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# AIRFINANCE JOURNAL

YOUR ESSENTIAL INTELLIGENCE RESOURCE FOR AVIATION FINANCE

# Apollo's principles

Head of aviation Gary Rothschild explains Apollo's aviation investment philosophy

LEASING TOP 50 SUPPLEMENT | BANKS CONSIDER AVIATION EXIT | HK LEASING HUB FUTURE

# Can 2021 **breathe new life into aviation**?

With no end in sight to the Covid-19 pandemic, the future for the industry remains unclear, with an uneven and fragile recovery heavily dependent on the success of vaccine programmes.

When climbers attempt to reach the top of Mount Everest they enter an area near the summit known as the 'death zone'.

Above 8,000 metres, the air becomes so thin that the human body begins to die. Supplementary oxygen can help to relieve some of the symptoms and give the climber more time to complete the ascent, but incapacity and death is a certainty unless they descend to lower heights.

It is difficult not to see a grim comparison with the predicament faced by airlines, which either rely heavily on long-haul markets or whose key markets are struggling through a resurgence of the Covid-19 virus.

While government aid, debt capital issuances and sale and leaseback transactions can provide supplementary oxygen to see some airlines through the coming months, long-term survival relies on suppression of the virus, the rollout of effective vaccines and joined-up and effective global testing regimes.

Until these are successful and lead to a sustained recovery, the challenges that faced airlines, lessors and financiers in 2020 look set to be repeated in 2021.

Michael Duff, managing director of *The Airline Analyst*, warns that many airlines are at "serious risk of failure or restructuring".

He says: "Liquidity is at its highest level ever, for now, but balance sheets are labouring under new debt obligations, net debt is increasing on a daily basis and there is no visibility as to when cash break-even will be reached."

To date, governments have provided a total of $90 billion of direct and indirect liquidity support, but Duff notes that the reservoir of bankable collateral is now "severely diminished".

He suggests that depending on time to traffic recovery and cash break-even, much more government support will be required.

Alternatively, creditors may agree to amortisation standstill or debt/equity conversion, as has been the case at Norwegian.

Speaking on a recent media call, Brian Pearce, chief economist at the International Air Transport Association, talked about a two-speed recovery in 2021, with Asian countries which had suppressed the virus enjoying a domestic recovery, while regions such as Europe struggle amid second or third waves.

Available seat-kilometre data for September shows that China's domestic market has returned to pre-Covid-19 levels, while Russia's domestic market has exceeded levels seen in January 2019.

But in Europe and the USA, domestic traffic remains heavily impacted and international passenger demand across the globe plunged 88.8% in September.

"I think we are already seeing a two-speed industry. We are seeing domestic markets showing people want to fly again. We have seen full recoveries in domestic markets like China, which is the second biggest, in Russia and a number of other Asian economies," says Pearce.

"Whereas on international markets I think it's very much restricted by the measures that are being put in place by governments. So even where we have travel bubbles, or corridors, or green lanes, often it is restricted to business purposes only or there are some quite difficult bureaucratic processes to go through," he adds.

Pearce said Europe was sadly suffering "quite substantially" from the current situation.

"Hopefully, it will work in getting the Covid-19 virus under control, but contrast that with what is happening in China and a number of other Asian economies where we are seeing pretty strong recoveries," he says.

Lessors and financiers spent much of 2020 locked in restructuring efforts as the first wave of deferrals hit from early on in the crisis.

Publicly listed lessors such as DAE and Avolon have noted progress throughout the year in increasing their rental collection rates and the diminishing number of lessees in arrears. The challenge in 2021 will be to work through the more complicated deferral agreements and managing any further waves of requests.

A special report in this issue reveals that Covid-19 has started a banking exodus from aviation, with at least one bank leaving the space altogether.

Bank appetite for lending to the sector came to a standstill in the immediate aftermath of the crisis and remains subdued as institutions continue to digest the impact of the pandemic on their businesses.

Our Leasing Top 50 supplement in this issue reveals trading conditions for the biggest lessors are deteriorating. Fleet values have come down across the board, yield is down to 11.9% from 12.1%, average debt cost has risen to 4.4% from 4.1%. Spread is down to 7.5% from 8% and return on equity was down to 9.7% from 11.4%

And most of that occurred before the Covid-19 crisis.

The crisis will continue to represent opportunities for others. Chinese lessors which are backed by large bank parents have been prominent among those closing sale and leaseback transactions in 2020.

The secondary market has also been reinvigorated. Aircraft leased by Chinese airlines which are now back up to speed on rental payments are trading once again.

Institutional investors and private equity funds which specialise in distressed investments will also continue to find attractively priced assets in 2021.

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# Power named Seraph's head of commercial origination

The Seraph Aviation Group has appointed industry veteran Gerry Power to head of commercial origination, aviation services.

Power started his aviation career with Guinness Peat Aviation (GPA Group) and spent eight years, from 1985 to 1993, working with the company, then the world's largest aircraft lessor.

He founded Power Aviation Services, a boutique aircraft trading and advisory company, in 1993. It provides specialised aircraft trading and brokering services to airlines, investors, high net-worth individuals, banks and financial institutions worldwide.

He was seconded from Power Aviation to Aergo Capital, where he performed the duties of chief commercial officer from November 2015 through February 2018.

Power was senior vice-president at Standard Chartered Bank Aviation Finance from April 2013 through August 2015. During this time he closed sale and leaseback transactions for 16 aircraft with a value of about $1.5 billion.


Gerry Power

## CDB Aviation appoints first head of strategy

CDB Aviation has appointed Cronan Enright to the newly created role of head of strategy.

Enright will be based in Dublin and will report to Craig Segor, the lessor's chief investment officer.

Enright joins CDB Aviation from Avanti, an aviation-consulting firm he founded in January 2020.

He spent seven years with GECAS, most recently as chief marketing and strategy officer. He also held the position of head of airline strategy at the lessor.


Cronan Enright

## Townend is BOC Aviation's new CFO

BOC Aviation has promoted Steven Townend to deputy managing director and chief financial officer.


Steven Townend

He replaces Phang Thim Fatt, who will remain with the Singapore-based lessor to ensure a smooth transition of his duties until his retirement later in 2020.

Townend was previously BOC Aviation's chief commercial officer, Europe, Americas and Africa, a role he had occupied since June 2014.

Townend joined BOC Aviation's predecessor Singapore Aircraft Leasing Enterprise as structured finance director in 2001.

## BBAM names Cannon as COO

BBAM has appointed Vincent Cannon as chief operating officer (COO) and general counsel. He was previously senior vice-president corporate legal.

Cannon takes over from Greg Azzara, who has retired.

Azzara will remain with BBAM as an adviser to the lessor's executive committee through 31 March 2021 to ensure a smooth transition.


Vincent Cannon

## Geaney promoted to Avolon's chief risk officer

Avolon has promoted Paul Geaney to chief risk officer. Geaney, who is also elevated to the executive committee, has worked for the lessor since 2010.


Paul Geaney

He most recently served as head of the original equipment manufacturer (OEM) team with responsibility for managing Avolon's relationships with all airframe and engine manufacturers. It is understood Geaney will continue in his role as head of OEM until a successor is announced.

# Fears for Hong Kong's future as leasing hub

The concessionary tax regime for aircraft leasing introduced by the Hong Kong SAR government in 2017 was designed to lay a solid foundation for Hong Kong to develop into an aircraft leasing centre. **Dominic Lalk** investigates whether the city's status quo has changed amid ongoing dissent and political changes.

Any conversation about the city of Hong Kong's future has become a political hotbed marred by controversy amid the ever-growing influence mainland China is seeking, not least with the recent implementation of China's National Security Law.

There is never a shortage of opposing views in Hong Kong, and this spills over into the debate over the feasibility of the city's leasing ambitions. There are two factions: those who believe that investor confidence has been completely eroded, and who will argue that droves of companies, multinationals and high-income nationals are leaving the city because they feel their basic rights have been infringed upon, and those who say that nothing has changed and that Hong Kong's future as a leasing hub looks more secure than ever.

"The excellent fundamentals and infrastructure contributing to the success of Hong Kong as an international financial centre, a commercial and aviation hub, have not changed. Stability, which is an indispensable component of a first-rate business environment, has been restored. Hong Kong continues to rank the freest economy in the world in 2020," says BCLP Hong Kong partner William Ho.

"The economy will rapidly recover once the Covid-19 pandemic retreats. The concessionary tax regime for aircraft leasing introduced in 2017 has laid down a solid foundation for Hong Kong to develop into an aircraft leasing centre. The prominence of Hong Kong as an aircraft leasing hub will grow steadily when the aircraft leasing market picks up steam," adds Ho.

*“We see Hong Kong’s role as a leasing hub for the future more promising than ever.”*

**Mike Poon**, chief executive, CALC

Hong Kong’s “homegrown” aircraft lessor, China Aircraft Leasing (CALC), agrees with BCLP’s assessment.

“We see Hong Kong’s role as a leasing hub for the future more promising than ever as business and transactional activities gravitate increasingly towards aviation markets in Asia, led by the recovery from the pandemic in China, which will emerge as the world’s biggest market in a few years.

“This prospect is further secured by endorsements from the Chinese government and support policies to reinforce the ‘One Country, Two Systems’ competitive advantage of Hong Kong and the city’s strategic importance in China’s continuing reforms and opening up,” CALC chief executive officer Mike Poon tells *Airfinance Journal*.

“Reports of Hong Kong’s demise as an Asian and global aviation finance hub have been greatly exaggerated, most often by wishful-thinking naysayers with an agenda. I am sitting drinking my favourite cocktail, Thyme N’ Pisco Sour, overlooking a very busy Hong Kong financial district that now appears almost indistinct from how it looked 18 months ago,” says Paul Jebely, co-chair of asset finance and Hong Kong managing partner at Pillsbury Winthrop.

“What, exactly, has fundamentally changed about Hong Kong that is not the experience elsewhere? Was it the protests last year, the Cooties early this year, or the enacting of a par-for-the-course National Security Law more recently?” asks Jebely.

“Certainly, none of it has stopped the tide of IPOs [initial public offerings] in Hong Kong, which have refortified the city’s position as one of the freest, deepest and most liquid pools of capital in the world – with a domestic market capitalisation that, for example, makes the Singapore Exchange look like the Tehran Stock Exchange in comparison to the New York Stock Exchange. I mention this as I wonder if our sector now has a better strategy than to follow the money? If so, I would love to hear it,” he adds.

Not everyone, however, agrees with these rosy and colourful visions. Many financiers and lawyers *Airfinance Journal* has spoken to since the enactment of the controversial National Security Law in the city say that Hong Kong’s ascent to an aviation leasing hub could end quicker than it began, although an unprecedented number of aircraft finance bigwigs in the region have refused to comment on the matter.

“The violent protests have damaged confidence, not only of investors, but also of mainland Chinese, HK people, and expats who live in and love HK. Where Hong Kong was once considered a safe haven for international business, and a comfortable multicultural oasis for expats to relocate to, this image has been tarnished, perhaps irrevocably,” says Lune Wang, director and deputy general manager of Comsys Leasing.

“Companies may well be hesitant to invest, or dispatch foreign talent to a potentially unstable or unsafe jurisdiction – a beneficial tax regime can offer financial advantages only if its infrastructure and social climate are conducive to the smooth running of a business.

Recent events have thrown that into doubt, to the benefit of other competing jurisdictions. While investment is inevitably slowing during the current Covid environment, Hong Kong may struggle to maintain its importance as an investment destination once the industry warms up again if it cannot win back the confidence of global investors in the meantime,” says Wang.

The questions many are asking include a recurring argument that goes along the lines of: while it may be true that some global investors may be turning their backs on Hong Kong for the moment, an ever greater influx of mainland money into the city should well cover the temporary shortfall. This could, however, result in Hong Kong’s future as a leasing hub essentially taking the shape of a mainland free-trade zone (FTZ) such as Nansha, Zhoushan or Tianjin, some have said.

“Unlike the aircraft leasing platforms in mainland China’s free-trade zones, such as Dongjiang and Nansha, which are used by aircraft leasing companies to conduct domestic aircraft leasing business in mainland China, Hong Kong positions itself as an international aircraft leasing centre. Hong Kong is rapidly expanding its tax treaty network. Aircraft leasing companies are using their aircraft leasing platforms in Hong Kong to lease aircraft in the Asia-Pacific region and, gradually, all over the world,” says BCLP’s Ho.

*“Reports of Hong Kong’s demise as an Asian and global aviation finance hub have been greatly exaggerated.”*

**Paul Jebely**, co-chair of asset finance and Hong Kong managing partner, Pillsbury Winthrop

“Hong Kong already has the best tax treaty with mainland China, which attracts the lowest withholding tax, and Hong Kong is keen to further improve the terms of such a tax treaty. Hong Kong will soon become the lessor jurisdiction of choice by aircraft leasing companies which are leasing aircraft into mainland China. Hong Kong remains among the top three IPO markets globally in 2020. By building up aircraft portfolios in Hong Kong, aircraft leasing companies may easily tap into the Hong Kong IPO market for funds,” he adds.

“Hong Kong, with its special positioning, is ready to leverage its established infrastructure to cooperate with the leasing hubs of Tianjin, Shanghai and Nansha to exploit future opportunities, especially those emerged from industry consolidation and increasing aircraft leasing penetration in the post-pandemic period,” explains CALC’s Poon.

“CALC has been proposing to the free-trade zones a number of lease structures that benefit from Hong Kong’s legal system and favourable tax regime, including but not limited to the lease-in-lease-out structure. Cooperation in this area will extend the reach beyond the domestic market. We believe Hong Kong will become a major hub for Chinese lessors for leasing and trading activities in the overseas markets to facilitate endeavours for expanding their shares in the global aviation industry,” adds Poon.

"Mainland China will surely support HK during these dark times to the best of its ability. They are doing pretty well so far, in my opinion. As to whether HK will evolve to resemble the mainland hubs, my opinion is no. On the contrary, mainland FTZs like Nansha, or Tianjin are taking the shape of HK," says Comsys Leasing's Wang.

"HK has evolved as a sophisticated centre for the industry, combining an attractive tax regime, developed infrastructure, an impressive talent pool and a reputation as a jurisdiction with few linguistic, cultural, or other barriers for international investment. This cannot quickly be cloned by other locales. All the local FTZs in China are competing with each other to attract investors and talent to the best of their ability. They will evolve and find their own advantages. Even Tianjin is facing huge challenges from Shanghai, Nansha, Hainan, etc," adds Wang.

"In 10 years', HK will still be a top leasing hub, I believe, although in 20 years', who knows? By then, there might be many 'HKs' in China and newly arisen FTZs," she notes.

The one to pay particular attention to is a new aviation super FTZ under development in Hainan Island. "Everybody is looking at Hainan. It is also an island, still a green field, and the cost of investment to start from scratch is comparatively low. Look at Shenzhen 30 years ago and now. I wouldn't be surprised if Hainan is the biggest competitor of HK in 30 years'," says Wang.

The trade tensions between China and the USA have only continued to worsen since Hong Kong agreed the implementation of China's National Security Law in the city that was supposed to be safeguarded from any material political changes until 2047. In one of the most recent escalations of tensions, the USA imposed sanctions on several Hong Kong SAR leaders, including its chief executive, Carrie Lam.

With the USA expected to continue taking a tough stance on China and the "Hong Kong issue", regardless of who is elected president, a normalisation of relations between Hong Kong, China and also the Commonwealth of Nations is unlikely. What might this mean for Hong Kong's leasing hub ambitions?

"Whoever is being elected, it seems unlikely that they will warm relations with China under the current climate. Relations seem to be shifting to a Cold War-type scenario, unfortunately. It is a conflict not only of economy, high technology, artificial intelligence, 5G and finance but also a propaganda war," says Wang, although she cautions that any such problems are "likely to be short-lived" in the longer term.

"Relations with the USA are likely to be challenging over the near future, but, in the end, the USA requires Chinese investment, resources and vendors, so regardless of the political games currently being played, it seems likely that economic practicalities will eventually persevere," according to Wang.

*"Relations with the USA are likely to be challenging over the near future."*

**Lune Wang**, director and deputy general manager, Comsys Leasing

"International aircraft leasing companies benefit from the profits they make from leasing aircraft into mainland China. The macroeconomic concern of trade deficit is never an issue in the aircraft leasing industry. The USA is always keen to export Boeing aircraft to mainland China. It is inconceivable that tough trade policies or even trade sanctions of the USA against mainland China would ever touch on the aircraft leasing business. Normalisation of relations between mainland China and any other country is a political matter," says Ho.

"The aircraft leasing business is largely immune from political considerations. There is no reason to believe that any US conglomerate with a global reach would desert Hong Kong simply for political considerations. Notwithstanding the temporary setback caused by the Covid-19 pandemic, it is still anticipated that mainland China will need to lease a large number of aircraft to meet the demand for growing air transportation. Hong Kong is rapidly expanding its tax treaty network and improving its business environment for aircraft leasing companies to operate. Innovative leasing structures featuring Hong Kong and mainland China and providing optimal benefits to the participants are expected to come out. In terms of aircraft leasing, Hong Kong's role as a gateway into mainland China will not diminish, but grow," says BCLP's aviation specialist.

Another question often asked with regards to the robustness of Hong Kong's aircraft leasing hub model is why aircraft lessors and other financiers would need Hong Kong at all when their real intention is to do business with China. Why not set up shop in China directly?

"HK has been a buffer zone connecting mainland China and the world for many decades. HK is a leasing hub for international transactions, however, not for China transactions. We have already seen a trend that there are more and more non-Chinese leasing companies setting up entities in Tianjin, because Tianjin has won the reputation of being stable, transparent, supportive and efficient – a great gateway for an international company to enter the China market," says Wang, Comsys's Tianjin head.

"The government has tried to encourage cross-border deals out of Tianjin and implement quite a few incentives. However, why are people still hesitating? If there is a longer established and more familiar place to choose such as HK, why risk an exotic regime which has a different legal system and super-duper complicated and costly tax system?" asks Wang.

Another potential reason for not wanting to set up shop in China despite wanting to do deals with local airlines is that Chinese carriers are not easy clients to deal with.

"They demand a lot of communication, a deep understanding of the culture and language skills. It really depends on how much priority the lessor gives to the China market," says Wang.

"Chinese FTZs focus on domestic aircraft leasing. Using an aircraft leasing platform in one of the free-trade zones in mainland China, such as Dongjiang, Nansha, to own aircraft and to lease aircraft to Chinese airlines will give rise to difficulty in trading the aircraft overseas.

International aircraft leasing companies have largely been put off by the limited tradability of aircraft assets stuck in the Chinese FTZs. The relatively unfavourable tax treaties entered into by mainland China commercially preclude the use of Chinese free-trade zones to lease aircraft overseas," explains BCLP lawyer Ho.

This is where Hong Kong comes in handy. "With a low withholding tax rate on rent between mainland China and Hong Kong, which may go lower further in the near future, it is expected that a lease-in-lease-out leasing structure involving Hong Kong and a Chinese FTZs will be extensively used by market participants leasing aircraft into mainland China," he predicts.

He adds: "Rather than competing against Chinese FTZs, Hong Kong actually complements them by helping them solve the asset non-tradability problem."

# Private equity comes to the fore

Private equity is playing a key role in financing the aviation industry amid the Covid-19 crisis, but is its involvement the first sign of a nascent recovery, or funding of last resort for a desperate sector? **Oliver Clark** reports.

As the Covid-19 crisis continues to drain airline liquidity and push some carriers to the edge of, or into bankruptcy, private equity funds that specialise in opportunistic plays in distressed sectors have come into their own.

From Apollo Global Management's lending $1 billion of debtor-in-possession (DIP) financing to Aeromexico in its Chapter 11 restructuring, to Oaktree Capital Management's $1.125 billion of DIP financing to LATAM, private equity firms have become a lender of last resort for airlines which cannot access funding elsewhere.

In both cases, Apollo and Oaktree have the option of converting their debt into equity in the respective Latin American carriers.

Hedge funds have also been active, with Knighthead Capital investing $175 million of DIP financing for LATAM and Davidson Kempner Capital Management providing £170 million ($217 million) in secured financing as part of Virgin Atlantic's recent recapitalisation.

"I think that for the last five years the market has been, generally speaking, very difficult for private equity firms and distressed credit funds to operate in at the return levels they would like to see," Voyager Aviation's president, Mike Lungariello, tells *Airfinance Journal*.

Before Covid-19, aviation had become a "very low return, very saturated business" after an influx of cheap money from Asia, says Lungariello.

As airlines have been brought to the brink by the crisis, funding structures such as the DIP financing model are an essential element in keeping airlines that would in normal times be viable in business, he adds.

"Anytime you see distress and anytime you see something like this, this is exactly what private equity is built for."

Lungariello says a lot of what we are seeing in the support mechanisms for the distressed part of the business is credit and distressed lending. While he wouldn't call them "in and out" investors, they certainly have more of a short-term focus, he believes.

"I am not surprised at all that the private equity guys are looking because essentially we are going to be at a trough in terms of where the market is," says Greg Byrnes, White Oak Aviation's chief financial officer, who adds: "We all know that the market is cyclical, so if there was a time to invest it's probably the right time now."

Jim Bell, a partner with Watson Farley & Williams, believes that private equity involvement is a "positive" for the sector.

"If money is required to rectify the situation, and the existing investors are unwilling or unable to invest further, then that money has to be sourced from somewhere," he says.

Bell points out that for various reasons, traditional lenders such as banks are less active in the market and have less flexibility to provide capital to those who need it most amid the crisis.

"Banks have different business models from private equity firms – they don't usually have the same freedom in types of investments and risk.

"So it becomes harder and harder for banks to compete in DIP financing because if it's risky then it will be expensive and if it's expensive then at that point a private equity might be able to do something cheaper," he adds.

Speaking on the Alter Domus 'Aircraft Leasing in a New World' webinar, Vedder Price shareholder Adam Beringer said he expected private equity firms not just to play their traditional role "on the equity side" of the sector, but also for debt provision as banks "flee the market".

Beringer also expects private equity involvement in more bilateral asset-backed securitisations, with investors teaming up with "some of your more active managers" on private deals.

**Takeovers**

Private equity takeovers have sometimes proven controversial.

Bain Capital's acquisition of Virgin Australia was accompanied by a particularly brutal restructuring of the airline's business and debts.

*"I am not surprised at all that the private equity guys are looking because essentially we are going to be at a trough in terms of where the market is."*

**Greg Byrnes**, White Oak Aviation's chief financial officer

In July, *Airfinance Journal* reported that the private equity fund had retendered all of the airline's leases in an attempt to pressure lessors and banks to provide lower lease terms.

The move to new ownership has been characterised by the mass exodus of its existing board, the shutting down of Virgin Australia's holiday package business and the curtailing of its long-haul operations.

When Greybull Capital took over UK leisure carrier Monarch Airlines in 2014 it proved to be a short-lived saviour for the embattled airline, which collapsed into administration three years later and had its assets sold off.

While insiders claimed that Greybull did not make a significant profit on its investment in Monarch, it did little to dispel the view of some that the private equity firm was in the business of asset stripping.

Bell says that while such an outcome is always a risk in such investments, but it needs to be viewed within the context of how a return for the investors is to be achieved.

"That's always a risk, but these are clever people. If the assets are worth more than the business, then that's the right thing. If there is a business proposition there and it can make money long term, then that's the right thing to do and that's what private equity would be pushing.

"So it depends on a case-by-case basis as to what is the best thing to do.

"There are lots of airlines out there that have fantastic business models but aren't cash rich and so for those it will be about sourcing investment from private equity or otherwise to shore up the shop and ensure the airline's survival," says Bell.

### ABS and EETC

Beyond direct loans and taking equity positions in airlines and lessors, private equity firms will also be looking for attractive returns in the asset-backed securitisation (ABS) and enhanced equipment trust certificate (EETC) markets.

White Oak's Byrnes notes there was "quite a heavy discount" initially on par for ABS notes in April and May, but there has been considerable recovery on those and discounts have reduced "significantly".

"There are still discounts and clearly it depends on the individual structure, but certainly it hasn't had the eye-watering prices we have seen," he adds.

While ABS structures have weathered the initial impact of the crisis, Byrnes believes the true test will come over the next nine to 12 months as deferrals and airline bankruptcies potentially pile more pressure on liquidity reserves.

"We already know of private equity funds that have spoken to existing investors in ABS and EETCs. There will be insurance companies that will need to sell downgraded securities as a result of their investment criteria or regulatory requirements, including Solvency II," says Bell.

"So there will be 'sunny day' investors exiting, either from a risk perspective, but also from a management perspective because some issues will require action, and many such investors do not have the experience or manpower to deal with these issues,

"In that environment, yes, private equity firms would of course be interested in that

*That's always a risk, but these are clever people. If the assets are worth more than the business, then that's the right thing.*

**Jim Bell**, a partner with Watson Farley & Williams

scenario because they have experience of dealing with problems like this; they have the ability to invest more cash and they can see a profit. If they can buy at a discount and then sweat the asset effectively to make a profit, then that of course makes perfect economic sense," he adds.

### The long haul

An important distinction needs to be drawn between private equity firms that invests in times of distress for short-term, high returns and funding provided on a long-term strategic basis.

Before its involvement in LATAM, Oaktree was associated with financing Richard Wiley's lessor start-ups. The firm provided $500 million of funding to establish Jackson Square Aviation and before that Wiley's Pegasus Aviation. Oaktree is also a majority owner of Elix Aviation Capital.

Apollo has long had multiple channels into the sector, whether through its Merx Aviation leasing arm, or direct investment, such as its acquisition of Sun Country Airlines in 2017 and now through its acquisition of PK Airfinance.

*I think the next wave, as things settle themselves out, will be a lot of these private equity [firms] that have longer-term capital with lower returns that are going to focus perhaps on starting up.*

**Mike Lungariello**, president, Voyager Aviation

Indigo Partners is perhaps one of the most high-profile private equity firms in the airline space, with stakes in Frontier Airlines, Jetsmart, Volaris and Wizz Air, among others.

Nordic Aviation Capital (NAC), the largest regional aircraft lessor, opened up its capital in 2015 by selling a 54% stake to Swedish private equity firm EQT. In 2019, GIC also invested in NAC.

Byrnes recalls that many of today's big lessors started with private equity funding, including his former employer Avolon, with involvement from Cinven, CVC Capital Partners and Oak Hill Capital Partners.

"Certainly, private equity has played a hugely important role in the leasing industry. From my early days at Avolon, it was originally the three private equity companies that invested in Avolon and then GIC came on board after. And across the leasing companies, private equity have been hugely influential in driving the recovery of the industry," he says.

Bell notes that the traditional model was investing over about five years, "the old-school model of private equity was that they find a project, they come in and build the business up and then exit several years down the road, by IPO [initial public offering] or otherwise, and hopefully with a profit.

"But that's a bit old fashioned and I think it depends on what the deal is and what the plan is, and it could be anything, it could be that they are in and out in 12 months. It could be that they are in with a 10-year game plan. It really can be anything. It just needs to make economic sense based on the fund investment strategy," he adds.

In recent months, private equity firms has been linked with a number of new start-ups.

Canadian private equity fund Binder Capital is backing new start-up carrier Pivot Airlines.

An as yet unnamed Norway-based airline being established by former Norwegian Air Shuttle executives is seeking private equity funding, while South Korea's Eastar Jet reports interest from private equity funds in its sale.

"I think the next wave, as things settle themselves out, will be a lot of these private equity [firms] that have longer-term capital with lower returns that are going to focus perhaps on start-up businesses," says Voyager's Lungariello.

"If today you had a source of capital and you are able to start a brand-new lessor, there are a lot of opportunities out there.

"There are secondary opportunities, there are direct opportunities with the airlines who are struggling to increase their liquidity and perhaps shut some of their Capex [capital expenditure]. So," he adds, "it's a fantastic time for new investors coming into the space."

# **Parent bank support** vital for Chinese lessors

Chinese lessors continue to increase their footprint in aircraft finance via the capital markets and sale and leaseback transactions. **Elsie Guan** reports.

Hong Kong SAR (HKSAR) is destined to remain an international aircraft leasing hub despite political turmoil and Covid-19 disruption, panellists told *Airfinance Journal*'s China 2020 virtual event.

"Some players are thinking about international expansion, and Hong Kong is still the first choice. As a new market and hub, maybe Hong Kong will face some slow growth in the coming future, but I'm certain that it will be growth," says Johnny Lau, chief consultant of PwC aviation business services.

"This year, we did notice that new policies have been implemented in Hainan and also the greater bay zone, which has connected the whole area around Hong Kong," Lune Wang, director and deputy general manager of Comsys (Tianjin) Leasing says, noting that HKSAR still has its advantages in tax benefits, financing resources and infrastructure.

Panellists also shared opinions about Chinese lessors leaning towards their domestic market under the Covid-19 pandemic.

"In the short term, we will probably see heavier concentration by Chinese lessors into Chinese airlines, but, in the long run, they will return to a more spread-over concentration model," says Li Gang, chief executive officer (CEO), Dragon Aviation Leasing.

"All big lessors in China have strong support from their parent companies, and financing sources are in a bigger amount in equity than debt. This provides more liquidity and flexibility for them to do financing arrangements in the crisis environment," says Wang.

As a representative of HKSAR-based lessors, China Aircraft Leasing (CALC) continues to observe strong interest from Chinese lessors interested in buying aircraft that have leases attached to Chinese airlines, says Mike Poon, CALC's executive director and CEO.

"We have seen a lot of challenges in the market, but we do not see much distress in the market yet. Today, you can see liquidity is quite enough for the whole financial market. People just need to wait and see when revenue begins to return to normal," says Poon. He adds that leasing companies target narrowbody deals and he expects the widebody market to be particularly challenging for some time.

CALC anticipates this market not to come back before 2025.

Chinese lessors have been very active in the sale and leaseback markets since the beginning of the pandemic.

*Airfinance Journal*'s Fleet Tracker shows that Chinese lessors have mandated or closed an estimated $8 billion-worth of new delivery financings since January.

BOC Aviation and CDB Leasing have stepped up their leasing activity since the second quarter with narrowbody deals. BOC Aviation has added Boeing 737 Max aircraft to its portfolio through deals with TUI Travel, United Airlines, Southwest Airlines and Icelandair.

CDB Leasing has done more transactions on the Airbus A320neo family, notably with Azul, Indigo, Wizz Air and Frontier Airlines.

Poon notes that while the aircraft asset-backed securitisation (ABS) market has halted in almost all parts of the world because of crisis-related rent deferrals, there are still opportunities in China.

"For CALC, because our home market is in China, we are still able to do ABS in China," says Poon.

Limi Zhu, assistant general manager of the financial markets department of Minsheng Financial Leasing, does not see much potential for ABS transactions in the current market conditions.

"ABS is heavily related to the asset itself, so when the whole commercial aviation industry is going down, I worry that asset portfolios cannot generate sufficient cash to meet the requirements of investors," says Zhu.

The ability for airlines and lessors to serve their debts is a key issue in the current climate, she adds.

"When asset values are going down and business is really freezing up, how lessors and airlines continue to finance their debts is really a key question in regard to how they sustain their companies," says Zhu.

She adds that bond issuances are an attractive financing solution for lessors with good credit ratings and strong shareholder backing, and are really the only way to raise large sums without resorting to asset-backed commercial loans from banks.

"You can see lessor's bond issuances are up in 2020," she says.

Sean Huang, a vice-president and senior analyst of the financial institutions group of Moody's Investors Service, thinks that a mix of government-supported initiatives will continue to underpin China's aviation industry, including its lessors.

"The government involvement in the Chinese aviation industry is very substantial. You can see the ongoing support from the government. Our rating reflects this," says Huang.

Since the beginning of the Covid-19 pandemic, the government has injected significant volumes of liquidity into the market, to the benefit of lessors, in particular.

"That's why aircraft lessors have a huge amount of liquidity to support their business. Even though for Chinese lessors, normally their leverage ratios are very high, they still have liquidity support from their state-owned parents or parent banks," says Huang.

Huang adds that over the past few months, China's international lessors have built up excess liquidity with banks by issuing different kinds of securities in the capital market to enhance their debt leverage ratios, making their present business model more stable than that of airlines.

"The balance of government support is even more important. Some policies including direct loans or subsidies can be considered as exceptional or extraordinary support," says Huang.

Chinese lessors have issued an estimated $6.7 billion of new debt in the capital markets since the beginning of the year, according to *Airfinance Journal*'s Deal Tracker.

The Chinese bank-backed leasing subsidiaries, including BOC Aviation, CMB Leasing, ICBC Leasing and CCB Leasing, are the main issuers.

In late October, Fitch Ratings said it expected the credit profiles of those lessors to remain stable and supported by their parent companies, although their significant aircraft leasing exposure has been affected by the global aviation downturn because of the coronavirus pandemic.

# Banks consider aviation exit as lending slumps

Covid-19 has started a banking exodus from aviation, with one institution already offering its $2 billion aviation book for sale.

The ascent of higher loan-to-values (LTVs) and fear of a deterioration of credit with no immediate exit to the crisis could be behind an established bank departing the aircraft finance industry, sources tell *Airfinance Journal*.

According to sources, the bank is unofficially offering its $2 billion aviation book for sale. *Airfinance Journal* is also aware of a European bank that has stepped out of deal origination.

In October, *Airfinance Journal* revealed that another bank, allegedly with less exposure to the market, was leaving the sector.

The commercial lending market has greatly reduced over the past six months as lenders have adapted to the new environment.

While it is true that many deals in the pipeline managed to close, given the reduced number of aircraft deliveries expected by the original equipment manufacturers (OEMs) over the next year, appetite in the commercial lending sector has dropped.

It almost came to a standstill at the beginning of the Covid-19 crisis, when banks were just closing committed transactions rather than doing new business.

Along with less delivery output from the OEMs, the banking market saw less activity in the first half and those who were active were “more niche and bespoke lenders”, says a source.

At the beginning of the Covid-19 pandemic, banks were officially “open for business”, he says, but in reality lenders were focusing on understanding the potential effect of the pandemic on their clients.

*Airfinance Journal* understands there were less than 10 financial institutions considered as active for new business in May.

“This is down from 80 lenders on a good day,” said one banker at the time.

In April, one banker told *Airfinance Journal*: “My priority is airlines. We are following every client’s cash position and their RCFs [revolving credit facilities] being drawn. We are also monitoring the conditions on state support and the percentage provided by the banks.”

Traditional lending providers will weather the storm, says another banker, who adds that aviation is small compared with other businesses at the bank.

But deals have struggled to receive credit committee approval.

“Aviation does not make great headlines. Tenors have been shorter and LTVs have dropped. No pricings are done below 300 basis points,” said a financier in the second quarter.

“By exception, if commercial teams are able to obtain credit committee approval, after fierce internal battles, the terms they are able to propose are shorter: six to eight years max instead of 10 to 12 years pre-Covid-19; LTV lower at 60% instead of 80 to 85%; and higher pricing. The balloon and residual value risk is very modest,” he explained.

*Everybody is a capitalist until the industry is in trouble, and then they become a socialist.*

**A banker**

As a result, lenders were more selective as they focused on draw-down of existing revolving credit facilities.

"Conversations in the first month on new deals paused as banks were not venturing on new clients. Instead, they prioritised existing client relationships," he added.

Consequently, LTVs were more conservative than before the crisis as banks initially anticipated lower asset values as well as a potential decline in airline and lessor ratings.

Banks reacted quickly at the end of the first quarter on LTVs and some proposals were in the 50% to 55% LTV range with shorter tenors versus the pre-Covid-19 environment.

One banker observes that tenors of 12 months were offered in some cases, while other tenors were typically in the three-year range.

"The risk dimension changed as volatility and uncertainty were in every banker's mind," he says.

Another banker recalls that several banks mandated on deals that were due to close in the second quarter had to withdraw temporarily. "They left the syndication process even though they had passed the deal in their committee in the first quarter," he comments.

Top-credit offers were more in the 65% LTV range, according to one banker, who adds that in today's market, banking appetite for weak credits is almost non-existent.

One banker says an Asian bank offered commercial loans to two European carriers at LIBOR plus 200 basis points (bps) during Covid-19, but that those offers were turned down.

"Everybody is a capitalist until the industry is in trouble, and then they become a socialist," he says.

As he predicted back in May, the industry has been relying on the capital markets.

The bond market has proved a meaningful source across unsecured and secured financings, including enhanced equipment trust certificates.

As of 31 October, about $93 billion had been raised in the capital markets by airlines and lessors, according to *Airfinance Journal*'s Deal Tracker.

"We are seeing fewer RFPs [request for proposals] for commercial loans and I suspect there will be fewer aviation banks in the final quarter of this year or in 2021. It will depend also on the number of new deliveries," says one source.

Non-aviation banks are expected to be less active, as the days of pricing top carriers at less than 100bps are gone, says one banking source. "This shows how crazy the commercial loan market was," he adds.

"I'm sure there are plenty of banks considering to leave aviation, but the guys on the front line will not know it yet. The true scale of stress in some banks' portfolios will only come evident in a few months' time," says another banker.

"The aircraft financing activity within banks was already under pressure pre-crisis because of increased and/or increasing regulatory capital. As banks incur losses in their portfolios, the amount of capital to be set aside for new aircraft financing business/exposures will further increase as requirements to make more aggressive 'expected loss' assumptions are imposed. At the very least, this will lead to a notably higher pricing hurdle, but, in a scarce capital environment, the aircraft financing business will suffer in appeal against other balance sheet/capital usages," he explains.

"There will not be a one-size-fits-all reaction, and some of the traditional lenders will commit to minimum new business and strengthen relationships with key clients."

Some banks, described as non-aviation players, have in the meantime focused on local airlines. "Local banks, particularly in Asia, have continued to support their house airlines," observes a financier.

"Institutional investors are keeping an eye on the sector but so far we haven't seen a major breakthrough outside of the USA coming from non-banks to provide secured financing," he adds. "Debt funds are also looking at the market but the risk level/reward is still not at the desired level."

### Higher LTVs

At the start of Covid-19 banks were not offering tenors beyond three years, says another banker.

"Typically, banks were in the market with two-to-three-year tenors, except for good airline credits on liquid aircraft," says a banker.

The market has gradually changed and banks are more willing to stretch terms on new aircraft financing proposals. It will be interesting to see the number of RFPs

*Non-aviation banks are expected to be less active, as the days of pricing top carriers at less than 100bps are gone.*

**A financier**

coming through the end of November and December from airlines and lessors, versus this time last year.

One banker observes a trend for more bilateral transactions with those "who are capable" of executing a financing deal.

The LTVs have gone up since the summer as asset values have corrected. One banker says asset values have taken a hit between 5% and 40% depending on the models and, as a result, a 55% LTV proposal at the beginning of Covid-19 is now translating into a few more basis points of LTV.

"It can now reach 65 to 70% on liquid aircraft and good airline credits," he comments.

Tenors came back to the five-to-six-year range in September, observes one financier. "Margins are still down but on the best credit names only," he adds, suggesting that European top credits are in the 200bps to 250bps range.

One bank observes that a major European airline recently agreed loans at 200bps.

He also confirms a rise in LTVs after appraisers adjusted asset values.

"Now they have revised their values, this is reflected in LTVs offered by banks. However, we are seeing more financing appetite from lessors now. Lessors have restarted their trading activity, although the portfolios on offer are not large. Equity is there for investors who are seeking debt. In the meantime, lessors are getting more active in the sale and leaseback market," he says.

Recourse lending to lessors is estimated at 300bps to 350bps now, while non-recourse is between 450bps to 600bps, depending on the credit.

This is up from 350bps to 450bps pre-Covid-19, when tenors were also longer, says the financier.

He adds that his pipeline of potential deals is "much better than two months ago".

*Recourse lending to lessors is estimated at 300bps to 350bps now, while nonrecourse is between 450bps to 600bps, depending on the credit. This is up from 350bps to 450bps pre-Covid-19, when tenors were also longer.*

**A banker**

# Jolco market down but not out

The Japanese operating lease with call option and Japanese operating lease aircraft financing products are still seeing deals amid the prolonged Covid-19 crisis, although Japan's investors are more cautious than ever. The ongoing fiscal second half is crucial, says **Dominic Lalk**.

Since the outbreak and quick spread of Covid-19, which besieged North East Asian economies as early as January, many naysayers have said that demand for Japanese operating lease with call option (Jolco) and Japanese operating lease (Jol) financings was "gone"; others said the market was all but "dead".

This, however, is not what the movers and shakers in aviation finance told the *Airfinance Journal* Japan 2020 virtual conference. While there was a consensus that trading volumes are way down this year, this does not necessarily spell doom for Jolco transactions because they historically pick up in the ongoing fiscal second half only.

More interestingly, some say, will be observing and capitalising on changing investor preferences, including a requirement for more discipline and caution.

"Certainly, in the near term, from a Japanese investor standpoint, there will be more fight for quality deals and more discipline," Novus Aviation Capital's Hani Kuzbari told the conference.

"Over the last few years, we have seen more flexibility on the type of credit Japanese investors were looking at. This will tighten a bit and they will focus on their credits on a more conservative term. There will be smaller volumes of transactions but, ultimately, as the situation improves Japan will remain a very strong aircraft investor."

Jolco players could face a potential issue though as airlines, seeking to protect their cash positions amid market uncertainty, may not be in a position where they have the funds – or the confidence – to exercise the call options.

"Japanese lessors are facing similar issues as non-Japanese lessors. They, too, are dealing with deferrals, power-by-the hour requests, insolvencies, repossessions and delayed payments," says Kuzbari. "The only thing that is more relevant to the Japanese market is that on the Jolco front there is a growing number of airlines that are unable to exercise the call options, which creates more uncertainty."

Tokyo Century managing executive officer and executive chairwoman of Aviation Capital Group (ACG), Mahoko Hara, told the conference that Jolco transaction volumes have come down significantly during the Covid-19 crisis.

*In the near term, from a Japanese investor standpoint, there will be more fight for quality deals and more discipline.*

**Hani Kuzbari**, Novus Aviation Capital

"Unfortunately, there has been a big alarm. Apart from several deals that had been already committed pre-Covid, we have not seen any new deals coming into the market since March," says Hara, adding that Tokyo Century does not expect a meaningful recovery for some time.

"Even if they come back to the aviation market, investors will be much more focused on higher credits names. We have seen that loosening over the last few years but unfortunately it is going the other direction again. Investors will be focused on higher quality names again," says Hara.

Orix Aviation chief executive officer (CEO), James Meyler, agrees with Hara. "On the volumes done in 2018 and 2019, if those airlines perform and are not in bankruptcy, they should straddle through this current environment," he says. "It is really where the bankruptcies occur with Jolco deals in them. Those deals are the ones to watch. They are not financially robust enough to take that type of hit."

Meyler, too, sees many potential headwinds on the call option front. "It could be very difficult for many airlines to exercise the call options if the appraised value of the aircraft has dropped to such a level that they would have to pay a very significant premium to market value to purchase the aircraft," he says.

Orix has not been involved in Jolco transactions recently and predominantly focuses on Jol transactions with single investors, although that demand has been stymied by Covid, too.

"Many transactions were completed pre-31 March for investors and there is still plenty of time to March next year. A lot of investors are waiting and seeing," says Meyler. "Many of our investors are repeat investors and have several aircraft. They are paying but with the value diminished in terms of the current market value, the average lease term remaining is almost seven years," adds the Orix CEO.

Nevertheless, there is a consensus among financiers in Japan that the decrease in deal making is only temporary because the finance product market is heavily dependent on the state and the health of the greater Japanese economy.

"The Japanese economy is, of course, heavily impacted by the continuous spread of Covid-19, so overall demand and volumes are down and this translates into less demand for tax solutions like the Jolco," says Sumitomo Mitsui Finance and Leasing managing executive officer and head of transportation, Shinichiro Watanabe.

"The Jolco market is not dead like many seem to think. We still see some demand right now. For the first half of the year, volumes were 20% to 30% of 2019 levels. I believe that this is probably the bottom of the market. We expect demand to rise in the second half. You must remember that the fiscal year in Japan starts in April, so right now we are actually only in the second fiscal quarter, and typically the second halves have seen much stronger demand for tax solutions like the Jolco," he says.

"The point is whether investors have confidence to invest in aircraft Jolco at the moment. There are alternatives as you know, so some investors may find those safer alternatives for Jolco transactions as demand for freight and cargo is up and demand for passenger aircraft is down," adds Watanabe.

"Japanese investors may not be confident in aircraft Jolco except for some very experienced ones at the moment so they may seek less risky alternatives."

# **Budget carriers** ready to grab market share

Latin America budget carriers speak to *Airfinance Journal* about how they see the post-Covid 19 pandemic environment.

As demand gradually returns for air travel, the months ahead will be crucial for airlines in Latin America.

The focus will be on re-establishing networks but airlines in the region are conscious that the recovery from Covid-19 may not follow a linear path.

With three large airline groups in Chapter 11 bankruptcy protection, low-cost carriers (LCCs) and ultra-low-cost carriers are pushing ahead with plans to increase their market share, because they believe they will benefit from a capacity reduction from incumbent carriers.

Viva Air Peru's chief executive officer, Stephen Rapp, believes the Viva Air Group will come out of the Covid-19 "even stronger".

Viva Air Colombia was grounded for almost six months and restarted operations in early September. Viva Air Peru started operations again on 15 July.

Currently, Viva Air Peru is focusing on rebuilding its network domestically and starting to restimulate demand.

"We are starting to see demand returning. The whole economy has been affected and people have disposable income. This makes our low fare offering even more attractive. Every sol, dollar, peso invested in a trip counts even more than before." Rapp tells *Airfinance Journal*.

Initially, the low-cost carrier saw strong demand, but further outbreaks in Peru have slowed its recovery.

"Today, we operate at 15 to 20% of the capacity we had pre-pandemic," says Rapp, adding that with Covid-19 now under more control, Viva Air Peru is pushing for more resumptions of services.

Viva Air has been working with the authorities to resume international operations in the fourth quarter. The carrier hopes to re-establish some key routes from Lima, Peru, to Medellin and Bogota in Colombia. Viva will also work on restarting Miami routes from Medellin and Bogota.

"Prior to Covid-19, we were about to announce international expansion plans. From Colombia we were looking at a number of new routes to the Caribbean and up to the USA. Those opportunities are still there. We might see a couple of those routes operating towards the end of the year," says Rapp.

*"We are starting to see demand returning. The whole economy has been affected and people have disposable income."*

**Stephen Rapp**, chief executive officer, Viva Air Peru

In Lima, Viva Air has seen more opportunities in the Peruvian domestic market after the closure of Avianca Peru.

"They had control on a number of frequencies to Argentina and Chile and over to Brazil. This presents some opportunities in some markets for next year, but first it will be re-establishing the network we were operating," he says.

Viva is now targeting corporate business because the "model is now better understood", he says, adding that the company was gearing up for such a move before Covid-19.

"That emphasises the opportunities we have, as low-cost airlines in the region," he adds.

"There are a number of restructurings in the region and I would question how far they can restructure, how much cost can they take out of their businesses, how close can they get down to our cost levels," says Rapp.

"Coming into the crisis we were 35% to 45% lower in costs than those carriers," he comments. "I would imagine that coming out, even post-restructuring, we will have a significant advantage on the cost point of view."

## Argentina

In Argentina, Flybondi believes it is best positioned for when demand returns.

Its executive chairman, Mike Powell, says Argentina has seen the longest and strictest lockdown in the world – all airlines had to suspend flights on 20 March.

The original date to resume domestic and international services was 1 September, but the summer period saw a significant rate of infections in the country, which triggered a further delay in reopening flight operations.

"The new dates have not been defined but the transport minister has talked in recent days about resuming both domestic and international services on 1 October. That would require the health minister's approval and the president's approval, of course," he said in September.

Domestic services finally restarted on 22 October with Aerolineas Argentinas, but passengers need a circulation permit to fly.

Flybondi has strongly protested the government's decision to keep Buenos Aires' secondary airport, El Palomar, closed as the country slowly reopens after the coronavirus crisis.

The budget carrier has been impacted since the start of its operations by the economic crisis in Argentina. "The crisis has rumbled on. The peso has depreciated versus the US dollar by 80%."

Covid-19 has had a profound effect on the Argentinian economy with a 12% decline in gross domestic product forecast this year.

"Inflation is now coming down finally and we are expecting a modest recovery next year," says Powell.

Flybondi had started to push into Brazil with routes to Sao Paolo and Porto Alegre since the beginning of the year, after opening routes to Rio de Janeiro and Florianopolis in 2019. Powell says more destinations are in the pipeline.

In March, Flybondi had a 9% market share, ahead of Norwegian Argentina and Jetsmart Argentina with 7% of the market each. Aerolineas Argentinas represented about 60% of the market, while LATAM Argentina accounted for 16% and Andes for 1%.

"Given the consolidation that has taken place in the Argentine market, going from six airlines down to three, we think that we are very well positioned with our brand with a very low cost base to exploit the opportunities in the post-Covid-19 era," says Powell.

He adds: "Our investors see that the reduction of airlines in Argentina to three is potentially a great benefit for those surviving the crisis."

LATAM Argentina has pulled out. "They considered it many times before and I think Covid-19 was the last straw for them," he says. Norwegian Argentina has been acquired by Jetsmart Argentina and Andes has shrunk to a level where it barely offers services.

"The post-Covid-19 market will be Aerolineas, Jetsmart and ourselves," claims Powell.

"With LATAM Argentina out of the market, there is a big slug (16%) of the market available domestically. Aerolineas is going through a major restructuring on its own, which will see it cutting its capacity by as much as 30%. Effectively, that is another 18% to 20% of the market available. We saw prior to Covid-19 that Andes had shrunk from 8% to less than 1% of the market. You can quite easily see that, post-Covid, the LCCs in Argentina ought to have 40% to 50% of the market.

"The low-cost market share in Argentina was 19% pre-Covid-19. The advent of LCCs in the region has resulted in doubling, tripling of the market's size within 10 years. The market has grown by 60% in Argentina and we think there is a long way to go from the 2019-based figures."

Powell observes that every crisis has pushed up LCCs over full-service carriers. "Consumers are more accustomed to flying low cost because of economic reasons."

Flybondi received a 58% net promoter score last December, which Powell sees as evidence of the popularity of LCCs within Argentina.

He says: "When you introduce a new concept to the market, the local consumers are amazed they can now fly for the same price as going on a long-distance bus."

**Brazil**

Gol Lineas Aereas has captured 40% of the Brazilian domestic market.

The Covid-19 pandemic has severely impacted the country, but the fatality rate peaked in July and started to trend down in August, according to Richard Lark, the carrier's chief financial officer.

"Demand in Brazil has gradually improved every month since May. We expect we will benefit the most from the revival of the domestic market," he says.

Gol's domestic traffic was at 30% of pre-pandemic levels in early September.

Lark adds: "We plan to end the year with 80% of frequencies and markets."

**Mexico**

Viva Aerobus believes its focus on the domestic market will be beneficial. The LCC operates 95 routes, of which 12 are international, versus 127 routes in March.

The carrier has a network that expands continuously – it opened 10 new routes during the pandemic.

Mexico never closed its skies and transit within the domestic market has been without restrictions, says Jose Golffier, Viva Aerobus's chief financial officer.

Golffier says the recovery is happening and the airline expected to finish the month of September with one million passengers transported.

"The yields are not where we wanted but volumes are picking up quite rapidly," he says. "Our market share at the end of 2019 was close to 21%." He believes Viva Aerobus will increase its domestic market share.

The carrier says 90% of its passengers are on domestic operations from five bases: Cancun, Guadalajara, Monterrey, Mexico and Tijuana.

"That has proved our core strength during the pandemic and has allowed the carrier to recover in terms of capacity and load factors faster than some competitors," adds Golffier.

"In Mexico, two-thirds of the population is middle class," he says, adding that the domestic market has been expanding at a 10% compound annual aggregate rate over the past five years, mainly because of the low-cost presence.

Between May and August, the domestic market increased at a 43% compound growth rate and Viva Aerobus grew the fastest of any airline, according to Golffier.

He believes Viva Aerobus can more than double its domestic market share within five years. Golffier says two competitors in Mexico are shrinking capacity significantly and this should provide Viva Aerobus opportunities to grab a 30% market share.

The carrier plans to end this year with a 23% market share, and forecasts market share of 26.6% in 2021 and almost 32% by 2025.

"In the Mexican market there are a lot of secondary cities that need to be connected and we are well positioned for this," he notes.

Viva Aerobus is part of the largest bus operator in Mexico, and Golffier outlines the benefits of converting passengers to air travel. "About 50% of our passengers are first-time flyers," he says.

Golffier adds the government has not provided any incentive for any industry and this has forced airlines to manage their cash carefully.

"A couple of competitors have been severely hit and have had to downsize their fleets. A third of Mexico's total fleet has been grounded or returned to their financiers," he says.

To stimulate demand, Viva Aerobus is advertising fares without taxes and allowing customers to pay taxes at a different date before flying. "We are going to see an impact of this during the recovery of the crisis," adds Golffier.

**Chile**

Jose Dougnac, chief executive officer of Sky Airline, says they had a 26% share of the Chilean domestic market before the crisis, while Sky Airline Peru had a 17% market share in Peru.

In Peru, Sky Airline is the second carrier behind LATAM (63%), ahead of Viva Air (11%), Avianca (2%) and others (7%).

"We have made a significant impact in this market and we operated six A320neo aircraft with a 91% load factor at the start of the pandemic. We will continue to stimulate that market and bring the benefits of a simple service at a good price," he says.

In Chile, Sky Airline had the highest load factor in the 12 months up to the pandemic.

Domestic revenue passenger kilometres (RPKs) plunged 91% year on year in July in Chile. In Peru, RPKs were down 91% year on year in July and some airports were still closed as Sky Peru restarted operations, according to Dougnac.

Dougnac says Sky will focus on the domestic markets in Chile and Peru to strengthen its positions there rather than pursuing expansion in the region.

International travel is not allowed in both countries, he says, but Sky Airline is preparing for international growth.

The carrier has filed an application to fly to destinations in the USA from Lima and will use the Airbus A321XLR on the routes.

"We will have the A321XLR in 2023," says Dougnac. He confirms that the orderbook for the model with Airbus is "intact".

Sky Airline signed a purchase agreement with Airbus for 10 aircraft of the type in December 2019. The European manufacturer says the A321XLR will deliver a range of up to 4,700 nautical miles, with 30% lower fuel consumption per seat compared with previous-generation competitor jets, allowing airlines to expand networks by making new longer routes economically viable.

"The order is now more valuable than before," he says, describing Chile as one of the most restrictive markets in Latin America. But in the near term, the focus is on consolidating the carrier's positioning in Chile and Peru.

# **Apollo proves good timing** is no myth

Apollo Global Management's head of aviation finance, **Gary Rothschild**, tells Oliver Clark how the breadth and scale of the firm's aviation business platforms position it well amid the current crisis.

Apollo Global Management's acquisition of GECAS's PK Airfinance lending business in 2019 may appear to some like an ill-timed bet given the global crisis that was about to engulf the aviation industry.

The sale of the platform, along with the parallel acquisition of PK Airfinance's loan book by Athene, was announced in August.

Financial details of the transaction were not disclosed, although it was announced that the $3.6 billion of PK Airfinance financing receivables that were held for sale in the second quarter of 2019 were sold at a premium to book value.

The sale closed in December just weeks before the Covid-19 pandemic's impact began to be felt.

Apollo is well known for making well-timed opportunistic plays for distressed businesses, so does the US alternative asset manager regret the acquisition in light of the circumstances?

"The timing of buying an aviation business just before the pandemic, is obviously not the optimal time, but I don't know if this business would have been available three months later because it might have been tougher to execute," Gary Rothschild, partner and head of aviation at Apollo, tells *Airfinance Journal*.

"We are happy with the purchase. It's a great team and a great franchise and, at the end of the day, it's a debt book and so we are well protected from an asset value perspective and we have the ability to work through this," he adds.

From a strategic point of view, the acquisition of PK Airfinance did and still does make sense.

Apollo, a giant of private equity and credit investing, already had several channels for investing into the aviation space, a sector in which it has long been active.


Its leasing arm, Merx Aviation, has been an active player primarily in the secondary aircraft market since 2012.

Apollo has also been known to make opportunistic equity plays in the space from time to time, such as in late 2017 when it took over control of Sun Country Airlines.

The acquisition of PK Airfinance gives the US firm the opportunity to provide credit lines to airlines and lessors at a time when the need for such financing is acute.

Also, while Apollo is known as a private equity specialist, its credit business is larger and arguably more significant.

Of the $433 billion of assets it had under management at the end of the third quarter, $312 billion was credit.

"A lot of people still think of Apollo as a private equity shop. Our private equity is top tier, but the reality is also that two-thirds of our assets are now in credit," says Rothschild.

"Our credit business has more than $300 billion in assets that span the risk-reward spectrum, whether we're investing opportunistically or being able to utilise, for instance, our insurance affiliate Athene's balance sheet and much more cost-effective or efficient capital.

"Across these different pockets of capital, we can invest in many different areas of aviation. We have been an active player in a lot of the US capital market issuances. We have pockets of capital in bonds from airlines and other lessors, and we have been able to participate all the way up to debtor-in-possession (DIP) financing for some of these airlines."

**Integration of PK Airfinance and synergies**

With PK Airfinance, Apollo now has a multitude of channels into the aviation space. Rothschild says that the integration of the platform is going "quite well".

He says: "It gives us a better coverage for the airlines. We have originators from both the leasing and lending sides talking

> *A lot of people still think of Apollo as a private equity shop. Our private equity is top tier, but the reality is also that two-thirds of our assets are now in credit.*
>
> **Gary Rothschild**, head of aviation finance, Apollo Global Management

to the airlines and, of course, PK Airfinance relies on the Merx team for technical assistance."

But it was to be some time until the first PK Airfinance transaction was closed. Rothschild explains that immediately before the pandemic it was already a "bit frothy" in the market, both in the leasing and the capital markets, and Apollo was "sensitive to that".

This led to what he describes as a tapping of the brakes to avoid additional lending exposure in the market while it remained in flux.

Apollo has closed its first deal since the acquisition with a secured loan to US carrier Allegiant Travel Company.

"We were happy to support Allegiant. It was a one-off negotiated deal of $84 million of financing secured against both core assets and spare engines at a spread that we thought was reflective of the current environment, obviously much wider than prepandemic," says Rothschild.

He further sees an "acceleration" of similar opportunities that are actionable by the PK Airfinance platform.

With what he sees as a contraction in the banking world and the availability of funds that are willing to take asset risk, Rothschild believes the market is ripe for Apollo to grow the PK Airfinance business in the current environment.

**Aeromexico investment**

Apollo's appetite for distressed lending came to the fore in August when it agreed to provide $1 billion of DIP financing to Aeromexico as part of that carrier's Chapter 11 bankruptcy proceedings.

The superpriority funding is secured and is being provided in two tranches: one of $200 million and the second of $800 million. Apollo has the option potentially to swap the latter for equity in the Latin American carrier. Rothschild says Apollo carefully considered the rationale for the restructure before investing.

"With any of these investments you are looking at the importance of that airline in a particular region or sector, and bottom line: is there a reason for that airline to exist? We certainly think so and are pleased to provide Aeromexico with capital to continue operating as they restructure the company," says Rothschild.

He believes that the funding provided to Aeromexico is another example of the breadth of the Apollo platform.

"Across the Apollo aviation platform we have access to capital that spans the risk-return spectrum, from investment-grade secured paper through pure equity risk.

"And, of course, we also have the more metal-focused asset financing which are the leasing and the PK lending businesses. Then you add private equity's understanding of the industry dynamics or a particular company or management team.

"We can bring that expertise together in a DIP of this kind, and get comfortable investing in a sector that's undergoing significant real-time change. So, I do think it's a powerful platform," he adds.

Rothschild says Apollo has yet to decide whether to acquire a stake in Aeromexico.

"I think the option to take some equity is just that: it's a developing situation; it potentially creates some upside if things work out in a particular way, but it's not a definitive outcome that there would be an equity interest in the airline," he says.

### Airbus A220 deal

Rothschild, who has been chief executive officer of Merx Aviation since its inception, explains that before the crisis, 80% to 85% of its business was secondary market transactions.

*Airfinance Journal*'s Fleet Tracker shows that Merx's owned and managed portfolio consists of more than 100 aircraft, including some Kornerstone and Orix units under management.

The lessor was not involved in new sale and leaseback transactions because it felt the economics of those were "too thin" for its capital at the time.

All that changed with Covid-19. In early July, Apollo and Merx closed the acquisition of 10 2019-vintage A220-100s from Delta Air Lines.

The transaction marks the first A220 in the Apollo and Merx portfolios.

"Since the crisis started, I would say that ratio has reversed. Now it is more like 80% to 85% sale and leasebacks and 15% to 20% secondary markets, and even in those secondary market transactions, only a subset of those are actionable," notes Rothschild.

"If you make a venn diagram between where values are and where a seller is willing to move, those overlapping assets might be quite small," he adds.

### Growth opportunities

In a crisis as deep as the one created by Covid-19, Rothschild sees opportunities for further investment across the spectrum.

While government stimulus has helped the airline industry, Rothschild says that adding up all that support compared with the total need for the sector that is projected for the business, there remains a "big gap".

"I still think there is some runway here on distressed asset opportunities. The banks have been very happy supporting the airlines on their own balance sheets as have the capital markets in the USA, but there will be limits to that," says Rothschild.

He sees opportunities for platforms such as Apollo/Merx to step in. This should continue to play out over the next six, 12, 24 months, he explains.

Coming out of the current crisis, Rothschild sees the aviation market becoming smaller, but while Apollo's position as a relative player within it, growing.

"We still see some aggressive bidding being done on the leasing side which, if you look at on a relative value basis and where let's say you can quote the capital market bonds, it may not make sense, but there is still capital in the market, particularly from some of the overseas jurisdictions, just dedicated to leasing looking to invest in hard dollar-denominated assets," he adds.

With the exceptional levels of distress in the market providing multiple investing opportunities, is there a risk of Apollo and its channels losing their strategic focus?

Rothschild believes not, pointing out that both PK Airfinance and Merx Aviation have been in the market well before the pandemic and remain "totally focused" on aviation.

"There are, of course, parts of the firm that are more opportunistic and dynamic and shift to areas of distress in certain periods of time. But our commitment to the aviation space is strong and will be persistent across the firm," he says.

Neither are there plans to take synergies one step further and integrate the various aviation platforms into one integrated business.

"There are no plans to create one company, but there are many synergies as far as how we look at the market, how we see opportunities creating some cross-collateral benefits across some leasing opportunities and some debt opportunities that we can take advantage of," adds Rothschild.

### Deferrals and pandemic response

With such wide-ranging exposure to the aviation industry, it comes as no surprise that it was susceptible to the initial wave of deferrals and debt restructuring requests that characterised the early months of the crisis.

"It is no secret that the airlines are seeking deferrals, so our first priority right now is to manage our current exposures and make sure we preserve the capital there and walk through those processes.

"On the leasing side, I would estimate 75% lessees originally came in for deferrals, consistent with what others are reporting in the market as to a term of three months, with a payback period over next six, nine or 12 months with some imbedded interest rate," says Rothschild.

Echoing the comments of many leasing peers, Rothschild sees the next phase as being more complicated, with negotiations focusing on areas such as reserve offsets and end-of-lease adjustments.

Rothschild says that the lessor portion of the PK Airfinance book has held up "pretty well", noting that many of the lessors will seek to cure their debt defaults in order to protect their equity value.

"We are getting a lot of equity cures from our lessor community – in some cases, we have been paid out. Obviously, there has been amortisation in the book, so the book has shrunk a little bit with that.

"There are several cases where the airline is paying its debt service on assets they own to protect their equity value, but are in deferrals with their leases.

"The market kept airlines honest in past crises. If things became too aggressive, you had a bid away – there was a more readily discernible value to the asset. Right now, there is still so much uncertainty that it's difficult to determine what the bid away is to place aircraft," says Rothschild.

> *"It is no secret that the airlines are seeking deferrals, so our first priority right now is to manage our current exposures and make sure we preserve the capital there and walk through those processes."*
>
> **Gary Rothschild**, head of aviation finance, Apollo Global Management

"There aren't too many airlines, if any at all, that are looking to acquire aircraft that they don't already operate. There's no secret that the leverage is most decidedly in the airline's camp," he adds.

In one positive development, Rothschild says that the weekly calls with customers are spending less and less time on deferrals.

The list of open deferrals is now much shorter, he discloses, because Merx has finalised written arrangements with a large percentage of its lessees, and with many of the airlines now coming out of their deferral period and starting to pay again.

"And then there are some that are pushing out to the right and extending those deferrals. The issues tend to be focused somewhat in Latin America and particularly Indonesia right now, but it's not a surprise given the continued stress in the market," he adds.

### Future vision

Rothschild believes that with the distress in the market set to continue for some time, the window for Apollo to make opportunistic purchases is far from over.

"From my perspective," he adds, "the opportunity, given the experience and relationships across the platform, is greater than before for us to deploy capital across the broad range of aviation product offerings available to us at Apollo. I do think that the opportunity to get enhanced returns with better downside protection is out there if you are selective.

"I think the appetite that Apollo has and our access to credit capital, we are going to grow our aviation business and we have the team and the expertise to do it."

# No liquidity problems for **Air Astana**

Air Astana has been impacted by the Covid-19 pandemic but the flag carrier of Kazakhstan has managed to protect its liquidity position, Peter Foster, its president and chief executive officer, tells **Elsie Guan**.

As the Covid-19 pandemic continues to affect the world, Peter Foster, president and chief executive officer (CEO) of Air Astana, tells *Airfinance Journal* that the key to travel returning to at least a sustainable level is pre-departure testing.

"Of course, we are not 100% sure because people could catch the virus after they are tested. At least it minimises risks, and it will enable travel to restart in some form," says Foster.

He does not see travel fully returning for a number of years.

"There are some markets that are performing very strongly. One is the domestic market. The leisure market is also strong as leisure passengers want to travel," he says, adding: "They want to travel from point A to point B without transiting through a major airport. That market has a huge demand, as we've seen in the summer when demand came back very quickly."

He points out that the travel industry is not limited to airlines. "It is airlines, hotels, tour agencies, duty shops and represents an absolutely massive industry employing millions of people worldwide.

"We absolutely need to get it going again soon. Otherwise, the economic fallout will be extreme," warns Foster.

Although Kazakhstan is a relatively secluded country surrounded by Uzbekistan, Kyrgyzstan, China, Mongolia and Russia, the Covid-19 pandemic has impacted its economy.

"We are not by any means immune from the pandemic. We had a very serious outbreak from about the end of June through to the end of July. But the fact is that we are a large country, and thus we have a large domestic network, has mitigated the economic effects of the pandemic on airlines," he says.

The carrier has operated relatively independently without any formal government intervention and supplementary capital from its shareholders.

Air Astana shareholders are the Samruk-Kazyna National Welfare Fund with 51% and the UK's BAE Systems, with the remaining 49%.

*"There are some markets that are performing very strongly. One is the domestic market."*

**Peter Foster**, president and chief executive officer, Air Astana

"The shareholder structure that started the airline in 2002, has never changed," says Foster.

He tells *Airfinance Journal* that Air Astana continues to have access to lines of credit. In October, Air Astana received a $180 million loan from an anonymous external financial institution partner.

"We always have commercial credit facilities. We don't have any government loans or government bank loans or any of that sort of stuff. We have always, ever since the start of the operation, had access to commercial loans of credit," says Foster.


Air Astana now has 36 aircraft in its fleet

"I have been now doing this job for 15 years. There has never been a time when we have not been able to secure loans from banks. That remains the case to this day. So we are not running out of cash," he adds.

Air Astana will continue with its fleet-replacement programme. The carrier plans to take delivery of two Airbus A320neos and four A321LRs through the end of 2021, all under operating leases.

Foster says Air Astana tends to have a large number of aircraft on operating lease rather than under finance leases.

"Like other peers, we have a mix of owned aircraft and leased aircraft. We do have more leased aircraft, and the primary driver to have more leased aircraft is that we prefer to keep our cash and liquidity to working capital," says Foster.

*Airfinance Journal*'s Fleet Tracker indicates that Air Astana now has 36 aircraft in its fleet, including Boeing 767-300ERs, A320-family aircraft and Embraer E190-E2s.

The carrier is gradually moving to a Neo fleet as well as E190-E2 aircraft, while the three 767-300ERs will be converted into dedicated freighters for Air Astana Cargo.

Since March, Air Astana has received three A320neo aircraft and one A321neo under operating lease agreements with SMBC Aviation Capital and Air Lease, according to *Airfinance Journal*'s Fleet Tracker. Aercap is also a lessor on the Neo side as well as on its E190-E2 jets.

Affiliate low-cost carrier Fly Arystan has seven A320-aircraft fleet, built between 2012 and 2014 that were previously operated by Air Astana.

Fly Arystan announced plans for 30 737 Max aircraft last year, but Foster indicates there is a "slim chance" this may still proceed.

He says: "It was a letter of intent [LOI] – it is not a firm order. Given the circumstance, particularly the aircraft out of the market, the LOI is not at the point to be converted into a firm order. But I will not say it is off the table completely."

# De Havilland Dash 8-400 – old name with new tricks

The high-speed turboprop's new owners are investing in the aircraft, but the market looks tough. **Geoff Hearn** gets some views on its prospects.

The De Havilland Aircraft of Canada Dash 8-400 is the largest member of the Dash 8 family and the only variant still in production, albeit under new ownership. The first variant – the Dash 8-100/-200 – entered service in 1984, while the stretched -300 version followed in 1989. The Dash 8-400 is a further stretched version powered by Pratt & Whitney Canada PW150A engines. The programme has been owned by the original De Havilland of Canada, Boeing and Bombardier.

In 2018, Longview Aviation Capital Corporation acquired the entire Dash 8 programme and the De Havilland brand, which has been reinstated in the aircraft's designation. Production of the Dash 8-400 continues at the existing manufacturing facilities in Downsview, Ontario.

The aircraft's key differential from most turboprops is its cruise speed, which is about 350 knots. The high speed is made possible primarily by powerful engines, each of which provides more than 4,500 shaft horsepower.

The high levels of cabin noise associated with turboprop aircraft, particularly high-speed models, are countered by the use of an active noise and vibration system. The Dash 8's high speed and lower cabin noise levels help make it a viable alternative to regional jets on longer sectors than those that conventional turboprops can compete on. The increased speed does, however, come at the expense of higher fuel burn, making the aircraft less competitive on the shorter sectors that are the normal domain of turboprops.

### Development

The cabin has seen the most significant developments to the aircraft since its introduction. An option for an increased-density cabin seating 86 passengers was announced in 2014, followed in February 2016 by a further development allowing up to 90 passengers. The latest significant development of the aircraft is its recertification to the latest ICAO noise standards (see Dash 8-400 meets latest noise standards).

### Variants

De Havilland Canada offers a factory-built freighter/passenger combi version of the Dash 8-400, for which Ryukyu Air Commuter, a member of the Japan Airlines Group, is the launch customer. A third-party freighter conversion programme is also available.

De Havilland Dash 8-400

## ISTAT appraisers' views

### Avitas

**Martin O'Hanrahan, senior consultant**

Before the Covid-19 pandemic, Avitas had considered the market for the Dash 8-400 to be balanced, because the type had established a convincing presence with a diverse operator base. While availability had remained relatively low, the order backlog had been falling.

Since the beginning of 2020, the market for the aircraft has been very negatively affected, not only by the impact of Covid-19 on global air travel, but also by the collapse in March of Flybe, the biggest operator of the type. The UK carrier had 54 Dash 8-400s in service, which accounted for just over 10% of the total active fleet at the time. The airline's demise resulted in a sharp spike in availability, with more than 50 aircraft offered publicly for sale or lease.

The Dash 8-400 competes directly with the ATR72-600, with both designs offering similar capabilities. The Dash 8-400 has more aircraft in service than the ATR72-600, but there are also about 200 active ATR72-500 models. With around 200 units on firm order, the ATR72 has a much larger backlog than the Dash 8.

The ongoing global pandemic has had a severe negative impact on the commercial aircraft market, and the Dash 8-400 has also suffered because of the jump in surplus units, which has depressed values and lease rates. These challenges will continue to be in place for some time and Avitas does not expect the traffic volumes achieved in 2019 to be realised again until 2024.

### IBA

**Lewis Leslie, aviation analyst**

The Covid-19 global pandemic has made 2020 an unprecedented year for aviation. In addition to the general problems for the industry, the Dash 8-400, which represents about 21% of the global turboprop fleet, faces particular short-term challenges as a result of oversupply, fleet exits and the failures of key operators – in particular Flybe.

The bankruptcy of the UK operator displaced 54 Dash 8-400s, representing about 10% of the type's global fleet. The filing for insolvency by German carrier LGW left a further 15 aircraft without an operator.

## Avitas view of Dash 8-400 values and lease rates

| Build year | 2012 | 2014 | 2016 | 2018 | 2020 (new) |
|---|---|---|---|---|---|
| Current market value ($m) | 8.5 | 10.5 | 12.5 | 15.0 | 19.6 |
| Indicative lease rates ($'000s/month) | 83-93 | 91-101 | 99-109 | 107-117 | 115-125 |

Assuming standard ISTAT criteria.

## AIRCRAFT CHARACTERISTICS

### Seating/range

| | |
|---|---|
| Max seating | 90 |
| Typical seating | 74 |
| Typical range | 1,100 nautical miles (2,040km) |

### Technical characteristics

| | |
|---|---|
| MTOW | 30.5 tonnes |
| OEW | 17.8 tonnes |
| MZFW | 29.0 tonnes |
| Fuel capacity (standard model) | 6,700 litres |
| Engines | PW150A |
| Thrust (take-off) | 5,070 shp |

### Fuels and times

| | |
|---|---|
| Block fuel 100nm | 480kg |
| Block fuel 200nm | 740kg |
| Block fuel 500nm | 1,550kg |
| Bock time 100nm | 44 minutes |
| Block time 200nm | 65 minutes |
| Block time 500nm | 126 minutes |

*The figures shown for fuels and times are for long-range cruise, 100% load factor, ISA en-route temperature, optimum flight levels and zero wind.*

### Fleet data

| | |
|---|---|
| Entry into service | 1999 |
| In service (active) | 319 |
| Operators | 50 |
| In storage | 241 |
| On order | 35 |
| Average age | 9.5 years |

**Source**: *Airfinance Journal Fleet Tracker, 26 October 2020*

### Indicative maintenance reserves

| | |
|---|---|
| C-check reserve | \$45 to \$50/flight hour |
| Higher checks reserve | \$30-\$35/flight hour |
| Engine overhaul | \$145-\$150/engine flight hour |
| Engine LLP | \$40-\$45/engine cycle |
| Landing gear refurbishment | \$30-\$35/cycle |
| Wheels, brakes and tyres | \$45-\$500/cycle |
| Propeller | \$15-\$20/flight hour |
| Component overhaul | \$145-\$150/flight hour |

**Source**: *Air Investor 2020*

The Dash 8-400 has not attained the same level of success in recent years as its direct competitor, the ATR72-600. While the aircraft benefits from a higher cruise speed, this is offset by the cost of fuel and maintenance. Even though some operators have instructed pilots to reduce cruise speeds, the cost per flight-hour and flight cycle is significantly higher than that of the ATR72-600.

The Dash 8-400 has proved most popular in more developed markets such as North America and Europe. The higher cruise speed of the Dash 8 is an advantage over the ATR on time-critical routes, but on shorter sectors taxi times and air-traffic delays can erode this benefit.

In terms of values and lease rates, the Dash 8-400s has suffered from the recent market downturn and the resulting oversupply, with aircraft being offered in the secondary market at low rates.

IBA values new Dash 8-400 aircraft in 2020 at \$21.6 million, while a 10-year-old example is valued at \$6.6 million, about 31% of the value of a new delivery. New examples could be expected to attract lease rates in the region of \$146,000 a month. On average, market values have dropped 25% between pre-Covid and post-Covid periods. The pressure on values and lease rates is likely to continue in the near term.

**Manufacturer's view**

In the light of the impact of Covid-19, *Airfinance Journal* asked De Havilland Canada for its views on how the crisis would impact its business. The company agrees that the pandemic has created an unprecedented adverse impact on the entire aviation industry; however, it notes the Dash 8 fleet, particularly the Dash 8-400, is playing a key role in the industry's recovery.

In line with views that *Airfinance Journal* has heard from other parts of the regional aircraft sector, De Havilland says that airlines are using the Dash 8-400 in lieu of their narrowbody jets to reduce cost on low traffic demand routes.

Despite the high-profile demise of Flybe, De Haviland believes a fundamental requirement for a regional network serving markets with the right-sized aircraft still exists.

A company spokesperson says: "We have supported the entry into service of the aircraft with over 15 new operators in the past five years.

"Furthermore, the increase in available Dash 8-400 aircraft as a result of Covid-19-related airline failures is leading to interest in other regions and we are working with the aircraft owners to introduce the versatility and value the Dash 8-400 can offer for regional operations in all parts of the world.

"We may actually see the customer base for the Dash 8 eventually expand as markets start to recover and new operators seek appropriate aircraft for their operations."

## Dash 8-400 meets latest noise standards

De Havilland Aircraft of Canada announced on 1 September that the Dash 8-400 has been recertified to meet the latest noise emission standards set by ICAO Chapter 14. The company notes that the high-speed turboprop is the first regional aircraft to achieve the certification.

ICAO Chapter 14, which is equivalent to FAA Stage 5 requirements, is the most recent in a series of noise limits introduced by governing bodies to regulate aircraft noise emission. The regulations come into force at the beginning of 2021.

In response to questions from *Airfinance Journal*, De Havilland expanded on where the company believes meeting the new noise certification standards will give the Dash 8-400 a competitive edge. De Havilland expects airports worldwide to support ICAO's latest noise requirement by incentivising airlines to operate aircraft that meet these stringent noise requirements. The company cites examples of airports where noise charges for aircraft meeting the latest standards are up to 83% lower than the equivalent charges for Chapter 4-certified aircraft.

Importantly, De Havilland believes that competing aircraft will struggle to meet the new standards.

A company spokesman told *Airfinance Journal*: "We anticipate that current regional jets will have difficulties meeting Chapter 14 requirements. In particular, many in-service regional jets cannot be recertified to Chapter 14 because their cumulative noise margin – a measure of the overall noise footprint of an aircraft during take-off and landing – exceeds the Chapter 14 requirement. During certification our turboprop competitors did not use the more rigorous methodology prescribed in Chapter 14. Therefore, competing turboprops would not be able to meet the new Icao standards without a costly flight test campaign."

# Airbus **A350-1000** awaits **777-9**

Boeing's latest widebody faces a daunting entry into service, with a volatile market and a competitor which has a head start. **Geoff Hearn** looks at its prospects.

The market for large widebody aircraft might not look the most attractive sector for manufacturers at the moment as they phase out iconic models. The end of production of the Boeing 747 is no great surprise, given the aircraft's long history. The demise of the relatively young Airbus A380 is, however, more of an indicator that the market for very large aircraft is smaller than forecast.

The disappearance of these two programmes means that the largest aircraft on offer from Boeing and Airbus are the 777-9 and the A350-1000, respectively.

In other circumstances the manufacturers might be relishing the prospects for their top-of-the-range models in the absence of aircraft the size of the 747 and A380. However, the market for widebody aircraft looks less than promising as the Covid-19 crisis continues to impact commercial aviation, with long-haul widebody markets particularly hard hit.

As *Airfinance Journal* previously reported, the crisis has completely changed the forecast demand for commercial aircraft. The International Air Transport Association believes long-haul widebody markets will not return to 2019 levels before 2024.

In this context, at least in the short to medium term, the A350-1000 and the latest 777 model will be fighting for shares of a much-reduced market. Their relative merits will come under intense scrutiny.

**Airbus A350-1000 characteristics**

The A350-1000 is the largest variant of the A350 family and Airbus's largest offering in the absence of the A380. The aircraft seats between 350 and 410 passengers in a typical three-class layout with a range of 8,700 nautical miles (16,100km).

The European authorities awarded the aircraft type certification in November 2017. It entered commercial service with Qatar Airways in February 2018.

The aircraft was originally conceived with a nine-abreast economy configuration and was designed to replace the A340-600 as well as compete with the 777-300ER.

Economy layouts with 10-abreast seating have subsequently been developed, which go some way to reducing the seating gap to the new 777-9 model. This competitiveness is aided by an increase of the maximum certificated capacity by 40 seats.


Airbus A350-1000


Boeing 777-9

**Boeing 777-9**

Boeing launched the 777X family in late 2013. The X designation was originally applied to the individual models, but is now only used as a programme designation. Entry into service was originally targeted for 2020, but this has been pushed back and launch customers are not expecting deliveries before 2022. The current crisis is prompting a number of airlines to defer planned deliveries.

The manufacturer offers two variants of the new family. The 777-9 provides seating for more than 400 passengers in a two-class configuration and has a range of close to 7,300 nautical miles. The second member of the family, the 777-8, seats more than 350 passengers and offers a range capability of about 8,700 nautical miles. Although Boeing says it remains committed to the long-range model, development of the -8 variant has effectively been put on hold.

In a straight comparison with the A350-1000, the 777X appears to be doing well in terms of orders and market share. Despite an entry into service several years behind its Airbus competitor, Boeing's new widebody has obtained significantly more orders than the A350-1000.

## Key data of A350-1000 and 777-9

| Model | A350-1000 | 777-9 |
|---|---|---|
| Engine | Trent XWB | GE9X |
| Thrust per engine (lbf) | 97,000 | 105,000 |
| Max seating | 440 | TBD |
| Typical seating | 350-410 | 426 |
| Typical range (nm/km) | 8,700/16,100 | 7,290/13,500 |
| Entry into service | 2018 | 2022 (planned) |

Source: *Airbus and Boeing*

## 777X and A350 order build-up

| Aircraft | Pre-2013 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| 777-8 | | 8 | | 10 | | | | | | **18** |
| 777-9 | | 58 | 185 | 10 | | 20 | | 18 | | **291** |
| A350-1000 | 80 | 53 | | | 25 | 1 | 2 | 8 | | **169** |
| A350-900 | 273 | 187 | 57 | 16 | 27 | 43 | 61 | 105 | 21 | **790** |

Source: *Airfinance Journal Fleet Tracker* excluding subsequently cancelled/transferred orders

According to *Airfinance Journal* Fleet Tracker, the 777-8/9 models combined have 140 more orders than the A350-1000. Sales of the A350-1000 have slowed since the launch of the 777X programme. It can be misleading to look at sales comparisons between individual models in the Airbus and Boeing families, but in this case, given the demise of the A380, the A350-1000 is the only model competing with the 777X family in what is now the largest category of in-production commercial aircraft. However, the apparent success of the 777 models is tempered by sluggish recent sales, with only 58 orders since the beginning of 2015.

The sluggish 777X orders can be attributed, in some degree, to the Covid-19 crisis, but sales have not been helped by delays and technical issues in the development programme, including problems with the GE9X engine. The external environment may also account for the limited number of A350-1000 sales, although the impact on A350-900 orders appears to be much less pronounced. Both aircraft are facing the prospect of an oversupplied widebody market.

The 777-300ER will remain a significant presence for some time to come with more than 800 aircraft either operating or stored, according to *Airfinance Journal* Fleet Tracker as of the end of October. The current low fuel-price and delays to the 777X programme have resulted in a recent increase in 777-300ER lease extensions, which may take some time to work through the system with a potential impact on the timing of orders for new-generation models.

**Cost comparison**

As ever, the manufacturers are adept at claiming their respective products hold the advantage in terms of fuel efficiency and operating cost. The claims are usually sufficiently vague to make verification difficult, particularly in the absence of sufficient data in the public domain.

In the case of the A350-1000 and 777-9, direct comparisons by the manufacturers are eschewed in favour of comparisons with previous-generation models. Airbus says the A350-1000 provides "a 25% step change in fuel efficiency compared to its current long-range competitor". Boeing says the 777-9 "offers a 20% savings in fuel consumption compared with the aircraft it replaces".

From these marketing claims, it is not clear against which aircraft the comparisons are benchmarked and whether they refer to costs per seat or costs per trip.

In presentations seen by *Airfinance Journal*, both manufacturers make comparisons with the competition. The claims are strikingly different even by the usual standards of such comparisons. Boeing says that the 777-9 has an 11% lower cash operating cost (COC) per seat than the A350-1000. The company's corresponding figure for the 777-8's advantage over its competitor is 4%.

By contrast, Airbus estimates that the A350-1000 has a 15% advantage in terms of cost per trip over the 777-9. The European manufacturer says this translates into a COC advantage of 5%. The manufacturers estimates are based on slightly different assumptions, notably different sector lengths, but nonetheless the figures are hard to reconcile.

In an attempt to provide a balanced comparison of the relative operating costs of the 777-9 and the A350-1000, *Airfinance Journal* has estimated the relative costs based on its own model. The 777-8 has also been included because it is, in theory, a more direct competitor to the A350-1000.

The closeness of the 777-8 and A350-1000 is borne out by *Airfinance Journal*'s analysis.

At fuel prices prevalent before the pandemic, their cash costs per trip on a 4,000-nautical mile sector are virtually identical, according to the *Airfinance Journal* model. At current lower fuel prices, the 777-8 appears marginally less competitive.

Differences are more marked in the case of the 777-9 comparison. At the pre-Covid fuel prices, the largest Boeing model has a 4% higher trip cost than the A350-1000, which translates to a 7% advantage in cost per seat, based on *Airfinance Journal*'s assumptions on capacity. A caveat to these findings is that 777-9 performance figures are estimates based on Boeing's early briefings and will only be verified once the aircraft has entered service. Relative seat-counts are also a source of claim and counter-claim.

Based on their respective cash costs, *Airfinance Journal*'s analysis suggests that the 777-9 will provide significant efficiencies for airlines which can use its full capacity, while the A350-1000 is a less-expensive lower-risk option.

Pricing of the aircraft is less than transparent, but *Airfinance Journal* understands that Boeing's asking price for the 777-8 is about $45 million more than the equivalent Airbus figure.

For the 777-9, the difference is about $75 million. These increments look high and, for example, would mean the 777-9 losing almost all of its cost per seat advantage.

Prices are of course subject to negotiations and Boeing may well be able to convince airlines that 777-9 operating costs are as advantageous as its marketing documentation suggests. In any case, Airbus is no longer able to offer an aircraft that matches the capacity of Boeing's largest model.

## Relative cash cost at December 2019 fuel price (about $1.9 per USG)

| | A350-1000 | 777-8 | 777-9 |
|---|---|---|---|
| Cash cost per trip | 100% | 100% | 104% |
| Cash cost per seat | 100% | 99% | 93% |

## Relative cash cost at current fuel price (about $1.1 per USG)

| | A350-1000 | 777-8 | 777-9 |
|---|---|---|---|
| Cash cost per trip | 100% | 102% | 105% |
| Cash cost per seat | 100% | 101% | 94% |

Assumptions: 4,000-nautical mile sector, *Airfinance Journal* cost model.

# Rating agency unsecured ratings

## Airlines

| | Fitch | Moody's | S&P |
|---|---|---|---|
| **Aeroflot** | BB-(neg) | - | - |
| **Air Canada** | BB-(neg) | Ba2(neg) | B+(neg) |
| **Air New Zealand** | - | Baa2(stable) | - |
| **Alaska Air Group** | BB+(neg) | - | BB-(neg) |
| **Allegiant Travel Company** | - | Ba3(neg) | B(neg) |
| **American Airlines Group** | B-(watch neg) | B2(neg) | B-(neg) |
| **Avianca Holdings** | D | - | D(NM) |
| **British Airways** | BB(neg) | Ba2(neg) | BB(neg) |
| **Delta Air Lines** | BB+(neg) | Baa3(neg) | BB(neg) |
| **Easyjet** | - | Baa3(neg) | BBB-(neg) |
| **Etihad Airways** | A(stable) | - | - |
| **Grupo Aeromexico** | - | - | D(NM) |
| **GOL** | CCC+ | Caa1(neg) | CCC+(developing) |
| **Hawaiian Holdings** | B-(watch neg) | B1(neg) | CCC+(neg) |
| **International Consolidated Airlines Group** | - | Ba2(neg) | BB(neg) |
| **Jetblue** | BB-(neg) | Ba2(neg) | B+(neg) |
| **LATAM Airlines Group** | WD | - | - |
| **Lufthansa Group** | - | Ba2(neg) | BB(neg) |
| **Qantas Airways** | - | Baa2(neg) | - |
| **Ryanair** | BBB(neg) | - | BBB(neg) |
| **SAS** | - | Caa2(neg) | CC(neg) |
| **Southwest Airlines** | BBB+(neg) | Baa1(neg) | BBB(neg) |
| **Spirit Airlines** | BB-(neg) | B1(neg) | BBB(neg) |
| **TAP Portugal (Transportes Aereos Portugueses, S.A.)** | - | Caa2(neg) | B-(watch neg) |
| **Turkish Airlines** | - | B3(neg) | B(neg) |
| **United Airlines Holdings** | BB-(neg) | Ba2(neg) | B+(neg) |
| **Virgin Australia** | D | Ca(developing) | D(NM) |
| **Westjet** | B(neg) | B3(neg) | B-(neg) |
| **Wizz Air** | BBB-(neg) | Baa3(neg) | - |

Source: Ratings Agencies - 26/10/20

## Lessors

| | Fitch | Moody's | S&P | Kroll Bond Ratings |
|---|---|---|---|---|
| **Aercap** | BBB-(neg) | Baa3(neg) | BBB(neg) | - |
| **Air Lease Corp** | BBB(neg) | - | BBB(neg) | A-(neg) |
| **Aircastle** | BBB(stable) | Baa3(neg) | BBB-(stable) | - |
| **Avation plc** | B(watch neg) | - | CCC(watch neg) | - |
| **Aviation Capital Group** | WD | Baa2(neg) | BBB-(neg) | A-(neg) |
| **Avolon Holdings Limited** | BBB-(neg) | Baa3(neg) | BBB-(neg) | BBB+(neg) |
| **AWAS Aviation Capital Limited** | - | Baa3(neg) | BB+(stable) | - |
| **BOC Aviation** | A-(stable) | - | A-(neg) | - |
| **CDB Aviation Lease & Finance** | A+(stable) | A1(neg) | A(stable) | - |
| **Dubai Aerospace Enterprise** | BBB-(neg) | Baa3(neg) | BB+(stable) | BBB+(neg) |
| **Fly Leasing** | - | B1(neg) | BB(neg) | BBB(neg) |
| **ILFC (Part of Aercap)** | BBB-(neg) | Baa3(neg) | - | - |
| **Park Aerospace Holdings** | BBB-(neg) | Baa3(neg) | - | - |
| **SMBC Aviation Capital** | A-(neg) | - | A-(neg) | - |
| **Voyager Aviation** | BB-(watch neg) | B3(neg) | CCC+(watch dev) | BB-(neg) |

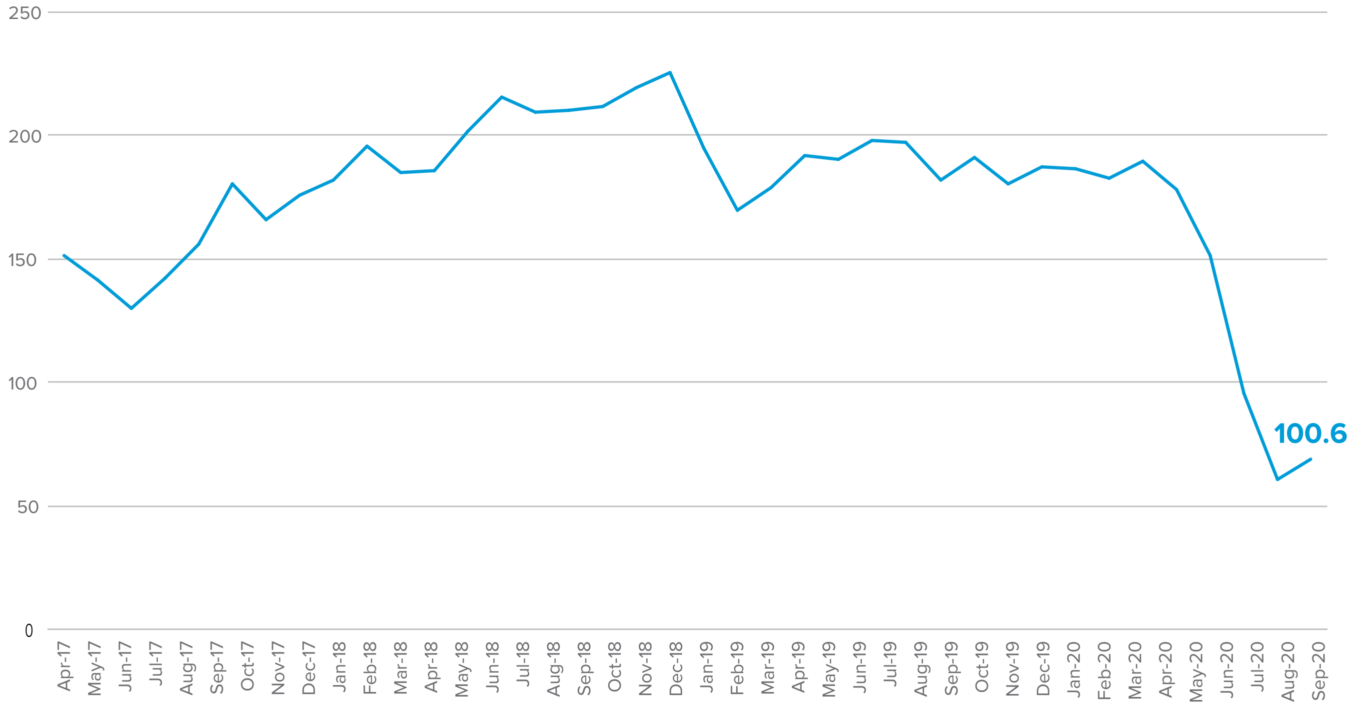
Source: Ratings Agencies - 26/10/20

## Manufacturers

| | Fitch | Moody's | S&P |
|---|---|---|---|
| **Airbus Group** | A-(neg) | A2(neg) | A(neg) |
| **Boeing** | BBB(neg) | Baa2(neg) | BBB-(neg) |
| **Bombardier** | CCC | Caa2(neg) | CCC+(neg) |
| **Embraer** | BB+(neg) | Ba2(neg) | BB+(neg) |
| **Rolls-Royce plc** | BB+(neg) | Ba3(neg) | BB-(watch neg) |
| **Raytheon Technologies Corp** | - | Baa1(stable) | A-(neg) |

Source: Ratings Agencies - 26/10/20

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




Source: *US Energy Information Administration*

## Recent commercial aircraft orders (August-October 2020)

| Customer | Country | Quantity/Type |
|---|---|---|
| Sky Express | Greece | Four A320neo |
| Helvetic Airways | Switzerland | Four E195-E2 |
| Eva Air | Territory of Taiwan | Three 777F |
| Unidentified customer | - | Three 737 Max |

Based on *Airfinance Journal* research up to 1/11/2020

## Commercial aircraft orders by manufacturer

| | Gross orders 2020 | Cancellations 2020 | Net orders 2020 | Net orders 2019 |
|---|---|---|---|---|
| **Airbus (30 September)** | 370 | 70 | 300 | 768 |
| **Boeing (30 September)** | 49 | 430 | -381 | 54 |
| **Bombardier - Mitsubishi Heavy Industries** | 0 | 0 | 0 | 15 |
| **De Havilland of Canada** | 0 | 0 | 0 | 10 |
| **Embraer** | 20 | 0 | 20 | 55 |
| **ATR** | 5 | 0 | 5 | 43 |

Based on *Airfinance Journal* research and manufacturer announcements until 1/11/2020

## New aircraft values ($ million)

| Model | Values of new production aircraft* |
|---|---|
| **Airbus** | |
| A220-100 | 33.2 |
| A220-300 | 37.8 |
| A319 | 34.3 |
| A319neo | 37.2 |
| A320 | 43.7 |
| A320neo | 49.3 |
| A321 | 51.8 |
| A321neo | 57.1 |
| A330-200 | 85.9 |
| A330-200 Freighter | 94.4 |
| A330-300 | 98.2 |
| A330-900 (neo) | 110.4 |
| A350-900 | 149.4 |
| A350-1000 | 169 |
| A380 | 219.2 |
| **Boeing** | |
| 737-800 | 46.3 |
| 737-900ER | 48.6 |
| 737 Max 8 | 51.3 |
| 737 Max 9 | 52.5 |
| 747-8I | 155.6 |
| 747-8F | 183 |
| 777-300ER | 153.9 |
| 787-8 | 118.5 |
| 787-9 | 143.6 |
| 787-10 | 150.5 |
| **ATR** | |
| ATR42-600 | 16.2 |
| ATR72-600 | 20.2 |
| **MHI-Bombardier** | |
| CRJ700 | 24.1 |
| CRJ900 | 26.2 |
| CRJ1000 | 28.2 |
| **De Havilland Aircraft of Canada** | |
| Dash 8-400 | 20.7 |
| **Embraer** | |
| E175 | 28.5 |
| E190 | 32.1 |
| E190-E2 | 34.5 |
| E195 | 33.9 |
| **Sukhoi** | |
| SSJ100 | 23.3 |

*Based on ISTAT appraiser inputs for Air Investor 2020

## New aircraft lease rates ($'000 per month)

| Model | Low | High | Average |
|---|---|---|---|
| **Airbus** | | | |
| A220-100 | 204 | 262 | 233 |
| A220-300 | 276 | 303 | 289.5 |
| A319 | 230 | 283 | 256.5 |
| A319neo | 266 | 293 | 279.5 |
| A320 | 295 | 353 | 324 |
| A320neo | 340 | 383 | 361.5 |
| A321 | 350 | 424 | 387 |
| A321neo | 380 | 444 | 412 |
| A330-200 | 640 | 745 | 692.5 |
| A330-200 Freighter | 657 | 715 | 686 |
| A330-300 | 690 | 833 | 761.5 |
| A330-900 (neo) | 801 | 872 | 836.5 |
| A350-900 | 1,050 | 1,195 | 1,122.5 |
| A350-1000 | 1,233 | 1,342 | 1,287.5 |
| A380 | 1,503 | 1,950 | 1,726.5 |
| **Boeing** | | | |
| 737-800 | 310 | 364 | 337 |
| 737-900ER | 330 | 394 | 362 |
| 737 Max 8 | 350 | 394 | 372 |
| 737 Max 9 | 368 | 404 | 386 |
| 747-8I | 990 | 1,264 | 1,127 |
| 747-8F | 1,178 | 1,570 | 1,374 |
| 777-300ER | 1,050 | 1,300 | 1,175 |
| 787-8 | 815 | 931 | 873 |
| 787-9 | 950 | 1,200 | 1,075 |
| 787-10 | 1,053 | 1,146 | 1,099.5 |
| **ATR** | | | |
| ATR42-600 | 117 | 153 | 135 |
| ATR72-600 | 144 | 185 | 164.5 |
| **MHI-Bombardier** | | | |
| CRJ700 | 153 | 220 | 186.5 |
| CRJ900 | 170 | 235 | 202.5 |
| CRJ1000 | 182 | 255 | 218.5 |
| **De Havilland Aircraft of Canada** | | | |
| Dash 8-400 | 140 | 200 | 170 |
| **Embraer** | | | |
| E175 | 205 | 240 | 222.5 |
| E190 | 230 | 275 | 252.5 |
| E190-E2 | 239 | 263 | 251 |
| E195 | 211 | 280 | 245.5 |
| **Sukhoi** | | | |
| SSJ100 | 153 | 205 | 179 |

# **Twelve-step approach** to living through current nightmare

**Adam Pilarski**, senior vice-president at Avitas, looks at how things could turn out in the new reality.

Now that we have lived for more than half a year in a state of alternative reality, it is time to establish some clear understandings of new realities. This approach maybe can guide us to accept where we are and where we are going. I have put together a highly personal view of 12 such observations of facts and of ways to do better.

*One*. We have to accept the reality that the solution to the existing problems is out of our hands. A power greater than us (the virus) is in charge. We have to accept that fact and adjust to that reality.

*Two*. We have to take a moderate and balanced view. It is easy to fall into despair, see only negatives and start writing obituaries for aviation. However, we do know that aviation will come back, as it always has in the past.

There are very good objective reasons for its existence, and temporary hardships are not negating those. In the same way, we should reject some opinions which espoused a view that as soon as vaccines become available we will immediately go back to old realities.

*Three*. The Kafkaesque present situation is unfortunately real. As much as we hope to wake up and discover that all this was just a bad dream, it will not happen. We have to devise strategies on how to overcome existing hardships.

*Four*. As much as we talked about the “perfect storm” and “once-in-a-lifetime events”, those events are real and continue to happen. I have personally lived through a significant number of those supposedly once-in-a-lifetime events.

*Five*. The most efficient and rational remedy to cure the present disaster is social distancing. By definition, that solution is the perfect antithesis of the reason for the existence of our industry, whose goal is to bring people together.

*Six*. We must also realise that no matter how convenient it is to blame all the negative developments on the virus, we are also to some degree at fault by not pursuing cautious and prudent policies for many years. We should have realised that our industry was in dire need for a major rebalancing. We were facing a huge bubble in aircraft ordered and produced, a bubble which had to burst eventually.


Our author at the *Airfinance Journal* Dublin 2020 conference.

> *“We have to accept the reality that the solution to the existing problems is out of our hands. A power greater than us (the virus) is in charge.”*

Just because the virus caused so much damage it does not mean that when it is eventually defeated we will go back to old realities.

*Seven*. We must realise that wishful thinking is not an appropriate strategy. Just hoping that people will start flying and going on holiday again will not make it happen. We must have well-thought-out and articulated strategies to bring air transport to the next phase of growth.

*Eight*. We must not despair. Recent circumstances will not remain forever. Yes, in the meantime things will still get worse before they get better. The good reasons for the existence and a century of phenomenal growth are evidence of all the goodness our industry brought to humanity and this will continue.

*Nine*. The recovery will definitely come. Be prepared for it. Select the winners and losers in advance to benefit from new realities. Know where to invest and which companies and products to avoid.

*Ten*. Appreciate that new players and technologies will become relevant. Be prepared for new realities like a greater role of governments in economic decisions in our industry. This is even more relevant in light of worldwide environmental concerns.

Imagine how environmentally responsible products are not an obstacle to being profitable but may enhance efficiency and profitability. It is the same with speed. Instead of seeing it as a hindrance (cost) see it as an enabler to what humans want and for which they will be willing to pay a premium.

*Eleven*. Be prepared for and actively develop new business models. As an example, the old system of making money in the engine business based on the razor and blades paradigm (give away the razor for free and make money on selling blades at high margins) may have to be re-engineered.

It is the same for leasing versus outright purchases. Rethink what an airline is and redefine its value. See how you can make money in different ways.

*Twelve*. Take the enormous present difficulties as a challenge, which can make humanity more prosperous. It will take time and, unfortunately, a lot of suffering but if history teaches us anything it is that most progress has come from valiant efforts by humans in the face of adversity.

As of writing this column, it is my birthday (16 October). Those who remember my forecasts, this is the date that in 2011 I predicted oil prices to be about $40/barrel. I have just checked today and the price is $40.89. Not too far off for long-term forecasts. So it turns out the future can be predicted!

With all this I wish the readers a sober and successful future. Please stay safe and sane.

AIRFINANCE JOURNAL

An *Airfinance Journal* special supplement

# Leasing Top 50 2020

# Top 50 **managers by number of aircraft**

| Rank | Manager | Total | % change since last year | | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|---|---|
| 1 | GECAS | **1,203** | ↑ | 0.2% | 21 | 234 | 796 | 152 |
| 2 | Aercap | **1,046** | ↑ | 0.4% | - | 10 | 778 | 258 |
| 3 | Avolon | **542** | ↑ | 2.3% | - | - | 430 | 112 |
| 4 | BBAM | **524** | ↑ | 2.7% | - | 2 | 391 | 131 |
| 5 | Nordic Aviation Capital | **486** | ↓ | -4.5% | 286 | 193 | 7 | - |
| 6 | SMBC Aviation Capital | **437** | ↑ | 3.8% | - | 2 | 382 | 53 |
| 7 | Air Lease Corporation | **383** | ↑ | 6.1% | - | 2 | 279 | 102 |
| 8 | ICBC Leasing | **350** | ↑ | 6.4% | - | 11 | 302 | 37 |
| 8= | DAE Capital | **350** | → | 0.0% | 55 | - | 233 | 62 |
| 10 | BOC Aviation | **334** | ↓ | -0.9% | - | - | 272 | 62 |
| 11 | Aviation Capital Group | **306** | ↓ | -3.2% | - | - | 290 | 16 |
| 12 | Aircastle | **278** | ↓ | -1.8% | - | 5 | 245 | 28 |
| 13 | Castlelake | **255** | ↑ | 14.3% | 16 | 14 | 178 | 47 |
| 14 | Carlyle Aviation Partners | **248** | ↑ | 3.3% | - | - | 213 | 35 |
| 15 | BOCOMM Leasing | **233** | ↑ | 7.4% | - | 10 | 200 | 23 |
| 16 | CDB Aviation | **221** | ↑ | 2.8% | - | 20 | 158 | 43 |
| 17 | ORIX Aviation | **207** | ↓ | -4.6% | - | - | 176 | 31 |
| 18 | Macquarie AirFinance | **191** | ↓ | -1.5% | - | 3 | 176 | 12 |
| 19 | Goshawk | **183** | ↑ | 7.0% | - | 1 | 165 | 17 |
| 20 | Jackson Square Aviation | **169** | ↑ | 7.0% | - | - | 147 | 22 |
| 21 | Avmax | **140** | ↓ | -6.7% | 62 | 67 | 9 | 2 |
| 22 | China Aircraft Leasing Company | **134** | ↓ | -2.2% | - | - | 125 | 9 |
| 23 | Standard Chartered Bank | **132** | ↓ | -0.8% | - | - | 126 | 6 |
| 24 | DVB AAM | **132** | ↑ | 9.1% | - | - | 112 | 20 |
| 25 | AMCK Aviation | **131** | ↓ | -8.4% | - | - | 125 | 6 |
| 26 | Falko | **123** | ↑ | 7.0% | 15 | 108 | - | - |
| 27 | CMB Financial Leasing | **112** | ↑ | 19.1% | - | 5 | 91 | 16 |
| 28 | Cargo Aircraft Management | **104** | ↑ | 1.0% | - | - | 11 | 93 |
| 29 | Fortress Transportation | **97** | ↑ | 38.6% | - | - | 80 | 17 |
| 30 | Altavair Airfinance | **93** | ↑ | 55.0% | - | - | 39 | 54 |
| 31 | Chorus Aviation | **91** | ↑ | 13.8% | 74 | 15 | 2 | - |
| 32 | Aircraft Leasing & Management | **87** | ↑ | 1.2% | - | 13 | 59 | 15 |
| 33 | Aviator Capital Management | **86** | ↑ | 352.6% | - | 5 | 65 | 16 |
| 34 | CCB Leasing | **85** | ↑ | 13.3% | - | - | 73 | 12 |
| 35 | VTB Leasing | **79** | ↑ | 6.8% | - | 7 | 60 | 12 |
| 36 | ALAFCO | **77** | ↑ | 10.0% | - | - | 66 | 11 |
| 37 | Merx Aviation | **75** | ↑ | 33.9% | - | - | 72 | 3 |
| 37= | State Transport Leasing Company | **75** | ↑ | 8.7% | - | 35 | 33 | 7 |
| 39 | JP Lease Products & Services | **71** | ↓ | -1.4% | - | - | 51 | 20 |
| 40 | FPG Amentum | **69** | → | 0.0% | - | - | 55 | 14 |
| 40= | Skyworks Leasing | **69** | ↑ | 19.0% | 4 | - | 40 | 25 |
| 42 | Elix Aviation Capital | **66** | ↓ | -9.6% | 66 | - | - | - |
| 43 | Genesis Aircraft Services | **65** | ↑ | 30.0% | - | - | 63 | 2 |
| 44 | Aviation Finance & Leasing | **64** | ↓ | -1.5% | - | - | 64 | - |
| 45 | VEB Leasing | **63** | ↓ | -11.3% | 1 | 35 | 9 | 18 |
| 45= | Jetran International | **63** | ↑ | 3.3% | 7 | 1 | 49 | 6 |
| 47 | GTLK Europe | **60** | ↑ | 3.4% | - | 1 | 49 | 10 |
| 48 | Arena Aviation Capital | **59** | ↑ | 18.0% | - | - | 42 | 17 |
| 49 | Tokyo Century Leasing | **56** | ↓ | -8.2% | - | 3 | 40 | 13 |
| 49= | Sberbank Leasing | **56** | → | 0.0% | - | 20 | 30 | 6 |
| | **Total** | **10,560** | ↑ | **3.5%** | **607** | **822** | **7,458** | **1,673** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

# Top 50 **managers by $MV of fleet** ($m)

| Rank | Manager | Total | % change since last year | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|---|
| 1 | Aercap | **$28,587** | -27.8% | - | $292 | $15,732 | $12,563 |
| 2 | GECAS | **$20,215** | -22.3% | $179 | $970 | $13,821 | $5,245 |
| 3 | BBAM | **$19,447** | -16.6% | - | $20 | $9,924 | $9,503 |
| 4 | Avolon | **$17,343** | -15.8% | - | - | $10,686 | $6,658 |
| 5 | Air Lease Corporation | **$16,214** | -14.2% | - | $24 | $8,217 | $7,973 |
| 6 | SMBC Aviation Capital | **$16,201** | -11.4% | - | $22 | $11,531 | $4,648 |
| 7 | BOC Aviation | **$13,183** | -19.0% | - | - | $8,366 | $4,816 |
| 8 | ICBC Leasing | **$12,247** | -23.8% | - | $181 | $9,481 | $2,585 |
| 9 | DAE Capital | **$9,082** | -21.9% | $586 | - | $4,991 | $3,504 |
| 10 | Aviation Capital Group | **$8,570** | -23.8% | - | - | $7,366 | $1,204 |
| 11 | BOCOMM Leasing | **$7,725** | -17.1% | - | $164 | $6,178 | $1,383 |
| 12 | CDB Aviation | **$6,823** | -16.9% | - | $269 | $5,017 | $1,537 |
| 13 | Goshawk | **$6,411** | -19.5% | - | $14 | $4,859 | $1,538 |
| 14 | Jackson Square Aviation | **$6,349** | -13.7% | - | - | $4,715 | $1,633 |
| 15 | ORIX Aviation | **$5,833** | -20.3% | - | - | $4,187 | $1,647 |
| 16 | Aircastle | **$5,225** | -24.0% | - | $68 | $4,311 | $846 |
| 17 | Nordic Aviation Capital | **$4,821** | -25.0% | $2,206 | $2,448 | $167 | - |
| 18 | China Aircraft Leasing Company | **$4,154** | -21.9% | - | - | $3,596 | $559 |
| 19 | Standard Chartered Bank | **$4,084** | -17.1% | - | - | $3,981 | $103 |
| 20 | CMB Financial Leasing | **$4,031** | -17.0% | - | $100 | $3,003 | $929 |
| 21 | Castlelake | **$3,958** | -4.7% | $35 | $83 | $2,835 | $1,005 |
| 22 | AMCK Aviation | **$3,651** | -26.8% | - | - | $3,535 | $116 |
| 23 | Macquarie AirFinance | **$3,462** | -19.5% | - | $29 | $3,218 | $214 |
| 24 | CCB Leasing | **$3,369** | -11.7% | - | - | $2,387 | $982 |
| 25 | Aircraft Leasing & Management | **$3,240** | -14.0% | - | $245 | $1,680 | $1,314 |
| 26 | ALAFCO | **$3,195** | -4.8% | - | - | $2,012 | $1,183 |
| 27 | Carlyle Aviation Partners | **$3,157** | -3.8% | - | - | $2,728 | $429 |
| 28 | Altavair Airfinance | **$2,809** | -11.9% | - | - | $755 | $2,054 |
| 29 | Amedeo Limited | **$2,605** | -15.6% | - | - | - | $2,605 |
| 30 | FPG Amentum | **$2,505** | -18.8% | - | - | $1,551 | $954 |
| 31 | Tokyo Century Leasing | **$2,437** | -15.4% | - | $38 | $1,123 | $1,276 |
| 32 | Aviation Finance & Leasing | **$2,243** | -18.3% | - | - | $2,243 | - |
| 33 | EMP Structured Assets | **$2,195** | -16.7% | - | - | - | $2,195 |
| 34 | DVB AAM | **$2,192** | -16.2% | - | - | $1,733 | $459 |
| 35 | JP Lease Products & Services | **$1,880** | -26.4% | - | - | $919 | $960 |
| 36 | GTLK Europe | **$1,776** | -30.2% | - | $20 | $979 | $777 |
| 37 | Merx Aviation | **$1,721** | -29.7% | - | - | $1,550 | $171 |
| 38 | Investec | **$1,699** | -30.5% | $53 | $79 | $134 | $1,433 |
| 39 | IAFC | **$1,633** | -32.2% | - | - | $1,013 | $620 |
| 40 | Skyworks Leasing | **$1,531** | -36.3% | $6 | - | $734 | $791 |
| 41 | Minsheng Financial Leasing | **$1,489** | -36.6% | - | - | $1,121 | $368 |
| 42 | VTB Leasing | **$1,487** | -34.0% | - | $8 | $1,413 | $66 |
| 43 | Wings Capital Partners | **$1,469** | -28.7% | - | - | $1,309 | $160 |
| 44 | VEB Leasing | **$1,454** | -25.2% | $5 | $512 | $216 | $721 |
| 45 | Novus Aviation Capital | **$1,371** | -24.5% | - | - | $424 | $948 |
| 45= | Sberbank Leasing | **$1,371** | -18.4% | - | $221 | $917 | $233 |
| 47 | Seraph Aviation Management | **$1,296** | -20.2% | $10 | $82 | $572 | $632 |
| 48 | GOAL | **$1,287** | -19.3% | $84 | $36 | $1,141 | $26 |
| 49 | SPDB Financial Leasing | **$1,254** | -14.2% | - | $54 | $995 | $205 |
| 50 | Falko | **$1,224** | -9.1% | $74 | $1,151 | - | - |
| | **Total** | **$281,273** | **-19.9%** | **$3,238** | **$6,901** | **$179,365** | **$91,768** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020
*Source: Avitas Blue Book Market Values as of 01 October 2020*

# Top 50 **beneficial owners by number of aircraft**

| Rank | Beneficial Owner | Total | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|
| 1 | GECAS | **1,157** | 17 | 207 | 785 | 148 |
| 2 | Aercap | **1,005** | - | 10 | 740 | 255 |
| 3 | Avolon | **491** | - | - | 387 | 104 |
| 4 | Nordic Aviation Capital | **485** | 286 | 192 | 7 | - |
| 5 | ICBC Leasing | **362** | - | 11 | 314 | 37 |
| 6 | Air Lease Corporation | **319** | - | 1 | 225 | 93 |
| 7 | BOC Aviation | **310** | - | - | 252 | 58 |
| 8 | Aviation Capital Group | **299** | - | - | 284 | 15 |
| 9 | DAE Capital | **279** | 53 | - | 170 | 56 |
| 10 | SMBC Aviation Capital | **278** | - | - | 262 | 16 |
| 11 | Aircastle | **274** | - | 5 | 241 | 28 |
| 12 | Castlelake | **262** | 10 | 18 | 183 | 51 |
| 13 | Carlyle Aviation Partners | **248** | - | - | 213 | 35 |
| 14 | CDB Aviation | **224** | - | 20 | 163 | 41 |
| 15 | BOCOMM Leasing | **210** | - | 7 | 181 | 22 |
| 16 | NBB Leasing | **208** | - | - | 126 | 82 |
| 17 | Macquarie Airfinance | **191** | - | 3 | 176 | 12 |
| 18 | Jackson Square Aviation | **170** | - | - | 150 | 20 |
| 19 | Goshawk | **163** | - | - | 149 | 14 |
| 20 | Avmax | **135** | 58 | 66 | 9 | 2 |
| 21 | JP Lease Products & Services | **116** | - | - | 83 | 33 |
| 22 | Standard Chartered Bank | **114** | - | - | 108 | 6 |
| 23 | China Aircraft Leasing Company | **107** | - | - | 100 | 7 |
| 24 | Cargo Aircraft Management | **104** | - | - | 11 | 93 |
| 25 | Fortress Transportation | **98** | - | - | 80 | 18 |
| 26 | Falko | **96** | 15 | 81 | - | - |
| 27 | Chorus Aviation | **91** | 74 | 15 | 2 | - |
| 28 | Aviator Capital Management | **86** | - | 5 | 65 | 16 |
| 29 | CCB Leasing | **85** | - | - | 73 | 12 |
| 30 | Accipiter Holdings | **82** | - | - | 79 | 3 |
| 31 | Fly Leasing | **81** | - | - | 72 | 9 |
| 32 | VTB Leasing | **79** | - | 7 | 60 | 12 |
| 33 | Deucalion Aviation Funds | **78** | - | - | 62 | 16 |
| 34 | ALAFCO | **77** | - | - | 66 | 11 |
| 35 | State Transport Leasing Company | **75** | - | 35 | 33 | 7 |
| 36 | Genesis Aircraft Services | **73** | - | - | 71 | 2 |
| 37 | Regional One | **72** | 8 | 64 | - | - |
| 38 | Merx Aviation | **69** | - | - | 66 | 3 |
| 39 | CMB Financial Leasing | **68** | - | 1 | 60 | 7 |
| 40 | Elix Aviation Capital | **66** | 66 | - | - | - |
| 41 | Altavair Airfinance | **65** | - | - | 33 | 32 |
| 42 | Aviation Finance & Leasing | **64** | - | - | 64 | - |
| 43 | Jetran International | **63** | 7 | 1 | 49 | 6 |
| 44 | VEB Leasing | **61** | 1 | 35 | 7 | 18 |
| 45 | Sberbank Leasing | **56** | - | 20 | 30 | 6 |
| 46 | IAFC | **55** | - | - | 30 | 25 |
| 47 | Incline Aviation | **54** | - | - | 48 | 6 |
| 48 | GTLK Europe | **53** | - | 1 | 45 | 7 |
| 49 | ORIX Aviation | **51** | | | 42 | 9 |
| 50 | Fuyo General Lease | **50** | - | 5 | 40 | 5 |
| | **Total** | **9,359** | **595** | **810** | **6,496** | **1,458** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

** ORIX Aviation and Merx Aviation got credit for 50% each of the Kornerstone aircraft*

# Top 50 **beneficial owners by $MV of fleet** ($m)

| Rank | Beneficial Owner | Total | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|
| 1 | Aercap | **$28,713** | - | $292 | $15,115 | $13,306 |
| 2 | GECAS | **$19,968** | $167 | $916 | $13,736 | $5,149 |
| 3 | Avolon | **$16,794** | - | - | $10,015 | $6,779 |
| 4 | Air Lease Corporation | **$14,751** | - | $14 | $7,180 | $7,557 |
| 5 | BOC Aviation | **$13,052** | - | - | $7,993 | $5,059 |
| 6 | ICBC Leasing | **$12,599** | - | $181 | $9,833 | $2,585 |
| 7 | NBB Leasing | **$10,099** | - | - | $3,709 | $6,390 |
| 8 | SMBC Aviation Capital | **$9,523** | - | - | $7,904 | $1,618 |
| 9 | Aviation Capital Group | **$8,367** | - | - | $7,233 | $1,134 |
| 10 | DAE Capital | **$8,023** | $568 | - | $4,033 | $3,421 |
| 11 | BOCOMM Leasing | **$7,287** | - | $129 | $5,807 | $1,351 |
| 12 | CDB Aviation | **$6,880** | - | $269 | $5,164 | $1,448 |
| 13 | Jackson Square Aviation | **$6,383** | - | - | $4,842 | $1,541 |
| 14 | Goshawk | **$5,734** | - | - | $4,478 | $1,256 |
| 15 | Aircastle | **$5,051** | - | $68 | $4,137 | $846 |
| 16 | Nordic Aviation Capital | **$4,815** | $2,206 | $2,442 | $167 | - |
| 17 | Castlelake | **$4,339** | $25 | $153 | $2,991 | $1,170 |
| 18 | Standard Chartered Bank | **$3,482** | - | - | $3,379 | $103 |
| 19 | Macquarie Airfinance | **$3,462** | - | $29 | $3,218 | $214 |
| 20 | CCB Leasing | **$3,369** | - | - | $2,387 | $982 |
| 21 | China Aircraft Leasing Company | **$3,254** | - | - | $2,877 | $377 |
| 22 | ALAFCO | **$3,195** | - | - | $2,012 | $1,183 |
| 23 | Carlyle Aviation Partners | **$3,157** | - | - | $2,728 | $429 |
| 24 | JP Lease Products & Services | **$2,923** | - | - | $1,496 | $1,427 |
| 25 | CMB Financial Leasing | **$2,542** | - | $18 | $2,065 | $459 |
| 26 | Accipiter Holdings | **$2,254** | - | - | $2,196 | $58 |
| 27 | Aviation Finance & Leasing | **$2,243** | - | - | $2,243 | - |
| 28 | Fly Leasing | **$1,981** | - | - | $1,442 | $539 |
| 29 | Fuyo General Lease | **$1,721** | - | $85 | $1,217 | $419 |
| 30 | Incline Aviation | **$1,692** | - | - | $1,314 | $378 |
| 31 | IAFC | **$1,633** | - | - | $1,013 | $620 |
| 32 | ORIX Aviation | **$1,582** | - | - | $994 | $588 |
| 33 | Altavair Airfinance | **$1,569** | - | - | $513 | $1,056 |
| 34 | Investec | **$1,558** | $53 | $79 | $134 | $1,292 |
| 35 | VTB Leasing | **$1,487** | - | $8 | $1,413 | $66 |
| 36 | GTLK Europe | **$1,482** | - | $20 | $946 | $516 |
| 37 | Merx Aviation | **$1,462** | - | - | $1,291 | $171 |
| 38 | VEB Leasing | **$1,394** | $5 | $512 | $156 | $721 |
| 39 | Sberbank Leasing | **$1,371** | - | $221 | $917 | $233 |
| 40 | AVIC Leasing | **$1,364** | - | $29 | $954 | $381 |
| 41 | Minsheng Financial Leasing | **$1,327** | - | - | $1,121 | $207 |
| 42 | Deucalion Aviation Funds | **$1,318** | - | - | $898 | $420 |
| 43 | GOAL | **$1,287** | $84 | $36 | $1,141 | $26 |
| 44 | Doric | **$1,273** | $30 | - | $99 | $1,144 |
| 45 | Wings Capital Partners | **$1,268** | - | - | $1,108 | $160 |
| 45= | AMCK Aviation Holdings | **$1,268** | - | - | $1,210 | $58 |
| 47 | Tokyo Century Leasing | **$1,206** | - | - | $930 | $276 |
| 48 | Amedeo Air Four Plus | **$1,150** | - | - | - | $1,150 |
| 49 | Chorus Aviation | **$1,123** | $790 | $272 | $61 | - |
| 50 | FPG Amentum | **$1,067** | - | - | $996 | $71 |
| | **Total** | **$244,841** | **$3,929** | **$5,772** | **$158,808** | **$76,332** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020
*Source: Avitas Blue Book Market Values as of 01 October 2020*
** ORIX Aviation and Merx Aviation got credit for 50% each of the Kornerstone aircraft*

# Top 50 lessors' orderbooks

| Rank | Lessor | Total | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|
| 1 | Air Lease Corporation | **401** | - | - | 328 | 73 |
| 2 | Aercap | **312** | - | 38 | 251 | 23 |
| 3 | China Aircraft Leasing Company | **279** | - | 30 | 249 | - |
| 4 | SMBC Aviation Capital | **263** | - | - | 263 | - |
| 5 | Avolon | **261** | - | - | 229 | 32 |
| 6 | GECAS | **260** | - | - | 244 | 16 |
| 7 | Aviation Capital Group | **140** | - | - | 138 | 2 |
| 7= | BOC Aviation | **140** | - | - | 134 | 6 |
| 9 | CDB Aviation | **130** | - | - | 130 | - |
| 10 | ICBC Leasing | **125** | - | 50 | 75 | - |
| 11 | Ilyushin Finance Corporation | **93** | - | 27 | 65 | 1 |
| 12 | Avia Capital Services | **85** | - | - | 85 | - |
| 13 | ALAFCO | **73** | - | - | 73 | - |
| 14 | Nordic Aviation Capital | **70** | 48 | 2 | 20 | - |
| 15 | Macquarie AirFinance | **58** | - | - | 58 | - |
| 16 | China Huarong Financial Leasing | **50** | - | 20 | 30 | - |
| 17 | ABC Financial Leasing | **45** | - | - | 45 | - |
| 18 | Goshawk | **40** | - | - | 40 | - |
| 19 | Timaero Ireland | **38** | - | - | 38 | - |
| 20 | BOCOMM Leasing | **30** | - | - | 30 | - |
| 20= | Jackson Square Aviation | **30** | - | - | 30 | - |
| 20= | Everbright Financial Leasing | **30** | - | - | 30 | - |
| 23 | VEB Leasing | **27** | - | 2 | 25 | - |
| 24 | Aircastle | **26** | - | 26 | - | - |
| 25 | Accipiter (AMCK Aviation) | **20** | - | - | 20 | - |
| 25= | Lease Corporation International | **20** | - | - | 20 | - |
| 27 | Comsys Aviation Leasing | **17** | - | 17 | - | - |
| 28 | State Transport Leasing Company | **15** | - | 15 | - | - |
| 29 | Sberbank Leasing | **14** | - | - | 14 | - |
| 30 | Aerolease Aviation | **10** | - | 10 | - | - |
| 31 | Hong Kong Int. Av. Leasing | **6** | - | - | - | 6 |
| 31= | Chorus Aviation | **6** | - | 6 | - | - |
| 31= | Avation | **6** | 6 | - | - | - |
| 34 | SPDB Financial Leasing | **5** | - | - | 5 | - |
| 34= | CIB Leasing | **5** | - | 5 | - | - |
| 36 | Middle East Leasing | **4** | - | - | 4 | - |
| 36= | Novus Aviation Capital | **4** | - | - | - | 4 |
| 36= | Minsheng Financial Leasing | **4** | - | 4 | - | - |
| 39 | ACIA-Aero | **3** | 3 | - | - | - |
| 39= | GTLK Europe | **3** | - | - | 3 | - |
| 39= | CIAF Leasing | **3** | - | 3 | - | - |
| 42 | Aerostar Leasing | **2** | 2 | - | - | - |
| 43 | CMB Financial Leasing | **1** | - | - | 1 | - |
| 43= | DAE Capital | **1** | - | - | - | 1 |
| | **Total** | **3,155** | **59** | **255** | **2,677** | **164** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020
*Source:* as per OEMs` input and press releases

# Top 50 **lessors' orderbooks** ($m)[1]

| Rank | Lessor | Total | Turboprop | Regional jet | Narrowbody | Widebody |
|---|---|---|---|---|---|---|
| 1 | Air Lease Corporation | **$34,263** | - | - | $21,696 | $12,568 |
| 2 | Aercap | **$21,333** | - | $1,114 | $16,519 | $3,700 |
| 3 | Avolon | **$19,433** | - | - | $14,212 | $5,221 |
| 4 | GECAS | **$18,954** | - | - | $16,253 | $2,701 |
| 5 | SMBC Aviation Capital | **$16,790** | - | - | $16,790 | - |
| 6 | China Aircraft Leasing Company | **$16,155** | - | $660 | $15,495 | - |
| 7 | Aviation Capital Group | **$9,651** | - | - | $9,312 | $339 |
| 8 | BOC Aviation | **$9,067** | - | - | $7,965 | $1,102 |
| 9 | CDB Aviation | **$8,052** | - | - | $8,052 | - |
| 10 | ALAFCO | **$4,591** | - | - | $4,591 | - |
| 11 | ICBC Leasing | **$4,083** | - | $1,173 | $2,909 | - |
| 12 | Avia Capital Services | **$3,909** | - | - | $3,909 | - |
| 13 | Ilyushin Finance Corporation | **$3,521** | - | $637 | $2,856 | $28 |
| 14 | Macquarie Airfinance | **$3,093** | - | - | $3,093 | - |
| 15 | Goshawk | **$2,518** | - | - | $2,518 | - |
| 16 | Timaero Ireland | **$2,384** | - | - | $2,384 | - |
| 17 | Jackson Square Aviation | **$2,006** | - | - | $2,006 | - |
| 18 | Nordic Aviation Capital | **$1,421** | $482 | $43 | $897 | - |
| 19 | VEB Leasing | **$1,348** | - | $56 | $1,293 | - |
| 20 | China Huarong Financial Leasing | **$1,265** | - | $440 | $825 | - |
| 21 | ABC Financial Leasing | **$1,238** | - | - | $1,238 | - |
| 22 | Accipiter (AMCK Aviation) | **$1,180** | - | - | $1,180 | - |
| 23 | Hong Kong Int. Av. Leasing | **$1,163** | - | - | - | $1,163 |
| 24 | Lease Corporation International | **$989** | - | - | $989 | - |
| 25 | Sberbank Leasing | **$936** | - | - | $936 | - |
| 26 | Novus Aviation Capital | **$826** | - | - | - | $826 |
| 27 | BOCOMM Leasing | **$825** | - | - | $825 | - |
| 27= | Everbright Financial Leasing | **$825** | - | - | $825 | - |
| 29 | Aircastle | **$744** | - | $744 | - | - |
| 30 | State Transport Leasing Company | **$417** | - | $417 | - | - |
| 31 | Comsys Aviation Leasing | **$374** | - | $374 | - | - |
| 32 | Middle East Leasing | **$285** | - | - | $285 | - |
| 33 | Aerolease Aviation | **$260** | - | $260 | - | - |
| 34 | DAE Capital | **$194** | - | - | - | $194 |
| 35 | Groupe Dubreuil | **$169** | - | - | - | $169 |
| 36 | Chorus Aviation | **$153** | - | $153 | - | - |
| 37 | GTLK Europe | **$151** | - | - | $151 | - |
| 38 | SPDB Financial Leasing | **$138** | - | - | $138 | - |
| 39 | CIB Leasing | **$128** | - | $128 | - | - |
| 40 | Avation | **$63** | $63 | - | - | - |
| 41 | CMB Financial Leasing | **$59** | - | - | $59 | - |
| 42 | ACIA-Aero | **$53** | $53 | - | - | - |
| 42= | CIAF Leasing | **$53** | - | $53 | - | - |
| 44 | Minsheng Financial Leasing | **$33** | - | $33 | - | - |
| | **Total** | **$195,095** | **$598** | **$6,285** | **$160,201** | **$28,011** |

*Source:* Lessors and *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020
*Source:* as per OEMs` input and press releases
[1] *calculated as 55% of 2020 list price*

# Lessor firm orders

Figure 1: Firm orders by body type

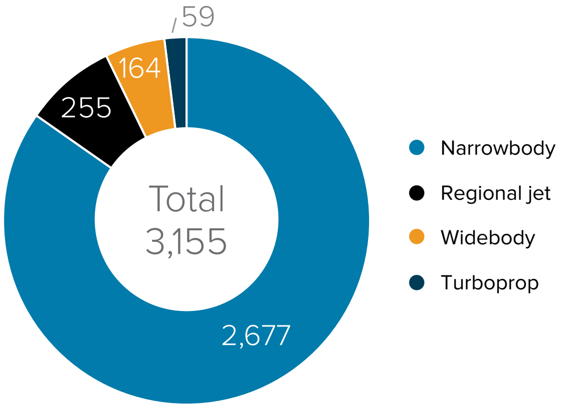



Figure 2: Firm orders by value by body type ($m)

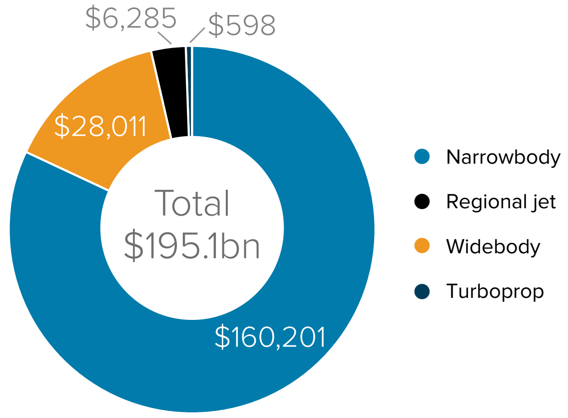



Figure 3: Firm orders by manufacturer

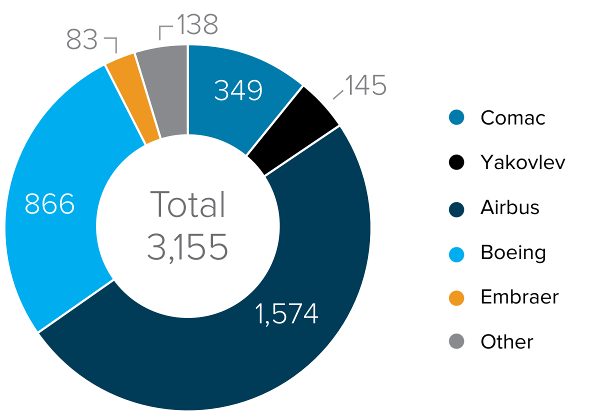



Figure 4: Firm orders by value by manufacturer ($m)

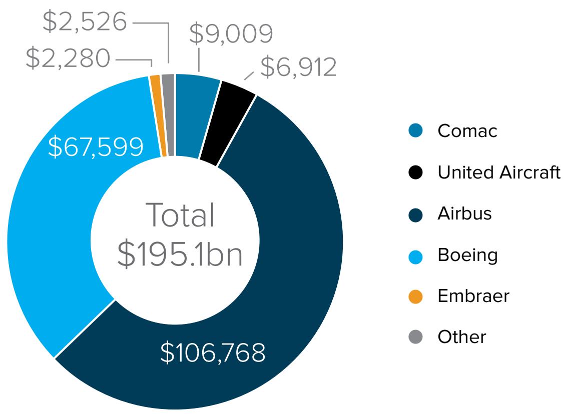



Figure 5: Firm orders by country of lessor

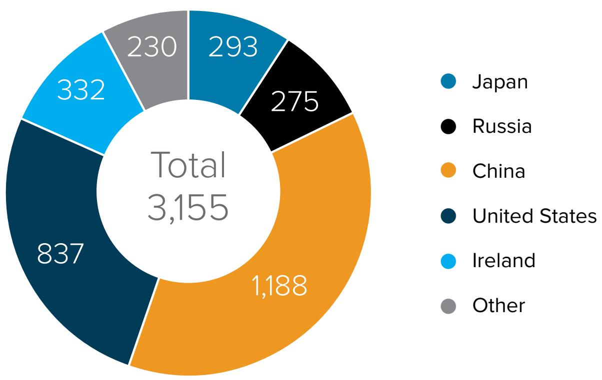
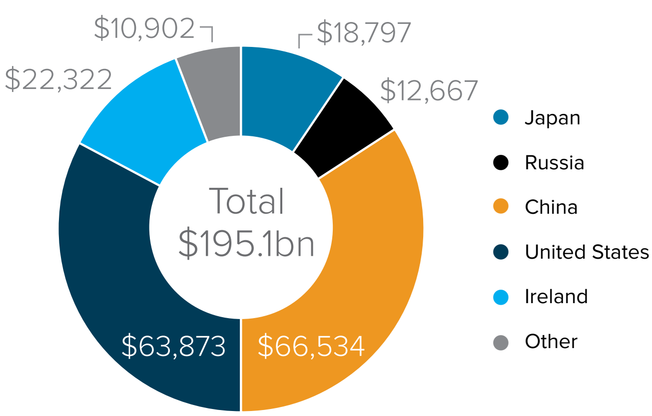



Figure 6: Firm orders by value by country of lessor ($m)




*Source:* OEMs and internet research as of 30 June, 2020

** Calculated as 55% of 2020 list price and estimated list prices*

# Trend analysis – Global aircraft leasing companies' financial performance

In addition to the "Lessor Comparisons" analysis in the next section, we present here an analysis of the global financial trends for the industry as a whole over the last five years. The survey group includes seven of the top 10 largest lessors (the exceptions being GECAS, ICBC Financial Leasing and BBAM - though it includes Fly Leasing).

DAE Capital is included for the third time. AWAS and CIT Aerospace are included for the periods before their change of ownership and when their financials were available. In total, the survey includes 24 lessors and enables us to review the industry's growth rate, the trends in yields and financing costs, capital structure and profitability.

The scope of the study is the most recent full year financial statements for the lessors. In most cases this precedes the onset of Covid-19. A Supplement to the study covering 2020 financial performance is available to *Airfinance Journal* subscribers. If you would like to receive it, please contact your account manager.

## Growth

Figure 1 shows the net income for the lessors whose financials have been continuously available over the last five years. We have shown GECAS separately as only a few figures are available from General Electric's annual reports.

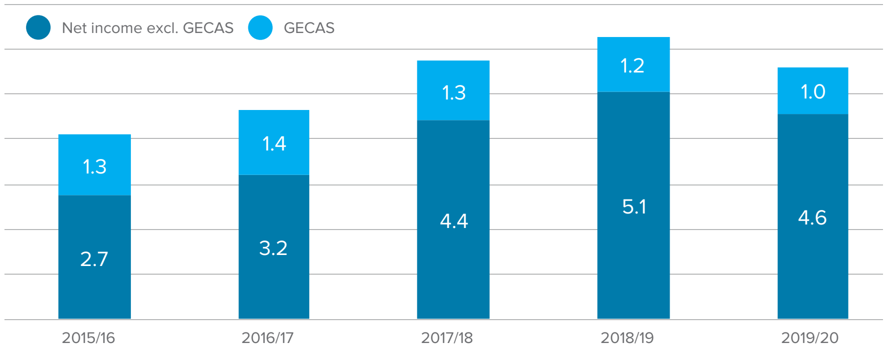
GECAS revenues were flat at $4.9 billion and net income declined to $1 billion from $1.2 billion. Revenues for the group excluding GECAS were $22 billion (a 6.8% increase) but net income declined to $4.6 billion from $5.1 billion.

Total property, plant and equipment (PP&E) assets for the population were $171 billion (up 6% excluding GECAS) in the most recent financial year, despite the relatively high rate of asset sales among some of the larger lessors who are included in the survey. These sales have been to other leasing companies, into structured ABS deals and sidecars. PP&E value for GECAS is not available this year but total assets declined 9.7%, reflecting asset disposals and the sale of PK AirFinance assets in December 2019.

## Yield and debt cost

Figure 2 shows the yield and average debt cost trend over the last five years. In 2019/20, lease yield continued its downward trend since 2015/16. Clearly one of the objectives of the lessors is to maximise the yield-interest cost spread. As shown in Figure 2, the downward movement in average interest cost in 2017/18 was good for profitability in that year but was followed by a 30 basis points (bps) increase in 2018/19. The most recent year witnessed a further 30 bps increase in average debt cost, to 4.4%. Spread therefore declined from 8% in 2018/19 to 7.5% in 2019/20 pressuring profitability.

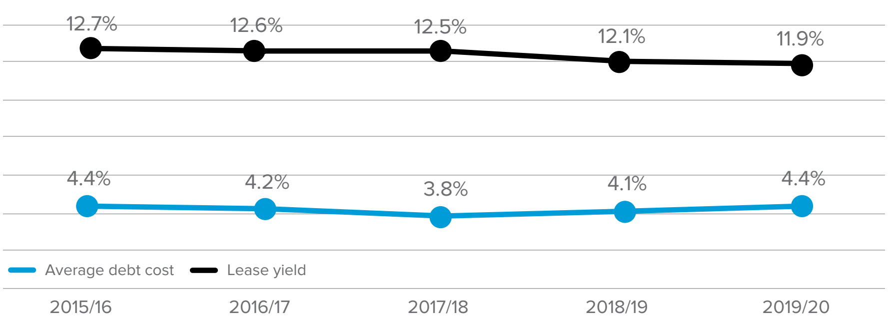
Figure 1 - Net income ($ billion)[1]




*Source:* Company reports and *The Airline Analyst*

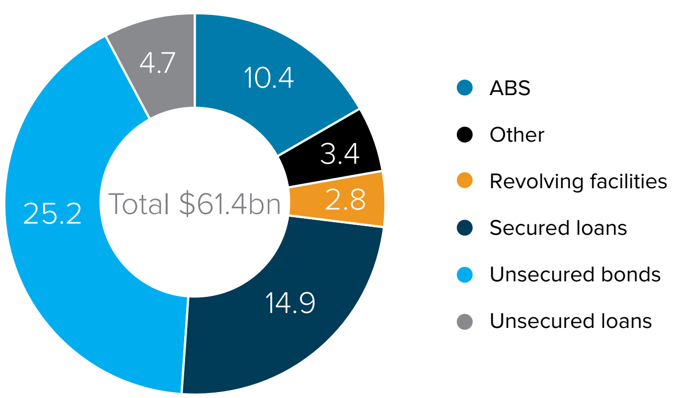
[1] *after adjusting for large 2017 tax credits for ALC, ACG and BOC Aviation*

Figure 2: Lease yield & debt costs




*Source:* Company reports and *The Airline Analyst*

Figure 3: Lessor funding sources 2019 - $bn




*Source: Airfinance Journal*'s Deal Tracker

**Funding sources**

The lessors raised approximately $61 billion from the debt markets in 2019, as shown in Figure 3.

The better rated leasing companies continued the trend of the last few years in tapping the unsecured debt markets, raising a total of $25.2 billion according to AFJ's Deal Tracker.

Secured loans were the second biggest source followed by ABS transactions and other structures, as shown. The lessors have raised a further $18 billion of unsecured public debt in 2020 but at noticeably higher coupons than in 2019. This will put pressure on 2020 and later financial performance.

**Debt structure**

The aggregate debt structure, shown in Figure 4, clearly shows the shift from secured to unsecured debt financing, with the latter reaching a total value of $80.5 billion in the latest financial statements.

Some non-listed lessors continue to fund themselves with loans, senior and subordinated, from their parent groups of companies.

The improvement in the capital structure is also shown in Figure 5 where secured debt as a percentage of tangible assets has declined to 21% from 32% over the last five years.

**Gearing**

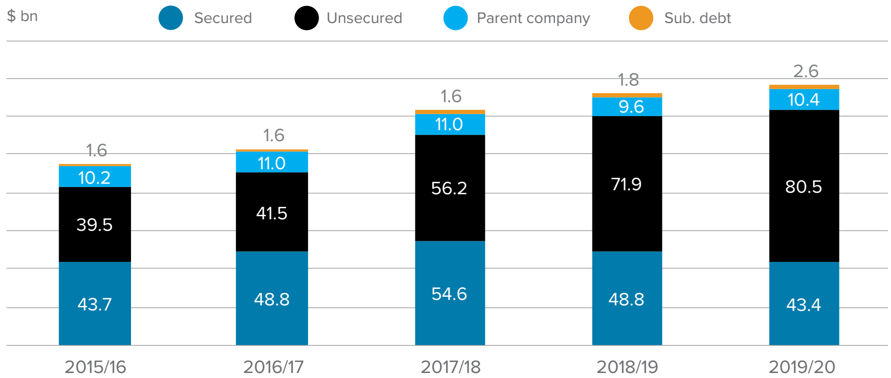
Gearing for the lessors in the survey remained benign as shown in Figure 6. This remains a conservative capital structure supported by a significant increase in retained earnings. The typical 4x or higher leverage of the last cycle is only evident in a few cases currently, though obviously this aggregate value is comprised of some very low and some quite high levels of gearing as presented in the "Lessor Comparisons" section. Clearly Covid-19 is putting liquidity and capital structure under scrutiny and this will be addressed in the Supplement to this study, available through your account manager.

**Return on Equity**

Return on equity for the group fell to 9.7% from 11.4% in the most recent period. The revenue increase was more than offset by higher depreciation and finance costs. This, combined with increased equity from retained earnings, were the causes of the decline.

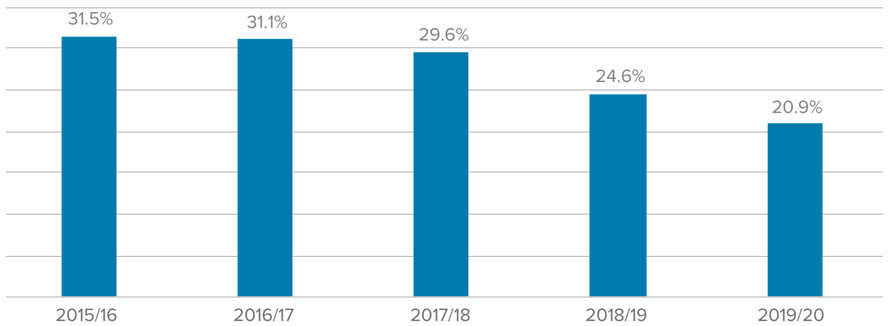
*Companies included in the latest period are listed in Figure 1 in the next section. In addition, we included AWAS and CIT Aerospace as appropriate in historic years in order to make the data as consistent as possible.*

Figure 4: Debt structure



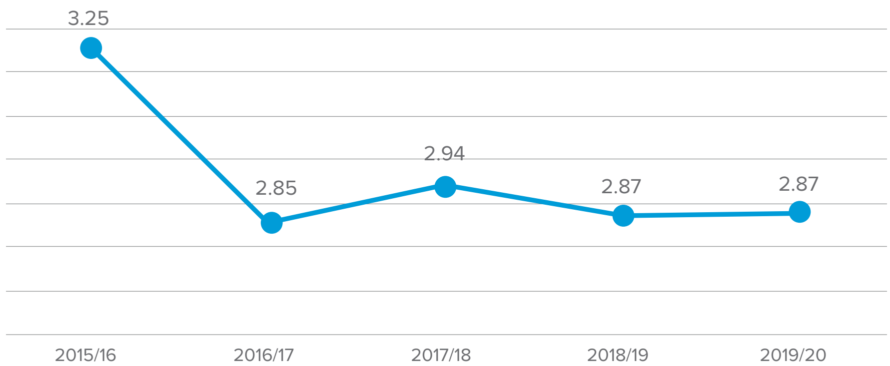

*Source:* Company reports and *The Airline Analyst*

Figure 5: Secured debt/tangible assets



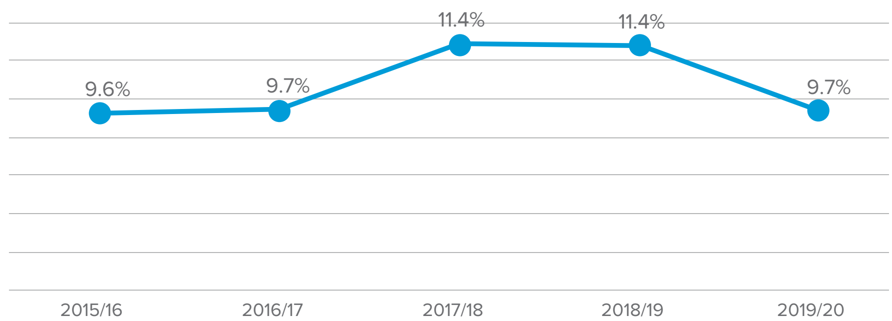

*Source:* Company reports and *The Airline Analyst*

Figure 6: Gearing (Debt/equity)




*Source:* Company reports and *The Airline Analyst*

Figure 7: Return on average equity[1]




*Source:* Company reports and *The Airline Analyst*

[1] *1after adjusting for large 2017 tax credits for ALC, ACG and BOC Aviation*

# Lessor comparisons – 2019/20

This study offers a comparison of the financial performance and capital structures of the aircraft leasing companies based on their most recent available full year financial statements (ending either in 2019 or 2020).

Figure 1 identifies the entities included in the study. In total, we have been able to source the financials for 24 aircraft leasing companies.

While full financials are not available for GECAS, some headline numbers are available in the General Electric annual report. Fortress Transportation and Infrastructure Investors publish financials for their overall leasing business but break out some key numbers for the aircraft leasing segment. We include Avation plc from Singapore (listed in the UK) and CALC (listed in Hong Kong). Most of the lessors in the study are incorporated in the US or Ireland. However, two of the largest, Aercap and BOC Aviation, are incorporated in the Netherlands and Singapore, respectively. Aercap is listed on the New York Stock Exchange and BOC Aviation is listed in Hong Kong.

Four major privately owned lessors whose financials are in the public domain are Aircastle, Aviation Capital Group (ACG), Avolon Holdings and SMBC Aviation Capital.

The significant absences from our coverage include ICBC Financial Leasing, Goshawk and Macquarie AirFinance (who do not file financial information publicly other than a few headline numbers). We include DAE but financials are not available for BBAM (though we do include FLY Leasing). We have included Jackson Square Aviation Ireland and include pro-forma aggregate numbers for Pembroke Capital and Pembroke Aircraft Leasing under "Standard Chartered". Some lessors that we have included previously are not included as they had not filed their 2019 financial statements at the date of preparing this compilation. We have included two special purpose listed aircraft leasing entities - Amedeo Air Four Plus and DP Aircraft I. Accipiter Holdings is included – one of the asset holding entities whose aircraft are managed by AMCK Aviation.

Several of the lessors' financial year-ends straddle the first quarter or first half of 2020 and therefore have been impacted by the effect of Covid-19. These lessors are Nordic Aviation Capital, Avation, SMBC Aviation Capital and Amedeo Air Four Plus.

The others have no Covid effect, which should be taken into consideration when interpreting the numbers. We will be producing a Supplement to the Leasing Top 50 shortly that will analyse and interpret the effect of the pandemic and the crisis facing

## Figure 1: Lessors included in the study

| Lessor | Country | FYE |
|---|---|---|
| **Accipiter Holdings Limited (Accipiter)** | China/Ireland | 31-Dec-19 |
| **Aercap NV** | Netherlands/Ireland | 31-Dec-19 |
| **AerDragon** | Ireland | 31-Dec-19 |
| **Air Lease Corporation (ALC)** | USA | 31-Dec-19 |
| **Aircastle** | USA/Ireland | 31-Dec-19 |
| **ALAFCO Aviation Lease & Finance (ALAFCO)** | Bahrain | 30-Sep-19 |
| **Amedeo Air Four Plus Limited (AA4+)** | UK | 31-Mar-20 |
| **Avation plc** | UK/Singapore | 30-Jun-20 |
| **Aviation Capital Group (ACG)** | Japan/USA | 31-Dec-19 |
| **Avolon** | Ireland | 31-Dec-19 |
| **Banc of America Leasing (BOA Leasing)** | USA/Ireland | 31-Dec-19 |
| **BOC Aviation (BOCA)** | China/Singapore | 31-Dec-19 |
| **China Aircraft Leasing Company (CALC)** | China/Hong Kong | 31-Dec-19 |
| **CDB Aviation Lease Finance (CDB ALF)** | China/Ireland | 31-Dec-19 |
| **Clover Aircraft Leasing Company Limited** | China/Ireland | 31-Dec-19 |
| **DP Aircraft I Limited** | UK | 31-Dec-19 |
| **Dubai Aerospace Enterprise (DAE)** | UAE | 31-Dec-19 |
| **FLY Leasing (FLY)** | Ireland | 31-Dec-19 |
| **Fortress Transportation and Infrastructure Investors[1] (FTAI)** | USA | 31-Dec-19 |
| **GECAS[1]** | USA/Ireland | 31-Dec-19 |
| **Jackson Square Aviation Ireland (JSA)** | Japan/Ireland | 31-Dec-19 |
| **Nordic Aviation Capital (NAC)** | Denmark | 30-Jun-20 |
| **SMBC Aviation Capital (SMBC AC)** | Japan/Ireland | 31-Mar-20 |
| **Standard Chartered Pro-forma[2]** | UK/Ireland | 31-Dec-19 |

*[1] Key data only*
*[2] Simple aggregation of Pembroke Aircraft Leasing Holdings Limited and Pembroke Capital Limited*

the global airline industry on the aircraft leasing industry. The abbreviations used to refer to the lessors through the rest of this study are indicated in Figure 1.

We include the Irish leasing entities for three Chinese lessors: AerDragon, CDB Aircraft Lease & Finance (CDB ALF) and Ping An Leasing (renamed Clover Aircraft Leasing following the introduction of Mizuho as joint-venture partner).

The regional aircraft sector is represented by Nordic Aviation Capital and Avation. Banc of America Leasing continues to maintain its low profile yet appears to be doing deals with $2.5 billion of plant, property and equipment as of 31 December 2019, $500 million higher than the prior year.

Note that for some lessors, the entities analysed do not represent the entirety of their global leasing business and may be impacted by internal funding arrangements and inter-company transactions. This applies particularly to some Chinese lessors, Accipiter and SMBC Aviation Capital who have been heavily funded by shareholder loans so please interpret their numbers accordingly. Over the last three years, however, SMBC Aviation Capital has partially funded itself from external sources.

**Adjustments**

In order to enhance comparability in treatment and presentation of the financial statements we have made some adjustments as described in Figure 2.

## Figure 2: Adjustments to enhance comparability

| Item | Treatment |
|---|---|
| Gain on sale of aircraft | Net gain included in revenue |
| Recognition of "excess" maintenance reserves | Included in lease revenue but not seperately disclosed by every lessor |
| Maintenance and transition costs | Recognised under its own heading when disclosed, but not disclosed by every lessor |
| Staff cost, including stock-based compensionio | Included in SG&A expenses |
| Interest income | Included in other revenue |

*Source:* Company reports and *The Airline Analyst*

# Profitability

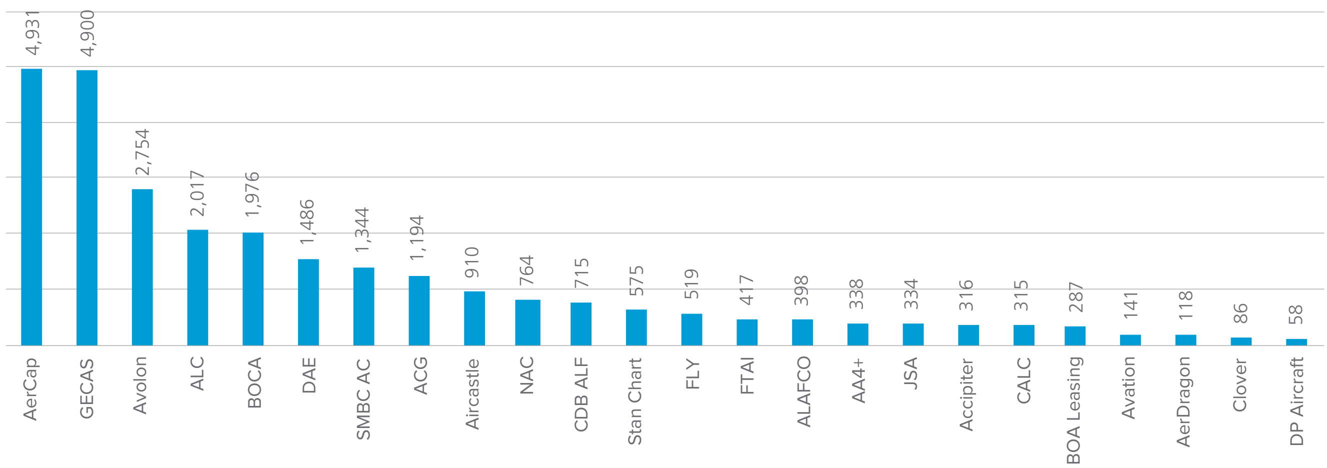
Figures 3 and 4 show the lessors ranked by revenue and net income. The revenue range of the lessors in the study is from $4.9 billion for Aercap and GECAS to $58 million for DP Aircraft. Avolon remains just over half the size of GECAS and Aercap. Air Lease (ALC), BOC Aviation and DAE come in fourth, fifth and sixth position followed by SMBC Aviation Capital.

As mentioned in the previous section, aggregate yield for all lessors in the study decreased from 12.1% to 11.9% in 2019/20.

Among the bigger decliners were NAC and Aircastle. Aercap's and Avolon's yields declined by 1.9% and 3% year-on-year, respectively. Some of the lessors bucked the trend and squeezed some growth in yield, most notably FLY Leasing, ALAFCO, Avation, CDB ALF and Jackson Square Aviation Ireland.

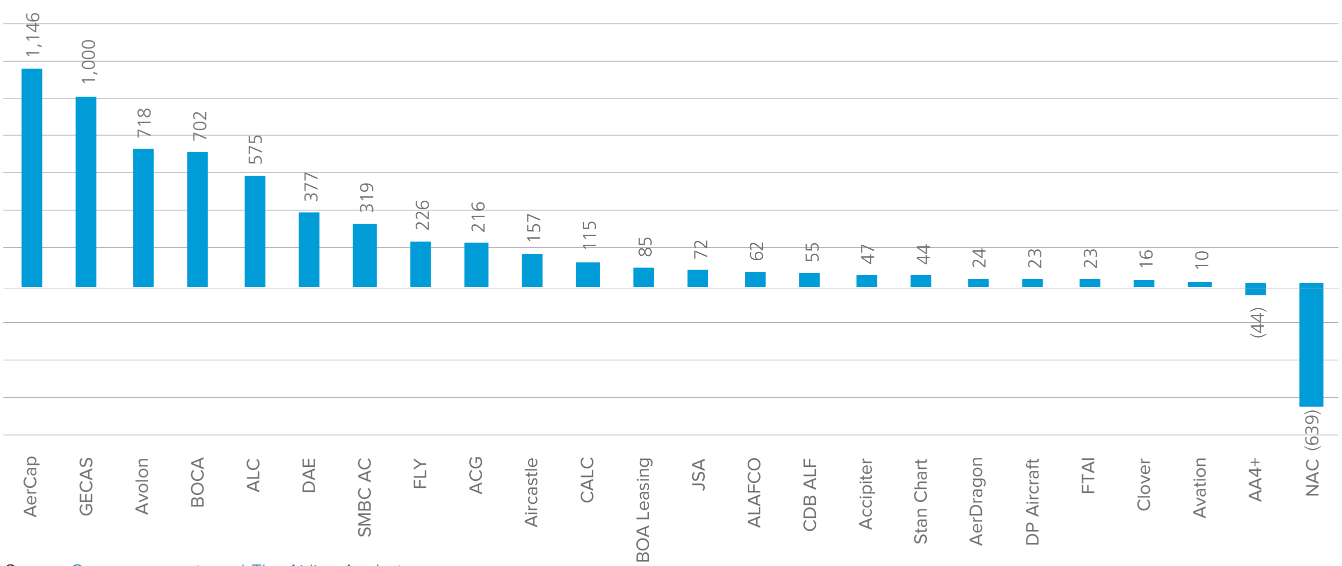
In aggregate the profit generated by the lessors in the study (and including GECAS) was $5.6 billion, an 11% decrease on the previous year. Net income for the

## Figure 3: Total revenue ($ million)




*Source:* Company reports and *The Airline Analyst*

## Figure 4: Net income ($ million)




*Source:* Company reports and *The Airline Analyst*

first time was headed by Aercap at $1.1 billion. GECAS came second at $1 billion (down from $1.2 billion) followed by Avolon at $718 million and BOC Aviation at $702 million. Coming fifth in profitability were ALC, followed by DAE and SMBC Aviation Capital.

Among the key drivers of lessor profitability is the spread between lease yield and debt cost of funds. Figure 5 shows all three, ranked in descending order of yield from 15.6% to 8.4%.

FLY, Amedeo Air Four Plus and DP Aircraft are the leaders on yield with FLY and Standard Chartered the highest on spread. Aircastle also generated attractive yields but their relatively high debt costs result in lower spreads. The standouts in terms of lowest cost of (externally provided) funds are ALC at 3.5% and BOC Aviation at 3.7%. CALC and ALAFCO perform well, at 4.1%. Avolon, Accipiter and Aercap come next, all at 4.4%. Some of the other lessors with low debt costs are heavily funded by their parents on attractive terms.

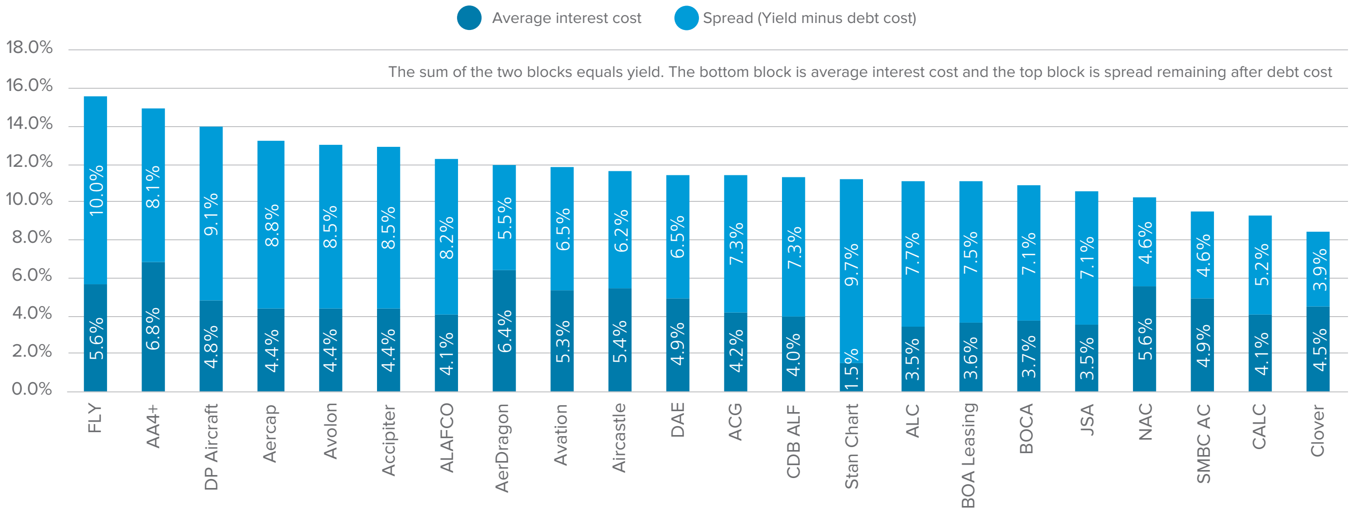
### Gains/losses on sales

Aggregate plant, property and equipment for the lessors in the study amounts to $171 billion. Gains booked on sales totalled $1.1 billion, 24% up on 2018/19, and 20% of reported profit before tax. Gains from aircraft sales made a significant contribution to the profitability of a number of lessors as shown in Figure 6.

### Impairments

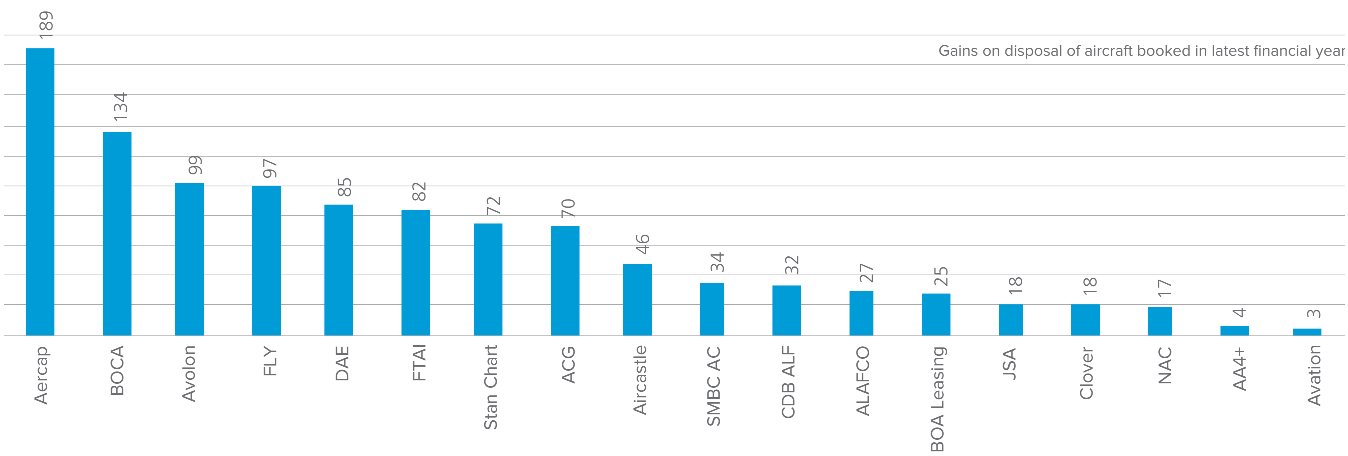
Impairments totalled $406 million, up from $256 million the prior year. They were not universal but significant amounts were reported by ACG, Aercap, Amedeo Air Four Plus and CDB ALF, as shown in Figure 7. Overall, however, they were only 0.3% of opening net book value in aggregate.

## Figure 5: Yield, spread and debt cost




*Source:* Company reports and *The Airline Analyst*

## Figure 6: Gain (loss) on disposal of aircraft ($ million)




*Source:* Company reports and *The Airline Analyst*

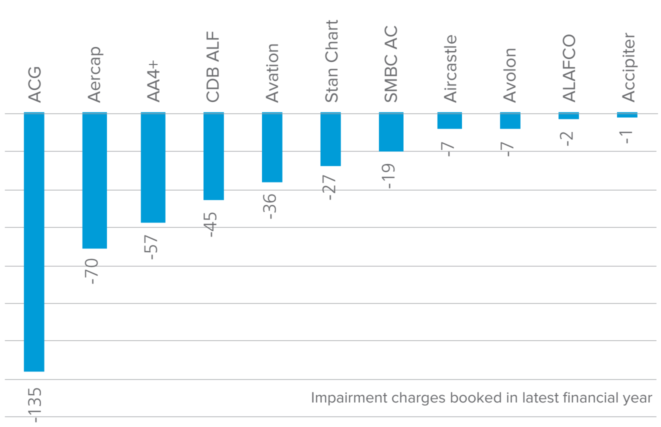
# **Financial** flexibility

We assess four elements of financial flexibility – leverage as measured by the debt/equity ratio, level of secured debt relative to tangible assets, EBITDA interest coverage and liquidity.

**Leverage**
The debt/equity ratio is the simplest measure of capital structure and is universally understood. Some of the lessors use significant amounts of inter-company debt which results in high nominal leverage. The chart in Figure 8 shows leverage calculated assuming inter-company debt is debt and also assuming inter-company debt is equity. As the chart shows, the majority of lessors are in a range of 2-4x on this latter measure. CALC, Nordic Aviation Capital and Avation are well above this threshold. FLY was just above the 4x figure last year and are now down to 2.6x following a major fleet restructuring. The lowest leverage values are Jackson Square Aviation Ireland, AerDragon, DP Aircraft, SMBC Aviation Capital, Standard Chartered and BOA Leasing.

**Debt Structure**
Borrowing unsecured has many attractions, being more flexible and having lower transaction costs than borrowing on a secured basis, though at the cost of higher coupons or margins. The ratings agencies generally cite low levels of secured debt as being a key consideration in granting

## Figure 7: Asset impairment ($ million)



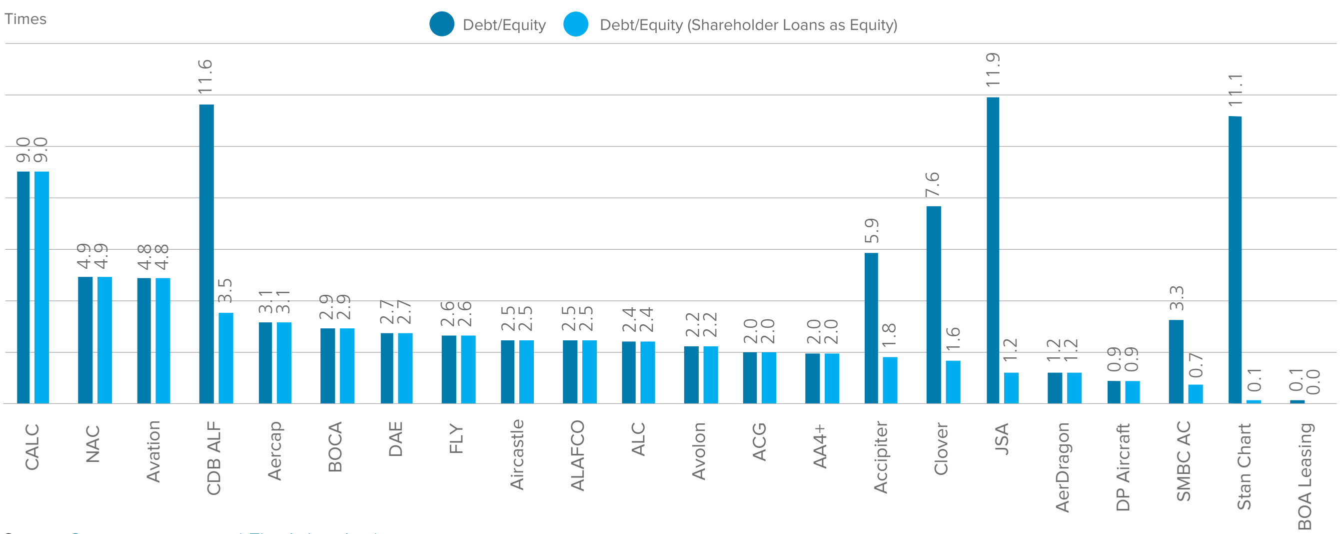

*Source:* Company reports and *The Airline Analyst*

## Figure 9: Lessor unsecured credit ratings

| | Fitch | Moody's | S&P | Kroll |
|---|---|---|---|---|
| **Aercap** | BBB-(neg) | Baa3(neg) | BBB(neg) | - |
| **Air Lease Corp** | BBB(neg) | - | BBB(neg) | A-(neg) |
| **Aircastle** | BBB(stable) | Baa3(neg) | BBB-(stable) | - |
| **Avation PLC** | B(watch neg) | - | CCC(watch neg) | - |
| **Aviation Capital Group** | WD | Baa2(neg) | BBB-(neg) | A-(neg) |
| **Avolon Holdings Limited** | BBB-(neg) | Baa3(neg) | BBB-(neg) | BBB+(neg) |
| **AWAS Aviation Capital Limited** | - | Baa3(neg) | BB+(stable) | - |
| **BOC Aviation** | A-(stable) | - | A-(neg) | - |
| **CDB Aviation Lease & Finance** | A+(stable) | A1(neg) | A(stable) | - |
| **Dubai Aerospace Enterprise** | BBB-(neg) | Baa3(neg) | BB+(stable) | BBB+(neg) |
| **Fly Leasing** | - | B1(neg) | BB(neg) | BBB(neg) |
| **Park Aerospace Holdings** | BBB-(neg) | Baa3(neg) | - | - |
| **SMBC Aviation Capital** | A-(neg) | - | A-(neg) | - |
| **Voyager Aviation** | BB-(watch neg) | B3(neg) | CCC+(watch dev) | BB-(neg) |

*Source:* Ratings Agencies - 26 October, 2020

## Figure 8: Debt/equity ratio

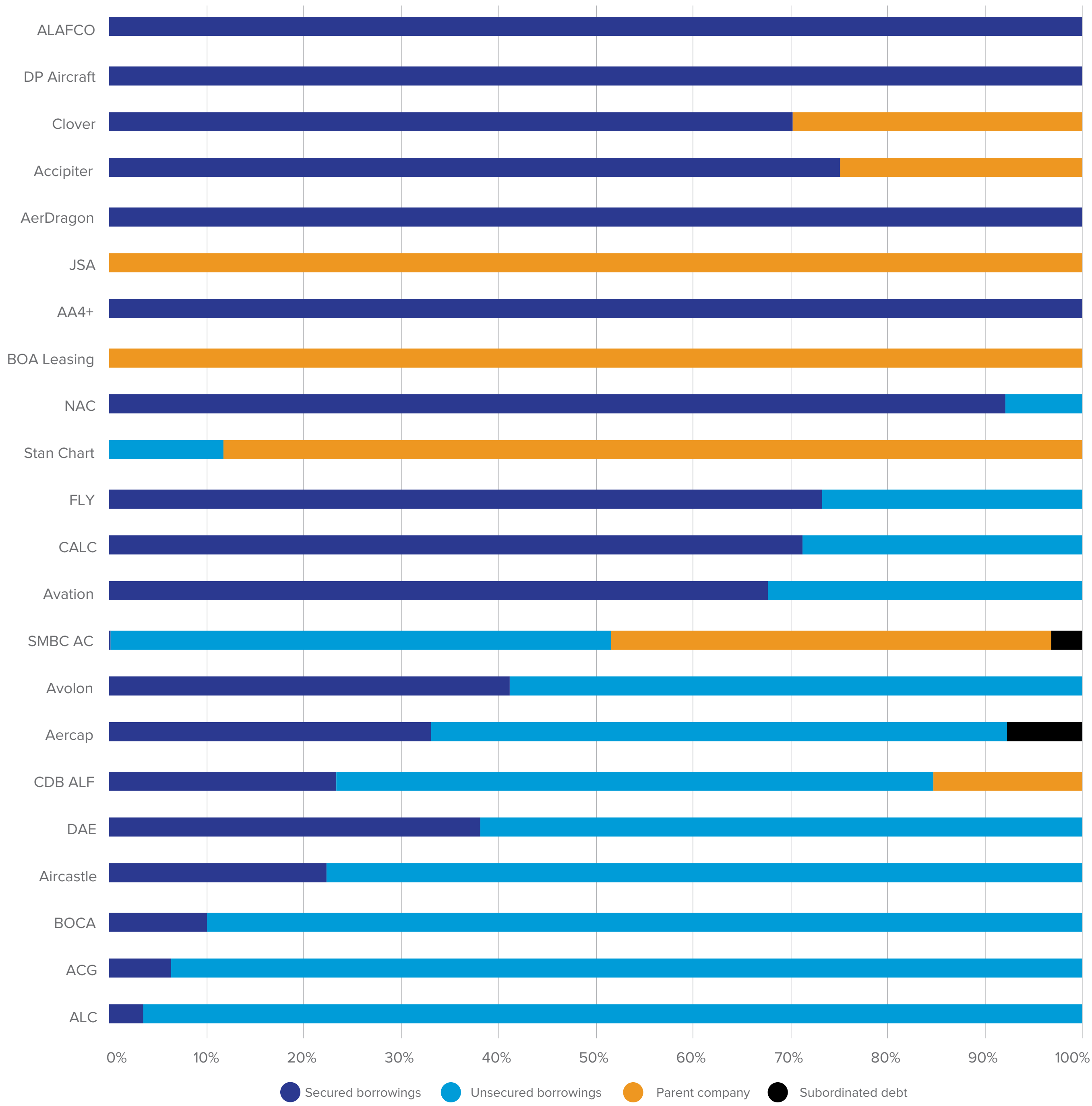



*Source:* Company reports and *The Airline Analyst*

investment grade ratings to lessors. Lessors with investment grade ratings are Aircastle, ALC, CDB ALF, SMBC Aviation Capital, Avolon, DAE Capital, ACG (who have retained investment grade despite their sale to Tokyo Century) and BOC Aviation who, in addition to very strong financials, benefit from their Bank of China ownership.

Figure 10 shows the debt structures on a proportional basis for the lessors ranked in order of the highest proportion of unsecured debt at the bottom to least at the top. The chart also shows shareholder loans and other loans. As discussed in the previous section there has been a significant increase in unsecured funding by the industry as a whole, reaching 59% of total debt in 2019/20. The lessors with the highest percentage of external unsecured funding are ALC, ACG, BOC Aviation, Aircastle and DAE Capital. NAC had 46% unsecured debt as of 30 June 2019 and raised a further $858 million in an unsecured private placement in February 2020. However, as a consequence of the severe Covid-19 impact on their rental receipts, the regional aircraft lessor entered into a scheme of arrangement to delay debt payments. As a condition, they had to give collateral to most of their unsecured creditors and had only 8% unsecured debt as of 30 June 2020.

## Figure 10: Debt structure




*Source:* Company reports and *The Airline Analyst*

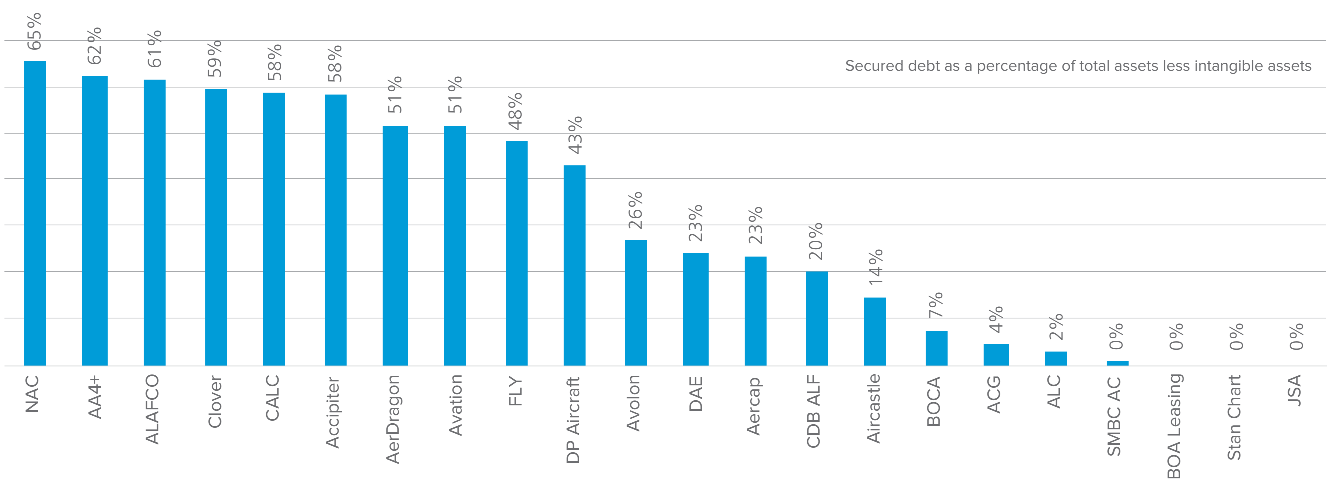
# **Financial** flexibility

Figure 11 shows secured borrowing as a percentage of tangible assets, which indicates the level of protection available for unsecured creditors. The data for SMBC Aviation Capital, BOA Leasing, Standard Chartered and Jackson Square Aviation Ireland reflects their heavily shareholder funded debt structures. The other lessors on the right of Figure 11 represent the strongest position for unsecured creditors, led by ALC, ACG and BOC Aviation with their significant unsecured funding programmes. Those at the left-hand side demonstrate the least protection for unsecured creditors, notably NAC.

**Interest Coverage**

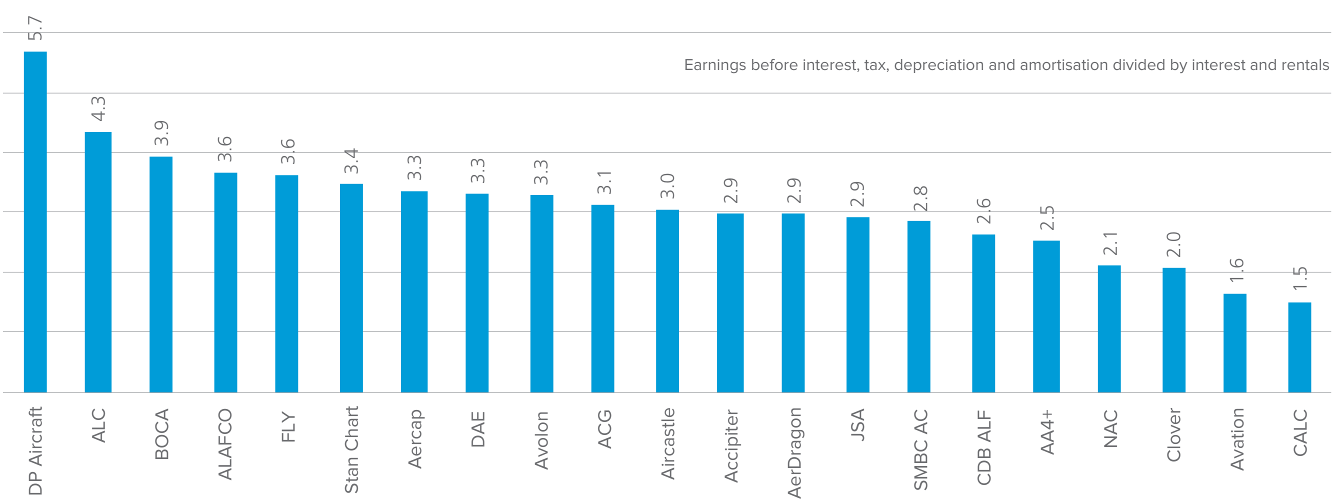
Interest coverage measured as EBITDA/ finance costs is another key aspect of financial flexibility. From Figure 12 we see that the majority of lessors covered by the study have a healthy coverage of at least 2x and many have much better coverage than that, particularly DP Aircraft, ALC, BOC Aviation and ALAFCO. The main outliers on the weaker side are Avation and CALC with coverage of 1.5-1.6x. DP Aircraft's high ranking is rather unhelpful as 100% of their fleet is leased to restructuring airlines Norwegian Air Shuttle and Thai Airways and the "Earnings" in their EBITDA are now zero. Amedeo Air Four Plus had coverage of 2.5x, which will be challenged in the current year due to the restructuring of lessee Thai Airways but supported by cash flow from their exposure to Emirates Airline.

## Figure 11: Secured debt/gross tangible assets




*Source:* Company reports and *The Airline Analyst*

## Figure 12: Ebitda/total finance costs

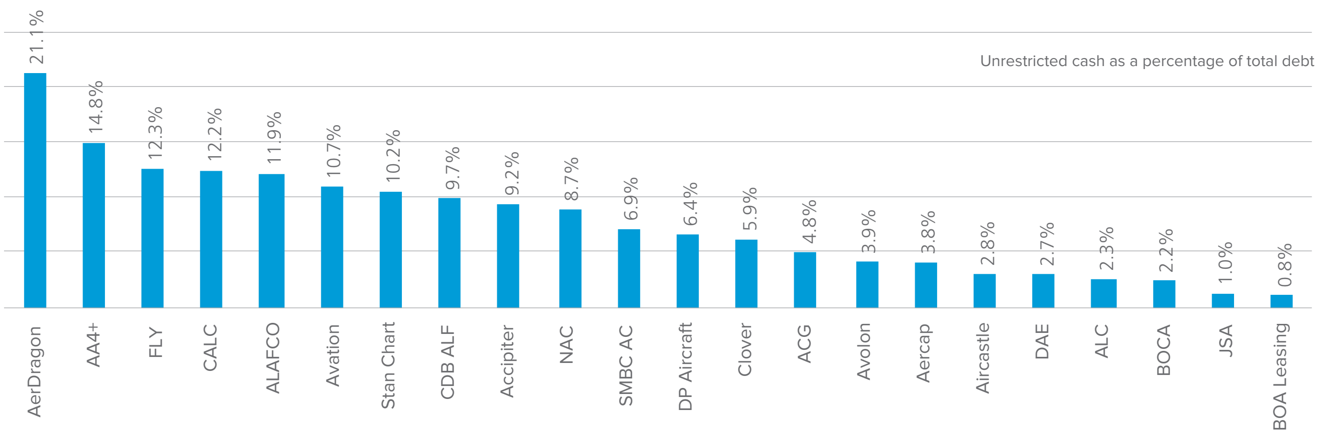



*Source:* Company reports and *The Airline Analyst*

# **Financial** flexibility

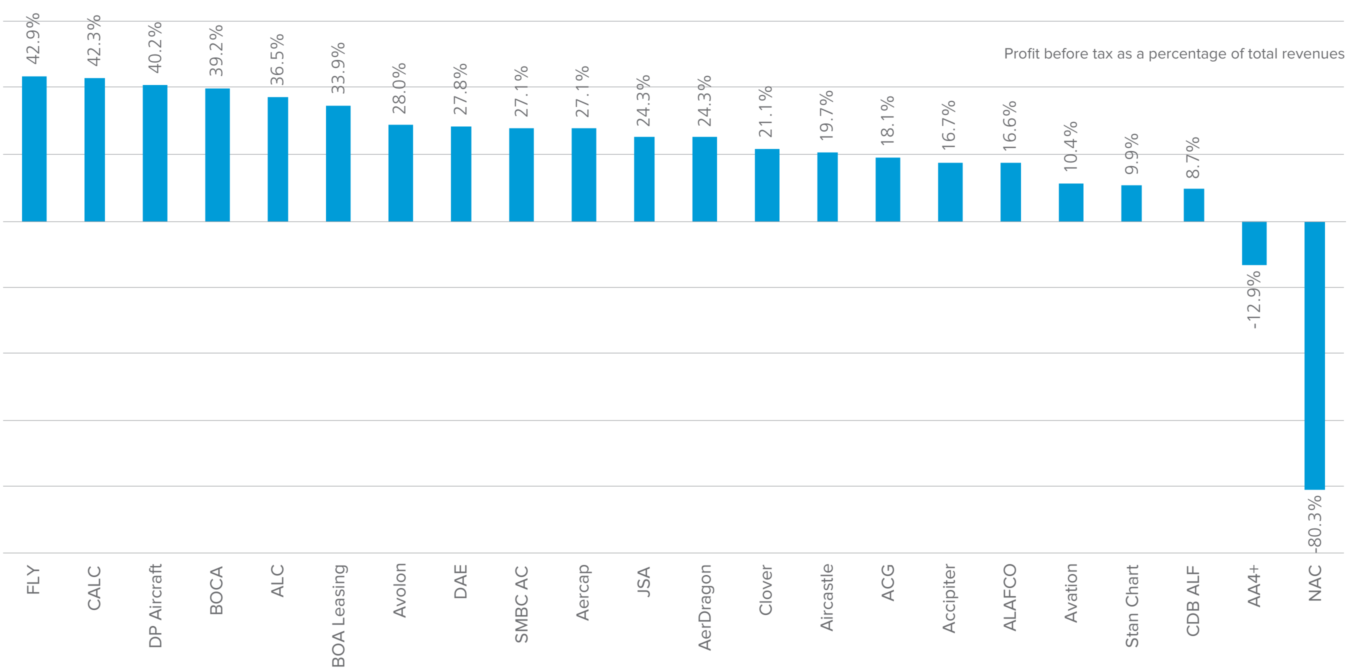
**Liquidity**
Figure 13 shows unrestricted cash liquidity as a percentage of total borrowings. At the extremes of the range are AerDragon at 21.1% and BOA Leasing at 0.8% after paying a large dividend in 2019. The next four strongest are Amedeo Air Four Plus (AA4+), FLY, CALC and ALAFCO. AA4+ had $277 million of unrestricted cash at 31 March 2020. From this, they distributed £98.5 million ($122 million) to shareholders in October and created a £30 million contingency reserve to prepare for the possibility of having to cover 18 months of interest and repossess and remarket the Thai Airways aircraft. For the other lessors, this liquidity/borrowing measure ranges from a low of 1% for Jackson Square Aviation Ireland, 2.2% for BOC Aviation and low numbers for ALC, DAE Capital, Aircastle and Aercap. All of these lessors additionally have substantial committed revolving credit facilities or have access to funding from their parent groups.

## Figure 13: Cash/total debt




*Source:* Company reports and *The Airline Analyst*

## Figure 14: PBT margin




*Source:* Company reports and *The Airline Analyst*

# Returns

**Profit before Tax**
As an overall measure of profitability, we have evaluated profit before tax as a percentage of total revenue as shown in Figure 14. This suggests that the lessors at the left side of the chart have a favourable combination of lease yield, funding cost, SG&A costs and leverage – as well as factors not assessed in this study like fleet utilisation and maintenance/transition costs. The lessors with the highest margins were FLY, CALC, DP Aircraft (subject also to the caveat in the previous paragraph), BOC Aviation, ALC, BOA Leasing and Avolon. At the other end of the scale were NAC as a result of the significant reduction in their lease revenue.

**Tax Charge**
One of the drivers of net profitability is the tax rate on profits. Figure 15 shows that, with two exceptions, tax charges were all below 20% of profit before tax. So, it is not just Ireland and Singapore that would appear to offer attractive fiscal regimes for aircraft operating lease companies. With the US corporation tax reform of three years ago, even the US is looking competitive.

**Return on Equity**
Return on average of opening and closing equity is shown in Figure 16. More than two-thirds of the lessors delivered a return on equity in excess of 10%. Jackson Square Aviation, FLY and BOC Aviation generated attractive returns but Jackson Square Aviation was boosted by its relatively higher nominal leverage.

Standard Chartered, Accipiter, Aercap, DAE Capital and ALC also performed well. Of the larger lessors with regular capital structures, Avolon, Aircastle and ACG were below 10%.

**Conclusion**
This study has shown some of the key dynamics affecting aircraft lessors' business models which are more varied than would appear the case at first inspection. Lease yield, debt cost, asset selection, asset utilisation and re-marketing capabilities are all critical components of the aircraft operating leasing business.

Get these correct, and the aircraft leasing business in normal times can offer substantial "LIBOR-plus" returns to equity investors as demonstrated by most members of the study group.

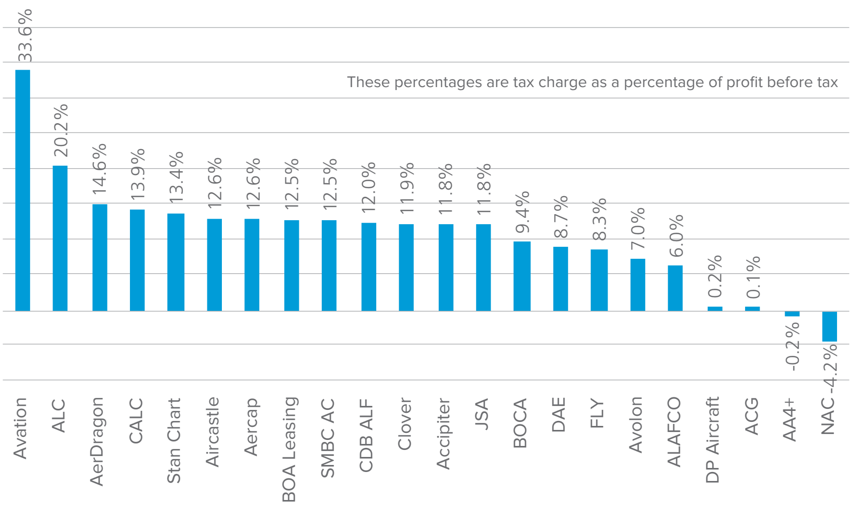
However, Covid-19 is testing these assumptions and has introduced significant volatility to cash flows and balance sheets as seen with NAC and Avation.

We will be producing a Supplement to the Leasing Top 50 that will update the lessors' performance through 30 September 2020.

Please contact your account manager at **accountmanager@airfinancejournal.com** if you would like to receive a copy.

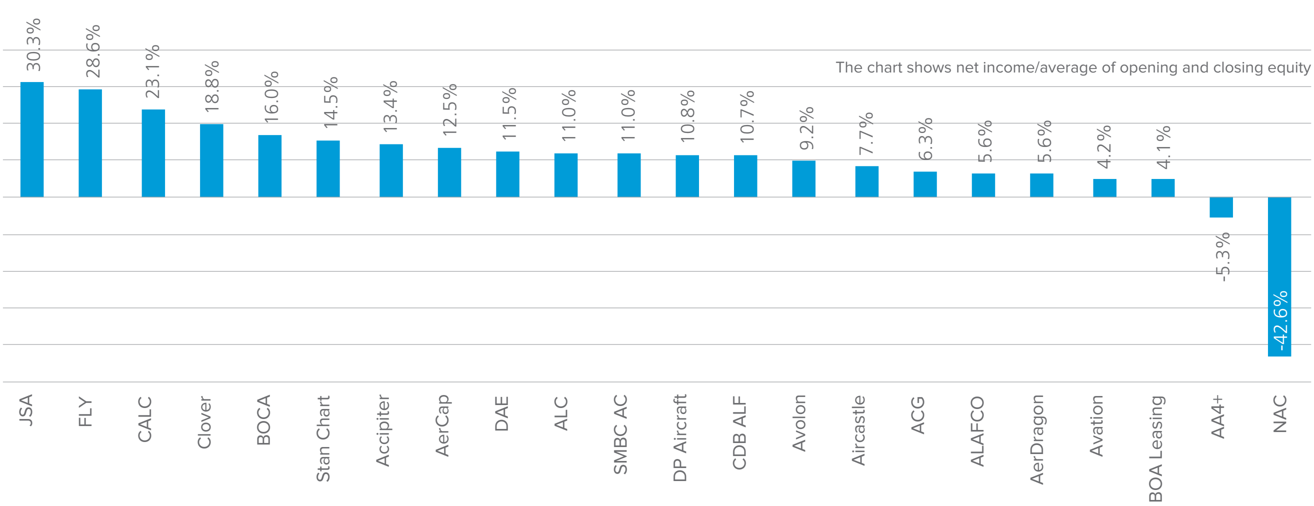
Please direct any questions or comments to **mduff@theairlineanalyst.com**.

Figure 15: Tax rate




Source: Company reports and *The Airline Analyst*

Figure 16: Return on average equity




Source: Company reports and *The Airline Analyst*

# Analysis of the **global leased fleet**

The *Airfinance Journal* Fleet Tracker database includes 11,312 aircraft on operating lease (data as of 30 June 2020). Aircraft leased by "captive" lessors such as Synergy, Sunrise Asset Management, Arctic Aviation Assets, Aircraft Purchase Fleet, Transportation Partners and by the OEMs are excluded. Aggregate orders by the commercial lessors total 3,155 aircraft with an estimated cost of close to $200 billion. The average age of the existing leased fleet is 10.2 years.

The industry is heavily concentrated. The top 10 lessors (5,561 aircraft) account for 49% of the total fleet count. Nevertheless, the smaller lessors provide value to the marketplace in dealing with older or more specialised aircraft. They also may be prepared to do business with some of the more challenging regions of the world or have leading positions in their niche markets.

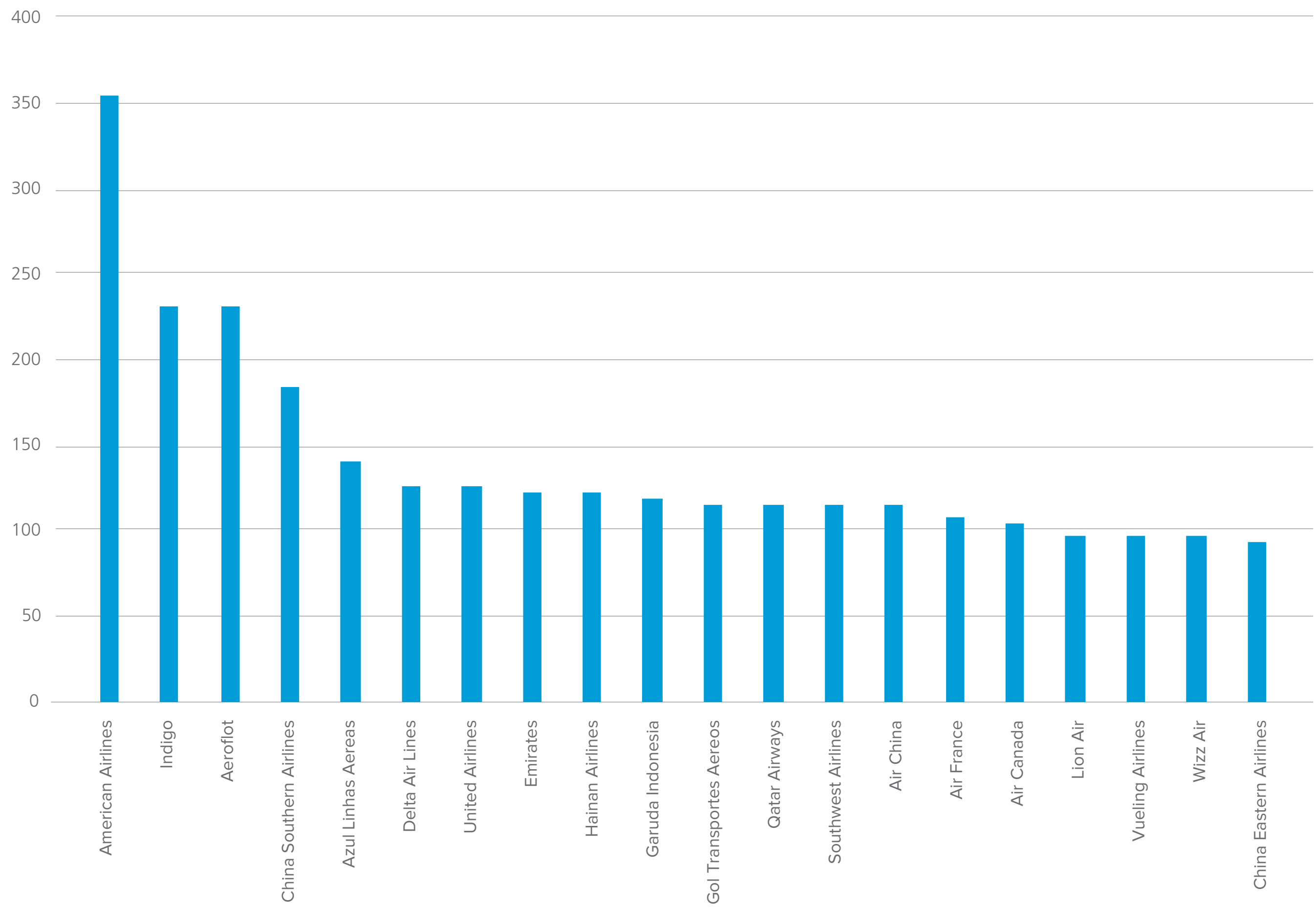
**Airlines with the most leased aircraft**

Figure 1 shows the top 20 lessees by number of aircraft. Just as the leasing industry is heavily concentrated in a relatively small number of players, the airlines to whom they are leasing are forming increasingly concentrated groups. Such concentration could reduce the ability of the lessors to diversify their portfolio risks due to concentrations of exposure. This is particularly the case in the Covid-19 era which has significantly reduced the credit quality of airlines. American Airlines is far-and-away the largest lessee resulting from the merger with US Airways. The other US majors are also significant lessees but there is geographic diversity too across Europe and many emerging markets.

**Geographic distribution of leased aircraft**

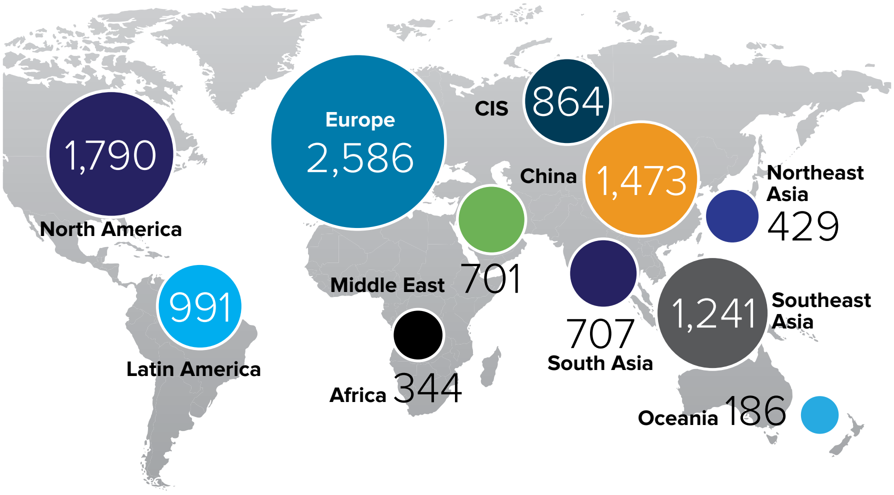
The geographic distribution of leased aircraft is shown in Figure 2. While the chart shows Europe in the lead, this is because we split Asia-Pacific into sub regions given their varying dynamics. The territories of Hong Kong, Macau and Taiwan are included in the China segment. We also decided to show Russia and the CIS as a segment separate from Europe.

Figure 1: Biggest lessees by number of aircraft




Source: *Airfiance Journal*'s Fleet Tracker

## Figure 2: Geographic distribution of leased aircraft




Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

By contrast, a total of 92 A320neo family aircraft have been delivered to lessors during 2020. The lessors' fleets include a total of 435 dedicated freighters.

**Regional Jets**

As can be seen, GECAS remains the largest player despite its significant fleet reductions over the last few years. Nordic Aviation Capital comes in second place, having increased its fleet to nearly 200. Falko and TrueNoord have been investing and increasing their exposure to this segment.

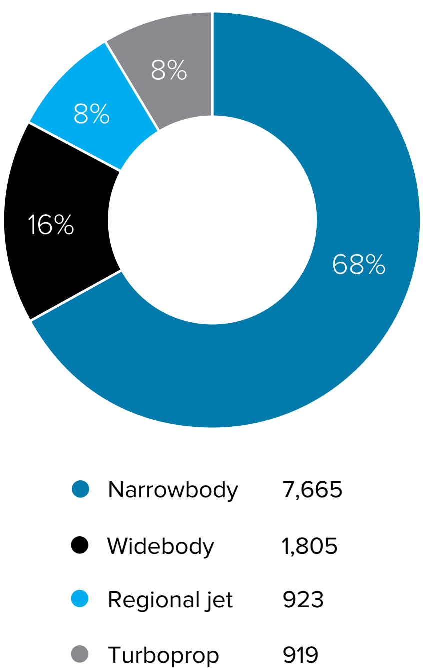
**Turboprops**

Turboprops are a significant niche market, dominated by one lessor, Nordic Aviation Capital. However, other lessors have a presence, as shown in Figure 5, attracted by relatively higher yields. Leading the way in terms of new investment is Chorus Aviation Capital. The other major players in the segment are shown on the chart.

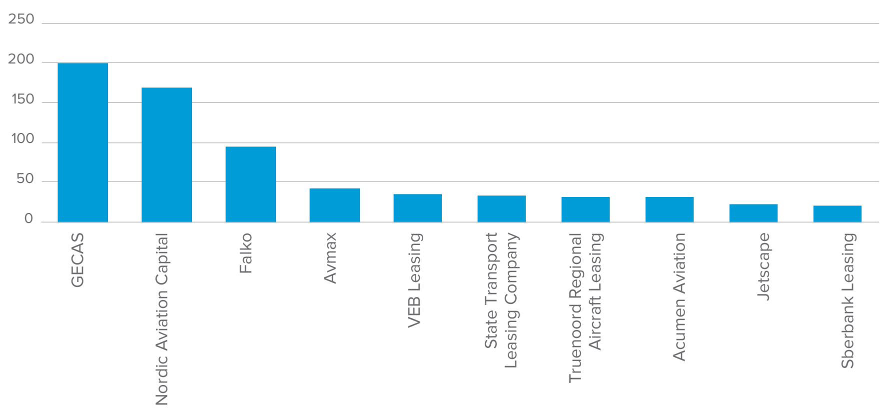
**Breakdown of Leased Fleet**

Figure 3 shows a breakdown of the leased fleet by body-type of aircraft. A full 68% of the leased fleet is in the narrow-body category split mostly between the A320 and 737 families. Only 16% is widebody, though in value terms their share would be much more significant, especially with the A350 and 787 finding a lot of favour among lessors. A total of 74 delivered 737 Max aircraft are included in the lessors' fleets and 774 remain in the lessors' orderbooks even after 288 cancellations during 2020.

## Figure 3: Leased aircraft body type

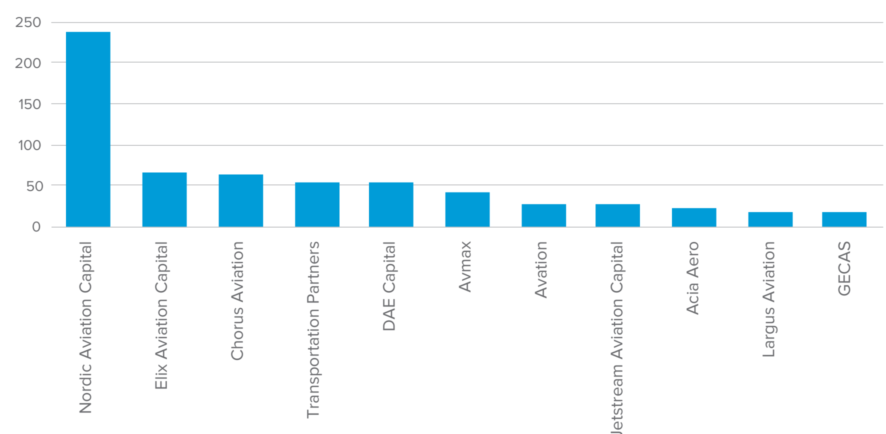



## Figure 4: Top 10 lessors of regional jets




Source: Lessors and *Airfinance Journal*'s Fleet Tracker

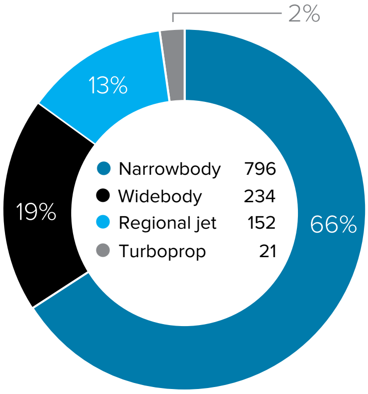
## Figure 5: Top turboprop lessors



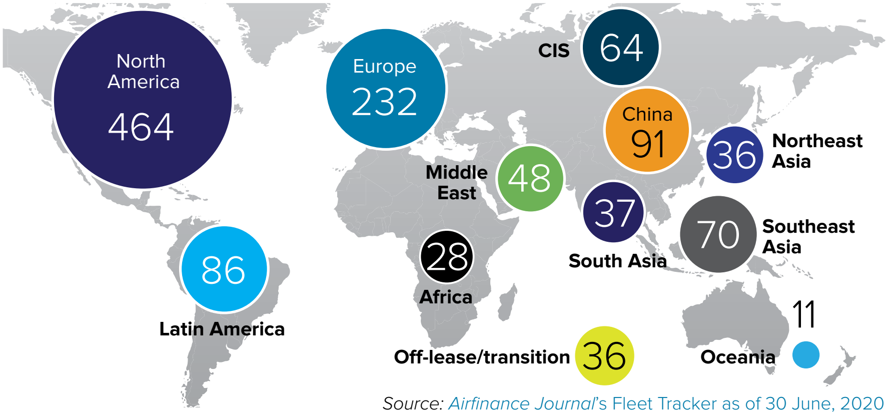

Source: Lessors and *Airfinance Journal*'s Fleet Tracker

# 1 GECAS

## GECAS fleet by aircraft type

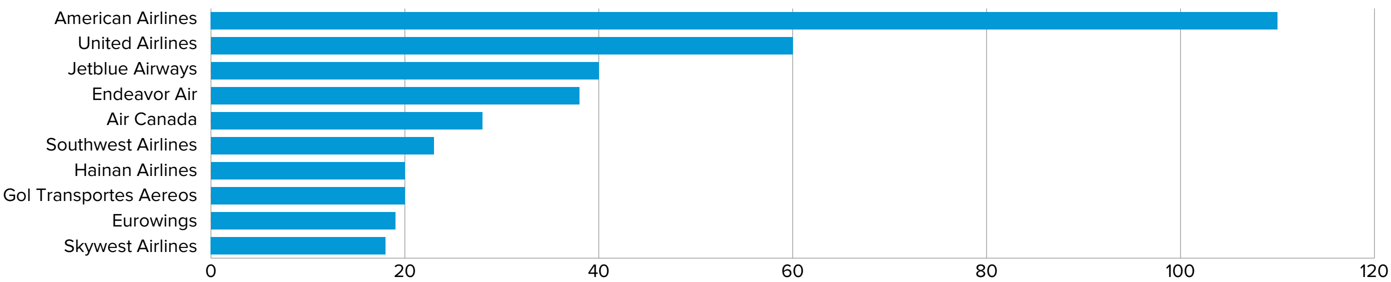



## GECAS fleet by region of lessee



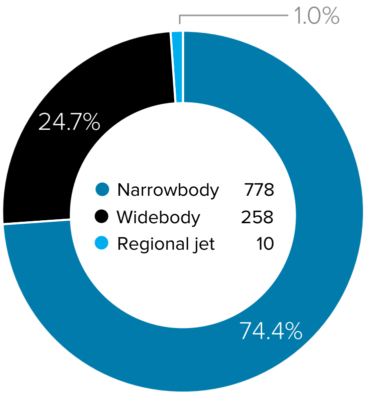

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## GECAS top lessees

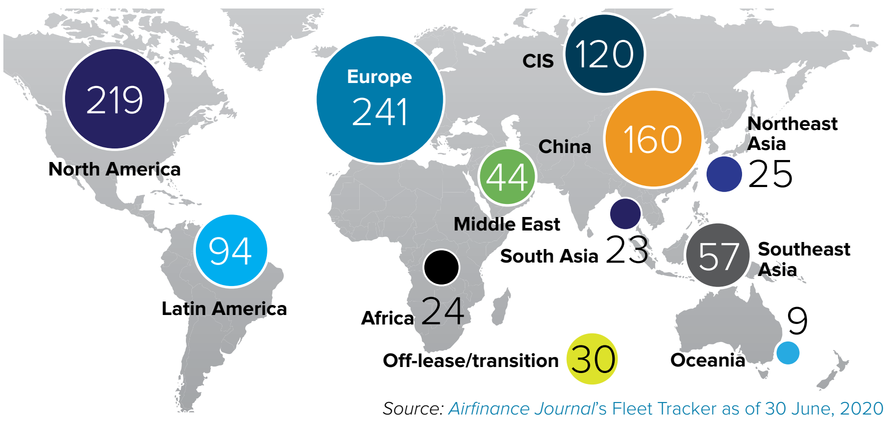



# 2 Aercap

## Aercap fleet by aircraft type

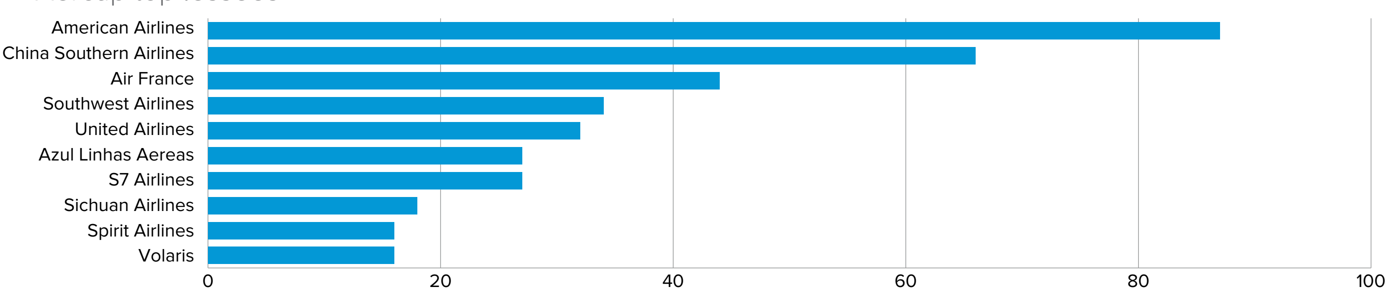



## Aercap fleet by region of lessee



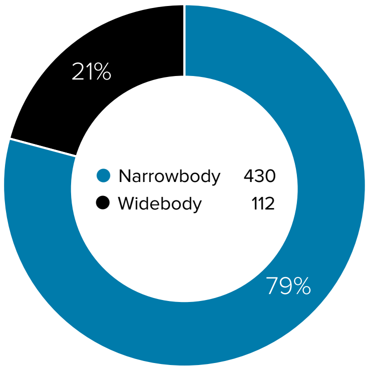

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## Aercap top lessees

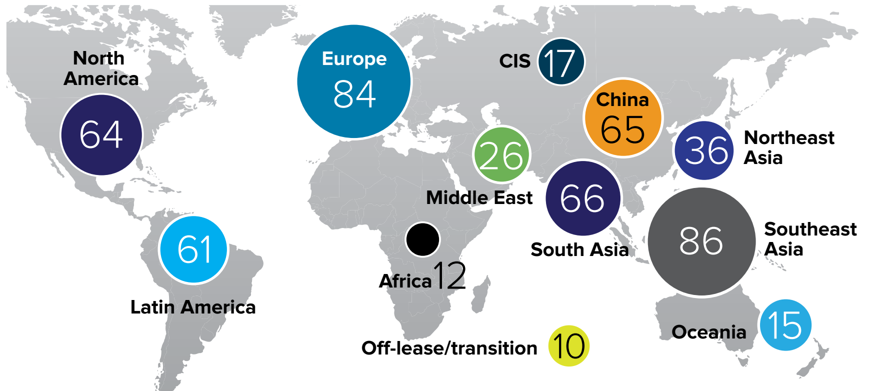


# 3 **Avolon**

## Avolon fleet by aircraft type

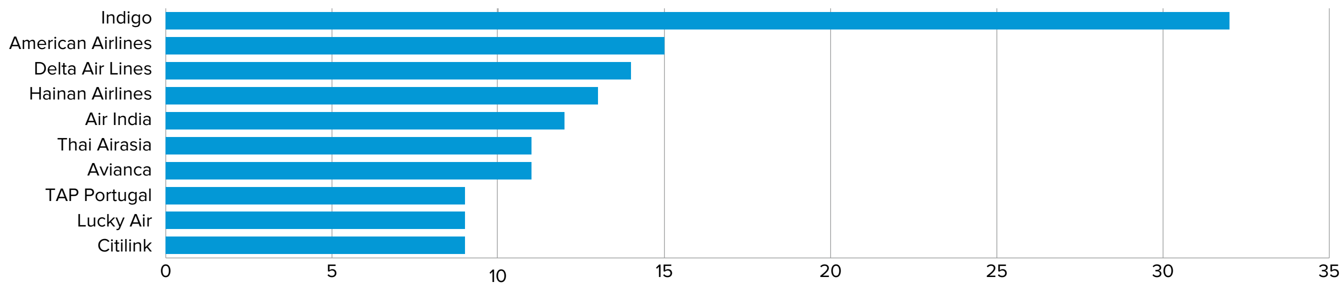



## Avolon fleet by region of lessee



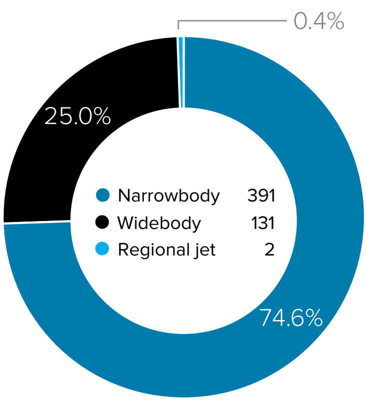

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## Avolon top lessees

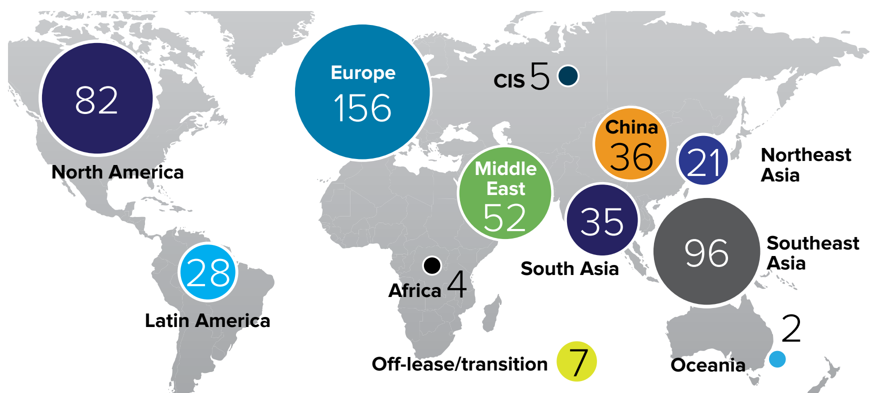



# 4 **BBAM**

## BBAM fleet by aircraft type

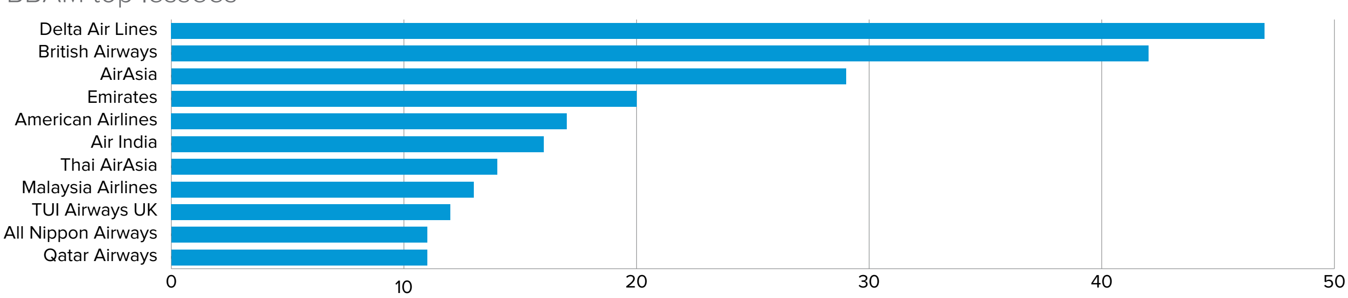



## BBAM fleet by region of lessee



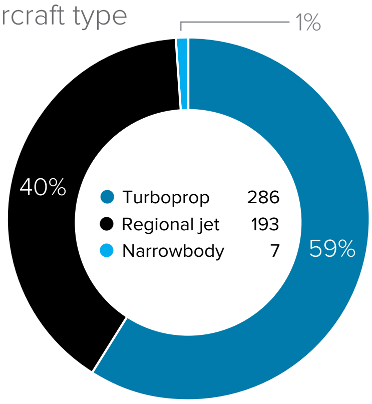

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## BBAM top lessees

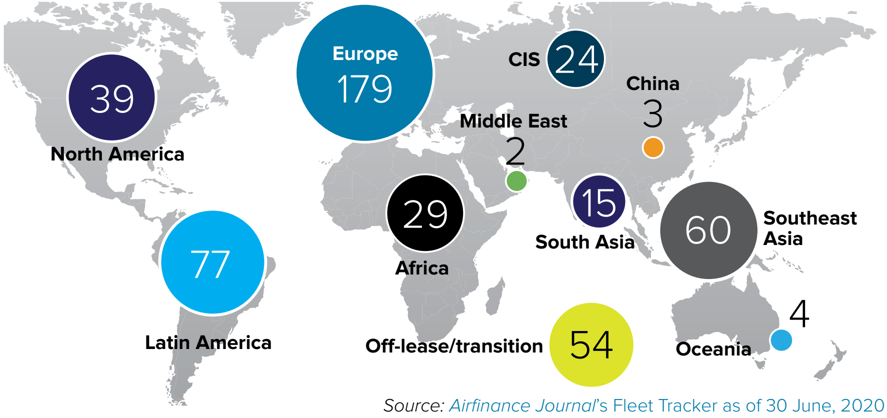


# 5 Nordic Aviation Capital

Nordic Aviation Capital fleet by aircraft type

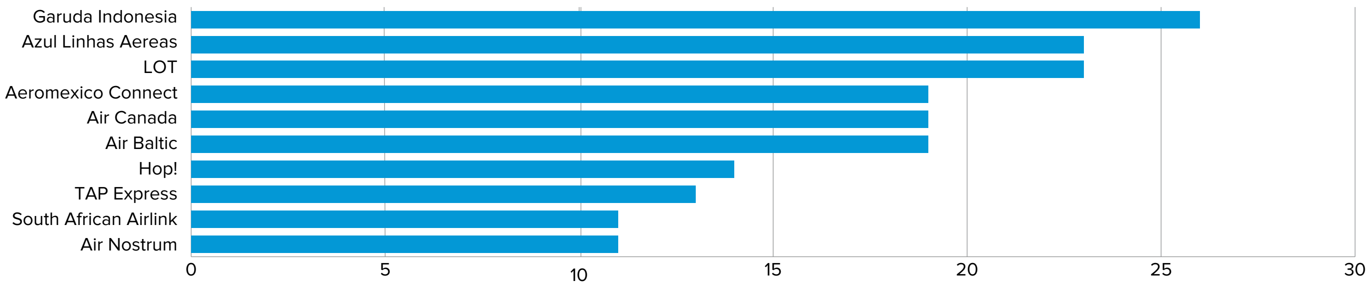



Nordic Aviation Capital fleet by region of lessee



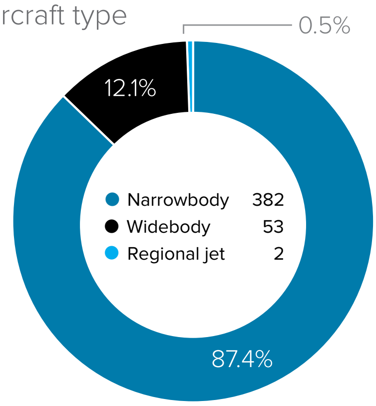

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

Nordic Aviation Capital top lessees

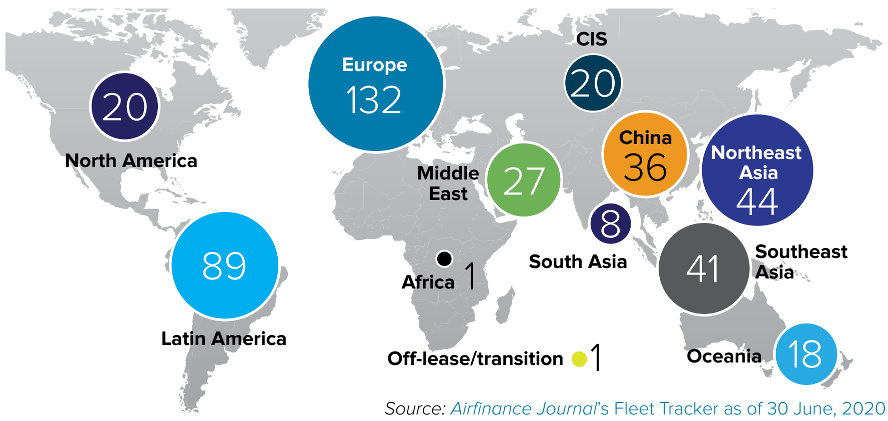



# 6 SMBC Aviation Capital

SMBC Aviation Capital fleet by aircraft type

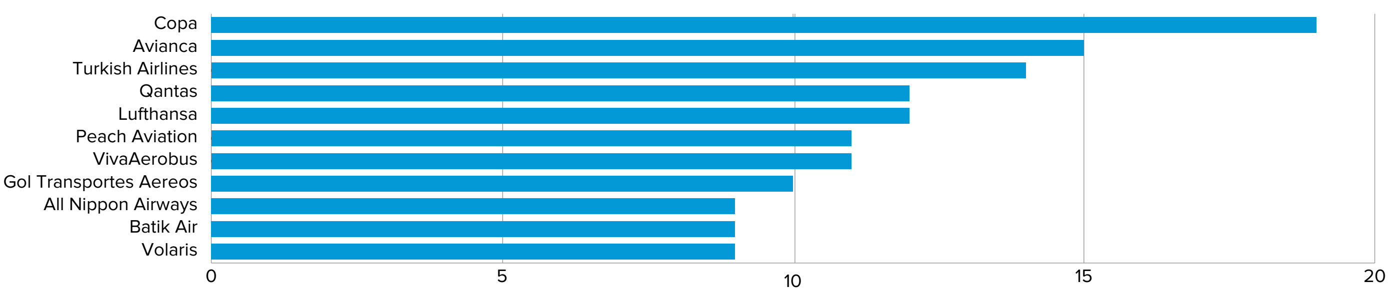



SMBC Aviation Capital fleet by region of lessee



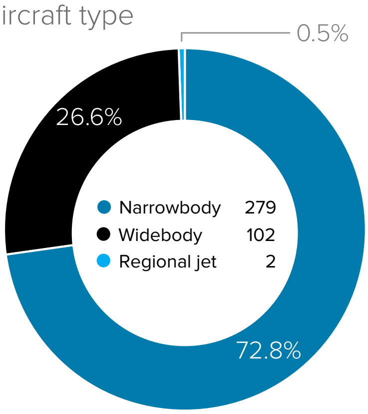

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

SMBC Aviation Capital top lessees

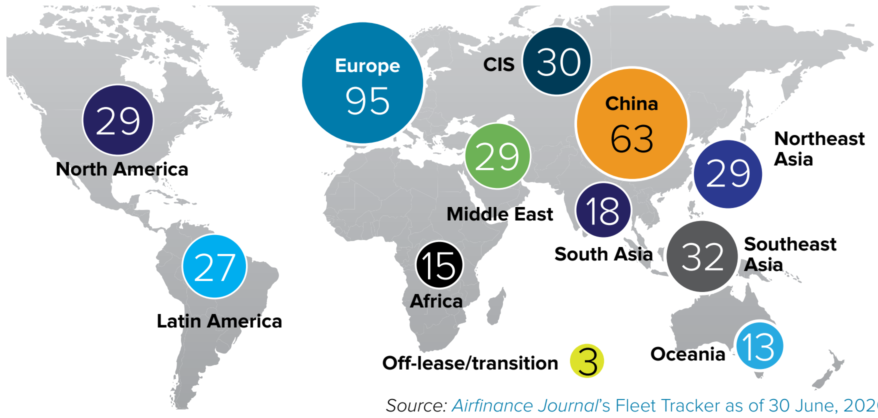


# 7 Air Lease Corporation

Air Lease Corporation fleet by aircraft type

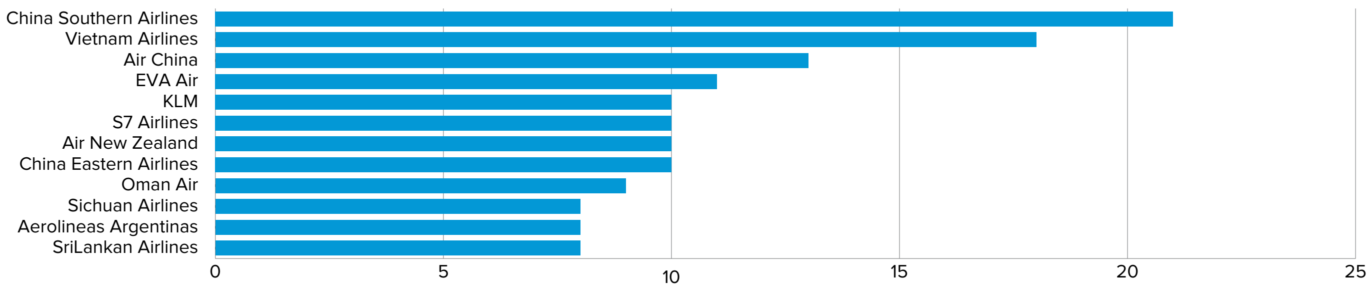



Air Lease Corporation fleet by region of lessee



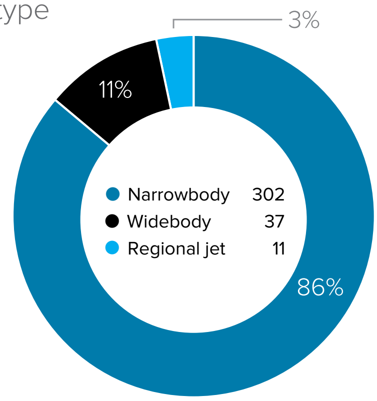

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

Air Lease Corporation top lessees

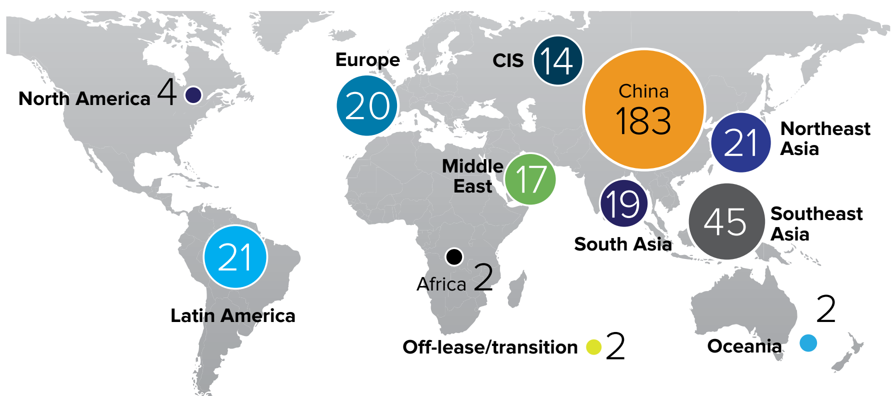



# 8= ICBC Leasing

ICBC Leasing fleet by aircraft type

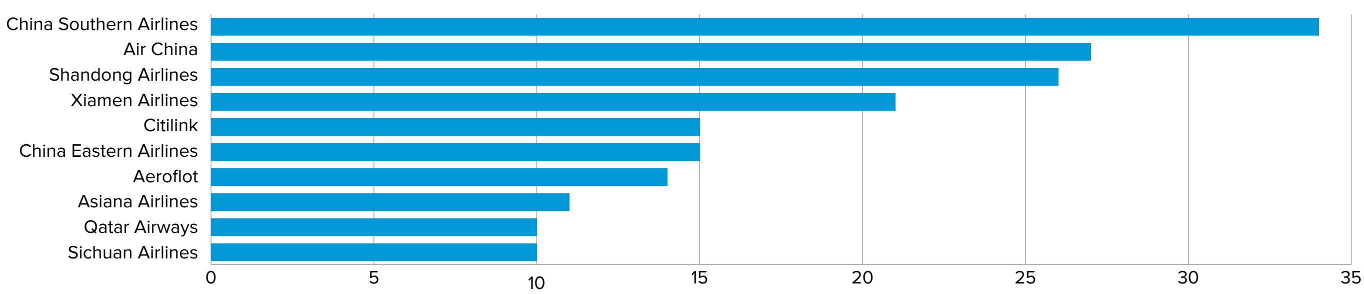



ICBC Leasing fleet by region of lessee



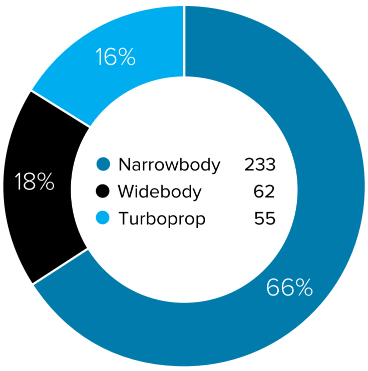

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

ICBC Leasing top lessees

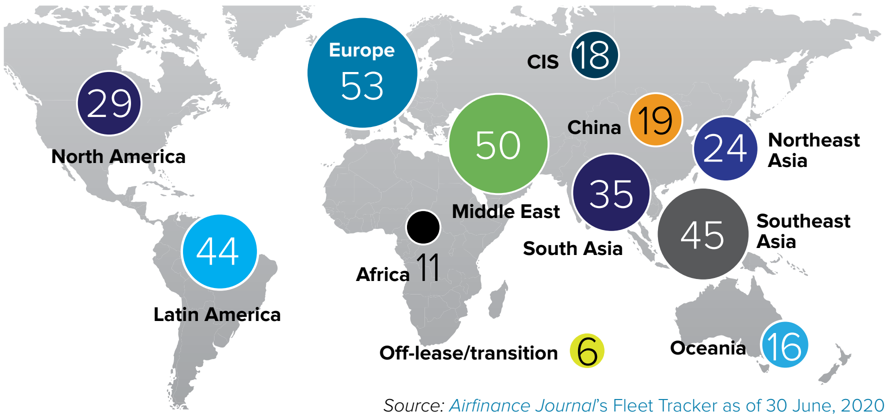


# 8= DAE Capital

## DAE Capital fleet by aircraft type

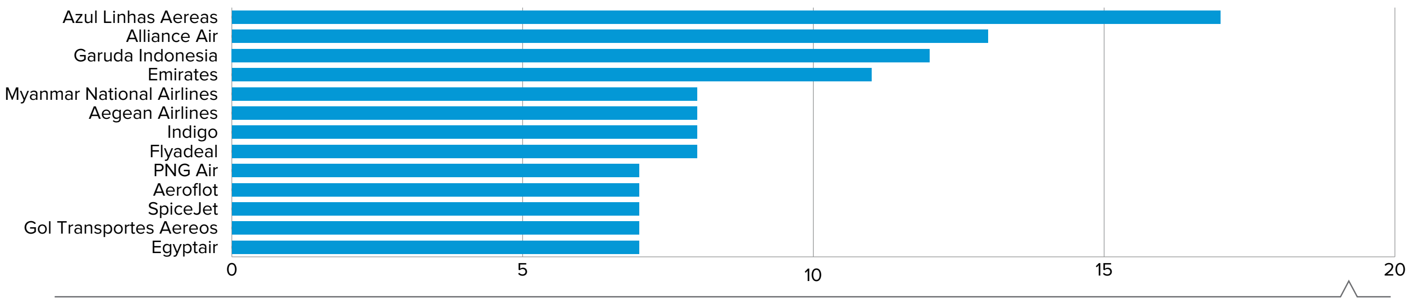



## DAE Capital fleet by region of lessee



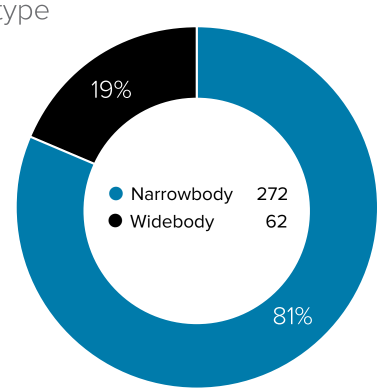

Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## DAE Capital top lessees

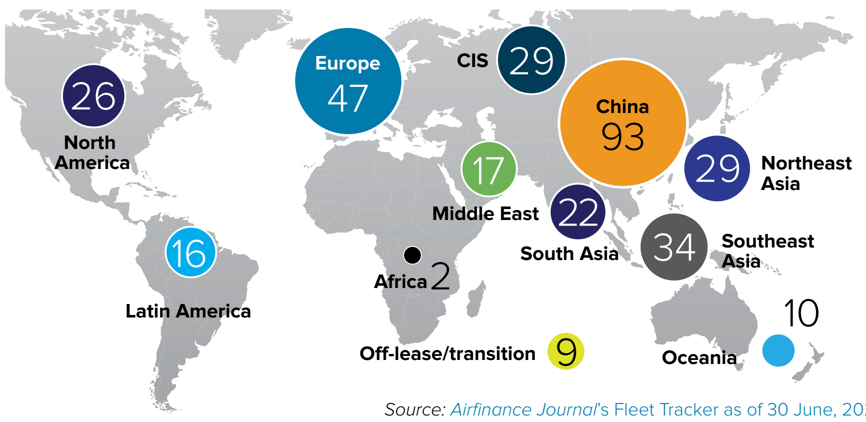



# 10 BOC Aviation

## BOC Aviation fleet by aircraft type




## BOC Aviation fleet by region of lessee




Source: *Airfinance Journal*'s Fleet Tracker as of 30 June, 2020

## BOC Aviation top lessees