executive officer, Bombardier.

Before joining the Canadian manufacturer, Buchholz worked at Lufthansa for 14 years, most recently as executive vice president of fleet management.

Clyde & Co hires aviation partner

Law firm Clyde & Co has hired Robert Lawson as a partner in its aviation group. Lawson joins Clyde & Co from Quadrant Chambers where he has a general commercial and common law practice, with particular emphasis on aviation law.

The firm called the hiring "a rare lateral move from the senior ranks of the independent bar".

Jazeera Airways names new CEO

Kuwaiti airline Jazeera Airways has named Rohit Ramachandran as its new chief executive officer (CEO).

Jazeera Airways Group chairman Marwan Boodai stepped up to serve as the CEO in 2013 when the previous chief Stefan Pichler resigned in order to head up Fiji Airways.

Ramachandran brings 20 years of aviation experience to the role, having worked at airlines including KLM, Singapore Airlines and more recently Air Arabia and its joint ventures and subsidiaries.

According to *Airfinance Journal*'s Fleet Tracker, the airline operates a fleet of seven Airbus A320s, manufactured in 2015 and 2016.

In the third quarter of 2016, the latest quarter for which the airline's financial results are available, the airline generated $62.3 million in total revenue, resulting in $20 million of net income, according to data collected by The Airline Analyst. Earnings before interest, tax, depreciation, amortization and rent (EBITDAR) totalled $37.8 million, with an EBITDAR margin (EBITDAR/total revenue) of 49.3%.

K&L Gates hires two partners

K&L Gates has hired two aviation finance partners to work in the firm's London office, *Airfinance Journal* understands.

The new partners, Philip Perrotta and Sidanth Rajagopal, will be joining the firm from Arnold & Porter Kaye Scholer. Rajagopal was a partner at the firm and Perrotta headed the firm's aviation finance and leasing practice and served as managing partner of legacy firm Kaye Scholer's London office.

They are accompanied in their move by a team of associates. Perrotta and Rajagopal, as a team, have concluded hundreds of transactions and projects involving commercial and business aircraft, aero engines, and other aviation assets around the world. They act for aircraft lenders, lessors, operators, and aviation businesses across the globe, primarily on secured debt and leasing matters.

Tony Griffiths, administrative partner of K&L Gates' London office, says: "With air traffic forecast to grow at 4.5% annually over the next 20 years, we expect there to be significant demand for passenger — and, indeed, other types of — aircraft in a wide variety of aviation markets around the globe and, consequently, the legal advice and business know-how surrounding the acquisition and leasing of these assets and related matters resulting from that trend. With the arrival of this group, we are delighted to add the experience and capabilities of one of the leading aviation finance teams, representing the ideal fit for our existing global practice."

Philip Perrotta, partner, K&L Gates

Sidanth Rajagopal, partner, K&L Gates

Calc reappoints Poon as CEO

Mike Poon Ho Man, the founder and former chief executive officer (CEO) and executive director of Hong Kong lessor China Aircraft Leasing Group Holdings (CALC), has been reappointed as chief of the lessor.

The company's former chairman, Chen Shuang, stepped down as CEO on 19 January, but will remain as executive director and chairman of CALC. In a stock exchange filing, CALC said this arrangement will alleviate Chen's workload and raise the level of CALC's corporate governance.

Poon founded CALC in March 2006 and was the former CEO and executive director until his resignation took effect from 18 June 2015.

"He played an instrumental role in developing the Group into the largest independent aircraft lessor in China and one of the leading global players in the aviation industry," CALC says.

"He was the key driver of the company's listing on the Stock Exchange of Hong Kong in 2014, which made the Group the first listed aircraft lessor in Asia."

Poon is also the founder of Friedmann Pacific Asset Management (FPAM), which is a major shareholder in CALC.

In addition, he founded China Airport Synergy Investment in 2014, which acquired Toulouse-Blagnac Airport in the first deal involving a Chinese consortium purchasing an overseas airport.

He also initiated Aircraft Recycling International (ARI) in 2014 and its aircraft disassembly project in China in 2015.

Floreat targets $132m securitisation at aviation

Floreat Group is embarking on a securitisation programme focused on the aviation sector to provide long term fixed income investments to their institutional and high net worth clients.

The company tapped the commercial paper market late in December to raise a total of $132 million.

The eight-year notes were issued by a Luxembourg securitisation vehicle on 21 December and were listed on the Euro MTF market of the Luxembourg Stock Exchange. Part of the notes will be structured as being Sharia compliant for Floreat's Middle Eastern investors.

The notes, which were issued by Floreat Fixed Income, carried a 7% coupon and mature on 23 December 2024.

The notes, which are in denomination of $1,000 each, were sold to non-retail investors.

The series A notes totalled $51 million, while the series B were issued in the amount of $81 million.

Floreat Fixed Income acted as bookrunner. Floreat Capital Markets originated and structured the transaction.

Deutsche Bank acted as paying agent. Allen & Overy acted as legal adviser.

The multiple waterfall per tranche deal use the proceeds to finance two Airbus A330-200s and one A330-300 recently acquired by the company.

One A330-200 unit, MSN 1407, was purchased from Aircastle in early December. The aircraft is on lease to Virgin Australia through April 2025.

A second A330-200, MSN 1310, was acquired from Avolon. The aircraft is on lease to Hawaiian Airlines through May 2024.

One A330-300, MSN 1518, was acquired from Intrepid in late December. The aircraft is on lease to Asiana Airlines through April 2026.

The three aircraft acquisition closed on 30 December.

Floreat plans to aquire a fourth aircraft as *Airfinance Journal* went to press. The financing of the A330-200, MSN 904, is subject to further notes issuance, according to the company's offering circular.

Floreat Aviation is due to decide whether to issue further notes in the amount of $26.2 million to invest in the net issue proceeds in the indirect acquisition of the 2008-vintage aircraft acquired from TAP Portugal. The aircraft is on lease to TAP through 1 May 2024.

Doric Asset Finance is acting as asset manager for Guernsey-based Floreat Aviation.

Floreat Aviation also used the proceeds from the issue of the preference shares to inject equity into its subsidiaries (other than MSN 1407) and to repay a $44 million equity bridge.

The company repaid the equity bridge loan by the delivery of preference shares in an amount of $34.3 million, acting in respect of its Floreat Aviation Notes Series B and by the payment of an amount of $9.7 million in cash to the issuer.

> *"We have previously funded individual transactions in the aviation space to satisfy the demand from our core clients for long term income producing transactions secured by real assets."*
>
> **Ben Churchill**, partner, Floreat Capital Markets.

"We have previously funded individual transactions in the aviation space to satisfy the demand from our core clients for long term income producing transactions secured by real assets. The issuance of listed notes was a natural next step for our asset based lending programme, which, to date, has only been open to the group's core clients," said Ben Churchill a partner at Floreat Capital Markets.

Floreat is looking to follow this initial issuance with a second issuance this year. The company plans to issue $1 billion in notes.

2016: not a year for lessor orders

Aircraft leasing companies placed orders for a total of 97 Airbus and Boeing aircraft last year, representing a mere 5% of the manufacturers' gross figures.

In 2016, Airbus recorded 949 orders and 218 cancellations finishing the year with 731 net orders. Boeing had 848 orders and 180 cancellations during the year, meaning 668 net orders.

Lessors ordered 79 Airbus aircraft last year, equivalent to 10.8% of manufacturer's 731 net orders.

A total of 33 orders were for the current engine option models while another 40 orders were for the new engine option models, according to Airbus' order figures. The remaining six orders were for the A330 and the A350 models.

Calc ordered two A320s while Air Lease placed orders for two A320s, one A321 and two A320neos during the year. Aviation Capital Group was the most active lessor. It placed follow-on orders for 35 A320-family aircraft including 30 A320neos, two A320s and three A321s, as well as options for a further 10 A320neo aircraft.

Awas ordered 12 A320s and three A321s, while AerCap ordered 10 A320neo and BOC Aviation placed follow-on orders for five A320s and five A321s.

New lessor Hong Kong International Aviation Leasing extended an order for five A330-300s in December while Air Lease ordered one A350-900 unit.

In the narrowbody market, lessors represented 17.5% of Airbus current engine option models sales and less than 1% of new engine option orders.

Airbus delivered a total of 688 aircraft to customers last year and lessors represented 20% of direct deliveries by value. Asia accounted for 31% of deliveries ahead of Europe with 19%, Americas with 16% and Middle East/Africa with 14%.

Lessors represented about 2% of the Boeing's total orders. The lessors placed orders for 18 units including Air Lease for six 737 Max and Standard Chartered Bank for 10 737s. Silk Road Leasing placed an order for one 737. Air Lease also ordered one 787 unit during the year.

In 2015, Boeing booked narrowbody orders from AerCap (101), Air Lease (8), BOC Aviation (28), Gecas (2) and SMBC Aviation Capital (10).

Boeing delivered a total of 748 aircraft during 2016 and lessors represented 16% of direct deliveries, with 121 units.

Another real estate firm moves into aircraft leasing

Century City Holdings, part of a group of Hong Kong real estate companies, owns a fleet of 15 aircraft managed by a low-key London-based aircraft manager. Kenneth Szeto, executive officer, tells **Michael Allen** why the business chose to move into aviation.

The downturn in the Chinese and global real estate markets has driven two Hong Kong companies owned by tycoons Li Ka-shing and Cheng Yu-tung to diversify into the aircraft leasing business.

Cheung Kong Holdings recently restructured its aviation businesses, bringing lessor Accipiter and MC Aviation Partners joint venture Vermillion under the ownership of Cheung Kong Property in a bid to streamline the aviation business and give it more access to cash.

Goshawk Aviation, Chow Tai Fook's Dublin-based lessor, told *Airfinance Journal* in an interview that it had 71 aircraft in its portfolio and has committed to acquire 20 more over the next 12 months.

However, another Hong Kong tycoon – this time through Century City Holdings – has been quietly accumulating a portfolio of aircraft. So far, it has stayed out of the limelight that has illuminated Cheung Kong and Chow Tai Fook. Several experienced industry sources based in Hong Kong were unaware that Century City is involved in aircraft leasing when *Airfinance Journal* contacted them about the company.

But since 2012, Century City, which is chaired by a member of the influential Lo family (see Meet the Los box), has been accumulating a portfolio of regional jets and narrowbody aircraft, from its office in Hong Kong.

A little-known London-based company, Plane Business Leasing (see What is Plane Business Leasing? box), is Century City's aircraft manager, helping it manage a portfolio of aircraft on a daily basis and source and place aircraft from and to the market.

Now, with 15 aircraft under its belt after a major regional jet portfolio purchase in 2015, Century City is eyeing further expansion cautiously, and says it has a long-term outlook for its aircraft leasing ambitions and is "continuously looking for growth opportunities".

Kenneth Szeto, executive officer, chairman's office, is one of several Century City personnel overseeing the company's aircraft-leasing business. Szeto reports to the company's chairman, Lo Yuk Sui.

Century City Holdings is part of a group of four other listed companies – Regal Hotels International Holdings, Regal Real Estate Investment Trust, Paliburg Holdings and Cosmopolitan International Holdings – whose primary focus is real estate.

"From time to time we look at different business opportunities as part of our group's diversification plan and there are people approaching us to present different kinds of business opportunities other than hotels or real estate," Szeto tells *Airfinance Journal* in an interview at Century City's offices in Causeway Bay.

He adds: "When we came across to review the aircraft leasing industry, we thought there was a good potential for growth in the sector which led us to invest in our first aircraft in 2012.

"We believed this business would generate recurring income for us and could complement our investment income base in the long term."

History of Century City

Szeto declined to provide specific up-to-date information on MSNs and lessees, but publicly available information is available.

In July 2012, Century City bought 84.9% of JAR Aviation Fund for HK$110 million ($14.1 million). The fund owned a 1998-vintage 737-800 (MSN 27979) on a 62-month lease to South Korean carrier T'way Air.

At the end of 2012 and in 2013, Century City acquired two Airbus A321s (MSNs 1017 and 781). The aircraft were leased out to Thai carrier R Airlines and Ukrainian airline Windrose Aviation, respectively.

By 2015, the company further expanded its aircraft leasing business, acquiring a fleet of 12 Embraer aircraft for $34.5 million. Four of the aircraft were subsequently sold. The following year, it purchased a 737-300SF, which it leased to Indonesian cargo carrier Tri-MG Airlines on a 62-month finance lease from April 2016.

"Our group was being quite cautious in the first few years entering into the aircraft leasing business. As we gradually gained more experience, we wanted to further expand our portfolio… and seek suitable opportunities for further expansion," says Szeto.

"We think narrowbody aircraft markets are more lucrative with a wider customer base than widebody aircraft. As demand for air travel will continue to grow, especially in the developing regions, short-haul and regional routes should benefit the most in the next five to 10 years. Therefore, we will probably focus on these narrowbody aircraft that fly regional routes in our short- to medium-term expansion strategy."

As of 26 January, the portfolio under the group consists of 15 aircraft: two A320s, one 737-800, one 737-300F, six ERJ-135s and five ERJ-145s.

Real estate downturn

Similar to Chow Tai Fook and Cheung Kong, Century City's foray into aircraft leasing has been partly influenced by softness in the real estate market.

"While real estate projects generally have a longer investment cycle with a larger potential upside, aircraft leasing, on the other hand, could still generate good returns over a shorter period of time if well-managed," says Szeto.

"Moreover, as the investment amounts for aircraft leasing could be much smaller as compared to real estate investments, there are actually more opportunities out there to choose from and it is easier to find something that suits our investment appetite. With a shorter investment cycle in aircraft leasing and a reasonably liquid market, we can also be more flexible in our investment strategy to adapt market changes."

With increasing competition and overall costs going up, the returns in real estate investments are reduced, adds Szeto. Overall, though, he remains positive about the Hong Kong and mainland China real estate markets in the long term.

"It's just harder to find a good opportunity to invest these days," he says.

Fleet

Although the company's fleet is now composed of mostly Embraers, Szeto says Century City is not committing itself to Embraer aircraft only.

"We have looked at a lot of Airbus and Boeing aircraft too, but I think probably because they are more popular among lessors... there is lower return for investment," he says.

However, he adds this is not absolute and is why Century City needs to evaluate deals on a case-by-case basis. Szeto says his company's aircraft leasing business has involved investing in midlife aircraft, but it is prepared to add some newer aircraft to its portfolio when the suitable opportunity arises.

Century City's aircraft are now leased to T'Way Air, Windrose Aviation, R Airlines, Aeromexico Connect and South African Airlink, according to the most up-to-date publicly available data.

"In any case, we try to be very cautious when selecting our lessees. Although the risks associated with our lessees might be slightly higher, at the same time we were also expecting a higher return from these investments and they generally lived up to our expectations so far," he says.

Szeto adds: "We heard some lessors were willing to accept a 3% to 4% return with brand new aircraft but if this were the case, we would have other investment options to choose from."

Meet the Los

Lo Ying-Shek was a Hong Kong property tycoon who cofounded real estate firm Great Eagle Company in 1963 with his wife, Lo To Lee Kwan, according to *Forbes*. Besides Yuk Sui, who majority owns Century City, Ying-Shek has two other sons, Vincent and Kai Shui.

Vincent is chairman of Hong Kong-based Shui On Group, whose most famous project is the development of Shanghai's upmarket Xintiandi entertainment district.

Kai Shui serves as deputy managing director, executive director and member of the finance committee of Great Eagle. He is also the founder of Sun Fook Kong Group, which engages in the real estate, construction and oil and gas industries.

Yuk Sui's two children, Jimmy Lo Chun To and Lo Po Man, are involved in the family business, holding executive-level positions in the group's companies.

What is Plane Business Leasing?

Plane Business Leasing (PBL) started life in 1995/96 as a leasing company attached to Dublin-based airline Aviajet, which was later bought out by London Southend-based Flightline, which ceased operations in 2008.

PBL's first deal was a 737-300 leased into Indonesia. The company, which likes to maintain a low-key public profile, has never had a portfolio of more than 30 aircraft and has recently gone through a "very big" period of selling.

PBL does not hold any equity or interest in Century City's aircraft, but does in other aircraft in its portfolio.

Plane Business Leasing previously invested in JAR Aviation Fund, which has since been renamed Plurimi Aircraft Leasing Fund, and is affiliated to London-based Plurimi Capital. *Airfinance Journal* understands that the fund is expected to close shortly after two aircraft are sold. Plurimi will resume investment in aircraft but not through a fund structure.

It was Plurimi that initially connected PBL with the Lo family. The two companies came out to Hong Kong together to visit Century City.

"Century City loved investment in aircraft but they didn't love the fund structure, so they said: 'How about we buy some aircraft and PBL manage them for us?'" a source close to those discussions tells *Airfinance Journal*.

Export credit to play limited role in 2017

Export credit funding for the aviation sector, which is still unavailable for Airbus assets and available on a limited basis for Boeing products, will not play a significant role in helping to pay for the industry's $126 billion financing bill for commercial aircraft deliveries this year.

However, Mark Streeter, managing director of JP Morgan, speaking at *Airfinance Journal*'s Aviation Investors' Day in January, said export credit funding could be "up and running" as early as this year.

Though he insists export credit support will not pay for a "large piece of the aviation funding pie in 2017".

"Everyone has learned to live without a functioning export credit environment," he says, adding: "We have all heard of lessors who are picking up deals that should have gone to the export credit market and that is helping them out."

While Streeter would not be drawn on when he believes export credit funding could return to the aviation sector in full force, he indicates the export credit door is still open under US president Donald Trump.

The US Export-Import Bank (Ex-Im) has been operating with just two board members for nearly 19 months, one board member shy of the three needed to approve transactions greater than $10 million.

> *We have all heard of lessors who are picking up deals that should have gone to the export credit market and that is helping them out.*
>
> **Mark Streeter**, managing director of JP Morgan

Ex-Im faces opposition from Republicans that view the agency's use of government funding as corporate welfare, and just how the Trump administration will weigh in on the matter has yet to be seen.

"It is interesting as Trump is all about creating jobs and the Tea Party is always whispering in his ear about killing Ex-Im Bank, but hopefully since Trump is all about job creating, if he is seen to be doing something that is killing jobs, he could be caught in a catch 22," Streeter says, adding: "The one thing we know about Trump is to expect the unexpected, so I don't think anyone can say with certainty what is going to happen with how his administration will deal with Ex-Im Bank."

If there is a "European corollary up and running" then there will be a lot more incentive to have a level playing field in the USA, he adds.

As for Ex-Im, Streeter says it is a matter of wait and see whether the agency's capability "gets expanded or gets stuck" with the "small" $10 million deals the bank is authorised to work on.

He adds: "It is not that important now until we get to the downturn."

In Europe, regarding Airbus's "controversy", he says: "We will see how it all plays out but my sense is at some point in time we will have a green light again."

Export credit financing is due to account for 9% of the 2017's funding bill, according to Boeing.

ABS market off to good start

The asset-backed securities (ABS) market continues to attract new issuers as shown by the first two issuances in the second part of January: Dubai Aerospace Enterprise (DAE) and Elix Aviation Capital.

Two leasing companies, although addressing different parts of the market, tapped the capital markets for a similar amount in February.

DAE packaged loans in a $410 million bond issuance through its Falcon Aerospace trust.

Proceeds from the sale of the transaction will be used to purchase a fleet of 21 aircraft, comprising five Airbus A319s, five A320s, three Boeing 737-700s and eight 737-800s on lease to 13 airlines. The initial weighted average aircraft age of the portfolio is about 9.2 years, with a remaining lease term of 4.5 years.

The lessor structured the deal in three tranches: $315 million Series-A loans with a 63.5% loan-to-value (LTV); $65 million Series-B loans with a 76.6% LTV; and $30 million Series-C loans with an 82.6% LTV.

The portfolio's initial value is $496.1 million, based on the average of the half-life base values provided by three appraisers as of June 2016 and adjusted for maintenance conditions. The portfolio has an aggregate maintenance-adjusted current market value of about $488.1 million. As of 31 December, the 21 aircraft included in the portfolio represent about 18.9%, by number of aircraft, of DAE's owned and committed aircraft.

The loans are borrowed by Falcon Aerospace and Falcon Aerospace USA.

Dubai Aerospace Enterprise will act as the servicer for the transaction.

Phoenix American Financial Services is the managing agent, Wells Fargo is the trustee, while Crédit Agricole Corporate and Investment Bank is the facility provider.

Goldman Sachs is the structuring agent and left lead, while Goldman Sachs Bank is they global coordinator.

Crédit Agricole Corporate and Investment Bank is the joint lead arranger.

The Series-A loans and Series-B loans amortise on a 15-year straight-line schedule for the first two years and a 13-year straight-line schedule thereafter.

The Series-C loans amortise on a 15-year straight-line schedule for the first two years and a seven-year straight-line schedule thereafter.

Kroll Bond Ratings Agency assigned an A preliminary rating to the Series-A loans, BBB to the Series-B loans and BB to the Series-C loans.

100% turboprop

Irish-based turboprop lessor Elix Aviation Capital also brought to market a $411 million ABS transaction featuring 100% turboprops.

The transaction, which features 63 used turboprop assets, does not include the sale of E-note certificates.

Elix Aviation acts as the servicer for the transaction. Phoenix American Financial Services is the managing agent, Wells Fargo is the trustee, while Deutsche Bank is the facility provider.

The lessor structured the deal in three tranches: $300 million Series-A loans with a 55.5% loan-to-value (LTV); $57 million Series-B loans with a 65.5% LTV; and $54 million Series-C loans with a 75.4% LTV.

The Series-A loans and Series-B loans amortise on an 11-year straight-line schedule for the first four years and a 13-year straight-line schedule thereafter.

The Series-C loans amortise on a five-year straight-line schedule for the first two years and a seven-year straight-line schedule thereafter.

In November 2015, Castlelake Aircraft Securitisation Trust 2015-1, which was backed by 54 aircraft, featured two ATR 42-500s and three Bombardier Dash 8-100s, or 2.5% of the collateral.

Previously Castlelake Aircraft Securitisation Trust 2014-1 transaction closed in February 2014 and featured 79 aircraft. Among those, turboprops accounted for 53% of the portfolio with one ATR 42-500, three ATR 72-500s, seven Dash 8-100s, 18 Q200s, 11 Q300s and two Q400s.

I think 2017 is going to be strong for the ABS market, especially with the deals we are seeing in the pipeline.

Steven Chung, partner, Hughes Hubbard and Reed

The asset-backed securities (ABS) are expected to perform well in 2017.

A total of $4.45 billion-worth of deals were issued in 2016, according to *Airfinance Journal* market research.

Those included first-time issuers including Bocom Leasing ($300 million dual-tranche transaction) in December. The deal is backed by 13 aircraft.

Merlin Aviation Holdings closed a $250.8 million ABS in December. The transaction – in which Aviation Capital Group is a servicer – is backed by eight aircraft and is split between three classes of notes.

In October, Blackbird Capital 1, the joint venture established by ALC and Napier Park Global Capital, issued $800 million-worth of notes to refinance 16 aircraft.

US lessor AerGen also tapped the ABS market in June with a $325 million issuance. The three-class notes issuance was backed by 19 in-production narrowbody aircraft.

"I think 2017 is going to be strong for the ABS market, especially with the deals we are seeing in the pipeline. If other lessors or joint ventures are able to bring in similar commitment and focus to Air Lease and Blackbird as they did to their deal, I think from a time and cost-efficiency perspective, you'll really see the upside for lessors," said Steven Chung, partner at law firm Hughes Hubbard and Reed at the *19th Global Annual Airfinance Conference* in Dublin.

Air Lease's head of strategic planning, Ryan McKenna, sees ABS transactions trading at better rates than unsecured bonds.

He says: "I look at this product and say it can trade better than our unsecured paper at some point. I think there's a chance with the structured products that we have the opportunity to tap into a market that aviation hasn't used efficiently."

Source: Dubai Aerospace Enterprise

Transformation of **Air Baltic**

Jack Dutton speaks to **Martin Gauss**, the Latvian airline's chief executive officer, about the carrier's plans to streamline its fleet and the future of the CSeries programme.

In 2011, Latvian flag carrier Air Baltic was on the rocks. The airline was facing a potential closure because of its weakened financial position. In September 2011, the airline announced plans to lay off about half its employees and cancel around 700 flights a month to avoid possible grounding. The mass layoffs were later repealed when the airline's shareholders, the Government of Latvia and Baltijas Aviacijas Sistemas, agreed to invest L100 million ($153 million) in the airline's share capital.

After the shareholders injected their capital into the struggling airline, Martin Gauss, who had previously turned around former BA subsidiary Deutsche BA to make it profitable again, joined Air Baltic in 2011. The company then went through a heavy restructuring after he outlined his ReShape strategy to the airline's shareholders and the Latvian cabinet.

Air Baltic is a different airline now compared to what it was six years ago. The carrier has been profitable since 2014 and took delivery of the second Bombardier CS300 of its 20-aircraft order at the start of January.

When the carrier's first CS300 was delivered in December, it also provided a major milestone for Bombardier: it was the first CS300 to be delivered to a customer, after the programme experienced several technical hiccups and delays. Air Baltic will receive six more CS300s this year, eight more in 2018 and four more in 2019.

Source: Air Baltic

Aircraft of choice

Speaking to *Airfinance Journal* in the airline's head office in Riga, Latvia, Gauss explains why he opted for the CS300 model.

"You can take a 737-700, A319neo and the CS300 (and later on, the Max and the Neo). You put all three next to each other and you take the weight. You take the weight of the aircraft and you put the engines on, not on the Boeings, [where] it's the LEAP engine or something similar, but on the others it's exactly the same engine. You put that on the aircraft and then you take off. You have the same passengers on board and the same engine. What will happen? You will burn more fuel on the Airbus because it's heavier."

Air Baltic has secured 12-year financing from Export Development Canada (EDC) for seven of the 20 CS300s it is adding to its fleet. The deal will also involve lending from several different banks, with EDC providing a "standard industry amount of the overall loan", in the region of 85%, according to Gauss.

Clyde & Co is representing the airline on the deal, while Norton Rose Fulbright is acting for EDC.

Although Gauss will not be drawn on which banks are involved, he confirms the airline has appointed one European bank so far for the financing of certain aircraft.

He says that Air Baltic is looking to put all the new Bombardier jets on its balance sheet and is in discussions about financing options for the other 13 aircraft. Gauss adds it is "too early" to test the sale and leaseback appetite for the aircraft with only one of the type in operation.

He says the cost of the aircraft does not matter as much because the cost to operate the aircraft is lower.

> *"Even if you pay five or 10 million more for the C series you will easily offset this in the lifetime of the operating cost."*
>
> **Martin Gauss**, airBaltics chief executive officer

"Even if you pay five or 10 million more for the aircraft you will easily offset this in the lifetime of the operating cost," he says, adding: "You take off now with this aircraft and now we have the second thing coming: the noise levels, which are lower on the CSeries. While you are lighter, you have to pay less money for flying, landing charges, overflying charges."

The airline operates 13 Boeing 737s, 12 Q400s and two CS300s. All the Q400s are under operating lease. All the 737s were previously leased but now the carrier has bought nine of them. The new CS300s will replace the carrier's fleet of 13 737-300 and 737-500 Classic aircraft. Four of the Classics are leased and nine of them are owned.

The airline will have received all of its CSeries aircraft by 2019. Between now and 2021, Gauss plans to sell the 737 Classics or scrap them, depending on the status of the aircraft after D checks. He says the aircraft were originally bought "at a good price".

Gauss says the airline is now "in a solid position" because of its €132 million ($142 million) capital injection last year and being able to increase some of its route capacity over the past year.

In 2014, Air Baltic had several other aircraft types in its fleet, including Fokker 50s and 757s. As part of the restructuring plan, the carrier is looking to operate only two aircraft types – 12 Q400s and 20

CS300s – in 2021, at the end of the business plan. Air Baltic plans to keep the 12 Q400s under leases, while the 20 Bombardier aircraft will be on the balance sheet.

Growth and diversification

2016 was the first year the airline could grow, according to Gauss. He adds that low fuel prices have not had a profound impact on his business plan, saying that they did improve the airline's results, but that was because the business plan assumed that fuel prices would stay higher.

Apart from export credit financing, Gauss says he is also open to looking at other ways of financing Air Baltic's fleet. "That was the whole idea because this airline only had leased aircraft and now we want to strengthen the balance sheet by putting the aircraft on. A lot of airlines say 'no, no it's better you lease them', but as airlines get bigger, they've always had a mixture between leased and owned aircraft and we want the same, even being a small airline. We are able to because we've got capital from the shareholders, which we don't use in operations – we use it for aircraft."

At 237 aircraft, the CS300 orderbook is small compared to its more established competitors, the 737 Max and the A320neo, at 3,336 and 3,385 orders, respectively. But Gauss is unfazed by the CS300's small orderbook, saying it will have a similar journey to the Embraer 170 and 190 programme, which initially started with few orders and is now considered to be an operational success. He adds that it is unfair to compare a new programme such as the CSeries to those that are already established.

> *"Watch this space – 2017 will be a very interesting year for the CSeries."*
>
> **Martin Gauss**, AirBaltic's chief executive officer

"They have a good orderbook for the CSeries," he says. "They have just two of them in commercial service, so for that, the orderbook is not bad. Of course, comparing it to Airbus or Boeing, who have thousands of orders, it's different, but the media always writes in a negative way about that aircraft, for the aircraft to be in the sky now and to see who orders it."

He adds that it is too early to test the sale and leaseback market appetite for the aircraft, because it has just entered into service.

"But there is interest and there was interest all the time," he says. "People are always visiting us; at the delivery ceremony there were many people there from the industry. Watch this space – 2017 will be a very interesting year for the CSeries."

Regional competition

Although Gauss keeps an eye on the strength of the dollar and the fuel price, he is not worried about changes having too big an effect on the carrier's business. The airline does hedge its fuel, but Gauss admits that it cannot hedge to the same extent the larger airlines can.

But this has not stopped it outcompeting some of the bigger names in the Baltic region.

"Operationally, over the last few years we have shown that we can compete. In terms of market share, we're first – number two here is Ryanair, number three is Wizz Air, number four is Norwegian. There's a long break before Lufthansa comes, meaning we are competing with the top low-cost guys.

"And we're doing this by keeping market share above 50% and being the strongest carrier in the region. We had to go through heavy restructuring, and now we're flying with them head to head."

Aviation demand to grow despite protectionism

Joe Kavanagh provides a roundup of the biggest stories from the *19th Global Airfinance Conference* in Dublin.

As the industry gathered in January for the *19th Global Airfinance Conference* in Dublin, there could hardly have been more to talk about.

President-elect Trump was just days away from being inaugurated, causing concern about the likely effects of rising protectionism. Meanwhile, Boeing and Airbus were on course to post a book-to-bill ratio of below one for the first time since 2009, suggesting that the industry is tipping into a down cycle. Borrowing costs have risen for airlines and lessors alike.

However, global demand for air transport will grow in the long term, even if protectionist policies become the norm, according to Iata's chief economist, Brian Pierce. Speaking to a full room of delegates, Pierce said: "In the long term, we shouldn't get too pessimistic about prospects for growth, or indeed demand for aircraft."


The Convention Centre Dublin

Deals

This year, the conference had a new feature – the Open Lounge – which was a space featuring meeting areas for delegates and non-delegates. The lounge was busy throughout the day, but was particularly well attended at about 5pm, which may have had something to do with the open bar.

The number of deals uncovered by *Airfinance Journal*'s editorial team showed the level of business being conducted there.

A number of airlines were close to mandating banks and lessors for incoming aircraft deliveries. Icelandair was discovered to be close to appointing financiers for six Boeing 737 Max aircraft; Indian low-cost airline SpiceJet has already closed lease agreements for five 737-800s in 2017; Wow Air will soon mandate banks for up to four Airbus A321s; Turkish carrier Pegasus Airlines, whose cost of financing has risen because of the attempted coup in Turkey last year, has reportedly issued a request for proposal for the financing of a number of incoming Airbus aircraft; and South Africa's Airlink has selected the Embraer E-Jet family to renew its Avro RJ85 fleet, according to sources who said the regional airline will take 10 used E190s, as well as three E170s.

New operating lessor Avi8 Air has selected an investment bank for its equity raise to secure funding for a portfolio of new and used assets, valued at more than $1 billion. The company was founded last year by Ray Sisson, the former chief executive officer at Awas, and Ed Wegel, founder and former president and chief executive officer at Eastern Air Lines. In October, Sisson said he believed the leasing market had "finally begun to tip over" into a down cycle, because of low fuel prices, large orders and low interest rates.

There was also talk of a new US airline seeking convertible debt to fund its operations. The carrier, which will be a "very niche player", according to a source, is set to mandate an investment bank soon.

Meanwhile, several airline executives spoke about their financing plans for 2017 and beyond.

Air Canada will fund its upcoming Boeing 787 deliveries in the commercial banking market this year and has no plans to issue an enhanced equipment trust certificate (EETC) to fund the widebody programme.

Helen Kotsovos, director planning of treasury, says Air Canada is also financing new deliveries through sale and leaseback transactions.

Tom Weir, American Airlines' vice-president and treasurer, says the term loan B market has become very strong, and the airline is also seeing "a lot of strong bids for sale and leaseback transactions".

Candice Li, vice-president finance and fleet management at WestJet, says the Canadian airline plans to diversify beyond unsecured bonds, potentially into products such as Japanese operating leases with call options/Japanese operating leases and EETCs. Aeromexico plans to move more aircraft onto its balance sheet – from about 25% now to about 50%, according to chief financial officer Ricardo Sanchez Baker. Chilean low-cost carrier Sky Airline is mulling private placements or commercial loans for its future A320neo deliveries, says chief financial officer Jose Ignacio Dougnac, who adds that lease agreements for six Neo deliveries are close to being finalised.

ECA support

Export credit funding, which is still unavailable in a meaningful way for Airbus and Boeing aircraft, is unlikely to play a significant role in helping to pay for the industry's $126 billion financing bill for new commercial aircraft deliveries in 2017, say delegates.

US Ex-Im Bank, which has been unable to authorise deals larger than $10 million since late 2015, now has a $4 billion backlog of aircraft deals.

Mark Streeter, managing director at JP Morgan, says that export credit agency funding may be up and running as early as this year. However, he stresses that US politics are unpredictable right now.

Streeter adds: "The one thing we know about Trump is to expect the unexpected, so I don't think anyone can say with certainty what is going to happen with how his administration will deal with Ex-Im Bank."


E2
EMBRAER
E190-E2
SMARTER BY DESIGN • SMARTER EXPERIENCE • SMARTER FOR BUSINESS
LOVE2
FLEETSMART
E-JETS E2. THE WORLD'S MOST EFFICIENT AIRCRAFT IN THE 70-130+ SEAT SEGMENT
Designed by people passionate about innovation and attention to detail, every opportunity has been considered on the E-Jets E2 for improved efficiency and performance, contributing to sustainable airline profitability and increased passenger comfort.
Be E2 FleetSmart with the world's most efficient aircraft in its segment.
E2FLEETSMART.COM
E-JETS E2 THE SECOND GENERATION
E175-E2
E190-E2
E195-E2
LOVE WHAT YOU FLY
EMBRAER
Commercial Aviation

New names and narrowbodies for **Korean investors**

In the run-up to the Inaugural Korea Airfinance Conference in Seoul on 23-24 March, **Michael Allen** examines how Korean investors are getting savvier with their investments in aircraft, gaining the courage to branch out into narrowbodies, as well as lesser credit airlines.

"In [South] Korea, we need aviation to fly our people in and out of the country – otherwise we have to go through North Korea," says one South Korean aircraft finance practitioner explaining the importance of the aviation industry to his country.

Both aviation and shipping have been pivotal to the peninsula's history since Korea was divided along the 38th parallel after World War II and along a military demarcation line after the Korean War. Since it became impossible to transport goods and people out of the country by land via North Korea, these two transportation industries have been seen as vital to the health of the south.

But while the South Korean shipping industry – along with real estate – has long been a key investment target of Korean institutional investors, investment in aircraft is a new area for them. With the shipping industry now being far from shipshape and real estate returns lacklustre, aircraft are proving more reliable assets for yield-hungry investors.

"Real estate in the US and UK was the first pick from 2009 to 2014 for Korean investors seeking an alternative asset class. Most Korean investors got exposed to the UK, US and even German property but, from the asset allocation perspective, they cannot put all their money in one asset class," explains one source at a Korean securities firm active in aircraft financing.

"The aviation transaction is very standardised and you can easily contact the right person for feasibility assessment and information gathering. Most reputable Korean institutions which have a big presence in the Korean market now have at least one aircraft in their balance sheet."

All of the deals done so far involving Korean investors have been for the crème-de-la-crème credits of the airline industry, with a particular focus on Middle Eastern heavyweights such as Emirates and Etihad.

Matthew Leigh, a senior associate at Norton Rose Fulbright in Singapore, believes Korean investors are showing a greater receptiveness to financings with operating lessors as the demand for aircraft

"The aviation transaction is very standardised and you can easily contact the right person for feasibility assessment and information gathering. Most reputable Korean institutions who have a big presence in the Korean market now have at least one aircraft in their balance sheet."

deliveries starts to come from the lessors more than the airlines.

"It is probably reflective of the shift in the market towards the volume of direct lessor orders, but I think that they [Korean investors] are certainly much more aware now of those opportunities – though I think in the same way the investors are looking at the top-tier airlines, the focus will be on the top 10 lessors," he says.

Despite this overwhelming preference for top-tier names, preferably government-owned flag carriers, market sources believe there is room for deal arrangers to introduce lesser credits to the Korean institutional investor base.

"There is still the mentality they want to have a full-service carrier with a strong credit profile alongside a good underlying asset," says a source with experience of the Korean market.

"However, they are now starting to be willing to look at new names in terms of the returns. The credit rating remains important – though provided there is the ability to demonstrate a good asset and that it's a well-run airline with a history of good lease return

Continued on page 18 >>>

Korean Investor Deal Survey: Korean deals closed between 1 January 2014 and 31 December 2016

Airline/ Lessor	Aircraft financed	Deal size	Financing parties	Structure	Law firms
AerCap	787-9	Undisclosed	KEB Hana	Undisclosed	Clifford Chance, Kim&Chang
AerCap	787-9	Undisclosed	KEB Hana, KDB	Undisclosed	Clifford Chance, Kim&Chang
All Nippon Airways (ANA)	777 300ER, delivering 16 Sep 2015	KRW 38,862,084, 997	The Bank of Tokyo-Mitsubishi UFJ (senior tranche A & B lender); Santander (Mezzanine & Equity); JB Fund; Construction Workers Mutual Aid Association	Lease ends 16 Dec 2025 (10 years, 3 months)	Lee&Ko, Clifford Chance
ANA	777-300ER, closing on 21 September 2016	Undisclosed	Banco Santander (arranger), Construction Workers Mutual Aid Association (investor), JB Asset Management acted as asset managers, Samil	Banco Santander sold down a junior loan on a 2015-vintage Boeing 777-300ER aircraft to Construction Workers Mutual Aid Association (CWMAA). Santander did not sell 100% of the junior loan, so both Santander and CWMAA are now new junior lenders.	PricewaterhouseCoopers (buy-side advisory), Lee & Ko (legal advisory)
Air France	777-300ER	$34m	Public Officials Benefit Association (POBA) and Yellow Umbrella Mutual Aid (investors)	Mezzanine debt. European banks also will invest in equity and senior debt financing, while the POBA and the savings fund for small business owners purchase the whole mezzanine tranche. In return, the two Korean funds will receive a fixed annual return at the upper end of the 5% range for seven years to maturity.	Not available
Air France	777-300ER	$115.7m	Dongbu Securities and undisclosed	Undisclosed	Clifford Chance, Yulchon as acting legal representative of Dongbu Securities
Asiana Airlines	A380	Undisclosed	Korea Development Bank (lead arranger), KDB Asset Management (arranger for Korean investors on junior side)	The financing was a US dollar denominated commercial loan on the senior side and a Korean won denominated junior note issuance. The split between the senior and junior parts was roughly 70/30. On the junior side there is one note issuer and one trustee, both of whom are South Korean. The deal represents the first transaction in which Korean investors provided 100% financing for an A380 for a local carrier.	Norton Rose Fulbright (counsel to KDB), Milbank (counsel to Asiana)
Avianca	8 aircraft (6 A320 family and 2 787s)	$379m	Burnham Sterling + Of the participating investors, one domiciled in Korea	EAIV private placement structure. 12-year final maturity	Not available
DHL	2x 777-200LRF. Financing closed June 2015.	$320m ($160m per aircraft)	Helaba, DZ and Nord LB (senior loan), NPS and other Korean institutions (mezzanine), Mirae Asset Securities HK (equity)	Senior loan, mezzanine and equity. Lease expiring in 2024.	Lee&Ko, Vedder Price and Maples & Calder (legal counsel to Mirae).
Etihad Airways	A380	100% financing; amount undisclosed	Magi Partners and Youjee Partners (arrangers),	Etihad Airways has agreed a finance lease deal for one A380 supported by Korean institutional investors. Magi Partners and its Korean associates Youjee Partners arranged the transaction for the Abu Dhabi-based airline. The deal provides 100% financing for the aircraft through a 15 year fixed coupon full payout finance lease. The deal was the first ever Korean backed pre-funded financing for an A380. It is also the first time an A380 financing has been sourced solely with Korean funds with no other commercial debt involved.	Allen & Overy (counsel to Etihad), Stephenson Harwood (counsel to Korean investors)
Emirates	777-300ER. Financing closed March 2015	$144m	DVB and MUFG (senior loan), NPS and other Korean institutions (mezzanine), Mirae Asset Securities HK (equity).	Senior loan, mezzanine and equity. Lease expiring in 2024.	Bae, Kim & Lee, Clifford Chance and Maples & Calder (legal counsel to Mirae).
Emirates	777-300ER. Financing closed September 2015	$175m	MUFG and Société Générale (senior loan), NPS (mezzanine), Mirae Asset Securities HK (equity).	Senior loan, mezzanine and equity. Lease expiring in 2027.	Bae, Kim & Lee, Clifford Chance and Maples & Calder (legal counsel to Mirae)
Emirates	2x 777-300ERs	Undisclosed	EMP Structured Assets (arranger), Seraph Aviation Management (lease manager to EMP's equity investors), Dekabank (senior loan provider), undisclosed Korean investors (junior loan provider), undisclosed German institutional investor (100% equity purchaser)	Both aircraft, which delivered at the end of March, are two years old and are on 10 year leases. Air Finance Company (AFC) purchased the aircraft initially before ownership transferred to EMP after the lease novation. Dekabank is providing a senior loan and a group of Korean investors is providing a junior loan for the two aircraft. A German institutional investor has bought 100% the equity in the widebodies.	Bird & Bird (counsel to EMP and Deka Bank), Pillsbury (counsel to Emirates), Allen & Overy (counsel to AFC), Yulchon (counsel to Korean investors).
Emirates	2x A380s	Undisclosed	Investec (sole arranger for financing and leasing elements), The National Bank of Abu Dhabi and Qatar National Bank (joint senior underwriters of the senior financing), undisclosed Korean institutional investors (mezzanine financing),	Sale and leaseback transaction for two new A380-800s.The first A380, MSN 205, delivered in late January. The second A380 delivered in April. Both jets will be on lease for 12 years.	Clifford Chance (counsel to lenders), Bird & Bird (counsel to airline)
Emirates	A380-800	Confidential	Stellwagen Finance Company (lenders) Korean institutional investors Magi Partners and Youjee Partners (arrangers)	The operating lease for the A380 was placed with the Korean institutional investor market, by means of a private placement with a group of Korean non-bank financial institutions investing in a Korean fund structure.	Allen & Overy (acting for AFC) Yulchon (Seoul), Clifford Chance (Singpore), Walkers (Cayman) acting for the Korean investors) Pillsbury (acting for Emirates)
GECAS	Portfolio of 20 aircraft. The portfolio mainly consists of narrowbodies, which are on lease to a range of low-cost airlines and flag carriers, including some Chinese airlines. The average remaining lease length of the aircraft in the portfolio is 7.6 years.	$900m	Mizuho Securities and Meritz Securities (arrangers)	The debt consists of $655m from an asset-backed securities issuance by Mizuho Securities, and $244.5m in equity from South Korean securities and derivatives firm Meritz. The $244.5m contribution from Meritz will consist of a $150m mezzanine tranche and a $94.5m subordinate tranche.	Not available

Continued on page 18 >>>

Airline/ Lessor	Aircraft financed	Deal size	Financing parties	Structure	Law firms
KAL	A380	Undisclosed	KEB Hana	Junior term loan	Kim&Chang
KAL	3x A330	Undisclosed	KEB Hana, KDB	Junior term loan	Kim&Chang
KAL	2x B777-300ERs	Undisclosed	KEB Hana	Junior term loan	Kim&Chang
PAL	A321-200	$42m	KEB Hana as MLA, KEB Hana and CCB as Lenders	Secured term loan	Clifford Chance Thailand, Lee&Ko
Qantas	2x A330-200	$15m and $20m	The Local Finance Association (mezzanine investor), Hana Financial Investment (arranger).	The Local Finance Association, which oversees disaster insurance and savings money of South Korea's local governments, opted to invest $15 million on 31 October in mezzanine loans on two A330-200 aircraft that Qantas Airways will lease. Hana Financial Investment, which is in charge of the $20 million fundraising covering the two A330-200s, plans to attract one or two more institutions for mezzanine financing. The mezzanine debt is expected to deliver an annual return of about 6%.	Not available
Singapore Airlines	A330-300	$85 million	KTB Investment & Securities and Korea Investment & Securities (established the fund), Wealth Capital Management (seller), BBAM (asset manager), Eastmerchant (asset manager & advisor to WealthCap)	$60 million senior loans with expected returns at 4.05%, $20 million mezzanine loans and $5 million subordinated loans. The mezzanine and subordinated loans have 6.2% and 9.1% return targets, respectively.	Not available
Singapore Airlines	Airbus A330-300, Sep. 2015	KRW 58,077,880,146	Kyobo Securities (organiser); Meritz, JB Fund, Lotte Insurance, Hanwha Insurance, Daewoo Securities, Scientists and Engineers Mutual-aid Association, EastMerchant (equity)	Lease end date: August 2023 (8 years). Lessee has option to finish lease agreement at six and seven years after the start of the lease	Yulchon (Korean Law Firm)
Unknown	A330-300, delivering in 2009. Financing closed March 2014.	Undisclosed	Nord LB (senior loan), mezzanine (Korean institutions), Equity (Mirae Asset Securities HK).	Senior loan, mezzanine and equity. Lease expiring in 2021.	Bae, Kim & Lee and Maples & Calder (legal counsel to Mirae)

Source: Airfinance Journal, January 2017

conditions, then that goes quite a long way now with the investors."

As with Japan's Japanese operating lease and call option market, in which deal arrangers are experiencing more demand from investors than deal opportunities with top-tier carriers can satisfy, Korean arrangers are finding they are needing gradually to introduce new names to their investor clients.

"Korean investors for some of the top-tier airlines seem to have been tapped out at this point, so almost by necessity they are looking at lesser-known airlines," says Ji Hoon Hong, a partner in White & Case's South Korea office.

"I think they are looking at deal possibilities involving those airlines that may not necessarily be flag carriers or household names. Depending on how the structure works, I think deals involving below-top-tier airlines would be seriously considered by Korean players. Some arrangers are quite willing to take a leap forward – maybe a giant leap forward – and try to lead some of these sophisticated and large transactions on their own."

In addition, the deterioration of certain top-tier airline credits such as Air France (because of financial difficulties) and Turkish Airlines (because of political instability in Turkey) means Korean investors may have to look at other names, says a source in South Korea.

"Korean investors for some of the top-tier airlines seem to have been tapped out at this point, so almost by necessity they are looking at lesser-known airlines."

Ji Hoon Hong, partner, White & Case

Narrowbodies versus widebodies

Korean investors have mostly favoured investment in widebodies over narrowbodies because of the larger, more expensive aircraft offering higher returns than narrowbodies. However, investment in widebodies carries a higher residual value risk and the aircraft are more difficult to remarket at the end of their lease term.

"Korean investors have been attracted to widebodies because they tend to offer higher yields and because Korean investors – just like investors from any other country these days – are hungry for yield. But as they get more knowledgeable about this space, they see the attractiveness of narrowbody aircraft in terms of their stable values and secondary market tradability," says White & Case's Ji.

He cautions, however, that this could be a "double-edged sword", as the yield on narrowbodies would tend to be lower than that available for widebody transactions.

A source from a South Korean securities firm says: "If we consider the market situation separately for widebodies and narrowbodies, we believe the narrowbody market is safer in terms of exit and residual value risk but there is a tough competition among global lessors.

"Lease rates for narrowbodies are getting lower and lower and the rate of return for the equity investment is not very attractive. Still, widebodies can provide an attractive rate of return, so we need to mix up these narrowbodies and widebodies properly and manage the portfolio risk."

One airline that could be a potentially huge target of financing for Korean investors is Vietnam's VietJet Air, which is taking delivery of A320-family aircraft to fuel its rapid growth. Korean investors might feel comfortable with Vietnam as an investment jurisdiction because Koreans have a long history with investing in Vietnam, albeit not in aircraft, say sources.

GECAS portfolio deal

Late last year, Mizuho Securities and Meritz Securities launched a seven-year, $900 million fund to buy a portfolio of 20 aircraft from US lessor GECAS. The debt consisted of $655 million from an asset-backed securities issuance by Mizuho Securities, and $244.5 million in equity from South Korean securities and derivatives firm Meritz. The $244.5 million contribution from Meritz consisted of a $150 million mezzanine tranche and a $94.5 million subordinate tranche.

Sources tell *Airfinance Journal* that the portfolio contained some poor credit airlines, such as EgyptAir, in which Korean investors would not usually prefer to invest in a single transaction because of the heightened risk. However, because of the involvement of GECAS – which is the number one lessor in the world by number of aircraft (according to *Airfinance Journal*'s The Leasing Top 50 2016) – investors are sufficiently reassured that the risk could be managed.

"A couple of portfolios are coming around the market but have not yet been done. There are better aircraft and airlines in these, but their servicer names are not good enough from a Korean investor perspective," says a source who works with Korean investors.

Hard to ignore

More and more international players are taking notice of the South Korean market as a viable source of financing for aircraft, and many believe it will remain so for several years to come.

One source says: "It's not going to replace other sources of financing but if you're looking at what's out there at the moment, I don't think that you can ignore it."

Chorus takes on regional market

Chorus' new leasing subsidiary was established in January with funding from a Canadian insurance company. It plans to carve out a space in the regional leasing market. **Joe Kavanagh** speaks with its president, **Steven Ridolfi**, about his plans for the year ahead.

Chorus Aviation, the Canadian aviation holding company, will become a more familiar name this year. With the establishment of a new leasing joint venture, regional operators around the world may soon be doing business with the company for the first time.

The company already leases aircraft to its airline subsidiary, Jazz Aviation, which operates flights on behalf of Air Canada under a capacity purchase agreement (CPA). But it has planned to expand its aircraft leasing business with new customers for some time. The company told *Airfinance Journal* in 2015 about its plan to place regional aircraft with airlines further afield than Canada.

This plan became reality in November 2016, with the signing of a sale and leaseback agreement for four Bombardier CRJ1000s with Air Nostrum, which became Chorus Aviation's first leasing customer outside of a capacity purchase agreement with Air Canada.

Now, with the foundation of Chorus Aviation Capital, the company has begun the expansion of its leasing business in earnest.

The new subsidiary will be funded with a C$200 million ($149.5 million) convertible private placement from Canadian insurance firm Fairfax Financial. It will also expand its purchasing power by leveraging up until it has about C$800 million to chase deals.

Steven Ridolfi, who is president of the new company, says that Chorus has decided to launch a wholly owned subsidiary, rather than a joint venture, in order to retain control.

"We did look at joint-venture options and the pros and cons of how they would work. We ended up with a totally owned subsidiary because it best fit with our strategic goals: we wanted to maintain control, we wanted to grow organically with full freedom of asset selection, we wanted to take full advantage of Chorus synergies," he says.

"Remember that Chorus has a ton of technical capacity, to modify and transition airplanes, to provide our customers with more than just the metal but with ancillary services as well such as technical support, training capacity, spares support and pilot pools. We wanted to keep it in the family. The [decision to issue a] convertible bond was driven by that," he adds.

With the capital behind it, and with plans to expand rapidly, Chorus Aviation Capital will most likely be closing its first deals in the very near future.

Buying opportunities

The mission statement is clear for Chorus Aviation Capital: to stick to its roots with the purchase of regional aircraft.

"We're staying with regional aircraft, both jets and turboprops," says Ridolfi.

However, the company also plans to buy Embraer and ATR, as well as the Bombardier models that it already has experience of.

"Chorus is primarily a Bombardier customer, with Q400s, legacy Dash-8s and the CRJ family. But we'd certainly like to diversify into the Embraer and ATR product families as well. As a global leasing company, we'll start to look a lot like the fleet mix of the overall market," he adds.

Diversifying with other regional aircraft marks an important step for Chorus Aviation's expansion into aircraft leasing.

The parent company already owns Bombardier aircraft, which it leases to Jazz Aviation under the CPA with Air Canada. At the end of the third quarter 2016, it leased 39 aircraft under the deal.

The lessor will initially target aircraft with leases attached. However, it is open to the full range of acquisition types.

"Immediately in front of us, we are studying three potential transaction types: there are some interesting portfolios for sale, some airline sale [and] leasebacks that we've been looking at, and potentially some skyline orders in store. So we are likely to end up with a mix of these," he says.

Asked whether Chorus Aviation Capital would consider buying Bombardier's CSeries family of aircraft, Ridolfi confirms that a deal is not off the table. "We could have a look at the CSeries if the right situation warrants it," he says.

The initial investment by Fairfax will be supplemented by debt capital, which will boost the company's buying power.

"The C$200 million [private placement] will be leveraged up with debt to something like C$800 million, and we'll evaluate which opportunities generate the best combination of returns and strategic

> *"Remember that Chorus has a tonne of technical capacity, to modify and transition airplanes, to provide our customers with more than just the metal but with ancillary services as well such as technical support, training capacity, spares support and pilot pools. We wanted to keep it in the family. The [decision to issue a] convertible bond was driven by that."*
>
> **Steven Ridolfi**, president, Chorus

fit and go after these. The C$200 million arrives over the next three months of the year and, as the opportunities present themselves, we'll structure transactions to deploy the full capital," says Ridolfi.

"Just like most leasing companies, we'll try to do a wide range of transactions to diversify your supply channel. We'll look at all opportunities and selectively choose the ones that best fit our criteria," he adds.

Is there space in the regional market?

The smaller operator base for regional aircraft has dissuaded many players from getting involved in this space. Some larger lessors prefer to focus on Airbus and Boeing's most popular single-aisle offerings instead, leaving regional aircraft leasing to the specialists.

However, many lessors choose to own regional aircraft to diversify their portfolio, and there are several active lessors which focus on this market segment exclusively. There has recently been a flurry of mergers in regional leasing, as Nordic Aviation Capital (NAC) expanded aggressively last year. Having bought up regional lessors Jetscape and Aldus, NAC seems to be pinning down this market.

> *"Just like most leasing companies, we'll try to do a wide range of transactions to diversify your supply channel. We'll look at all opportunities and selectively choose the ones that best fit our criteria."*
>
> **Steven Ridolfi**, president, Chorus

How will Chorus Aviation Capital try to compete with the established players? Is there even room in this section of the market for a new contender? Ridolfi believes so.

"[Regional aircraft leasing] is a very intriguing market that has quite a bit of headroom, from our perspective."

He adds: "If you think about the narrowbody space – or even the widebody space – there's 40-plus companies chasing that business. On the regional side, there's Nordic Aviation Capital, which is very large, and then there's a few smaller ones, some that have only recently started. We have an ambition to grow very quickly, to stay inside the regional market place."

Ridolfi notes that some large lessors have divested from regional aircraft in recent months. Citing ALC's sale of 25 E190 and E175 aircraft to NAC, he says that portfolio sales will represent great opportunities for Chorus Aviation Capital as it looks to increase in size.

"Many of those 40 narrowbody/mainline leasing companies do have regional portfolios, but they're non-core and, in fact, some of them are being sold off," he says, "so we see opportunities to pick up some of those non-core portfolios."

As he sees it, there is plenty of space for new contenders.

"We think Martin Møller [Nordic Aviation Capital's founder and chairman] and Nordic have done a tremendous job, but we believe there's room for others in this market. We have ambitions to be one of the leading players before long."

What is Chorus Aviation?

Chorus Aviation is a Canadian holding company that owns various aviation-related subsidiaries.

Chorus Aviation

Jazz Aviation

Air Canada Express – under a capacity purchase agreement (CPA), the airline operates 113 Bombardier aircraft on behalf of Air Canada.

Jazz – operates North American charter flights with three Bombardier aircraft.

Voyageur Aviation

Voyageur Airways – operates special flying operations for blue chip clients in Canada and Africa with a fleet of 17 Bombardier aircraft.

Voyageur Aerotech – specialises in engineering and maintenance. Generates 25% of Voyageur Aviation's revenues.

Chorus Aviation Capital

The latest subsidiary, focused on commercial aircraft leasing.

Source: Chorus Aviation

Alaska's strong profile improves merger prospects

Joe Kavanagh examines the North American carrier's financial position after closing its $2.6 million takeover of Virgin America in December.

On 14 December, Alaska Airlines closed its takeover of Virgin America, in a $2.6 billion transaction that will bring the combined airline's fleet to 286 aircraft with an average age of 8.1 years.

Although the two businesses have not fully merged yet, Alaska Airlines, which will soon be the fifth-largest airline in the United States, is well-placed to take over Virgin America and looks set to enjoy a strong credit profile despite raising leverage in order to fund the deal.

Data provided by *The Airline Analyst (TAA*) shows that Alaska Airlines is one of the strongest-performing airline credits in the world, with strong earnings before interest, tax, depreciation, amortisation and rent cost (Ebitdar) margins, healthy fixed charge cover and high levels of liquidity.

Source: Alaska Airlines

Resilient financial performance

The Airline Analyst Financial Ratings Score (TAAFRS) ranks Alaska Air Group second out of the 150 airlines it covers.

Narrowly behind Ryanair, the airline is recognised for its high margins, liquidity and low leverage, with an overall score of 7.3 out of a possible eight.

The airline's Ebitdar margin for the last 12-month period was 32.8%, which places it 11th in the world for this metric. The top 10 – AirAsia, Jazeera Airways, PSA Airlines, Hainan Airlines, Allegiant, Volaris, Spirit, Frontier, IndiGo and SpiceJet – are mostly low-cost carriers. Generating such strong margins as a full-service airline is remarkable.

The carrier is similarly impressive in terms of liquidity, with liquidity as a percentage of revenue at 55.8% – the sixth highest of all airlines covered by TAAFRS.

Meanwhile, its fixed charge cover (calculated by dividing Ebitdar by net interest plus rent) is 20x, which demonstrates how substantially its earnings outweigh its financial obligations.

In short, the airline's financial performance sets it up well for the challenging months ahead, as it integrates with Virgin America.

The debt that it raised to fund the takeover will increase its leverage but is unlikely to affect its ratings in the near future, according to Fitch Ratings. The agency affirmed Alaska at BBB- once the takeover was closed in December, after having placed it on a watch list because of pending approval from the US Department of Justice.

Alaska funded the deal with cash on hand and about $2 billion of secured debt financing provided by multiple lenders. About $1.6 billion of the loans are secured against 56 of the company's Boeing 737 fleet, including 37 737-900ERs and 19 737-800s.

In a report issued in December, Fitch notes: "Aircraft tend to be readily financeable assets, and the reduction in unencumbered planes reduces one of [Alaska's] easiest and potentially cheapest sources of future financing. Nevertheless, we believe that [the airline] will still have plenty of capacity to tap the debt markets in the future if it were in need of capital given the company's relatively low leverage, history of free cash flow generation, and relatively strong credit profile."

Virgin America: most improved

Although it began operations in 2008, Virgin America did not turn a profit until 2013.

TAA shows that its net income was $10 million in 2013, $60 million in 2014 and $351 million in 2015 (the last full year for which data is available).

The improved financial health of Virgin America is indicated by the interest that its sale generated from other US airlines. Although Alaska Airlines won the deal, Virgin America's leadership also held discussions with executives from JetBlue and Hawaiian Airlines.

JetBlue liked the airline enough to make an offer of $54 a share – but was eventually outbid by Alaska Airlines' offer of $57 a share.

Data collected by TAA shows that while Virgin America is less profitable than Alaska, it has recently made substantial improvements. At 5.3 out of eight, its overall rating score for the last 12-month period is nowhere near as strong as Alaska's. However, it represents great progress, up from 5.1 in the preceding 12-month period and 3.3 in the 12-month period before that.

It has generated healthy Ebitdar margins (29.5%) in the last 12-month period, while liquidity as a percentage of revenue stands at 37.8% – generating the maximum score of eight, according to TAA methodology.

However, its Ebitdar is only twice as high as its net interest plus rent, generating a score of three out of eight. Meanwhile, adjusted net debt is 3.5x Ebitdar – substantially higher than Alaska's.

By one key metric, however, Virgin America beats Alaska Airlines: average fleet age. While Alaska's average fleet age is nine years, according to the data, Virgin America's average age is 6.3 years.

The improved financial health of Virgin America, as well as that of Alaska, means that the merger has every chance of success. The logistical challenges related to merging two airlines are substantial, but the credit profiles of both carriers suggest that the new entity will be able to benefit from strong ratings in the future.

Headwinds **hold back carriers**

North African airlines have faced a number of challenges in recent times, including a dearth of export credit financing, geopolitical instability and several terrorist attacks. **Jack Dutton** investigates.

Brian Pearce, chief economist of the International Air Transport Association, told delegates at the fourth Iata Airline Cost Conference in Geneva last year that carriers had "never had it so good" and, after decades of poor performance, airlines were finally making money.

The representatives from North African airlines, who were in the audience during the speech, looked at each other in a way that said Pearce's statements were far from their realities. Over the past few years, the region has witnessed geopolitical instability with the Arab Spring and several terrorist attacks, often in regions where tourism plays a vital role in the local economy.

"As someone who has been to all of these countries, you can see the diminished air traffic," says one industry source, who works with several airlines in the region. "I was at the pyramids in Cairo a few years ago, and some people came up to me saying 'We miss the Americans, we miss the Europeans'."

One striking example of an airline that has been negatively affected is Tunisian flag carrier Tunisair. Its traffic suffered after a terrorist mass-shooting against foreign tourists on a resort in Sousse that killed 38 people.

One leasing executive, who works with North African carriers, tells *Airfinance Journal*: "Tunisair has suffered a lot because they had less tourists come into the country since the attacks. The same thing happened in Turkey with Turkish Airlines."

As well as seeing a drop in tourist numbers, North African regions that have been affected by terrorism and political instability have experienced some hesitation from lessors, says the source. "I think they are more reticent right now. Overall, it's not stable, but people are still doing deals. It's just that when the airlines in those regions go to the market themselves, they often find it harder to get the financing."

If there is a dampening in tourist traffic, overcapacity can be a concern. One industry source says that EgyptAir has got some widebody capacity but "doesn't really need it" and "there's a move away from needing a Boeing 777 and Airbus A330 into something that's not as large as that" with some of the North African carriers.

Morocco's safe haven

Seen as a more politically stable region than some of its neighbours, Morocco does not seem to be experiencing the same pronounced negative effects as some of the other North African countries. Royal Air Maroc (RAM), the country's national airline, is viewed by many in the industry as being the main African airline that connects Africa with Europe, the Middle East and North America.

But that has not stopped the carrier's operating environment from being challenging. Like many carriers in Africa, RAM has financed a number of its aircraft with help of export credit agencies (ECAs). But with the current inactivity of the main ECAs, airlines such as RAM have had to look at alternative financing options.

Although the airline initially issued a request for proposal to fund three 787-8s by the Export-Import Bank of the United States, the dearth of export credit financing has caused it to look at other modes of financing. Although this has been negative for some carriers in the region, Yassine Berrada, vice-president corporate finance at Royal Air Maroc, says the carrier has not had its financing options limited through Ex-Im Bank's current inactivity and political instability in the Middle East and North Africa (MENA) region. During the past six months, RAM has closed three commercial deals for three new 787s, with the loans being paid in euros from two Moroccan banks.

"The global environment is not helpful for tourism in North Africa. Many Europeans prefer going to Portugal and Spain – they see them as safer."

Yassine Berrada, vice-president corporate finance at Royal Air Maroc

Unlike many African carriers, RAM has not seen a decline in interest from some of the banks when financing the aircraft. "We've had offers on both leases and commercial financings," says Berrada. "We did not expect to see the interest we saw. We had South African banks, European banks, US banks approach us – frankly, we were quite amazed. I think the appetite was due to the strong credit risk of the airline."

The carrier will be taking delivery of more 787s and a 737 Max aircraft from 2018 to 2020, which it looks likely to take on its balance sheet. Berrada adds that the carrier will lease all incoming aircraft this year.

"Although we have no big problems, still we are working in difficult environments," he says. "Indeed, despite Morocco being a safe haven within the region, an average European or American considers Morocco as part of the North Africa-Middle East troubled region. As a consequence, foreign tourist (excluding Moroccans abroad) arrivals dropped by 4% in 2016 after a drop of 5% in 2015."

Berrada adds that the airline has seen an 11% growth in traffic at fiscal year-end 30 October 2016, thanks to the performance of its Casablanca hub and new routes from this hub. The first two months of 2017 fiscal year are in the same trend of two-digit growth in traffic and he hopes traffic will continue growing by a two-digit percentage at the end of next year.

Although Berrada is optimistic about Morocco, he is less optimistic about North Africa as a whole. "The global environment is not helpful for tourism in North Africa right now. At the moment, many Europeans prefer going to Portugal and Spain – they see them as safer."

The main part of the carrier's traffic is connecting Africa to Europe and the Middle East. Berrada says that this traffic is growing, but he has seen a decline in competition from foreign carriers into Morocco.

"EasyJet has decreased this year from Morocco," he says. "Like us, they have seen that the pure Moroccan-Europe tourism is decreasing, so there is less LCC [low-cost carrier] competition."

Algeria's oil and ECA worries

Unlike Morocco, its neighbour Algeria is mainly an oil-driven economy. The country's two main airlines in Algeria are Air Algerie and Tassili Airlines.

The leasing source says: "Now with the oil price going down, it's less financially attractive for those airlines, because Air Algerie is owned by the state and Tassili Airlines is owned by Sonatrach, an oil company."

Air Algerie has a fleet of 59 aircraft, comprising 25 737-800s, 12 ATR 72-500s, eight A330s, five 737-600s, three ATR 72-600s, two 737-700Cs, three 767-300s and one Lockheed Hercules L100, according to *Airfinance Journal*'s Fleet Tracker. Tassili Airlines operates a fleet of 15 aircraft, indicates Fleet Tracker: four 737-800s, four Q200s, four Q400s and three Beech 1900s.

> *"I think the Arab Spring came as such a shock to everyone, it really has changed the culture among foreign investors."*
>
> **Victoria Mackay**, founder, VLM Advisory, a MENA political risk consultancy

"They use a lot of ECAs," says the leasing executive. "But they have a problem with that because Ex-Im and the European ECAs are not doing many deals right now. If there is any expansion from the airlines, it would be by acquiring aircraft from lessors or using commercial banks to finance aircraft. Sometimes international banks will finance them but it will be more expensive. In my view, they will have no choice – they will have to go to lessors to have 100% financing."

Egypt's other opportunities

Egypt is also experiencing its own problems, at times finding it difficult to attract the foreign investment its tourism and airline industry needs.

"I think the Arab Spring came as such a shock to everyone, it really has changed the culture among foreign investors. Political risk is now part of the due diligence process in a way it hasn't been previously and I don't see that changing any time soon," says Victoria Mackay, founder of VLM Advisory, a MENA political risk consultancy.

She adds that it takes only one big incident such as the Russian Metrojet passenger aircraft coming down over the Sinai Peninsula in 2015 to reduce the amount of foreign investment into that country.

In response to these attacks and a change in the Egyptian tourism landscape, Cairo-based airline Nile Air has managed to find additional revenue through other avenues by adding new routes to its network, such as from Sharm El Sheikh to Amman in Jordan.

Speaking to *Airfinance Journal*, the carrier's chief executive officer, Ahmed Aly, says: "I think one thing financial institutions and leasing companies understand is that Egypt's still a very strategically-important country and there is an overriding sense of stability despite the challenges that the country faces.

"It does pose a challenge having our dominant currency devalued in November. But with our airline, we're not just relying on local currency – you also rely on currencies like the Saudi riyal and Emirati dirham, which also provides a support system."

Aly adds that Egypt is "not reliant on just tourism traffic" and it is viewed a geographically attractive location across Africa and the Middle East.

EgyptAir, the country's flag carrier, operates a 75-aircraft fleet, including A320s, A330s and A340s, as well as 737-800s and 777-300ERs, according to *Airfinance Journal*'s Fleets.

The airline is due to issue a request for proposal (RFP) in the coming weeks, adds the leasing source. The RFP will be for 250-seater narrowbody aircraft, according to the source, who adds that the carrier will be open to all types of financing to fund the deliveries.

Increase risk monitoring from lessors

Mackay has seen an increase in lessors carrying out political risk analysis when determining which airlines to work with in the region.

Phil Seymour, chief executive officer of aircraft advisory IBA, agrees. "Typically, a lessor will go and visit an airline and the aircraft every two or three years. We've seen that they're now taking the opportunity to get in there more frequently. Coupled with that, the local currencies in the region are probably worth less now, and all of the costs are in dollars: fuel, leases and financings are probably based on US dollars that are probably going to be more expensive for them now."

When looking at credits in the region, lessors often have to look further than the profit and loss and the balance sheet of the airline. They also look at the airline management teams, the capacity, the codeshares and the alliances – to name a few variables.

"It brings up a whole new area in terms of assessing the risk in those areas from a lessor perspective," says Seymour.

Mackay adds "It's very difficult to conduct due diligence on a company or individual in that region without assessing their political context because political change has such a bearing on the financial fortunes of local entities and individuals."

Seymour says that if the situation is to improve for North African airlines, security needs to remain a priority for the countries in which they operate.

"They've got to think, 'We've got to prove to the industry that we're a safe place to be'. There is nothing much they can do about the low oil price, but they can do a lot about security," adds Seymour. "That's within their control."

Why **lessors** will continue to consolidate

The aviation leasing sector will continue to face further consolidation following the purchase of CIT Aerospace by Avolon and its Bohai Leasing parent group, say lessor sources.

Since 2014, the leasing industry has evolved through consolidation and the emergence of new platforms.

A spate of mergers and acquisitions has allowed cash-rich Asian businesses to enter the sector as the industry is increasingly viewed favourably by yield-hungry long-term investors.

The momentum is expected to carry on this year.

A leasing source says: "2017 will see more platform acquisitions, given the drive to consolidate and the continued influx of capital to the sector that will quickly determine that a 'go alone' strategy is not the right way forward."

More second-tier lessors could fuel their growth by acquiring platforms and/or portfolios to become first-tier lessors.

"It is a possibility because generic growth is so hard in today's market with lease returns being so low. We see the likes of AerCap selling off its portfolio and returning cash to investors via share repurchases vs reinvesting in aircraft," says another source.

"We are still seeing plenty of liquidity and not only in China. Canada has, at present, only slightly cracked open its coffers and there's a lot more there. We have a number of sources in the Middle East suggesting they are ready to invest. Korea is a quickly developing market also," he adds.

Another leasing source believes the catalyst for acquiring other platforms "will be a softening in the market" where the smaller or boutique lessors start to struggle.

The main reason for this struggle will be two-fold, he says.

Robert Martin (left), Managing Director and Chief Executive Officer of BOC Aviation and **Domhnal Slattery** (right), CEO of Avolon, Hong Kong, November 2016

"First, it is the desire of equity to switch to a different investment sector and second, it is because so many of the new entrants are staffed for good times – they have no real ability to deal with a single repossession – let alone, say, several – and lease restructurings simultaneously."

More mega-lessors?

In a poll at the 17th Asia Pacific Airfinance conference last November, 85% of the audience expected more operating leasing platforms to be acquired by Chinese entities in 2017.

Another 12% opined that this will not be the case, while the remaining 4% were unsure.

In an interview with *Airfinance Journal* Aengus Kelly, chief executive officer (CEO) of AerCap, said there will be continued consolidation in the leasing sector as there are significant benefits of scale.

"I would expect to see more of the second-tier guys roll over," he says.

However, another lessor argues that size is not essential.

"I think it's more important to ensure that the liability side of the balance sheet is financed efficiently and that doesn't necessarily have to come as a result of size," the lessor says.

He points out the difficulties of making good returns in today's market, especially on sale and leaseback transactions.

"With the OEM's juggling an order backlog it is impeding their placement opportunities for their own orderbooks. Options are few, but doesn't it point to the fundamental structure of the leasing business changing? You have to restructure your balance sheet to be a lender via some hybrid leasing structures as well as a traditional lessor," he comments.

Airfinance Journal's 2016 top 50 lessors showed the lessors represented $260 billion-worth of assets, up from $234 billion in 2015.

"We are still seeing plenty of liquidity and not only China. Canada has, at present, only slightly cracked open its coffers and there's a lot more there. We have a number of sources in the Middle East suggesting they are ready to invest. Korea is a quickly developing market also."

Their revenues and net income are also up on aggregate. The top 10 lessors had $18.6 billion combined revenues this year, up from $15.7 billion last year. Net income has gone up to $4.1 billion from $3.1 billion over the past 12 months.

The top 50 lessors ranking showed a fleet of approximately 8,675 aircraft under ownership and management. This compares with 8,185 units a year ago.

The top 10 lessors account for 5,200 aircraft or 60% of the top 50 ranking. In last year's ranking they represented almost two thirds with 5,330 units.

Exposure to the widebody market by the top 50 further reduced over the past 12 months to 15% from 15.3% a year ago. However the top 50's narrowbody market share is now at 69%, a 0.5 percentage point up from the 2015 figures.

Aside from NAC, a regional lessor specialist, the top 50's footprint in the regional jet and turboprop market over the past 12 months has contracted by more than 10%, confirming a trend to focus on the mainline sector.

The report shows that 455 regional jets and turboprops were owned and/or managed by the top 10 lessors, down from last year's 510 total.

Overall, the largest lessors in terms of fleet size – GECAS, AerCap, SMBC Aviation Capital, BBAM and Nordic Aviation Capital (NAC) – contracted by 200 units year-on-year. The race to the top could potentially mean a group of five large lessors by 2020.

Lessor number three

Avolon's CEO Domhnal Slattery has said the purchase of CIT Aerospace is "not the summit" of the lessor's ambition.

Bohai Leasing, which is majority owned by HNA Group, completed the purchase of Avolon in the first quarter of 2016. Avolon merged with Bohai's existing leasing entity, Hong Kong Aviation Capital.

The completion of the acquisition of CIT Aerospace, which is scheduled for the first-half of 2017, would propel Avolon to the number three spot in the lessor ranking by fleet size behind AerCap and GECAS.

Now all eyes are on the sale of Terra Firma Capital Partners' AWAS, which has been downsizing its fleet size and personnel during the past couple of years.

The lessor sold a 90-aircraft portfolio to Macquarie AirFinance as well as the E-notes of an asset-backed securitisation (ABS) deal covering 30 aircraft to Kahala Aviation in 2015.

The remaining 245-aircraft and its platform have attracted the attention of a group of operating lessors, sources indicate. Avolon, Dubai Aerospace Enterprise and Macquarie Group, which has teamed up with Ping An, are all involved in sales talks regarding the AWAS platform, say sources.

However, bids for AWAS were due as *Airfinance Journal* went to press. Following the bids the market should "know more then" about which firms will emerge as the leading bidders for the platform, says a source involved in the sale process.

Terra Firma entered into sales talks last year with Chinese-owned entities regarding the purchase of AWAS. But talks with ICBC Financial Leasing and Bohai Leasing broke down due to turmoil in the Chinese market, which resulted in the nation's stock market coming to a halt twice in one week, triggering a further weakening of the yuan.

So will a sale happen this time around? BOC Aviation's CEO Robert Martin opines that a sale is more likely now, but it "depends on the price and what Guy Hands, founder of Terra Firma, has in his head."

Avolon's Slattery believes AWAS will be sold and the owners will get a "fair price".

"If they don't sell it, I would not like being a limited partner investor in Guy Hands' fund. I would be pretty upset," he adds.

Tamweel Aviation Finance to further expand its platform

Dubai-based Novus Aviation Capital is looking to further expand the size of its financing leasing platform, Tamweel Aviation Finance (TAF).

The company was initially formed in 2013 by Novus in partnership with Airbus and Japanese lender Development Bank of Japan (DBJ) as a sponsors of the project. German lender NordLB then joined in October 2014.

In an interview with *Airfinance Journal*, Novus's managing director Mounir Kuzbari says the financing vehicle intends to further grow this year after a "very successful" ramp up.

"We are working with our partners to expand the platform over the next few months," he tells *Airfinance Journal*.

The vehicle is an integrated financing platform that offers alternative financing solutions to airlines and aircraft leasing companies by providing secured junior and mezzanine debt loans.

"TAF provides financing solutions to airlines and lessors who are looking for that incremental loan-to-values. We will continue growing this part of our business based on the very good market reception and outlook for this product especially with the ongoing changes we have been witnessing on both the export credit agencies and regulatory fronts," he adds.

The company was set up to facilitate the funding of aircraft acquisitions, with a focus on the twin-aisle segment. The Airbus A380 has been the core of the initial investments.

TAF has grown to a portfolio size of more than $1 billion of assets by market value. Its first deals includes the finance leases of Emirates A380s with Novus acting as overall structuring agent and providing mezzanine and junior tranches through TAF.

The refinancing of two A380s through a finance lease for British Airways in November 2014 was innovative as it provided dual denominated tranches. The deal was structured as a 14-year senior loan and a seven-year junior loan. The senior loan is 50% euro-denominated and 50% US-denominated, with NordLB providing the Euro potion and Qatar National Bank the dollar-denominated loans. The junior loan is 100% in dollars, with Qatar National Bank providing 50% and Tamweel providing 50%. The deal was arranged and structured by Novus offering the customer a turn-key solution.

TAF also financed its first A330-300 model for Hong Kong Aviation Capital, but in late 2015 it expanded its asset investment profile with its first single-aisle transaction.

TAF agreed a financing deal with Virgin America covering three A320s that were delivered in the first half of 2016.

It also closed financing on two A319s for Avianca.

"The mandate has always been to include all types of the Airbus product range including narrowbody aircraft in the portfolio with different customer profiles in Europe, Middle East, Asia, United States and Latin America."

In January, TAF provided mezzanine loans for the financing of three A321s for Singapore-based lessor Avation. Two European banks provided the US dollars loans on the aircraft that are on lease to VietJet Air.

"TAF's mezzanine facilities are a useful leverage tool for transactions of this nature," said Jeff Chatfield, executive chairman at Avation

A career **at the top**

Denis Kalscheur, Aviation Capital Group's former chief executive officer, left the company at the end of 2016. **Joe Kavanagh** caught up with him at the *19th Annual Airfinance Conference* in Dublin to hear about some career highlights, his final months at ACG and his new role at Avolon.

***Airfinance Journal*: One of your first major aviation deals took place after you were parachuted from the parent company in to US cargo airline Flying Tigers in 1983, to manage a major debt restructuring. The airline had run into serious problems after increased competition in the freight market and a dramatic increase in borrowing costs during the recession and credit crunch of the early 1980s. What was that process like?**

Denis Kalscheur: I started out at the holding company, Tiger International, which was Flying Tiger's NYSE-traded parent company, and then went to the airline to do the restructuring. The prime rate had reached 20.5% in the early '80s and capital-intensive companies such as airlines, which carried heavy financing, were hit hard.

I think we went about it the right way. Maybe other companies would have taken more drastic actions, but we successfully restructured the airline outside of a bankruptcy. We had a complex set of lenders: we had unsecured and secured banks, we had institutional investors investing in our equipment trusts and we had equity and debt investors through tax leveraged leases on 747s.

The complexity of the restructuring was this: we had lenders in many different categories, some who were highly secured, who couldn't care less what happened to the airline from a collateral protection point of view. They could sell their assets and our equipment trust would get paid back. But it was the under-secured and totally unsecured lenders for whom everything depended on a successful restructuring to get their money back. When you're doing an overall financial restructuring like that, it takes 100%. Everybody has to agree. Every equipment trust holder, all the leveraged lease pieces, all the foreign currency debt, all the banks have to agree and sign off or it doesn't get done. If you went and fixed one to the disadvantage of somebody else, the other people could take you down. So how do you convince everybody to cooperate?

There was a lot that Flying Tigers had in terms of franchise value, such as its

"Any deal has deal momentum. You build it and you get things to a marshalling point where the deal is ready to happen. If you miss it, it's like the wave cresting and then you have to wait for the wave to form again. We were able to bring this disparate group of lenders to that marshalling point on the very last business day of 1983. We had to get it done, and we did. There's nothing like a deadline."

Denis Kalscheur, Aviation Capital Group's former chief executive officer

global markets and key international airport slots and service protected by bilateral agreements that we had to preserve. If we hadn't been careful in how we dealt with the lenders, we could have lost all of that. The real task, stepping in, was to get all these people to come to the table. We had to come up with a creative solution because there was no way to go back and renegotiate each deal in the short time we had. It was like playing a three-dimensional chess game.

So what we did, which was very creative, along with the more than 60 lenders we had, was to create an "override agreement". We all agreed on a common document that overrode the provisions of every other document, which took 100% of the lenders. That allowed everybody to move forward. It got a little tricky at the end, because we had accumulated cash after having announced the restructuring, which was a moratorium on repayment until we came to an agreement. The lenders wanted a pay down from most of that cash. The banks had been most exposed, so they were willing to work with us within limits and we negotiated a new revolving credit with the banks for the liquidity we needed to run the business. This allowed us to take our cash and make a pay down under the new override terms and then rely on this new revolving credit facility for liquidity. So you had to make sure everything was in place before parting with the cash.

Any deal has deal momentum. You build it and you get things to a marshalling point where the deal is ready to happen. If you miss it, it's like the wave cresting and then you have to wait for the wave to form again. We were able to bring this disparate group of lenders to that marshalling point on the very last business day of 1983. We had to get it done, and we did. There's nothing like a deadline.

As chief financial officer at AirCal, you were involved in diversifying the airline's sources of financing. Generally speaking, how does the capital structure of airlines differ now from back then?

There was not a big operating lease option at the time. It was at an early enough market stage where the amount of aircraft available for operating lease was quite small compared to the total population of aircraft that was out there. So you're talking a small percentage of what it is today, in terms of the operating lease market.

But post-deregulation of the US aviation market there was a lot of airline growth and interest in aircraft as an asset by equity investors who could use the tax benefits of ownership. So a lot of leveraged leases became prevalent because the investors could use the tax benefits and pass some of them on to you in terms of lower lease rates. The battle at the time for airlines was not only getting the lower rate but at the end still to control ownership of the asset while keeping the transaction off the balance sheet. .

Today, the more flexible operating leasing option is available which gives airlines more optionality in dealing with their fleet over time. This is the best of both worlds between controlling the asset and having fleet flexibility. If you lease a new aircraft, you can have it for up to 12 years without the headache of ownership at the end, and with more flexibility in the meantime because the lessor owns the aircraft and can move it around if necessary. You have to negotiate your way out of the cancellation, of course, and that might involve other lease arrangements, but it just gives you a lot more flexibility.

You joined ACG from its parent, US insurance company Pacific Life, at the end of 2012. How did you find your way to the lessor, and what was the company's thinking behind its planned partial initial public offering?

I joined Pacific Life in late 2007 and one of the attractions was that part of the role was involvement with ACG. I knew the aircraft-leasing business and had introduced the companies to each other in the mid-1990s.

Then the financial crisis hit, right after I joined Pacific Life. My main focus had to be maintaining the financial strength of Pacific Life, which was the parent company, and taking advantage of acquisitions following the onset of the financial crisis.

But I always stayed close to ACG. When Steve Hannahs, former CEO, retired, I was asked to step in and run the aircraft leasing business.

At the end of 2015, when the Pacific Life board decided to consider a public offering of ACG, it wasn't to sell ACG outright – it was to provide ACG with a new source of capital for growth while retaining control of ACG. ACG had become a sizeable piece of the parent company, hitting the mid-teens as a percent of capital – and that's pretty significant. And looking at the scaling up that was going on in the aircraft-leasing business and the capital that was taking,

"Since I was scheduled to retire at the end of 2016, it made sense to make the move to a new CEO a bit earlier than planned. It doesn't matter how good you are – if the runway is short it's not a great pitch to say to investors, "Here, buy our stock, but by the way I'm not going to be here."

Pacific Life decided it would let a portion of the company go public. That would provide extra capital for growth while keeping control of the business, which provides good diversification benefits to Pacific Life.

Since I was scheduled to retire at the end of 2016, it made sense to make the move to a new CEO a bit earlier than planned. It doesn't matter how good you are – if the runway is short it's not a great pitch to say to investors, "Here, buy our stock, but by the way I'm not going to be here."

So a logical choice was for Khanh Tran, then the president of Pacific Life, to step in to do the CEO role for ACG and take it public. We've known each other for years so it was an easy transition.

[Note: ACG's partial IPO is ongoing]

Finally, in January 2017, you accepted a place on the board of directors of Avolon. What made you take the role, and can you share some insight into the leasing company's strategic goals?

I wanted to continue to be engaged in the aviation industry without taking on a day-to-day executive role but in an influential role with a global company accomplishing meaningful things. Serving on the board of Avolon clearly meets all those goals for me.

Avolon's overarching strategy is to be one of the leading aircraft-leasing enterprises, if not the global number one, focused on building a portfolio of modern, young and fuel-efficient aircraft. The CIT acquisition clearly puts Avolon in the number three spot and closing in on the couple of larger competitors. What has been impressive to me is to see the thoughtful risk management baked into all the company's key processes and decision-making, which has guided the company during its rapid growth. This does not happen without a skilled management team and the Avolon team, which I have known over the years, is equally impressive. Before Avolon, that team built another global top five player in the leasing industry and their experience across business cycles is evident in how they run the business – most particularly in their approach to risk management.

Another strategy objective of the company is to achieve investment-grade [IG] status for its debt. While not quite rated IG for now, the substantial oversubscription of Avolon's just-completed $8.5 billion of institutional funding and the fact that it is operating with investment-grade metrics today points toward achieving investment-grade status with a bit more seasoning.

Source: Avolon

Cautious confidence in **post-Kingfisher era**

Michael Allen explores how recent legal and infrastructural developments in the Indian leasing market are helping repair the country's damaged reputation after the disastrous collapse of Kingfisher Airlines in 2012.

"If your flight lands in Delhi, you will see in one corner of the airfield a few Kingfisher A320s parked on the side just gathering dust – it's like a little Kingfisher graveyard," says Sidanth Rajagopal*, a partner at K&L Gates, who makes frequent trips to India.

India suffered a disastrous blow to its reputation with the international lessor community when Kingfisher Airlines folded in 2012 (see box, Kingfisher's downfall). Few working in the industry at the time will be unfamiliar with the horror stories of cannibalised aircraft and protracted negotiations to get aircraft out of India, with DVB Bank and ILFC being the hardest hit by the airline's failure. DVB confirmed it had two A320s with Kingfisher. ILFC, which is now owned by AerCap, had at least six aircraft with the airline.

The phrase "Indian airline" therefore has an unpleasant ring to it; not just for lessors which dealt directly with Kingfisher, but also those not exposed to Kingfisher, who followed the situation and heard industry colleagues' tales about the difficulties with the jurisdiction.

But with India's recent advances in the application of the Cape Town Convention (CTC), coupled with voracious demand for aircraft from its fast-growing low-cost carriers (see box, SpiceJet's big order),

> *"The Indian aviation industry went through a bit of a rough patch... leaving the aircraft finance and leasing community cautious, but the market now seems to be booming and it's easy to see why."*
>
> **Leo Fattorini**, head of the Asia-Pacific aviation group, Bird & Bird

Shortly after this interview, Rajagopal left Kaye Scholer to join K&L Gates as a partner those who can forgive India for its past transgressions are reaping the rewards – though full CTC implementation is still ongoing and there remains room for improvement.

"The renewed growth is in line with the enthusiasm seen in the overall domestic economy and the strong appetite for aircraft in the surrounding geographies in Asia. We see more renewed interest for financing aircraft in the region, especially with the right backer and the risk profiles," says David Yu, International Bureau of Aviation's head of Asia.

Ravi Nath, chairman and managing partner of Rajinder Narain & Co, says that while the market is growing, regulations are not quite keeping pace.

"India is a signatory and has ratified the Cape Town Convention, but it is still to enact the underlying legislation, although it has enacted some subsidiary regulation which requires the Indian Directorate General of Civil Aviation (DGCA) to deregister an aircraft upon request of an Idera holder," he says.

An Idera is an Irrevocable Deregistration and Export Request Authorisation, a voluntary measure that provides greater security to creditors by preventing a debtor from flying an aircraft to a jurisdiction where the Cape Town Convention does not apply.

In October, the Indian government announced a draft rule that would benefit lessors seeking to repossess aircraft from India.

Rule 32A, concerning the export of aircraft, states that if an Idera holder applies for export of an aircraft, the central government will take action within five working days to facilitate the export and physical transfer of the aircraft, along with any spare engines.

Airfinance Journal understands that the idea behind the Idera is that the lessor holds it, and if the lessor needs to go to deregister the aircraft and fly it out, it does not need to go to the airline.

"There is absolute clarity – judicial precedent says that there is no choice but for the DGCA to deregister the aircraft," says a source.

Leo Fattorini, head of the Asia-Pacific aviation group at Bird & Bird in Singapore, says that he and his colleagues have recently advised banks, lessors and airlines on increasing numbers of deliveries into India and he expects this trend to continue.

"It's no secret that the Indian aviation industry went through a bit of a rough patch following the demise of Kingfisher, leaving the aircraft finance and leasing community cautious, but the market now seems to be booming and it's easy to see why," he says.

"India has a vast population and, more recently, there has been a surge in those with disposable income, which, coupled with the rapid growth of Indian LCCs [low-cost carriers] offering cheap fares, inevitably translates into more flights and the need for more aircraft," adds Fattorini.

"India is a signatory and has ratified the Cape Town Convention, but it is still to enact the underlying legislation, although it has enacted some subsidiary regulation which requires the Indian Directorate General of Civil Aviation (DGCA) to deregister an aircraft upon request of an Idera holder."

Ravi Nath, chairman and managing partner of Rajinder Narain & Co

"It's no secret that the Indian aviation industry went through a bit of a rough patch following the demise of Kingfisher, leaving the aircraft finance and leasing community cautious, but the market now seems to be booming and it's easy to see why."

Leo Fattorini, head of the Asia-Pacific aviation group at Bird & Bird

DVB and ILFC

Airfinance Journal's Fleet Tracker indicates that AWAS, ACG, AerCap, Amentum, BBAM, BOC Aviation, DAE Capital, ILFC, Pembroke Capital, RBS Aviation Capital and Volito Aviation Services all had exposure to Kingfisher.

But DVB and ILFC's exposures were the most widely publicised because of their public battles with the Indian government to get their aircraft back.

At the end of 2012, DVB suspended all financing to Indian carriers and sued the Indian DGCA for its failure to deregister two jets it wanted to repossess from Kingfisher. Bertrand Grabowski, then member of the board at DVB, said at the time that holding security over aircraft registered in India did not give acceptable protection to owners and mortgagees.

ILFC had to repossess six jets on lease to Kingfisher. Henri Courpron, then chief of ILFC, said that his lessor had never faced a situation as bad as Kingfisher.

Courpron added that complying with Cape Town is critical for the air finance industry, and those who do not comply may struggle to obtain financing for aircraft at all.

"Comply or don't fly," was his pithy warning to India.

DVB Bank declined to be interviewed for this article, saying only: "We don't really have much new to say on the topic of DVB and India. Our position on India remains as it has been for the last several years since the collapse of Kingfisher. That said, we continue to observe the development of the airline industry in India and monitor the changes to the country's legal system and may re-enter the market when we again feel comfortable."

AerCap, which now owns 100% of ILFC, declined to comment.

5/20 rule – minus the five

Another restriction on some Indian carriers' growth plans has been the government's enforcement of the 5/20 rule.

In the early 1990s, India privatised some of its industries, including aviation, and with that came several new entrants. A new regulation was brought in – the 5/20 rule – which stated that to be able to fly internationally as an Indian carrier, an airline must be five years old and have at least 20 aircraft in its fleet. Some industry heads view it as a protectionist rule for the government-owned flag carrier Air India.

Newer Indian carriers such as Vistara and AirAsia India are affected by the rule and therefore are restricted to flying only domestic routes.

"Some of the more established Indian carriers with more than 20 aircraft and over five years of operation were presumably quite happy with the rule as it made it harder for relative newcomers such as Vistara and AirAsia India to operate internationally," says Bird & Bird's Fattorini.

"There's no reason why the existing carriers would want to change the rule that was effectively hampering the progress of new carriers," he adds.

Airlines including IndiGo, SpiceJet, Jet Airways and Air India are exempt from the rule, and are able to fly internationally. Foreign carriers such as Singapore Airlines and Emirates are able to fly routes such as Singapore to Delhi in much larger aircraft than the Indian carriers. Because some Indian airlines are impeded by the rule, foreign carriers reap the benefits.

But *Airfinance Journal* understands that the "5" aspect of the rule has now been relaxed, while the "20" remains – for now.

"The 5/20 issue is going to go away. The government has already said that that is almost a non-issue," says Rajinder Narain & Co's Nath.

Mario Jacovides, global head of the structured and asset finance group at Allen & Overy, says that the Indian government's proposal to relax the 5/20 rule would enable new airline entrants in the market, such as Vistara and AirAsia, to compete on international routes without having to wait for the current five years of operations. While this would be beneficial for them, it may affect the market share of incumbent airlines which are complying with those rules.

"These rules have been the subject of much debate and discussion and a compromise may be needed to move forward," he says.

> *"The 5/20 issue is going to go away. The government has already said that that is almost a non-issue."*

Ravi Nath, chairman and managing partner of Rajinder Narain & Co

Cautious confidence

With these positive steps towards making India a more lessor-friendly jurisdiction, it seems the main thing that could still hold the country back is its infrastructure, which remains crucially underdeveloped.

"To allow India's airlines to expand, there is a pressing need to further develop the country's airport infrastructure and build more airports and runways at a much faster pace than current developments if they are to meet their projected growth plans," says Jacovides.

Kaye Scholer's Rajagopal says: "The infrastructure gap is the fact that, of about 450 airfields in India, only about 70 of them are useable. The interconnectivity is really poor. They have airstrips, but they don't have air traffic control, for example."

But the government is working on improvements, and the city of Vijayawada in the state of Andhra Pradesh is one example. Its airport serves as a hub for Air Costa, but just five years ago it lacked even a proper luggage belt, so disembarking passengers would simply select their luggage directly from the luggage trolley like at the end of a long-distance bus journey. "Even with that really small airfield it's still a city of about six million people," says Rajagopal.

But in January, a new terminal was inaugurated and the country's civil aviation minister said the runway would be extended to accommodate bigger aircraft.

"If it's successful, the Indian aviation industry 10 years from now will look significantly different from what it looks today," says Rajagopal.

The Indian government has a so-called Regional Connectivity Scheme in draft phase, and the industry hopes this will lead to more improvements in the country's aviation infrastructure.

The scheme, Rajagopal explains, allows airlines to approach the DGCA to choose a route from those offered under the scheme – which are all tier 2-tier 3 or tier 3-tier 4 city routes – whereupon the DGCA can issue that airline an exclusive 10-year permit to operate the route, though the airline must commit to investing in providing services on that route.

Some of these lower tier cities only have runways capable of landing small aircraft, even sometimes only unpressurised aircraft such as Dornier 228s.

"It will have to be a very, very new concept developing here, which hasn't been done anywhere else. You will have to have proper scheduled airlines with these super tiny aircraft," says Rajagopal.

"Yes, there is an infrastructure issue. Yes, it's being addressed to a certain extent, but it won't be addressed fully unless you have carriers who actually look specifically at using their aircraft and connecting tier 4 and tier 3 cities to tier 2 cities."

While there is still work to be done in making India a completely comfortable jurisdiction for lessors both from a legal and infrastructure perspective, market participants should be optimistic about the future of the country.

Rajagopal says: "Cautious confidence is what all lessors should have."

Kingfisher's downfall

Kingfisher Airlines collapsed in 2012 because of financial difficulties. DVB Bank and ILFC (now owned by AerCap) were the main creditors.

Kingfisher had its operating license revoked by the Indian Directorate General of Civil Aviation (DGCA) in October 2012 after failing to supply the regulators with an acceptable turnaround plan.

DVB Bank sued the DGCA for failing to deregister two Kingfisher A320s.

Airfinance Journal argued in March 2013 that the situation was "obviously calamitous for the lessor and banks involved, but it has wider implications for the aviation community as a whole".

An *Airfinance Journal* editorial at the time said: "The Indian government's delay over its return of the jets shows the weakness of rule of law in the country. Depressingly, it also highlights some of the limitations of the culture of compliance that Cape Town supposedly helps promote."

SpiceJet's big order

SpiceJet has announced a commitment for up to 205 aircraft with Boeing.

Booked at the end of 2016, the order includes 100 new 737 Max 8s, SpiceJet's current order for 42 Maxs, 13 additional 737 Maxs, which were previously attributed to an unidentified customer on Boeing's orders and deliveries website, as well as purchase rights for 50 additional aircraft.

SpiceJet, an all-Boeing jet operator, placed its first order with Boeing in 2005 for next-generation (NG) 737s and now operates 32 737NGs in its fleet.

Kiran Koteshwar, chief financial officer of SpiceJet, told *Airfinance Journal* that the "long-term order" gives the company "strategic direction".

He says: "We have [now] restructured completely: We have paid our dues, we have not taken any haircuts, we have paid the taxes and everything that is required. We are now in a growth part and our load factors have been the highest in the market."

Changing composition of financing sources in aviation

Professor David Yu, Istat certified aviation appraiser, examines trends in the aviation finance sector driven by the role of insurance companies and commercial banks.

Throughout the history of aircraft leasing, various financing trends have come and gone while the industry has grown significantly to the current $126 billion forecasted of new delivery funding requirements for 2017[1].

There are now more commercial banks than ever before involved in the equity side of the business, along with newer capital sources such as insurance companies. These new players are additionally more diverse in geographical break down by their funding sources compared with the traditional western players and newer eastern players.

As 2017 further develops, several trends can be observed in relation to geographical sources of the funding as well as its characteristics.

Background

Sources of capital for aircraft transactions have had many forms since the days of the original aircraft finance leases back in 1968 with the start of McDonnell Douglas Finance Corporation (later after the merger renamed as Boeing Capital) and leases of DC-8s and DC-9s. Before that, the aircraft industry was mainly funded by classic equity and bank debt.

From that time to the start of the aircraft operating leasing industry in the mid-1970s by the pioneering International Lease Finance Corporation (ILFC) and Guinness Peat Aviation (GPA), aircraft leasing has continued to grow to where it is 42% of the world's fleet[2].

This growth continues to be driven by the demand for air travel as global economies have grown along with the number of airlines, as well as revenue passenger kilometres and available seat kilometres.

Global state of aircraft funding

Airlines and aircraft have traditionally been financed by equity and bank financing facilities. These sources have continued to evolve with the support of the aircraft manufacturers and other innovative structures by the continued increase in demand from the users, mainly the airlines.

These innovative financing structures include the use of the operating lease by capital sources such as commercial banks and leasing companies both captive and non-captive to banks or manufacturers.

The other sources of funding include: cash or equity (28% of 2016 funding); export credit agencies (7% of 2016 funding); bank debt (33% of 2016 funding) by commercial banks, institutional players such as private equity and hedge funds, and tax equity; capital markets (30% of 2016 funding), including asset-backed securities (ABSs) and enhanced equipment trust certificates (EETCs); and aircraft and engine manufacturer financings (2% of 2016 funding) with a total of $122 billion of new aircraft funding requirements in 2016[3].

Export credit financing

Export credit agencies (ECAs) have been a significant source of funding, especially during the financial crisis, but this has been trending lower as capital markets financing has increased. The recent low exhibited in 2016 has been the uncertainty of US Export-Import Bank (US Exim), given its large historical support, especially to aircraft deliveries.

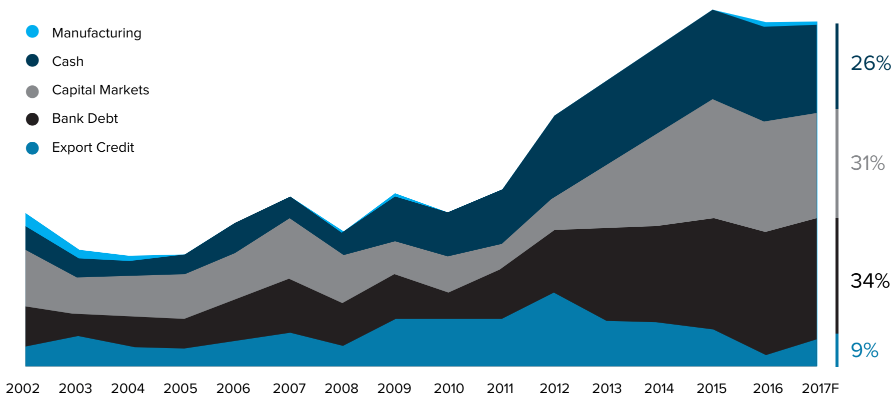
After letting its charter expire in July 2015, the US Congress reauthorised the bank in December 2015, but it is still in a state of limbo because it is not able to conduct new business given it awaits Senate confirmation of members to reconstitute a quorum. Only with a quorum can new funding decisions be made.

Graph 4: Percentage of Boeing Deliveries Funded By US Exim
(Source: Boeing Capital Corporation)

China's history of a formal export credit bank is far shorter that the West's. The Exim-Import Bank of China (CExim), one of the three policy banks under the State Council, was founded in 1994 with a mission to implement state policies to promote the export of Chinese products and services. Unlike US Exim, CExim funds projects directly instead of through guarantees or insurance, which is akin to what US Exim did in its early years.

While direct aggregate funding numbers are not published, the author has seen a significant rise in new financings by CExim especially over the past few years. This increase in funding is in line with the continued increased share of China's new deliveries in the global aviation market. CExim will continue to have a larger impact in respect to the global ECAs and the

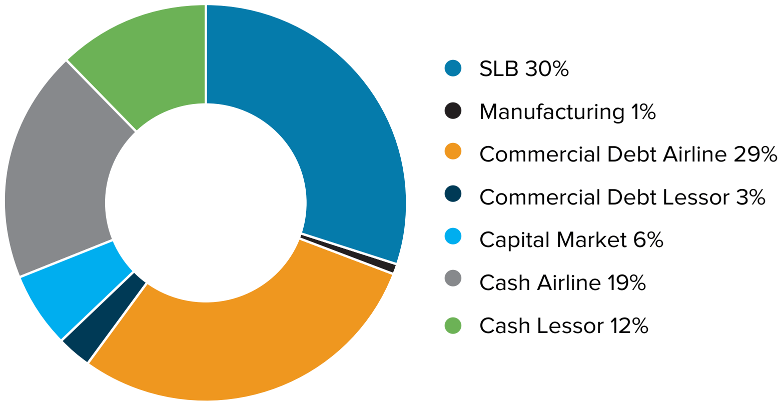
Boeing Delivery Funding 2016



Source: Boeing Capital Corporation

[1] *Boeing Capital Corporation Current Market Finance Outlook 2017.*
[2] *JP Morgan.*
[3] *Boeing Capital Corporation Current Market Finance Outlook 2017.*

Airbus Delivery Funding through October 2016



Source: Airbus

overall global aircraft financing market. This, in addition to the hopeful resolution of the quorum issue at US Exim, will have global ECAs play a larger role in the overall aircraft finance market.

Since the tail end of the financial recession, capital markets have seen a significant rise in the number and magnitude of deals and it has risen to represent about one-third of all new aircraft funding. These are represented by various securitisation transactions, including ABSs and EETCs. During this period, the vast majority of the capital markets deals have been completed in the West but, in Asia, the market has only just started. There are more innovative financing structures now being completed in onshore China and Hong Kong.

I predict that this trend will continue because more capital markets deals will be completed globally in 2017 but not by much in relative terms to other sources. The number of capital markets transactions in Asia will increase substantially, along with the expanding interest by financial players as described below, but as a percentage of the overall global market, this will not move the needle much in 2017.

Commercial banks as investors

Commercial banks have always played a significant role in the aviation finance market. They have traditionally provided financing facilities, both secured and unsecured term or revolving credit facilities. Recently there have been more unsecured term loan facilities completed at the lessor company level where traditionally the commercial banks have focused on the senior secured financing of specific aircraft assets. In addition, more commercial banks have again acted as lessors and have also become equity players.

One of the sub-trends is in the change of overall mix in terms of geography. In the late 1980s and early 1990s, banks such as Morgan Stanley not only arranged but also used their balance sheets to become equity investors. Dean Witter was one of the original founding shareholders of Aviation Capital Group (ACG) in 1986. The merged Morgan Stanley Dean Witter combined their aircraft portfolios into the acquired Awas in 2000. The end of this era came when John Mack took over as chief executive officer and almost immediately sold Awas to Terra Firma once it was determined to be a non-strategic asset.

Today in the US, Bank of America Merrill Lynch and CIT are still active as bank-owned lessors through their mainly Irish subsidiaries. CIT will soon be removed from this list when the expected closing of the sale to HNA Group is completed in the first quarter of 2017 because it too has been deemed a non-core asset.

Wells Fargo too entered the space through a joint venture with Avolon in 2013. In Europe, DVB, Santander and Standard Chartered, through its acquisition of Pembroke in 2007, are still active as investors. It is interesting to note that Standard Chartered is now in a joint venture with an undisclosed Chinese investor for a separate aircraft leasing investment entity.

The once active HSH Nordbank, through its formation of the Amentum platform, has since been sold to its management in an management buy-out. This was because the bank has downsized as a result of the problems with its shipping portfolio.

> *“Capital markets have seen a significant rise in the number and magnitude of deals and it has risen to represent about one-third of all new aircraft funding.”*

The story of Boullioun is interesting because it was bought from Sumitomo Trust and Banking by Deutsche Bank in 1998 and subsequently sold to WestLB, another German bank, in 2001. WestLB, once quite active as an equity investor, also had a 35.5% shareholding in Singapore Aircraft Leasing Enterprise (SALE) (now BOC Aviation) until its sale to Bank of China in 2006, when it decided these were non-core assets and refocused on its traditional European banking business. WestLB too had issues in its shipping portfolio and has further retrenched and this could be said about many of the European banks in the space. The shipping problem story will continue to be an impact, especially for European banks.

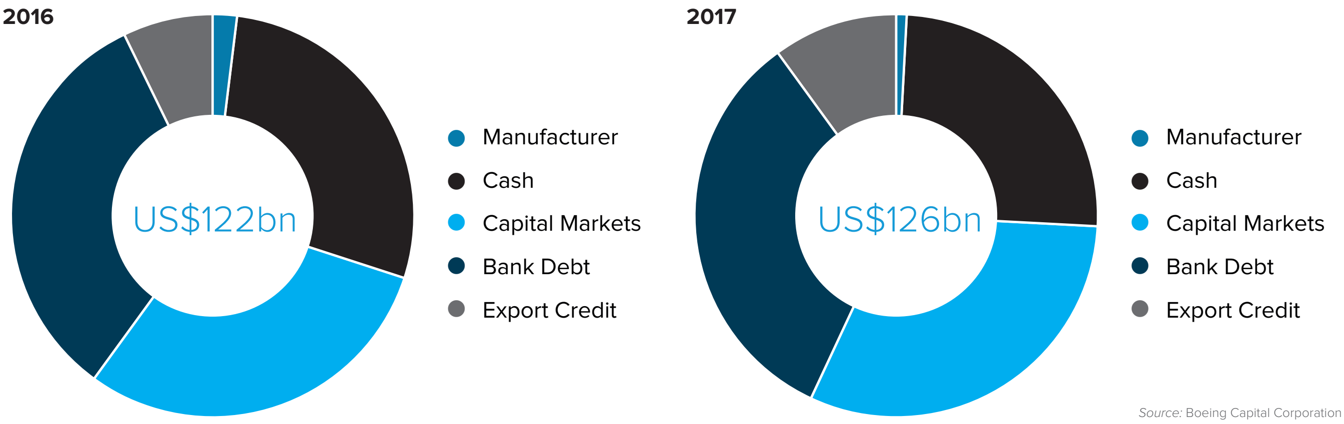
In Russia, VEB, Serbank and VTB banking groups have also been active through their leasing subsidiaries. Lately, they have encountered difficulties with sanctions and currency issues.

All of the above has happened as the East and the Middle East have seen large increases in activity in the sector. Japan originally had a lot of interest in aircraft leasing – for example, with Sumitomo Trust and Banking Company’s acquisition of Boullioun in 1994 from the manufacturer’s namesake founder and its subsequent sale to Deutsche Bank in 1998 as a result of the financial crisis of Japan Inc. This interest in aviation was resurrected post-2010 and was highlighted by SMBC’s acquisition of RBS Aviation Capital in 2012, among other merger and acquisition transactions by other local parties. Australia’s Macquarie, Commonwealth Bank of Australia and Investec have all been active principal investors. Middle Eastern banks joined the mix, including the National Bank of Abu Dhabi.

In China, almost all of the top 15 banks by assets[4] are active as investors through their owned leasing companies, except for Postal Savings Bank of China and Agricultural Bank of China, a policy bank. With the exception of Bank of China through its acquisition of SALE in 2006, all the other banks’ activities are newly formed financial leasing entities created after the 2007 edict by the China Banking Regulatory Commission allowing the creation of financial leasing entities owned by banks.

While financial leasing companies could be formed under the Ministry of Commerce, bank-owned financial leasing proved even more popular as new Administrative Measures for Financial Leasing Companies (Order of China Banking Regulatory Commission No 3) were issued in 2014 that lowered the barriers to entry into the financial leasing industry. These lessors are now some of the top 20 globally, according to *Airfinance Journal*’s Top Lessors 2016 by aircraft: BOC Aviation is eighth place

Global Industry Funding Breakdown



Source: Boeing Capital Corporation

> *“There is a new trend that is emerging in aircraft leasing of commercial banks downsizing their investments.”*

with 267 aircraft; ICBC Leasing 12th with 218 aircraft; and CDB Leasing 17th with 148 aircraft. Meanwhile, Minsheng Financial Leasing is 46th with 39 aircraft.

Looking at the top 50 lessors by value 2016, BOC Aviation is in sixth place ($11.4 billion), ICBC Leasing is eighth ($10.2 billion), CDB Leasing is 13th ($6 billion), Bocom Leasing is 19th ($4.2 billion) and Minsheng Financial Leasing is in 41st place ($900 million).[5] This trend will continue as the demand for aircraft in the region increases.

In addition, there is a new trend that is emerging in aircraft leasing of commercial banks downsizing their investments. Investec, for example, recently sold its 20% share of Goshawk Aviation to Hong Kong based co-shareholders Chow Tai Fook Enterprises (CTFE) and NWS Holdings Limited, which now both have 50% shareholding.

Goshawk is Investec’s third aircraft leasing platform, along with Global Aircraft Fund and Aircraft Syndicate Limited. It is also interesting to note that Goshawk was originally set up with backing from Investec, CTFE and Cheung Kong (CK), but CK subsequently sold its stake in the lessor to NWS. CK has since established Accipiter and several other joint ventures with global aircraft lessors.

Another driver rationale for this trend is the increased implementation higher reserve capital requirements on global banks by Basel III regulations enacted by the global financial crisis and set for implementation shortly. In addition, proposed amendments to the final Basel III even before its implementation, unofficially Basel IV, has even more stringent requirements that would standardise risk models and do away with internal risk ratings.

Aircraft leasing is under the specialised lending exposures class and object finance sub-category of the Basel Committee on Banking Supervision, a category that “generally exhibits higher risks and losses” than other categories of lending. Basel IV would, therefore, have negative effects for aviation and higher financing costs when it is enacted.

ECAs, on the other hand, have a cover effect on this standardised higher risk rating. Areas requiring large capital requirements such as aircraft leasing and private equity may propel banks to re-examine and restructure further or leave these investments.

In addition, the industry is seeing more insurance companies come into the space. Insurance companies with their large investment mandates have traditionally invested in public equities, capital markets and alternative investments such as hedge funds. Through these asset classes, insurance companies have had exposure to the aircraft leasing companies through one or multiple streams. Some insurance companies have direct investments in aircraft leasing assets, which started when ILFC (one of the founding companies in the space) was acquired by AIG Group in 1990. Subsequently, AIG sold its ILFC subsidiary after the financial crisis to AerCap and took a large shareholding in the new combined entity in 2014.

Other large notable direct investments by insurance firms include Pacific Life Insurance Company in ACG in 1996. The group has continued to expand, including acquiring Boullioun in 2005 and embarking on a new joint venture with NWS in 2016.

Other mid-sized insurance companies in Europe have also started to invest directly into aircraft leasing assets. Generally, these firms have invested in similar profiled investments such as infrastructure or real assets through ABS, EETC or other public and non-public equity and debt.

Increased interest in the sector from large insurance companies in China has also emerged. Like its compatriot banks, most of the major insurance firms in China have created financial leasing companies under China’s Ministry of Finance regulations and have primarily focused on finance leases, although some have started specific aviation divisions and others have diversified into operating leases.

These new players include Ping An Insurance ($753 billion in assets in 2015 and ranked number five top global insurance company), China Taiping Insurance ($63 billion in assets in financial year 2015[6]) through its joint venture with Sinopec, and China Life ($378 billion in assets in 2015 and number 20 top global insurance company) through its joint venture entity.[7]

This is not a surprising trend given that most financial groups and large conglomerates have joined the bandwagon in investing directly in aircraft leasing assets. As the industry continues to grow in 2017 and beyond, even more players from insurance companies and other sectors will be entering the industry.

These new capital sources will continue to change the composition of finance capital globally and increase weight towards insurance companies and Asian-based companies along with the continued growth of the global aircraft leasing industry.

[4] The Largest Banks in China (by Assts as of 30 June 2016) http://www.relbanks.com/asia/china.
[5] Airfinance Journal Leasing Top 50 2016 Supplement https://airfinancejournal.com/Magazine/Download/84
[6] China Taiping 2015 annual reports.
7 Basel Committee on Banking Supervision. Second consultative document. Standards. Revisions to the Standardised approach for credit risk. March 11, 2016 http://www.bis.org/bcbs/publ/d347.pdf

Boeing 777-300ER – a hard sell

The current widebody market is a difficult one and not even Boeing's most successful twin-aisle is immune to declining values, according to appraisers.

The 777-300ER is the most successful model in Boeing's popular 777 range. The formal go-ahead for the 777 family was announced in October 1990. Original 777-200 models were available with a choice of powerplant from General Electric (GE), Pratt & Whitney or Rolls-Royce.

The stretched 777-300 first flew in 1997 and was sold primarily to Asian airlines, the large majority of which selected Rolls-Royce's Trent engines.

No GE-powered standard 777-300 aircraft were delivered, but the manufacturer was awarded sole supplier status on the extended-range 777-300ER version, which was launched in 2002 and entered service in 2003.

All good things come to an end

The 777 continues to sell in both passenger and freighter versions, but orders are getting scarcer. Boeing's official figures for 2016 show annual net sales of only 17 of the type. Market conditions and the advent of new competitors are combining to make sales hard to come by. The contract signed with Iran towards the end of 2016, which included an order for 15 777-300ERs, was of course welcomed by Boeing, but in the current US political climate Iran Air might not be at the top of everybody's list of preferred customers.

Despite the difficult market background for new aircraft orders, existing 777-300ERs are still seen as sound assets by some investors, as the recent United enhanced equipment trust certificate (EETC) confirms (See United EETC shows 5% differential on 777-300ERs, *Airfinance Journal* October/November 2016, page 18).

As part of an attempt to stimulate 777 orders, Boeing and GE are phasing in improvements into current production models aimed at reducing fuel consumption by 2%.

Future developments

Boeing launched the 777X family at the Dubai Airshow in November 2013. The manufacturer is offering two variants of the 777X. The 777-9X provides seating for more than 400 passengers, depending on an airline's configuration choices. According to the manufacturer's data, the -9X will have a range of more than 8,200 nautical miles (15,185km). The second member of the family – the 777-8X – will seat 350 passengers and offer a range capability of more than 9,300 nautical miles.

Source: Boeing

"ICF believes the 777-300ER market will continue to soften with further deterioration in values and lease rates in the medium term."

Angus Mackay, principal

Boeing's launch of the 777X is an attempt to recapture its preeminence in the market sector but leaves the manufacturer with the problem of how to bridge the gap until production of the new models gets underway.

Collateral Verifications (CV)

Gueric Dechavanne, vice-president, commercial aviation services

In the past 12 months, CV has seen the 777-300ER market soften and lease rates drop for the type by about 5%. In our view, this level of discounting reflects a slightly higher level of depreciation than normal, which is because of the higher levels of available aircraft. As more aircraft come off of their initial leases and become available to the secondary markets, we expect this trend to continue for the next 12 to 18 months.

The demand for this aircraft, reflected in the current orderbook, had remained fairly stable over the past few years. However, the lack of recent orders and real demand from top-tier operators has started to soften the market. Another concern is the Airbus A350-1000, which is slated to enter service in 2017. With its improved economics, the A350 may slow future orders for the 777-300ER, which could have an additional impact on residual values and lease rates.

When the replacement for the 777 – the 777X – starts to deliver in larger numbers, this will also affect the future of the current model, but it is too early to tell when this will take place and to what extent. CV also sees continued pressure on values from some of the aggressive airline campaigns Boeing is pursuing. CV still feels that this aircraft will continue to be a desirable and viable option for many current and future operators, but some of the current market trends have increased uncertainty around the future of the aircraft. Longer term, a freighter conversion programme, complementing the factory-built 777F, will probably be developed.

ICF

Angus Mackay, principal

The 777-300ER competes in the 350- to 375-seat, long-haul widebody market segment, with a range exceeding 7,800 nautical miles. This segment, previously dominated by the 747-400, exhibits solid demand as operators, particularly in the buoyant Asia-Pacific region, have increasingly employed large widebody twins, which offer compelling operating economics compared to four-engined aircraft such as the 747-400 and A340-600. A key factor in the success of the 777-300ER has been the lack of true competition after the demise of these four-engined models.

Over the next few years, the 777-300ER will be challenged by both larger and smaller aircraft. At the lower end, the Airbus A350-1000 will be a competitor once scheduled deliveries commence in 2017. This aircraft, flying 369 passengers up to 8,000 nautical miles, has garnered 211 orders as of December 2016 . Boeing's 777-8X will also challenge the 777-300ER from the lower end of the payload spectrum, while the 777X will compete from above. Both Boeing products are planned for entry into service in 2020 and could be formidable competitors if they perform as planned.

As market interest in the 777-300ER diminishes, Boeing lacks the orders to bridge to the 777X and has announced progressive production cuts from the current 8.3 aircraft a month to 3.5 by 2018. This translates to about three years of production based on the firm order backlog.

Values and lease rates for the type have declined with general widebody oversupply and this trend is likely to accelerate in the near/medium term with the entries into service of the 777X and A350-1000.

Prospects for a freighter conversion programme seem uncertain in current market conditions, and significant redeployment to second-tier carriers may be challenging.

ICF believes the 777-300ER market will continue to soften with further deterioration in values and lease rates in the medium term.

Oriel

Olga Razzhivina, senior Istat appraiser

The extended-range (ER) version of the 777-300 has been extremely successful, having hit the sweet spot of the increasingly cost-conscious airline industry. The aircraft was particularly well received by first-tier carriers, because it offered trans-pacific with the lower costs of a twin-engined aircraft. Since its entry into service in 2004, the 777-300ER has largely replaced the 747-400 on thinner routes and has complemented the A380 on trunk city-pairs.

Despite the 777-300ER's relatively modernity, its successor, the 777X, was launched in November 2013. The new model will have two variants offering higher capacity and 10% fuel-burn saving. However, before the planned 2020 entry into service of the new models, Boeing says the current variant will undergo "continuous improvement, offering a 2% fuel burn reduction and an improved cabin with 14 more seats".

The facelift for the current generation 777 is timely: it will offer some respite from the last-off-the-line effect. These improvements may, however, not be entirely welcomed by the owners of earlier 777-300ERs. Owners of assets coming off lease in the next two to three years will be wise to lock in a lease extension as soon as possible. With no recovery in the widebody sector expected in the short term, downward pressures on lease rates and values will only increase.

Failing an extension, remarketing a 350-seat aircraft could prove challenging, as has already been shown by the smaller 777-200ER. There is no urgency for possible leasing candidates such as the US majors and British Airways, and they will likely cherry-pick the best deals offering them sister-ship fleets and lessor contributions towards interior reconfiguration.

VALUES 777-300ER

Current market value ($m)

Build year	2007	2009	2011	2013	2015	2017
CV view	75.1	85.2	97.5	111.6	130.4	154.7
ICF view	81.3	93.6	107.8	124.1	142.8	164.3
Oriel view	63.0	67.5	74.5	85.5	100.5	138.3

Values assume standard Istat criteria.

Indicative lease rates ($m)

Build year	2007	2009	2011	2013	2015	2017
CV view	0.65	0.75	0.85	0.95	1.05	1.20
ICF view	0.75-0.85	0.85-0.95	0.95-1.05	1.05-1.15	1.15-1.25	1.25-1.35
Oriel view	0.63	0.68	0.73	0.83	0.93	1.10

AIRCRAFT CHARACTERISTICS

Seating/range

Max seating	550
Typical seating configuration	365 in three-class
Max range	7,930nm (14,685km)

Technical characteristics

MTOW	351.5 tonnes (775,000lbs)
OEW	168 tonnes (362,000lbs)
MZFW	238 tonnes (529,000lbs)
Fuel capacity	181,200 litres (47,890 US gallons)
Engines	GE90-115B
Thrust	115,300lbf (512kN)

Fuels and times

Block fuel 1,000 nautical miles (nm)	15,610kg
Block fuel 2,000nm	29,840kg
Block fuel 4,000nm	60,900kg
Bock time 1,000nm	152 minutes
Block time 2,000nm	277 minutes
Block time 4,000nm	525 minutes

Fleet data

Entry into service	2003
In service	703
Operators (current and planned)	46
In storage	1
On order	124
Built peak year (2016)	88
Estimated production (2017)	66
Average age	5.1 years

Source: *Airfinance Journal* Fleet Tracker and research

Indicative maintenance reserves

C-check reserve	$125-$130 per flight hour
Higher checks reserve	$90-$95/flight hour
Engine overhaul	$290-$295/engine flight hour
Engine LLP	$450-$455/engine cycle
Landing gear refurbishment	$160-$165/cycle
Wheels, brakes and tyres	$100-$165/cycle
APU	$105-$110/APU hour
Component overhaul	$410-$3415/flight hour

Source: *Airfinance Journal* research and analysis

Fighting old battles

The success of the A320neo and 737 Max families will determine the positions of Airbus and Boeing in the narrowbody market, but the relative merits of the manufacturers' previous-generation single-aisle models will be of interest to owners and operators for years to come. **Geoff Hearn** looks at how the A320-200 and 737-800 match up.

It might have been anticipated that by the beginning of 2017 a comparison between the Airbus A320 and the Boeing 737-800 would be about two out-of-production aircraft, but as the year gets underway it is clear that the two models remain very much part of their respective manufacturers' current offerings. Exactly how long both models will continue to roll out of the production hangars is not completely clear from the manufacturers' announcements, but it looks certain that current-generation models will be built alongside their respective A320neo and 737 Max replacements until at least 2019.

Airbus has indicated that A320 production will continue beyond this year, but has not specified an exact date for discontinuing the current engine option (Ceo) model.

At a press briefing in early January, Fabrice Brégier, Airbus Commercial Aircraft president and Airbus chief operating officer, admitted that there had been problems with early A320neo production. "The transition between the A320ceo and A320neo is less sharp than what we expected three or four years ago, so we will continue to deliver substantial numbers of A320ceos beyond 2017," he says.

The A321ceo is likely to remain in production even longer because it has a larger backlog than the baseline A320 model.

The timing of an end to 737-800 production is even less certain because any hitch in 737 Max flight testing and early production could delay its phasing out. In any case, Boeing is unlikely to be in a position to switch from its current model earlier than Airbus.

Thanks in part to its additional seating capacity, the 737-800 has significantly outsold the A320, which is its most direct competitor in the Airbus stable. This is a significant achievement given the aircraft was launched, as part of Boeing's next-generation (NG) family, nearly a decade later than its Airbus rival. However, this does not take into account that the fastest-selling model in the Airbus family is now the larger A321, which has significantly outsold its most direct competitor – the 737-900ER.

Looking at total sales for the two families gives Airbus a clear lead. However, there is an argument that some sales of the 737 Classic generation should be counted in any direct comparison. Backlogs of the two current families are broadly similar.

Values and lease rates

Inputs from appraisers (see tables) suggest that the 737-800 has a slightly higher current market value (CMV) than the A320 for models of the same build year and the Boeing aircraft typically attracts higher lease rates. The differences are, however, largely explained by the differences in seating capacity.

Angus Mackay, principal, ICF, points out the 737-800 has achieved excellent market penetration with a large in-service fleet and a broad operator base. However, he adds the A320 is a formidable adversary, also with a large in-service fleet and operator base.

Mackay points out the latest standard A320ceos can offer an increase in

Leading characteristics of narrowbody competitors

Model	Entry into service	MTOW (tonnes)	Engines	Maximum pax	Typical pax	Range (nm)	In service	On order	Customers
737-800	1998	79	CFM56-7C	189	162	3,115	4,195	696	200
A320	1988	73.5/78	CFM56-5Bor V2500	180	150	3,300	3,945	361	268
A321	1996	89/93.5	CFM56-5Bor V2500	236	185	3,200	1,312	446	110
737-900ER	2001	85.1	CFM56-7C	215	180	3,200	409	102	21

Source: *Airfinance Journal Fleet Tracker and research*


Leasing an aircraft doesn't make it fly. We do.
Lufthansa Technik's Aircraft Leasing and Trading Support (ALTS) is the fast, professional service that takes over when a leased aircraft changes operators. We handle the full spectrum of checks and modification work, including design, cabin furnishings and repainting — all the way up to the necessary inspections and approvals. In short, we take care of all the technical and administrative tasks of aircraft leasing for you, whether you're the lessor or the lessee. Let's talk about it!
Lufthansa Technik AG, marketing.sales@lht.dlh.de
Call us: +49-40-5070-5553
www.lufthansa-technik.com/leasing
Lufthansa Technik
More mobility for the world

Current market value ($m)

Build year	2000	2004	2008	2012	2016
A320	12.7	17.6	24.0	31.3	43.4
737-800	15.4	19.5	26.0	33.1	46.3

Based on average of inputs from appraisal firms (Collateral Verifications, ICF and Oriel).

Indicative lease rates ($'000s/month)

Build year	2000	2004	2008	2012	2016
A320	155-170	175-220	215-270	250-300	300-380
737-800	165-210	185-250	225-280	265-350	330-400

Based on spread of inputs from appraisal firms (Collateral Verifications, ICF and Oriel).

range over the 737-800 of about 200 nautical miles, albeit with slightly lower capacity. This advantage stems largely from improved specific fuel consumption after the introduction, in December 2012, of sharklets (winglets) as an option for A320ceo models.

The consensus among appraisers is that both 737-800 and A320 values will remain stable in the short term, particularly for newer aircraft.

Olga Razzhivina, senior Istat appraiser, Oriel, says that 737-800 lease rates and market values have weakened in the past 12 months, but this owes much to the high rates the Boeing aircraft has been achieving recently. Oriel expects 737-800 values to remain stable.

Gueric Dechavanne, vice-president, Collateral Verifications, says market demand for the A320 has remained stable in the past six months, especially for newer aircraft. He adds that availability remains low, which has helped stabilise values and lease rates. He warns that increases in the production rate by Airbus may have a negative impact in the longer term. Delays in the delivery of early A320neos have played a positive role in the values of A320ceos. While this may be a short-lived phenomenon, it is likely to have an effect into 2017.

Most commentators agree that current fuel prices significantly erode the cash operating cost advantages of A320neos and 737 Maxs, which is likely to prop up demand for current-generation 737 and A320 models, which, in turn, should bolster values and lease rates.

Investor view

In *Airfinance Journal*'s 2016 Investors' Poll, the 737-800 was the highest-rated aircraft, with investors emphasising its suitability for the leasing market. The Boeing aircraft was one of the few models to increase its score from the previous year's poll.

The A320ceo came only fourth in the poll, behind the Boeing model and the A320 and A321 Neo models, with its score marginally down from the previous year. However, the differences in scores between the popular single-aisle aircraft are small and the A320 also is very highly rated by investors. Its lower poll position is in part explained by its successor A320neo model having entered service, whereas the 737-800 replacement – the 737 Max 8 – is not scheduled to enter service until the third quarter of this year.

Indicative relative direct cash operating costs for new single-aisle aircraft

	737-800	A320	A320neo	737 Max 8
Relative trip cost	1.5%	Base	-5.5%	-3.4%
Relative seat cost	-3.4%	Base	-5.5%	-8.0%

Assumptions: figures are based on *Airfinance Journal*'s interpretation of manufacturer claims and published data. Additional assumptions: 500-nautical mile sector, typical seating layouts.

Operating cost

Direct cost comparisons between the Boeing and Airbus single-aisle models are difficult because the two product ranges are not aligned in terms of seat count. The 737-800 typically accommodates between 5% and 10% more seats than the A320, which gives the Boeing aircraft an obvious advantage in seat-mile costs.

Airfinance Journal has carried out its own analysis (see table) based on an interpretation of the respective manufacturers' claims and published data. This analysis suggests the 737-800 trip cost on a 500-nautical mile (nm) sector is between 1% and 2% higher than that for the A320. This translates to an advantage over the A320 in terms of seat-mile cost of between 3% and 4%.

These figures show a smaller difference in seat-mile costs than in previous *Airfinance Journal* analyses of these two aircraft, largely because of the reduced fuel burn offered by equipping the A320 with the optional sharklets. Industry sources suggest that the fuel burn advantage from the Airbus sharklets is eroded significantly on sectors shorter than the 500nm used in the *Airfinance Journal* analysis. The addition of sharklets would normally increase acquisition costs and impact on the total direct operating cost of the aircraft.

The relatively small percentage differences in cash operating costs are very sensitive to assumptions and are likely to vary depending on an airline's operation. Maintenance costs are particularly difficult to estimate for a generalised case study. The differentials are so small that *Airfinance Journal* believes cash-operating cost is unlikely to be a key factor in an airline's choice between the two rivals. Fleet commonality, availability and acquisition cost are all more likely to influence which aircraft is selected.

Perhaps of more significance to investors is the decreased advantage in cash operating costs of both the 737 Max 8 and the A320neo over their current-generation counterparts, brought about by lower fuel prices.

Everyone's a winner

The market view and *Airfinance Journal*'s analysis would suggest that the 737-800 and A320 are difficult to separate in terms of investor appeal. Newer models, in particular, remain in demand and the outlook for values of both the Boeing and Airbus aircraft is positive.

The testament to this is that even with the successor aircraft either close to entering or already in service, the combined backlog of the two models is in excess of 1,000 aircraft. That is certainly a first in commercial aviation.

Rating Agency Unsecured Ratings

Airlines

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

Source: Ratings Agencies - 31st January 2017

Lessors

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

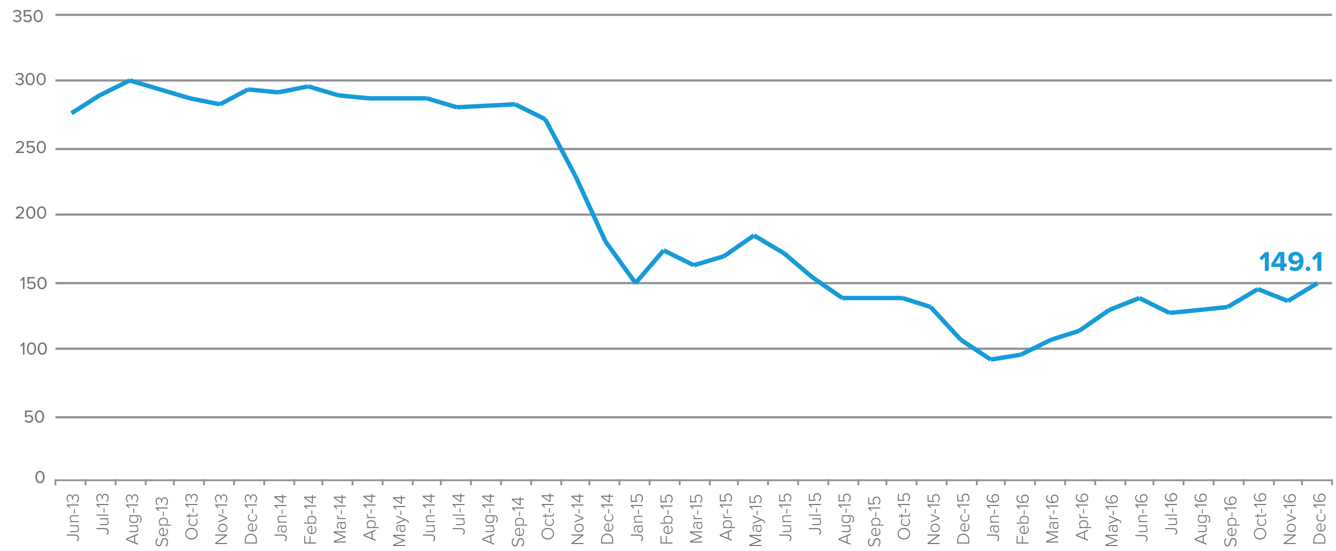
Source: Ratings Agencies - 31st January 2017

Manufacturers

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

Source: Ratings Agencies - 31st January 2017

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



Source: US Energy Infromation Administration

Commercial aircraft orders by customer

Customer	Country	Quantity/Type
September 2016 to 2 January 2017		
Qatar Airways	Qatar	30x787-9, 10x777-300ER
Atlas Air	USA	9x767-300F
Binter	Spain	6xATR72-600
Iran Air	Iran	80xBoeing aircraft
Iran Air	Iran	17xAirbus aircraft
Colorful Guizhou	China	2xE190
Vietjet	Vietnam	2xA321
Jetstar Pacific	Vietnam	10xA320
Aerolease Aviation	USA	10xMRJ90
Hong Kong Airlines	Hong Kong	9xA330-300
Intrepid	USA	2x747-8F
Swiss	Switzerland	1x777-300ER
UPS Airlines	USA	14x747-8
Donghai Airlines	China	5x787-9
PNG Air	Papua New Guinea	5xATR72-600
Peach Aviation	Japan	10xA320neo, 3xA320
Fiji Airways	Fiji	5x737 Max 8
United Republic of Tanzania	Tanzania	2xCS300s, 1xQ400
Philippine Airlines	Phillipines	5xQ400s
United Republic of Tanzania	Tanzania	1x787-8
BOC Aviation	Singapore	5xA320
GECAS	USA	75x737 Max 8
ACG	USA	30xA320neo, 2xA320, 3xA321
SpiceJet	India	100x737 Max 8s
Widerøe	Sweden	15xEmbraer E2s
Flynas	Saudi Arabia	60xA320neo
CityJet	Ireland	10xCRJ900

Based on *Airfinance Journal* research and manufacturer announcements as of 2nd February

Aircraft list prices - new models

Model	$ millions
Airbus (2017 prices)	
A319neo	99.5
A320neo	108.4
A321neo	127
A330-800neo	254.8
A330-900neo	290.6
A350-800	275.1
A350-1000	359.3
Boeing (2015)	
737 Max7	90.2
737 Max8	110.0
737 Max9	116.6
777-8X	371.0
777-9X	400.0
787-10	306.1
Bombardier (2016)	
CS100	76.5
CS300	85.7
Embraer (2015)	
E175-E2	48.3
E190-E2	55.3
E195-E2	62.4

Current production aircraft prices and values ($ millions)

Model	List price	Current market value*
Airbus (2017 price)		
A319	90.5	35.6
A320	99.0	43.7
A321	116.0	51.6
A330-200	233.8	90.4
A330-300	259.0	102.1
A350-900	311.2	143.5
A380	436.9	220.3
ATR (2015)		
ATR42-600	21.6	16.1
ATR72-600	25.9	20.4
Boeing (2015)		
737-700	80.6	36.1
737-800	96.0	46.8
737-900ER	101.9	49.0
747-8 (passenger)	378.5	162.6
777-200LR	313.8	N/A
777-300ER	339.6	156.9
787-8	224.6	117.3
787-9	264.6	137.1
Bombardier (2016 Avitas)		
CRJ700	41.4	23.6
CRJ900	46.5	26.0
CRJ1000	49.5	27.9
CS100	76.5	32.4
CS300	85.7	37.2
Q400	31.9	21.4
Embraer (2015 Avitas)		
E170	41.2	25.8
E175	44.4	28.5
E190	49.1	32.5
E195	52.0	34.5

*Based on Istat appraiser inputs for Air Investor 2017

Lease rates ($ millions)

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

Commercial aircraft orders by manufacturer

	Gross orders 2017	Cancellations 2017	Net orders 2017	Net orders 2016
Airbus	172	0	172	731
Boeing	189	2	187	668
Bombardier	10	0	10	161
Embraer	15	0	15	53
ATR	0	0	0	36

Based on *Airfinance Journal* research and manufacturer announcements as of 2nd February

The meaning and implications of **aviation cycles**

Despite an "undeserved" reputation as a pessimist, **Adam Pilarski**, senior vice-president at Avitas, is upbeat about aviation's the short-term prospects, although a downturn is on the way.

At the recent Dublin Airfinance conference, a speaker addressing the question as to where we are in the cycle recited a long list of factors supporting the positive long-term prospects for the industry. Most people, though, do not need to be reminded of our long-term prospects, but they have no doubt that ours is a cyclical business. It is also quite obvious that we are past the peak and nearing a periodic slowdown.

Over the past few years, we enjoyed continuing growth of world economies, good performance of airlines and an apparent order bubble. All these facts do not contradict the prospects of good fortunes still awaiting us, but highlight that changes are coming and those most prepared for them will do better than those competitors which are not planning for a downturn.

To assess where we are related to the cycle, we need to make a distinction between different elements of the aviation industry. Airlines are at a different stage than manufacturers, which face a different reality than investors or lessors.

To make life even more exciting, each category can be further subdivided into segments that have their own mini-cycle. So, passenger and cargo airlines are not in the same position, same for legacy and low-cost carriers. Manufacturers of jets face a different environment than those of turboprops and similarly large versus regional jet aircraft producers may be at a different phase of the aviation cycle. Even for the two duopolists, narrowbody lines face different realities than their widebody brethren.

So where are we in the timing of the cycle? First, we need to specify assumptions regarding some of the exogenous factors affecting the various segments of aviation. While the US economy is in the fourth-longest expansion period in its history, a downturn will have to happen eventually. The new administration has explicit plans to expand spending, which probably will stimulate the economy for a year or two.

There are no obvious signs yet of an economic disaster looming in other parts of the world, so we can speculate that we still have some momentum towards increased worldwide economic growth and world traffic. New economic realities point towards higher inflation rates and the dollar appears to continue staying at historically strong levels. Airlines just had the most profitable year in their history but costs are definitely going up, both on the fuel price and labour cost fronts. And the high value of the dollar causes cost pressures for non-US carriers because both oil prices and aircraft purchases are based on that currency. Yields (ticket prices) are getting weaker but still there will be demand for added capacity. Despite some movement towards consolidation in the leasing industry there appears to be more parties planning to enter the field. Low-cost carriers around the world are advancing their position in respect to their legacy competitors, except in the USA, where government policies seem to favour a comfortable oligopolistic status quo.

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

> *Over the past few years we enjoyed continuing growth of world economies, good performance of airlines and an apparent order bubble. All these facts do not contradict the prospects of good fortunes still awaiting us but highlight that changes are coming.*
>
> **Adam Pilarski**, senior vice-president, Avitas

If my assumptions are correct (and this is a big "if", subject to the usual caveats economists are famous for) what does it mean with regard to the timing of the aviation business cycle? Starting with airlines, I see intensifying competition between legacy carriers and low-cost carriers, including long-haul low-cost carrier routes, as well as between the various geographic regions of the world. Traffic will grow but profitability will be weakening as yields continue their decline. For manufacturers, I see an order-to-delivery ratio of definitely below one for the next few years. This will not prevent manufacturers from increasing production levels for at least a couple of years because of the existing huge backlog. Production increases rumoured now will eventually not materialise though. With intensified competition among lessors, I see increased downward pressure on yields. Since values lag decline in demand I would venture to say we still have steam for values before a periodic adjustment will occur.

Interestingly, despite my professional training in the dismal sciences and my undeserved reputation as a pessimist, I am fairly upbeat about the short-term prospects in aviation. A downturn is on the way but I do not see it just around the corner.

Surprisingly, many of my European colleagues see the realities in much darker colours but many forecasters in Asia share my views. All these views can be invalidated by unforeseen new developments but right now, this year still looks fine, with a periodic downturn starting to come next year. And the long-term future of aviation is still good.

AIRFINANCE JOURNAL

An *Airfinance Journal* special supplement

Regional Aircraft 2017

Contents

Regional aircraft news

TrueNoord invests in E190s

Amsterdam-based TrueNoord Regional Aircraft Leasing has disclosed its first investment, six Embraer E190 aircraft.

The portfolio is made up of aircraft built in 2013 and 2014 with leases attached.

The investment marks the start of a highly targeted on-going development and growth strategy for the TrueNoord fleet under lease, following investment from private equity firm Bregal Freshstream in 2016, says the leasing company.

TrueNoord Regional Aircraft Leasing relaunched last July after capital injection from a Bregal Freshstream.

Falko buys Bombardier portfolio

Falko Regional Aircraft is adding 11 Bombardier CRJ900NG aircraft to its portfolio.

The aircraft are being acquired from Scandinavian Airline Systems, and are currently on lease to Cimber A/s in Denmark.

"We are delighted to have reached agreement with SAS on these aircraft which further expands our portfolio of Bombardier manufactured aircraft" says Mark Hughes, executive vice president – corporate finance, Falko Regional Aircraft.

The transaction follows the acquisition of SAS' subsidiary Cimber A/S by Irish carrier Cityjet. As part of the transaction Cityjet has won a six-year wet lease contract from SAS to operate regional services from Copenhagen.

CityJet firms order for 6 CRJ900s

Bombardier Commercial Aircraft has announced the firm purchase agreement with Irish carrier CityJet, consistent with the conditional agreement announced on 24 January 2017.

The firm agreement includes six Bombardier CRJ900 aircraft and options for an additional four aircraft. Upon delivery, the aircraft will operate under wet-lease in the Scandinavian Airlines (SAS) network.

On 31 January CityJet completed the acquisition of Cimber A/S, the Copenhagen-based subsidiary of Scandinavian Airlines (SAS).

ATR misses deliveries target in 2016

Turboprop manufacturer ATR delivered a total of 80 aircraft in 2016, but missed its output target of more than 90 units.

The Toulouse-based company recorded a $1.8 billion turnover, down 10% from its record turnover in 2015 of $2 billion, when it handed over 88 aircraft to customers.

In 2015, ATR indicated that production would reach about 100 aircraft annually. The then chief executive officer, Patrick de Castelbajac, also admitted the turboprop manufacturer faced supply-chain "challenges" in ramping up production.

ATR further consolidated its position in 2016 with orders for a total of 36 new aircraft, including 34 ATR72-600s and two ATR42-600s, guaranteeing about three years of production. The manufacturer sold two ATR42-600s to Aeromar, while its largest order was for 12 ATR72-600s for Argentina's Avian Lineas Aéreas.

It also received renewed confidence from nearly 30-year-long customer Binter of Spain, as well as additional orders from Papua New Guinea's PNG Air (five ATR 72-600s) and Brazil's Azul Linhas Aéreas (also five ATR 72-600s).

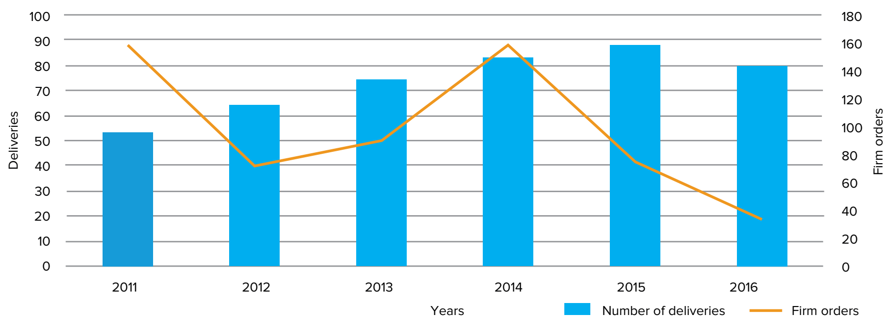
In February, Iran's flag carrier, Iran Air, signed an agreement to purchase up to 40 ATR72-600s. The deal includes firm orders for 20 units, as well as 20 options. The transaction has yet to be finalised.

"ATR remained the preferred choice of regional airlines in 2016, despite a globally difficult year in the regional aircraft market," says Christian Scherer, who was appointed chief executive officer of ATR in November, after the resignation of de Castelbajac.

He adds: "As the environment is getting tougher, the economic advantages and the market liquidity of the ATR aircraft versus its competitors prove to be the basis of our success."

The backlog at the manufacturer is estimated at 216 units, down from 260 at the end of 2015.

ATR orders and deliveries (2011-16)



MRJ delivery delayed

The Mitsubishi Regional Jets' (MRJ) first delivery has been delayed from mid-2018 to mid-2020.

Mitsubishi Heavy Industries (MHI) says in a statement the change is because of revisions of certain systems and electrical configurations on the aircraft to meet the latest requirements for certification.

MHI recently established the MRJ business promotion committee, chaired by Shunichi Miyanaga, president and chief executive officer of MHI, to oversee the continued development and long-term business performance of the MRJ.

"Since the historic MRJ first flight in November 2015, we have made significant progress in both engineering and test, and now three aircraft are in flight test in the United States," states MHI.

JAC becomes ATR operator

Japan Air Commuter (JAC), a subsidiary of Japan Airlines, the Japanese flag carrier, became a new ATR operator on 20 January with the introduction of an ATR 42-600 (MSN 1215).

Airfinance Journal understands that transfer of title was on 19 January and the handover ceremony on 20 January.

The aircraft, which was purchased with cash, will enter into service in late April after local training.

Eight other aircraft will be delivered over the coming three years as part of the carrier's fleet modernisation process.

JAC will receive the second aircraft in September. It is expected to be funded partly by the government for operation on specific island routes. The third aircraft is due in 2018.

JAC's nine new ATRs will start operations on both main routes and connections to and from smaller islands and communities across the country.

Airfinance Journal reported on 22 March that JAC had retired a Q400 aircraft.

Appraisers expect Bombardier to look at CS500

Bombardier is likely looking at making a larger member of the CSeries family, according to a panel of appraisers speaking at the 19th Annual Global Airfinance Conference in Dublin.

Stuart Rubin, principal, ICF International, says: "I certainly would say that Bombardier are looking closely at making a CS500. They see the family concept as a key success factor, and we've seen that in the market having a family is the key to success. I would not be surprised if they tried to stretch the aircraft in the next three to four years."

Lindsay Webster, director, asset valuations at Morton Beyer & Agnew, adds: "Bombardier is pretty adamant that there's not going to be. But I think that if they want to be in the industry for long, that's the next option they've got to go to."

However, Rikard de Jounge, vice-president, asset valuation at Avitas, disagrees. "It would be tempting to stretch, but they have enough to do in the sub-150 [seat] market. In the bigger market, Airbus and Boeing would likely stomp you out," he says. Olga Razzhivina, director at Oriel, says that Bombardier needs "a family concept" to be successful but going straight in a new class against Boeing and Airbus "will be difficult".

She adds: "Looking at the history of Bombardier, we know there has been a bid from China to have ownership in the company. The Canadian government may look at that again. The influx of money from that side of the Pacific means that Bombardier may not have to look over their shoulder in financial terms when looking to fund a new programme."

MANUFACTURER PROFILES

ATR

Source: ATR

Established in November 1981, ATR is a joint partnership between Airbus and the Italian company Leonardo (formerly known as Finmeccanica). Production is based in Toulouse alongside Airbus's commercial aircraft facilities. At the beginning of 2017, ATR had about 1,300 employees.

ATR is the only western commercial aircraft manufacturer that exclusively produces turboprop aircraft and the company's fortunes have been closely linked to those of turboprops in general.

The emergence in the 1990s of regional jets such as the Embraer ERJ-145 and Bombardier CRJ200 caused a decline in demand for turboprops, but there has been a significant revival since the start of this decade, 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 chief beneficiary of this resurgence.

Perhaps even more striking than the upturn in sales is the improved perception of turboprops among financiers. There is an unprecedented willingness to provide funds to customers acquiring aircraft, and leasing companies have placed significant orders directly with the manufacturer and via sale and leaseback transactions.

ATR manufactures two sizes of turboprop aircraft, the 70-seat ATR72 and the 50-seat ATR42. The aircraft benefit 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 in 1989. Both aircraft types have been the subject of several major upgrades and current production aircraft are designated as -600 models.

Many commentators predicted the ATR42 would be phased out because airlines seemed increasingly to favour the larger ATR72, but sales of the smaller model have continued, albeit in numbers well below those of the larger variant.

There has been much speculation that the company was planning a larger model to take advantage of the return to favour of the turboprop, but the plans have not materialised and the launch of such an aircraft looks unlikely in the short-to-medium term.

ATR production rates have increased to levels that are unprecedented for 50- to 70-seat turboprops. The company has envisaged sufficient demand for a production rate of 100 aircraft deliveries a year, although this has yet to be realised. To meet its production targets, ATR negotiated for additional space in the production facilities it shares with Airbus and set up a dual production line in 2014.

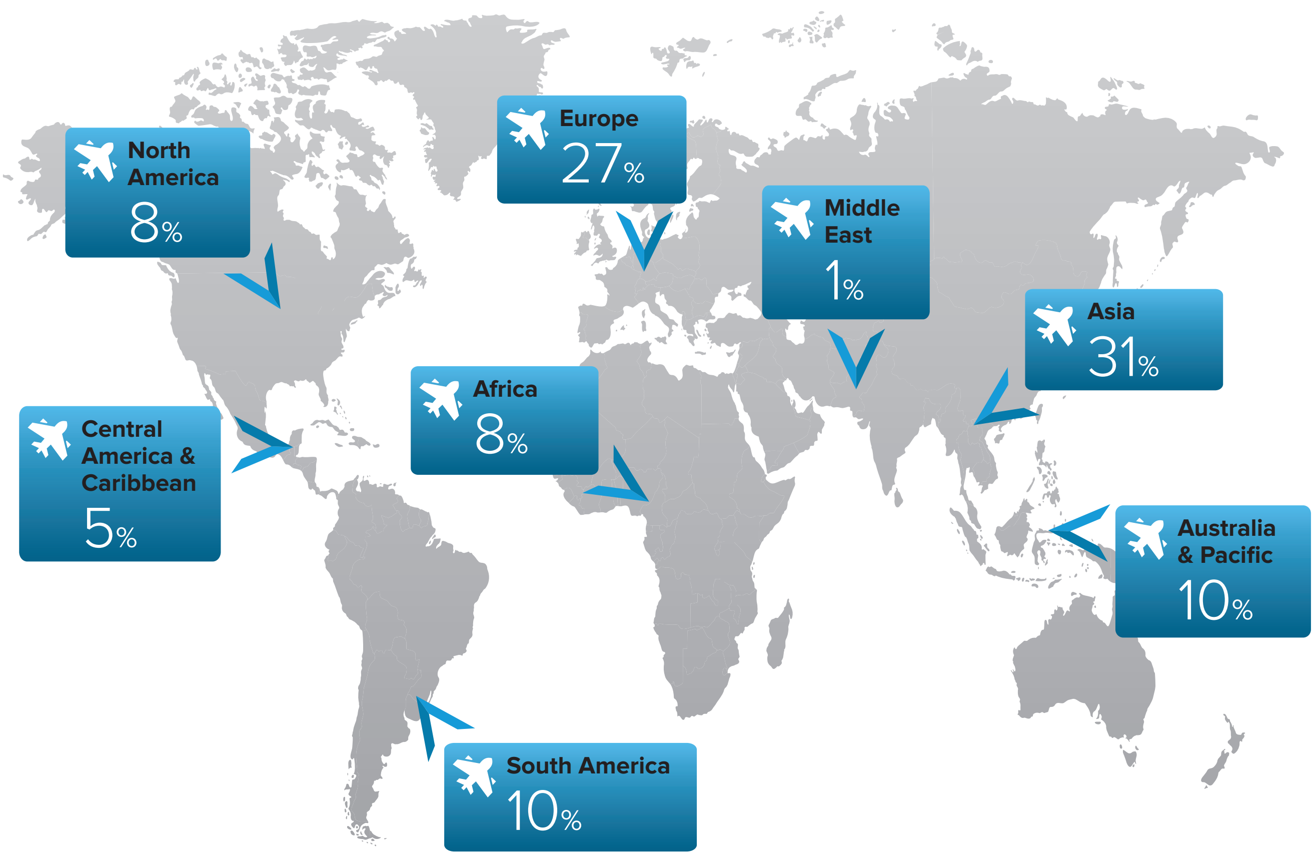
After this investment, ATR achieved its record turnover of $2 billion in 2015. During that year, the aircraft manufacturer also set a new company record for deliveries, with a total of 88 aircraft.

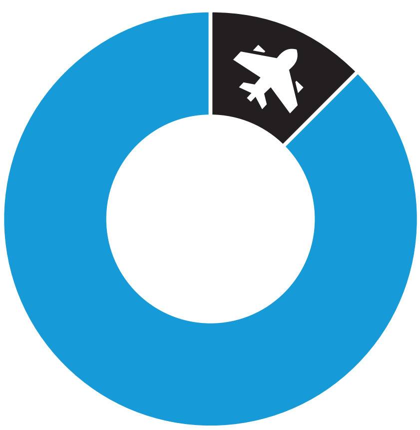
However, there is some recent evidence that the market has peaked and sales are becoming harder to come by. The problem is exacerbated by the increased participation of lessors, with leasing companies accounting for significant percentages of the manufacturer's order backlog.

Nonetheless, in January, ATR issued briefings saying it had consolidated historical levels of turnover and deliveries, despite a challenging market environment. The briefings noted that, in 2016, the company recorded its second-highest turnover ($1.8 billion) and its third-highest yearly total of deliveries (80 aircraft). During the year, the company received orders for 36 aircraft: 34 ATR72-600s and two ATR42-600s.

As of the beginning of 2017, the Franco-Italian joint venture had sold more than 1,500 aircraft, of which about 1,300 have been delivered.

ATR: Market share of current fleet by region





12.7%
of global regional aircraft fleet

1,188 ATR aircraft in the current fleet

Source: Airfinance Journal's Fleet Tracker

MANUFACTURER PROFILES

Bombardier

Source: Bombardier

Bombardier's prospects have improved considerably in the past 12 months. At the start of 2016, the company's new-technology CSeries programme was failing to book a significant volume of orders, more than two years late and $2 billion over budget.

However, thanks to a liquidity boost and a flurry of orders for CSeries aircraft, 2017 has got off to a much brighter start.

In June 2016, the company sealed a deal with Quebec's provisional government for the investment of $1 billion in the CSeries programme, which helped to ease its liquidity problems. Under the agreement, the government takes a 49.5% stake in the programme.

Meanwhile, Bombardier has picked up large orders from major airlines, boosting the credibility and the prospects of its newest aircraft offering.

Bombardier's turnaround plan seems to be taking effect. The company is on target to generate breakeven free cash flow by 2020, while total revenues, driven in part by higher CSeries deliveries, are expected to increase by a low-single-digit rate. Projected earnings before interest and tax is expected to range between $530 million and $630 million – up from 50% at the midpoint over 2016's earnings.

Aircraft types

As well as business aircraft, Bombardier manufactures a range of regional jets and turboprops (excluding the CSeries). These include the Dash8, Q Series and CRJ families.

The original Dash8 family consisted of the 30-seat Dash8-100/-200 and the 50-seat Dash8-300. A 70-seat variant, the Dash 8-400, followed but is significantly different to the original family members. Later models of all variants were rebranded as Q (for Quiet) Series aircraft. Production of the Q200 and Q300 ceased in May 2009. The -400 model continues in production, under the designation Q400.

The Canadair Regional Jet (CRJ) was derived from the Canadair Challenger jet and was well received by the market, with more than 1,000 of the 50-seat CRJ100/200 being delivered. The CRJ's success was a major factor in the demise of a number of turboprop manufacturers, which had previously dominated the 50-seat market. Production of the CRJ200 was suspended in 2005. The main competitor to the CRJ100/200 is the Embraer 145. CRJ production is expected to fall in 2017 to about 10 deliveries, most for replacement purposes, down from between 35 and 40 in 2016.

The CRJ700, CRJ900 and CRJ1000 are stretched and upgraded versions of the original CRJ200. According to *Airfinance Journal* Fleet Tracker, there are 1,450 aircraft in operation across the whole aircraft family.

Strong year ahead for CSeries?

Bombardier's latest venture is the CSeries family, which is aimed at the 100-seat-plus market. The two models in the family (the CS100 and the CS300) compete directly with the smaller members of the Boeing 737 and Airbus A320 families.

The programme suffered a number of setbacks and delays and initially failed to attract significant orders. However, that changed last year, with several significant orders coming from leading airlines, including Delta and Air Canada. These orders brought its backlog above the target of 300 orders by the time of the aircraft's entry into service.

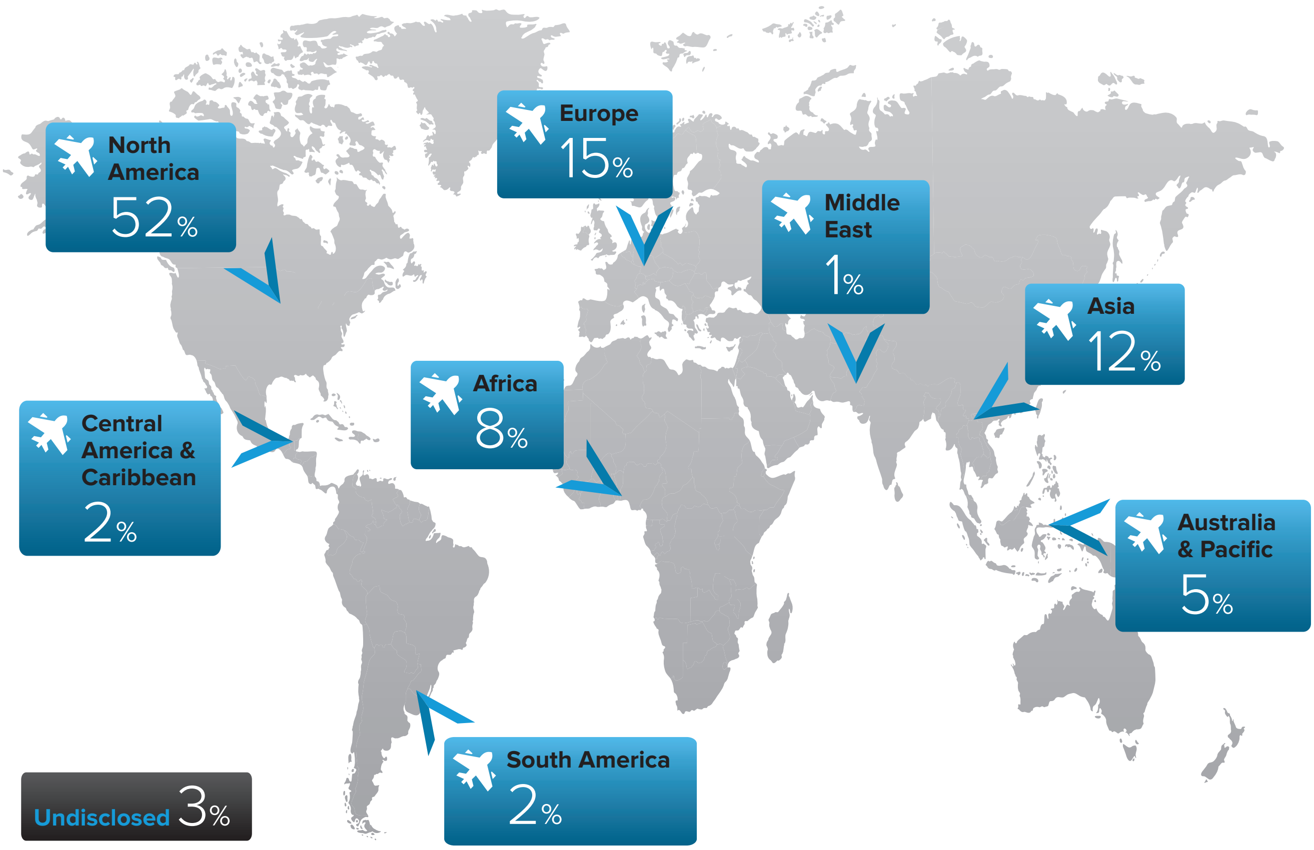
At the 19th Annual Global Airfinance Conference in Dublin in January, a panel of appraisers said it expected the CSeries programme to have a strong year in 2017 but to continue facing difficulties.

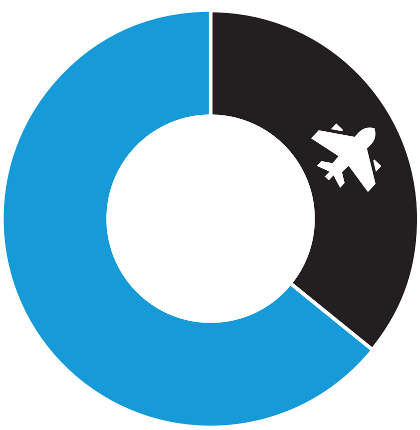
Stuart Rubin, principal at ICF International, says: "I think 2016 was an excellent year for the programme. The Delta order was key. Still some challenges remain: Boeing and Airbus have deep pockets on production levels and I think they are very well positioned to compete with the CSeries. The A319neo continues to be a problem for the programme, so I think 2017 will be a good year but there will be some challenges ahead."

Olga Razzhivina, director at Oriel, says the lack of orders for the CSeries may be because of market appetite for 108- to 133-seat aircraft.

"It's a difficult sector of the market to be in. If you look at CSeries' closest competitors – 737 Max 7s and A319neos – the orders are disappointing. But it could be a bellwether for how much demand there is for 108- to 133-seater aircraft. It's hard to tell whether the CSeries programme is out of the woods; I think it depends on one more major order from the main operators. It is really down to Bombardier to score another order, otherwise it might be another niche type that has its merits. You want an aircraft type that is really diversified between operators."

Bombardier: Market share of current fleet by region





35.9% of global regional aircraft fleet

3,345 Bombardier aircraft in the current fleet

Source: Airfinance Journal's Fleet Tracker

MANUFACTURER PROFILES

Embraer

Source: Embraer

Embraer kicked off the year strongly with two announcements – one for its re-engined E2 aircraft and another for its E-Jet family.

Scandinavian regional carrier Wideroe placed an order for 15 E190-E2 re-engined aircraft. The agreement includes three firm aircraft and purchase rights on a further 12, with deliveries commencing in 2018.

Wideroe is switching to Embraer after being an all-turboprop operator, with a fleet entirely comprising Bombardier Dash8s.

The order coincides with a shift in strategy at the Brazilian manufacturer. For some time, Embraer's focus has been on its successful E-Jet family. However, in 2013, the manufacturer announced the launch of the E2, which is the second-generation E-Jet.

Airlink, Southern Africa's largest independent regional airline, has selected the E-Jet for its Avro RJ85 replecement programe. The carrier plans to acquire a total of 13 aircraft with second-hand E-Jets amongst them three E170s and two E190s will be sourced from ECC Leasing, a wholly owned Embraer subsidiary. The carrier will start receiving the aircraft in the first half of this year.

Airlink already operates a large fleet of ERJ aircraft – last December, it started to add 11 further ERJ-140 jets to its fleet.

By the end of the fourth quarter of 2017, the airline will operate 30 ERJs, comprising all three types – ERJ-135, ERJ-140 and the ERJ-145.

The announcements come after Embraer increased its commercial aviation deliveries by 6.9% to 108 units in 2016.

It delivered a total of 225 aircraft to the commercial and executive markets, representing its highest volume of deliveries in the past six years. As of 31 December, the backlog totalled $19.6 billion.

Still, even with an uptick in deliveries, Embraer president and chief executive officer, Paulo Cesar de Souza e Silva, indicated at the time of the results that 2016 was a year of "major challenges in the aviation industry due to global economic and political uncertainties".

In response to this scenario, Embraer is implementing important actions and making adjustments to be well positioned in all business segments it operates, he says.

The spare parts pool programme continues to grow, he notes. In the fourth quarter, Airlink and the UK's Eastern Airways signed contracts for the programme.

Embraer has logged more than 1,700 orders for the E-Jets programme alone.

The manuacturer delivered its 1,300th E-Jet in the fourth quarter, to China's Tianjin Airlines.

Last year, it delivered 90 E175s, eight more than in 2015. E190 deliveries in 2016 totalled 11, three more than 2015, and E195 deliveries for the year totalled seven, one fewer than 2015.

However, Embraer did not deliver a single E170 in 2016, whereas it delivered two in 2015.

Looking ahead, Embraer is eyeing Iran's requirement for aircraft with 130 seats or fewer after Airbus won orders for 98 aircraft and Boeing secured a deal for 80.

It also sees untapped opportunities in the Asia-Pacific market. Embraer believes that airlines in that region will take delivery of 1,570 new jets in the 70- to 130-seat segment over the next 20 years. This requirement is valued at $75 billion, at list prices, representing 25% of the worldwide demand for the segment in the period.

According to the global Embraer Market Outlook for the 70- to 130-seat capacity segment for the next two decades, the entire market will demand 6,350 new jets in this category, which is valued at $300 billion over the period.

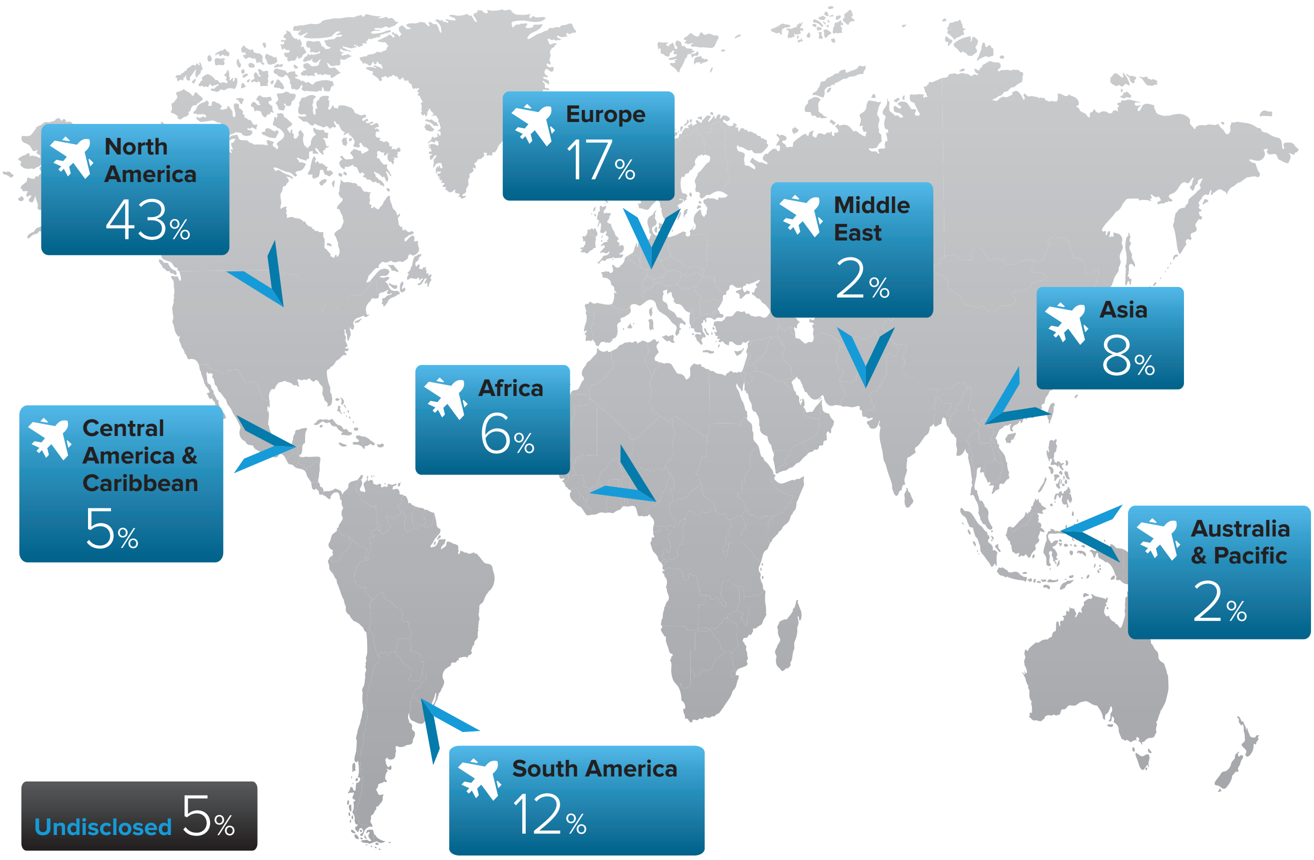
"We are showing to airlines the benefit of moving from red oceans to blue oceans – that is, to move away from a crowded marketplace and seek out opportunities in markets that are currently underserved, or not served at all, where yields are also stronger, moving from one to two digits," says de Souza e Silva.

Embraer notes in Asia-Pacific about 30% of narrowbody-exclusive markets are served with less than one daily frequency. It believes markets such as these would be better served with 70- to 130-seat jets, based on the average number of passengers per departure. Also, 37% of intra-regional turboprop capacity is offered on routes longer than 200 nautical miles, which are better suited to jet operations, because of their higher network productivity, better operating economics and superior passenger appeal, it believes.

Another opportunity in the region, says Embraer, is the replacement of ageing fleets. There are more than 250 jets in the 50- to 150-seat category that are more than 10 years old, and these are possible targets for replacement in the near future.

In the December/January edition of *Airfinance Journal* there was an incorrect figure in the Investor Poll on the operational success of the E175-E2. The incorrect figure was 5.0 when it should have been N/A, as the aircraft in question is not in service yet.

Embraer: Market share of current fleet by region



30.3%
of global regional aircraft fleet

2,822 Embraer aircraft in the current fleet

Source: *Airfinance Journal's* Fleet Tracker

MANUFACTURER PROFILES

Comac

Source: Comac

The Commercial Aircraft Corporation of China (Comac) is a state-owned limited liability associated with the Aviation Industry Corporation of China (Avic). Comac is responsible for large passenger aircraft programmes in China. Its principle aircraft is the C919, an A320/737-sized aircraft, but the company also has responsibility for the ARJ21 regional jet.

ARJ

The ARJ21 has suffered numerous delays in its development, but finally gained certification from the Civil Aviation Administration of China at the end of 2014. However, the US Federal Aviation Authority, which is shadowing the certification process, is not expected to certify the aircraft in the short term.

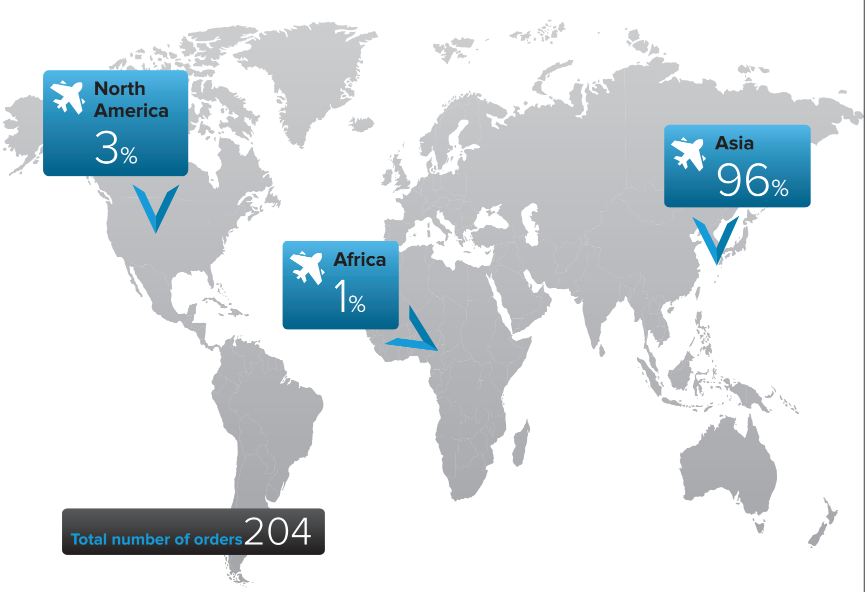
Sichuan-based Chengdu Airlines took delivery of the first ARJ21 in November 2015 on lease from SPDB Financial Leasing.

"The 700 baseline variant has already come out and is currently in service, but I don't think there is much demand for under 100-seat aircraft in China," says Professor David Yu.

"The continued trend is more upsizing in the aircraft size especially in crowded trunk routes, so this will likely have a minimum impact there. How many regional aircraft are there in China? Not that many compared to larger-sized aircraft."

He adds that one benefit of the aircraft is that it could have more impact in western China, where it can be utilised for increasing frequencies on underserviced routes or opening up new routes.

Comac: Number of orders by region



Source: Airfinance Journal's Fleet Tracker

Orderbook for ARJ21

Airline/Lessor	Number ordered
CALC	30
Chengdu Airlines	29
Comsys Aviation Leasing	20
Congo Brazzaville	3
Gecas	5
Hebei Airlines	10
ICBC Leasing	40
Henan Airlines	50
Myanmar Airways	2
Shandong Airlines	10
Shanghai Airlines	5

MANUFACTURER PROFILES

Mitsubishi

The Mitsubishi Aircraft Corporation is owned principally by Mitsubishi Heavy Industries, but has a number of smaller stakeholders, including the Toyota Motor Corporation. The company is developing the MRJ family of regional jets.

Original plans focused on the 70-seat market with the MRJ70 but, in response to changed market requirements after the aircraft's launch and programme delays, emphasis has switched to the larger MRJ90.

On 23 January, the company announced a further delay to the MRJ programme, with the first delivery now scheduled for mid-2020 rather than mid-2018 as previously planned.

This is not the first time the MRJ has encountered setbacks. In April 2015, Mitsubishi Aircraft announced a delay in the first flight from the second to the third quarter of 2015.

Aircraft testing

Mitsubishi Aircraft has used two aircraft for strength test. One is used for fatigue strength test, while the other has completed the static strength test.

"The completion of static strength test confirmed that the MRJ airframe has the structural strength required for test centre," states Mitsubishi Aircraft.

Four aircraft are in flight test. Three flight test aircraft (one, two and four) have successfully conducted ferry flights and flight tests are undergoing in the US. The fourth aircraft is undergoing flights test in Japan.

The new final assembly hangar has been completed and is ready for production

Customers

The dominant market for regional aircraft is the US, and this is reflected in the MRJ orderbook. This includes a firm order of 50 MRJ90 units for Tran States Holdings, 100 orders from Skywest and 20 units from Eastern Airlines.

All three US operators have conversion rights for the 70-seat variant, according to Hideyuki Kamiya, head of strategic marketing, Mitsubishi Aircraft.

The MRJ also has 10 units on order from Miami-based lessor Aerolease. In addition, the aircraft has secured three non-US customers so far, including ANA, Air Mandalay and Japan's flag carrier Japan Airlines.

In the US market there are two important limits that set the size of aircraft for routes applications: the maximum limit of 76 seats and the 86,000lb maximum take-off weight (MTOW) limit.

The 86,000 MTOW limit has created problems for the manufacturers because new-technology aircraft, equipped with new, efficient high-bypass engines, turn out heavier than 86,000lb in their 76-seat variants.

The manufacturers of new-technology aircraft gambled on the scope clause MTOW limit being raised by the end of the decade. The unchanged MTOW limit favours the two aircraft types that fit under the scope clauses: Bombardier's CRJ900 and Embraer's E175. But it makes life difficult for new products such as the MRJ90 and Embraer's E175-E2, which currently exceed the scope limit.

The MRJ90 MTOW is 94,000lbs, but Kamiya says the configuration depends on the customer.

"I think they will update and will be able to reduce it if needed," he tells *Airfinance Journal* on the sidelines of the 19th Annual Global Airfinance Conference Dublin 2017.

Embraer has planned a 2020 entry-into-service for its E175-E2, and Mitsubishi's recent announcement to delay the planned entry-into-service by two years to mid-2020 would give airlines more time to reach new scope agreements, allowing a higher MTOW.

"We can't forecast the timing of scope clauses but, historically, it has expanded. Mitsubishi's products are good aircraft to relax the scope clauses," says Kamiya.

The smaller MRJ70 would fit the current scope clauses. Kamiya says the model is the same size as the CRJ700 and the E170 products. "There are 500 aircraft in this category in the US," he adds.

The MRJ70 is the smaller next-generation aircraft available, and Mitsubishi is targeting CRJ200 and CRJ700 operators in the US market.

Kamiya says deliveries are expected initially to reach one aircraft a month, with an ultimate goal of 10 aircraft a month.

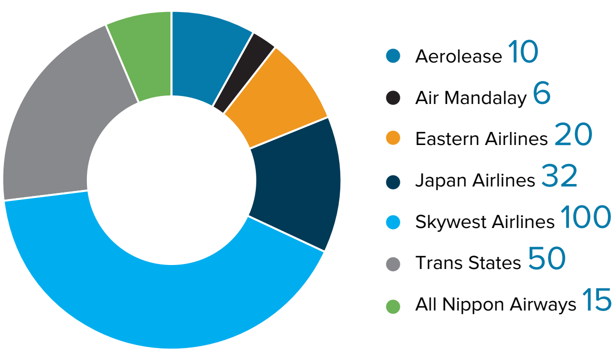
Lessors represent 10 firm aircraft, or 4% of firm orders. Rockton announced a letter of intent for 10 units at the 2016 Farnborough Airshow, and Kamiya is confident the Swedish leasing entity will firm its order.

As of 31 January 2017, the MRJ has recorded 233 firm orders and 194 options or purchase rights. "Lessors will endorse the MRJ programme," he says, adding they will have the capability to remarket.

Overall, Kamiya is confident the MRJ programme will perform well.

"Compared with the E2, we started the design from scratch. The MRJ has an optimised fuselage. The wing accommodates a high bypass ratio engine. It gives us some advantages over a re-engined aircraft," he says.

Orderbook for **MRJ90**



53 Orders from Asia 23%

190 Orders from North America 77%

Source: *Airfinance Journal*'s Fleet Tracker

MANUFACTURER PROFILES

Sukhoi Civil Aircraft Company

Sukhoi Civil Aircraft Company (SCAC) is a civil division of Russia's Sukhoi Aviation Holding (a UAC company), manufacturing the Sukhoi Superjet 100 aircraft (SSJ100). There are 85 SSJ100 in the active global regional fleet and a further 164 on order, according to Airfinance Journal's Fleet Tracker.

The company's main in-production civil programme – the Sukhoi Superjet 100 (SSJ100) – was designed in cooperation with several foreign partners, but production is based in Russia. The aircraft entered service in 2011 after certification from the Russian authorities. Certification by Western authorities followed, although not without some difficulties. The aircraft is designed to compete internationally with its Embraer and Bombardier counterparts.

The aircraft's SaM-146 engines are designed and produced by the Franco-Russian PowerJet joint venture between Snecma (Safran) and NPO Saturn.

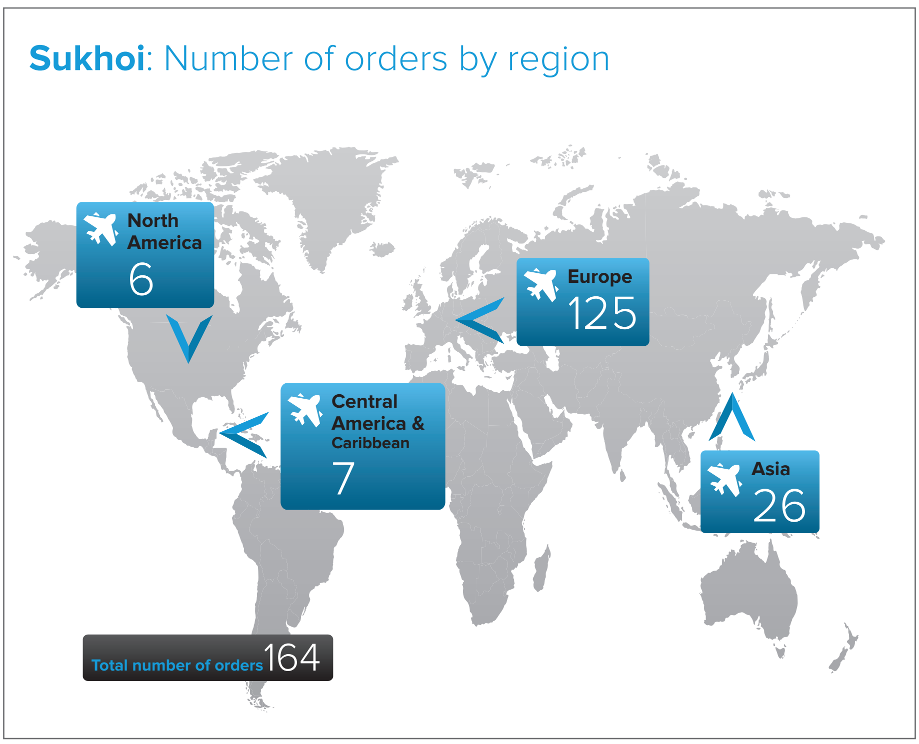
Worldwide marketing is undertaken by SuperJet International, which is a partnership between Sukhoi Aviation Holding and Alenia Aermacchi, a division of Italian aerospace conglomerate Leonardo (formerly known as Finmeccanica). The current-production models are the 100-seater SSJ100 in Basic version with a range of 3048 kmand a long range (LR) version of 4578 km range.

Source: Sukhoi

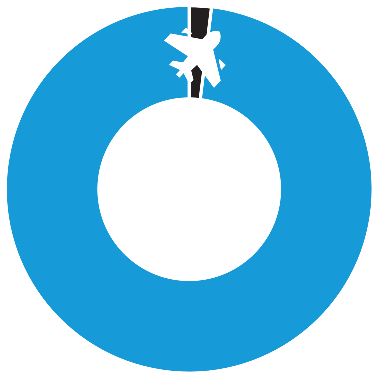
The company announced at the 2016 Farnborough Airshow that it is developing a stretched version to accommodate 120 passengers.This aircraft may bridge the gap between the Sukhoi Superjet 100 and the Irkut MC-21. It will act as a competitor to the Bombardier CSeries, Airbus A319 and smaller models of the 737NG.

Overall, the Sukhoi Superjet 100 has 239 firm orders, excluding options, according to Fleet Tracker. Some of the larger orders for the aircraft include an order of 30 from Aeroflot, made in 2005; an order for 30 made by Mexican carrier InterJet in 2011; and, more recently, an order for 32 aircraft, with options for 28 from Russian lessor GTLK. Irish regional carrier CityJet also placed a firm order for 15 SSJ100s with 16 options in October 2015, marking another international order for the aircraft.

The programme suffered a blow in May 2012 when a test flight of the SSJ100 crashed into a mountain, killing all 45 people on board. The programme also suffered a set back in January 2017, when some operators had to ground several of its SSJ100s for safety reasons. Cracks were found in the tail section of one aircraft, forcing the Russian authorities to order safety inspections of SSJ100. However all the aircraft with the technical issue have been repaired by the manufacturer the same month and SSJ100 resumed flights.



Source: Airfinance Journal's Fleet Tracker



1.1% of global regional aircraft fleet

107 Sukhoi aircraft in the current fleet

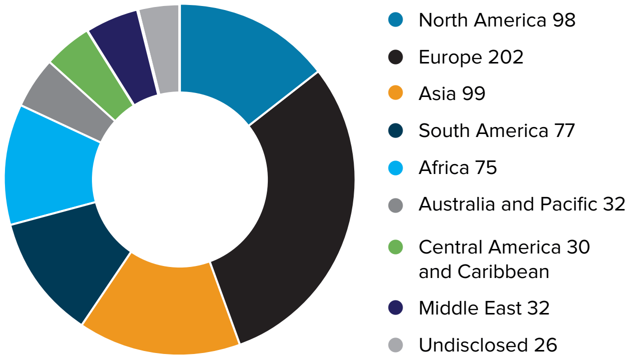
Other **regional manufacturers**

As well as the in-production aircraft types, there is a significant portion of the current regional fleet that is made up of older aircraft models. According to *Airfinance Journal*'s Fleet Tracker, 1,833 out of production aircraft are in the current regional fleet today, making up 20% of the total current global regional fleet.

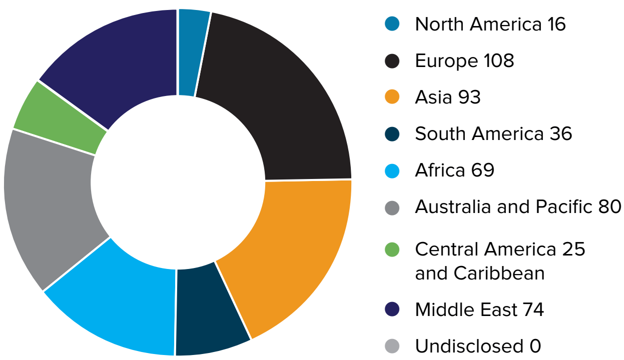
These include aircraft from British Aerospace, Fokker, Saab, Short Brothers and Boeing. Although it stopped being produced in 2002, the BAe 146 remains a particularly popular regional aircraft today, with its primary users including Ireland's CityJet and Brussels Airlines.

There are 246 Bae 146s in the current regional fleet today, according to Fleet Tracker. The charts illustrates percentages of out-of-production aircraft current global regional fleet.

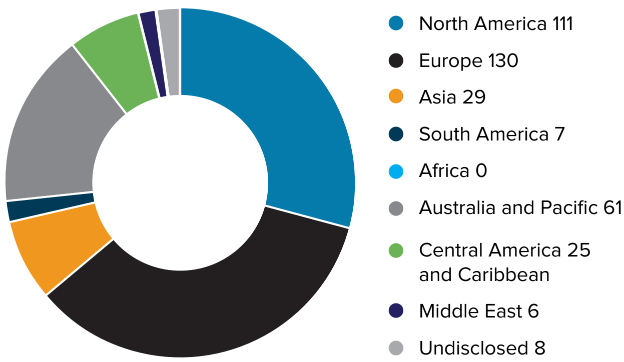
BAE: number of aircraft in current global regional fleet



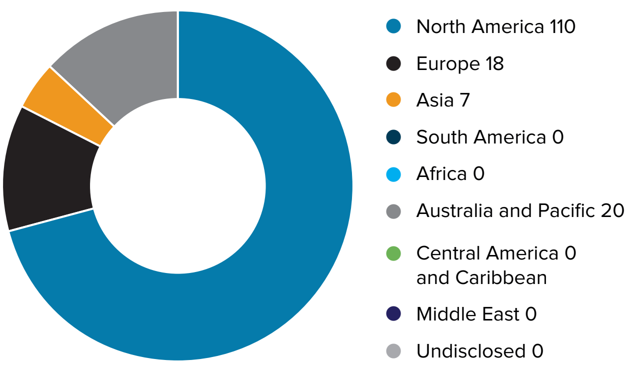
Fokker: number of aircraft in current global regional fleet



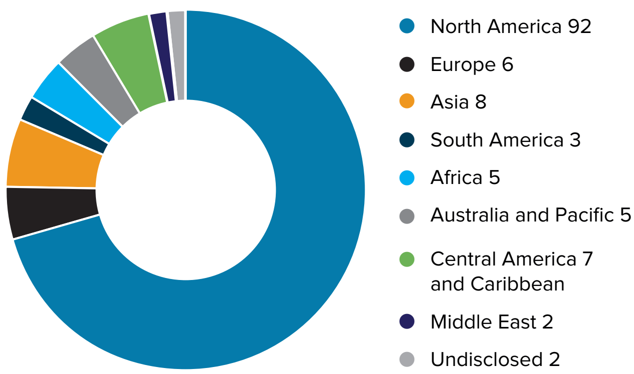
Saab: number of aircraft in current global regional fleet



Boeing: number of aircraft in current global regional fleet



Shorts: number of aircraft in current global regional fleet



Source: *Airfinance Journal*'s Fleet Tracker

Softly, softly

The 50-seat regional aircraft market continues to experience challenging conditions, writes **Olivier Bonnassies**.

In 2016, appraisers expected the soft conditions in the turboprop market to remain as aircraft availability continued to rise. This softening started in 2015, according to Collateral Verifications vice-president Gueric Dechavanne.

One year ago, the number of ATRs in storage or moving between customers marginally increased to 148 units. At 27 January 2017, there were 131 ATR aircraft in storage, according to *Airfinance Journal*'s Fleet Tracker.

ATR storage has stayed at the same level over the past year for 70-seat aircraft, reflecting challenging market conditions.

There were 83 ATR72s – notably 41 ATR72-500s and 21 ATR72-600s – in storage compared with 84 units in early 2016. A total of 37 ATR72s were advertised for sale or lease by Airfax, as of 17 January 2017.

On the 50-seat side, the storage situation has decreased. There are 44 ATR42s in storage compared with 64 in early 2016. A total of 26 ATR42s were advertised for sale or lease.

Storage of Bombardier aircraft has fallen slightly to 89 units during the past 12 months. There are 17 Q400 units in storage, along with 33 Dash8-100s, 15 Dash8-200s and 24 Dash8-300/Q300s.

"The Q300 market is an interesting market at the moment because prices are going down for no apparent reasons," says one leasing source. "It is a versatile but also a robust aircraft for operations in rough airfields," he adds.

The source notes a recent increase in availability after announcements made by Air New Zealand to phase out its fleet slowly, while US regional carrier Commutair will get some Embraer ERJ-145s.

Early Q300 models are trading at about $5 million, while latest models are about $7 million, according to the source. The leasing market is in the $50,000 to $70,000-a-month range.

In the 50-seat market, the Saab 2000 aircraft is still a useful turboprop, despite its small fleet in operation. About 45 units are still operated in commercial passenger roles while another 10 are in military use and government institutions.

"It is a resilient fleet," says the lessor source. "The [Russian carrier] Polet fleet are the only aircraft available because of the bankruptcy," he says.

Demand is mainly emerging from Europe, with Loganair and Eastern Airways adding units. Saab registered two new customers in 2016: Skywork in Sweden and Tus Airways of Cyprus.

US regional carrier PenAir continues to add Saab 2000s to its fleet and has now five units in operations.

In the meantime, more aircraft could be phased out by Swiss carrier Darwin and Sweden's Braathens Aviation.

Lease rates are about $40,000 a month for a Saab 2000, says the source.

The ATR42 market is holding up reasonably well. A total of 11 aircraft are advertised, according to Airfax.

The lease rate reference for an ATR42 is between $50,000 and $55,000, says an airline source, adding or retrieving $10,000 a month depending on the credit.

Large turboprops under pressure

The high level of storage in the 70-seat market, notably ATR products, is putting the market under pressure, despite oil prices remaining at reasonable levels.

There are 41 ATR72-500s in storage or transiting between customers, and more than half of the fleet is advertised for sale or lease.

Lease rates can range between $75,000 and $85,000 for older ATR72-500s, according to the airline source. He adds that 2002-vintage aircraft are leased at less than $80,000 a month, while a 10-year model can reach $100,000 a month.

More challenging lessees will lease in the $120,000-a-month range, according to another lessor.

There is definitely some softening in the market for new Q400s and ATR72-600s for placements.

In 2015, there was a slight decline in turboprop values reported. The turboprop market had been undersupply for a long time and ATR has ramped up production in recent years to catch up with demand.

But, in the meantime, the ATR72-600 model has been subject to aggressive bidding from some leasing companies and this has translated into some softening in lease rates.

"We are not happy where lease rates for the -600 series are," says one source. "At the moment, we will be happy with placements at $180,000 a month," he adds.

The lessor representative also notes less aggressiveness in the Q400 market to place more aircraft. Still, Q400 lease rates have softened.

"The Q400 market is not a selling market. In terms of placements, aircraft with new interiors can get placed at $150,000 a month in the second-hand market with weak credits. The rate drops to the $130,000 region for better credit airlines."

But he is optimistic about the Q400 market. "Six months ago, we were looking hard about where we could place aircraft. We are more comfortable to find homes now," he says.

New Q400 placements almost reach $200,000 a month, while older models are below $110,00 a month. The economics of the turboprops over the regional jets in a high fuel environment are not questionable but the past year has seen oil prices at between $28 a barrel and $55 a barrel. This may have prompted some operators not to rush to replace aircraft.

Turboprop values tend to stabilise and bounce back "fairly quickly" as soon as demand returns, and with oil prices creeping up, market conditions could improve this year.

> *"The high level of storage in the 70-seat market, notably ATR products, is putting the market under pressure, despite oil prices remaining at reasonable levels."*

50-seat RJs

The 50-seat regional jet market has improved over the past year as a result of the current level of oil prices. There are 134 ERJ-145s in storage, with half of them offered for sale or lease.

Embraer ERJ-145 fleets have traded reasonably well over the past year but this mainly is a seller's market.

The reference pricing point is between $1 million and $1.5 million for an ERJ-145, but investment could be needed as most US-based fleets have no airstairs, because regional airlines have access to jetways.

Some past trades have recorded as much as $2 million but the majority of deals over the past two years have been between $750,000 and $1 million.

It is a distressed market because owners, which are mainly financial institutions, generally try to sell at a discount rate.

The news that ExpressJet will be offloading 75 aircraft may add further pressure on the market, despite some pockets of demand emerging over the past few years.

Mexico's TAR Aerolineas has been taking former Mesa units while Calafia Airlines, also in Mexico, has taken some Trans States aircraft. It has now four ERJ-145s after recently taking delivery of a 2001-vintage ex-Mesa aircraft from Aerovision Aircraft Services.

Trading company Regional One has been buying some units lately.

In November 2015, US regional carrier CommutAir announced it will add 40 ERJ-145s to its all-turboprop fleet, expanding its operations with partner United Airlines at the New York Newark and Washington Dulles bases.

Other US regional airlines, including Republic Airways and SkyWest, have been downsizing their 50-seat regional fleets in favour of 76-seat regional jets for their mainline partners.

Fleet concentration has not helped remarketing US fleets outside the US because they are not EASA-compliant and need investments, especially in the navigation systems required in Europe.

Airstairs can costs owners $400,000, including $200,000 for the stairs alone, while another $100,000 has to be budgeted for the service bulletin. Installation and fitting make the most of the remaining costs.

The part-out market is limited because of high penetration of Rolls-Royce service agreements. "There are no buyers for part-out scenarios because more than 95% of the fleet is under the Rolls-Royce TotalCare scheme," says a leasing source.

The airframe would sell, in a part-out scenario, at $225,000 to $250,000, while each engine would cost $325,000 to $350,000.

The source sees lease rates in the US between $30,000 and $35,000 a month, depending on the credit and on multiple aircraft deals basis.

Some transactions have closed in the $45,000 to $50,000-a-month range plus maintenance reserves, says a leasing source.

Lease rates in Europe are about $50,000. A trading source says that lease rates are between $30,000 and $55,000 across the board.

Good-condition aircraft should sell in the $1.5 million to $1.75 million range, says a trading source.

The 50-seat CRJ market has been a seller's market for a long time. According to Fleet Tracker, there are 102 Bombardier CRJ200s but only one-third is advertised for sale or lease.

Sources say the units sell at a low level, about $1 million. A typical 15-year-old aircraft would be offered in the market for about $1.5 million.

A run out aircraft would sell below $1 million, says one source. In a part-out scenario, engines would sell between $250,000 and $300,000, he adds.

The top-end of the market commands prices in the $1.5 million to $1.7 million range.

A trading source says lease rates are typically between $30,000 and $40,000 for older models while the newest aircraft, especially with more green-time in the engines, command higher rates, adds the source.

Fleet Tracker recorded about 60 transactions in 2016 involving CRJ200s. Notably some aircraft were placed with RusLine and Yamal Airlines in Russia and Air Georgian in Georgia.

Applications have also developed in the African market with CemAir and FlightPro Zambia adding aircraft last year and in South America with Boliviana and Star Peru. SR Jet in China has taken delivery of four CRJ200s that were previously operated by China Yunnan and China Eastern Airlines.

Shaping tomorrow's regional aviation
ATR 72-600
ATR 42-600
atr-aircraft.com
ATR is the worldwide reference for regional aircraft, flying in almost 100 countries with 200 operators. The unique versatility and flexibility together with the ability to serve challenging airports, make ATRs the right tools for creating new routes and consolidating existing markets.
ATR
PROPELLING THE NEXT CONNECTION