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More clouds gathering on horizon

More airlines have ceased operations and net margins are being squeezed. Yet overall, carriers are still profitable and there is no shortage of liquidity in the industry.

A 12-month period does not seem long and many things in the aviation industry can change.

In June, International Air Transport Association (IATA) downgraded its forecast for global airline profitability for the year to $28 billion from the $35.5 billion profit it previously predicted in December 2018. Such a result would mean a reduction on the $30 billion net post-tax profits which airlines generated in 2018. Costs are expected to grow by 7.4%, outpacing an expected 6.5% rise in revenues.

As a result, net margins are expected to be squeezed this year to 3.2%, from 3.7% in 2018, while profit per passenger will also decline to $6.12 from $6.85 in 2018.

Strong competition is curtailing airline yields, while rising costs from everything from labour to fuel and infrastructure, combined with an intensifying trade war between the USA and China, means airline margins are being eroded.

More clouds are gathering on the horizon. A year ago, IATA was predicting $33.8 billion in profits, a 12% downgrade from an earlier forecast, meaning the 2018 net profits were to translate into 4.1% net margin, the lowest net margin recorded by the airline industry since 2015.

This year, net margins will further erode but, overall, airlines are still operating at a profit.

Airline restructurings are underway. In the first quarter of 2019, low-cost airline Ryanair issued its second profit warning in four months, saying airfares were falling more than expected over the winter.

A large number of airlines ceased operations last year as the pinch of rising fuel prices and labour costs, as well as rising interest rates, took their toll on carriers. This year's casualties include Germania, Wow Air, Flybmi, Insel Air, Shaheen Air, Avianca Brasil, Jet Airways, Aigle Azur, while Flybe in the UK was rescued in February.

One part of the industry that has not changed over the past 12 months is availability of capital. There is no shortage of liquidity and the $140 billion-worth of new aircraft hitting the market in 2019, bar nine months of non-Max deliveries, will be met because all indicators are green.

The banking market remains open for airlines and lessors and, despite being very competitive, no one sees any forms of retrenchment in terms of the number of banks.

Lessors are certainly taking advantage of the robust capital markets for funding aircraft as more companies seek to access unsecured funds to provide easier aircraft transitions. Equally, more mid-life lessors have tapped the secured markets – notably asset-backed securities – both as a refinancing tool and to facilitate portfolio sales.

At an industry event in Dublin at the end of March, the mood among lessors and financiers was mixed, but the general consensus was that a cyclical downturn is near. Some are still upbeat but the market is under pressure from airlines to lessors, and the Max situation is adding another layer of stress.

Others say the downturn has begun already. Another group feels the industry has peaked after low fuel prices, cheap capital and strong traffic demand facilitated a protracted period of growth.

In August, oil prices jumped to almost $80 a barrel, the highest level since November 2018. Oil prices were less than $50 a barrel at the start of 2019. By September, oil prices had come down to $58 a barrel, but it was back at $63 a barrel by the time *Airfinance Journal Annual* went to press.

Traditionally, airlines place new orders in the good times but the 2019 Paris air show saw a lot of commitments, yet few firm orders.

Airfinance Journal recorded a total of 810 aircraft announcements at the air show with only 140 firm orders, all made by airline customers. European manufacturer Airbus booked 114 firm orders while Embraer had 24 firm orders. ATR had firm orders for two aircraft, although it announced a total of 75 aircraft at the show. No firm orders were recorded from Boeing and Bombardier. On the "other commitment" side, airline customers represented 63% of the announcements. The Airbus A321XLR grabbed the headlines. in Paris but the talk of the show was the meaning of the International Airline Group's (IAG) commitment for up to 200 Boeing Max aircraft.

In fairness, no one saw this coming. There were rumours, before the show, that an announcement could feature the Max model, which has been grounded since March. Boeing's top priority is to fix the Max problems and make sure it gets recertified soon.

Therefore, an order announcement (or any kind of commitment, as it seems to be the fashion these days) at the air show, if any, had to send a strong message to the marketplace: top-tier group of airlines, huge number of aircraft. Boeing did even better to make sure it would be the "announcement of the air show": stealing an Airbus narrowbody customer.

Terms on the pricing and the Boeing Global Services agreement were probably key to the deal.

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Clear skies ahead?

The Alton Aviation Consultancy Industry Altimeter 2019 looks at the state of commercial aviation and aircraft leasing.

The commercial aviation industry is inextricably linked to the global economy. It plays a critical role in supporting trade as well as connecting people. By nature, it is highly exposed to all manner of macroeconomic and geopolitical factors; however, the industry has demonstrated a remarkable resilience across economic cycles and global shocks by achieving sustained growth over many decades.

In 2019, with an estimated $899 billion to be spent on commercial air transport, it will account for about 1% of global GDP as estimated by the International Air Transport Association (IATA). Comprising 2.9 million direct jobs, 70 million supply chain jobs and carrying $6.7 trillion-worth of international trade by air, the industry will generate forecast gross value-added revenues of $3.1 trillion in 2019.

This is accomplished by the more than 30,000 aircraft in the commercial air transport fleet (comprising narrowbody, widebody, regional jet and turboprop) in active service and operated by more than 1,000 commercial airlines globally but with the top 10 operators accounting for almost one-quarter of the global fleet and the top 100 accounting for about two-thirds, according to CAPA's fleet database.

What are the long-term air traffic demand trends?

The correlation between demand for commercial air transport and gross domestic product (GDP) has long been noted. IATA has calculated that global annual passenger traffic has risen at a multiple on average of 1.7 times global GDP growth over the past 25 years, while at the same time freight traffic volumes saw an average growth of 1.9 times GDP growth.

These positive correlations have demonstrated remarkable resilience even in the face of exogenous shocks. Most significantly, 11 September 2001 and the 2008 global financial crisis negatively impacted traffic demand in the short term (and profitability in the medium term), but subsequently, demand did rebound. Furthermore, in the wake of these crises, a number of bankruptcies ensued spurring merger and acquisition activity that consolidated the US market and resulted in its restructuring to more robust operating models. They also triggered much-needed cost and financial discipline in many airlines, which continues to endure.

In its 2018 20-year outlook, Boeing forecast economic growth of 2.8% and traffic growth of 4.7% a year on average, equivalent to a traffic growth-to-GDP multiple of 1.7 from 2018 to 2037.

How is airline performance tracking?

Historically, conditions of expanding economic activity and strong air traffic demand growth have not necessarily translated proportionally into airline profitability. Volatility in fuel prices can quickly raise costs, whereas more favourable operating conditions can lower the barriers to entry and invite new competition to the field and, as a result, put pressure on revenues.

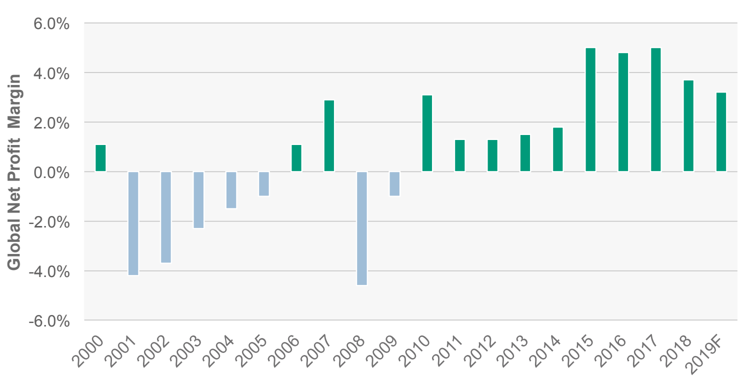
While consolidation has been evident in developed markets in recent years, there have also been a number of new airline entrants, particularly in emerging markets, encouraged by favourable operating conditions – moderate fuel prices, access to new-technology aircraft and market liberalisation being the most encouraging.

In spite of – or perhaps because of – the strong market conditions, airline failures have also continued: Primera Air, Wow Air, Avianca Brasil, Jet Airways, Air Berlin, Monarch and Aigle Azur, to name but a few, are all recent victims of the intensely competitive environment.

Meanwhile, merger and acquisitions between various business models have continued – for example, full-service carrier Cathay Pacific recently completed its acquisition of the low-cost carrier (LCC) HK Express, making it a wholly owned subsidiary.

Finally, the large airline groups continue to consolidate market leadership: the top 15 airline groups account for nearly half of the world's

Global airline net profit margins, 2000-2019F



Source: Airlines for America: Annual Financial Results: World Airlines (Data for 2000-2003), IATA Industry Statistics June 2019 (Data for 2004-2019F) capacity. However, some of the largest, historically fastest-growing airlines appear to be throttling back, most notably Emirates Airline and other Gulf carriers.

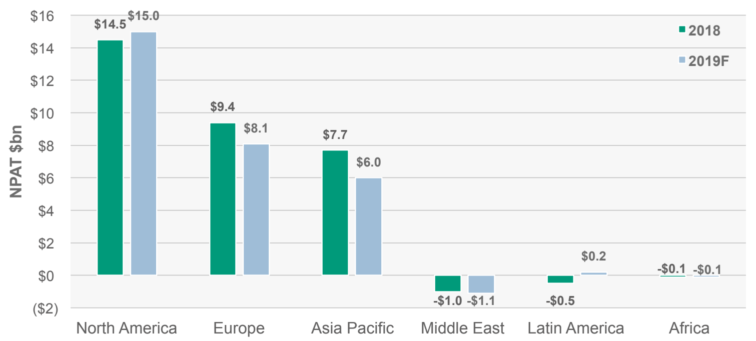
Although the airline sector has historically been a challenging sector for investment, it has recently enjoyed more stable financial returns, with high levels of profitability at margins not seen in decades. Specifically, between 2000 and 2009, the industry experienced losses in all but three years, while, conversely, the industry has seen profits in each year since 2010.

However, the large profits in 2018 were not spread evenly over each global region. Total net profit for 2018 was $30 billion, with North America responsible for generating $14.5 billion or almost half of the industry's profits. The North American carriers' improved profitability is particularly attributable to the post-crisis bankruptcies and subsequent airline consolidation; its resulting pricing power, capacity discipline and improved cost management, but at the same time reinvestment in the fleet and product, are equally echoed in record load factors.

In Europe and Asia-Pacific, where demand was strong but yields proved more challenging, each contributed sizeable portions of the remaining profit, while the Middle East and Latin America made comparatively modest contributions, and Africa generated a loss.

The trend of (historically) high profitability is forecast to continue throughout the remainder of 2019; however, the outlook of its magnitude has been revised downward. IATA, in its recent Economic Performance of the Airline Industry, 2019 June report, downgraded its previous (December 2018) global profit forecast for 2019 from $35.5 billion to $28 billion citing a deterioration of the business environment with rising fuel prices and substantial weakening of global trade. This figure represents a $2 billion decline in net profit from 2018. Cost growth, forecast at 7.4%, will outpace 6.5% growth in revenues, thereby tightening net margins to 3.2% (down from 3.7% in 2018). This amounts to a profit per passenger of $6.10 (down from $6.90 in 2018) with a forecast return on invested capital of 7.4%.

Global airline net profit margins by region, 2018E-2019F



Source: IATA: Economic Performance of the Airline Industry, Mid-year report, June 2019

So far, 2019 has presented a mixed bag of results, with a particular divergence between the passenger and freight markets in demand and correspondingly in performance. Passenger load factors hit an all-time high in May, while the seasonally adjusted freight load factor declined to 45.8% down 3.5% over the year. Global yields have stabilised in recent months with caution around adding capacity, but remain 2.9% lower than a year ago.

In the passenger market, the latest traffic results (June 2019) show demand growth continues but at a slower pace – up 5% year on year outpacing capacity growth of 3.3% resulting in improved load factors at 84.4%, setting a record for June.

In the air cargo market, demand fell 4.8% in June year-on-year – the eighth consecutive month of negative annual growth amid a 2.6% rise in capacity resulting in a 3.5% drop in freight load factor. IATA notes Brexit-related trade uncertainty in Europe and trade tensions (tariffs) between the US and China have notably contributed to a decline in export orders, with many manufacturers and shippers taking a wait-and-see approach compounding uncertainty and dampening demand.

For the second quarter of 2019, IATA notes improved performance in North America while softening in Europe and the Asia-Pacific region with the exception of India. Better-than-expected earnings from Delta Air Lines and United Airlines gave the market a bullish outlook for their second-half performance, and even carriers with significant exposure to the Boeing 737 MAX grounding, which had warned of an impact to their results, posted strong performance – American Airlines forecasted a $185 million impact to pre-tax on the cancellation of 7,800 737 MAX flights over the quarter but, despite these adversities, posted net profit up 5% year on year on record revenues.

In Europe, some of the major carriers are seeing challenging conditions – Turkish Airlines saw its second-quarter net income drop nearly 80% from the previous year, to $26 million from $127 million, citing declining domestic demand, the move to the new Istanbul airport, as well as 737 MAX grounding and delayed Airbus A320neo deliveries.

Perhaps, not surprisingly, given the bearish results, global airline stocks have underperformed relative to the global equity markets for the first half of 2019. The US Global Jets ETF, for example, a portfolio comprised of passenger and cargo airlines, aircraft, manufacturers and airport and terminal services stocks, grew 8.4% over the period while major US indexes – the Dow Jones, Nasdaq and S&P 500 – grew 14%, 20.7% and 17.3% respectively.

Where are we in the cycle... and where is it heading?

The sustained prosperity of the airline industry has caused some to posit that it has formed a more stable foundation while others conclude that the industry is simply enjoying an above-average peak in the cycle, and that it has not yet proven its resilience through a complete industry cycle or

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in an environment of sustained high fuel prices. Thus, there continues to be a debate on the likelihood and timing of a recession – economists are pointing to leading indicators, such as the inversion of the two-year versus 10-year Treasury bond yield curve.

The OECD's global composite leading indicator, which is comprised of a range of indicators to alert of early signals to turning points in the business cycle, has been trending down for 18 consecutive months; however, not all such downtrends lead to global traffic recessions.

IATA forecasts global GDP growth for 2019 at 2.7%, down 0.4% from 2018, while passenger traffic growth is now forecast to grow 5%, also down from the 2018 level of 7.4%. The earnings before interest and tax (Ebit) margin of the airline industry is projected to be 5%, down from 5.8% last year.

While there are a large number of risks that could impact the industry in the longer term, the near-term outlook across some key parameters are still relatively strong, although down from recent levels. The International Monetary Fund (IMF) notes a change in its global economic outlook over the past year, citing the US-China trade tensions, macroeconomic stress in Argentina and Turkey, disruptions to the motor sector in Germany and tighter credit policies in China, to name a few.

In addition, the IMF has observed financial tightening alongside the normalisation of monetary policy in the larger advanced economies and that global technology supply chains, in particular, are significantly susceptible to US sanctions. Last, the IMF notes increased uncertainty around several global trade agreements is having a significant impact on its outlook.

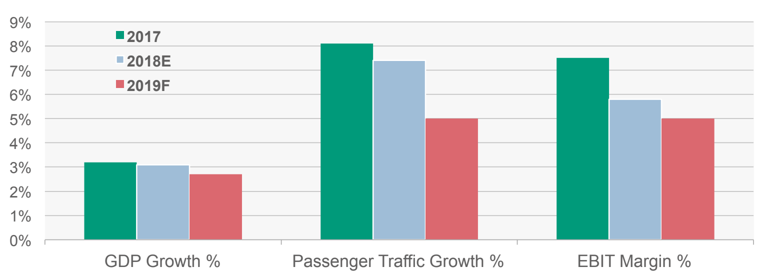
Of course, Brexit is another major question mark. UK and EU companies continue to be challenged by uncertainty with the potential for a no-deal Brexit by the impending 31 October 2019 deadline. How will the respective aviation authorities recognise each other's certificates? How will pilots' licenses be transferred? For suppliers and aftermarket participants – how will licensing, certification and regulations be treated? In all instances, the degree of reciprocity is unclear and particularly concerning to those companies affected.

Ownership concerns have seen numerous UK operators establish a second air operator's certificate in an EU country. Industry participants continue to be frustrated by the inability to plan effectively around it. Airbus's chief executive officer declared Brexit planning a "disgrace" and highlighted the real likelihood of the European manufacturer moving its UK production, taking thousands of jobs with it.

Passengers fear flight disruptions, as well as congestion and confusion, by new passport and customs rules. The only certainties are the complexity and expense that will accompany the outcome.

Looking further ahead, GDP growth is expected to be consistent at 3.6% to 3.7% over the next five years, according to the most recent projections from the IMF. Growth in advanced economies could decline from the 2.2% achieved in 2018 to 1.6% in 2024, while emerging markets and developing economies are forecast to see an acceleration in GDP growth to 4.9% in 2024 from 4.5% in 2018. The US will see GDP growth slow down from 2.9% in 2018 to 1.6% in 2024, according to the IMF.

IATA forecast of 2017-2019F economic and industry metrics



Source: IATA Industry Statistics, June 2019

Aircraft demand and supply dynamics – how many aircraft are needed over the next two decades?

Commercial air transport demand comprises both passenger and freight air transport. Today's global commercial air transport fleet (including jet and turboprop aircraft) totals 30,331 units in active service, of which 26,351 are in passenger service dedicated freighter configurations, with the remainder in various utility roles. The demand for new aircraft deliveries is driven by the combination of the need to replace those that are being retired plus the need to satisfy the market's expansion.

Boeing's Commercial Market Outlook (2018-37) forecasts that over the 20-year period, 42,730 new commercial jet aircraft (excluding turboprops), at a market value of more than $6 trillion, will be delivered. Of the total new deliveries, 56% of the units will be for growth while the remainder will be to replace retired aircraft. With 5,810 aircraft retained, the total global fleet is forecast by Boeing to be 48,540 in 2037.

Airbus's Global Market Forecast (2018-37) shows a total fleet of 47,987 by 2037, with 37,389 deliveries over the 20-year period. However, the different forecasts must be set in context of different starting bases and definitions: Boeing starts from a fleet of 24,400 commercial jet aircraft (excluding turboprops) at the beginning of 2018, while the Airbus forecast starts with a 2018 starting fleet of 24,453 passenger aircraft above 100 seats and freighter aircraft above 10 tonnes.

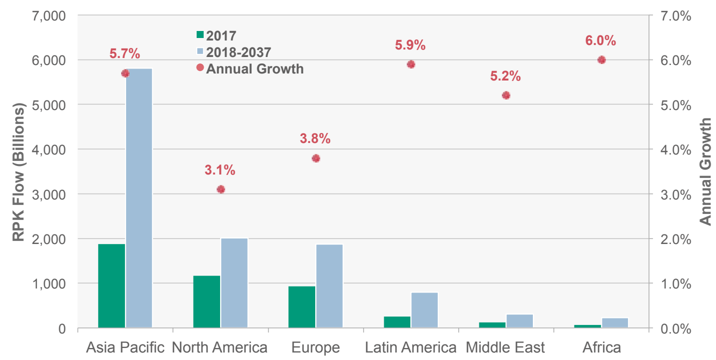
Economic expansion and liberalised markets are stimulating demand

Demand growth drivers are headlined by the following: economic and middle-class expansion (particularly in emerging markets), stimulation from low fares and market deregulation/liberalisation.

During the next two decades, while global GDP is forecast to grow on average 2.8% a year, Boeing estimates that airline traffic will outpace it at 4.7% a year. The Asia-Pacific region will be responsible for nearly 40% of future aircraft demand for deliveries, and that the fastest growing and the greatest in terms of real volume will occur in China. To cater to this traffic growth, Boeing estimates an average annual fleet growth rate of 3.5%, resulting in an almost doubling of the global fleet over the next 20 years.

Freight traffic has been trending upward over the past few years with the expansion in e-commerce and the narrowing of the price gap between air and sea shipping. Despite the substantial improvement over the past few years, some headwinds have formed, with IATA reporting air-freight traffic volumes declining 4.8% in June 2019 year on year. Boeing forecasts air cargo traffic (in revenue tonne-kilometres) to grow on average by 4.2% a year over the next two decades.

Traffic growth by region, 2017 versus 2037



Source: Boeing: Commercial Market Outlook 2018-2037

Growth demand driver – economic and middle-class expansion is creating more traffic

The drivers of demand are not only the underlying propensity to travel but also the prevailing economic conditions. The IMF projects global growth of 3.3% in 2019 and 3.6% in 2020. While long-term global economic growth has not been at record levels in recent years, there are a few key performers, specifically China and India, which have been the most significant contributors to global GDP growth.

The emerging and developing market economies experienced a post-crisis low in 2016 and were particularly hit by declines in commodity export levels and prices. The World Bank observes that growth is strengthening, but is moderated by sluggish productivity growth.

By 2037, it is expected that the top three economies by GDP will be China, the US and India. According to the Organisation for Economic Co-operation and Development (OECD), developed economies are projected to constitute about half the global GDP, down from about two-thirds today. Many developed countries will grow below the global average – notably the US, UK and a number of countries in Europe.

China will boost the Asia-Pacific average, with rates at, or in excess of, 6% a year through the end of this decade. Some indications of the slowdown in China include industrial production, profits and revenues, and risk of reduced foreign trade given the escalation of trade tensions.

Consumer spending has been solid in developed countries and global tourism has reached record levels with economic growth having an amplified effect on air travel. The World Trade and Tourism Council determined that travel and tourism growth has outpaced that of the global economy each year since 2011, and the trend is forecast to continue for the decade ahead.

Income growth in many of the world's most populous countries is a key driver in global demand. Developing economies are increasingly transitioning to more service-based economies and, as countries' middle-class populations grow, their discretionary spending rises. Further, the lower the GDP base, the greater the increase in propensity to travel.

Emerging markets, compared with developed markets, have low aircraft-to-population ratios and fewer average trips per person. The expected growth of the middle class in Asia-Pacific is most significant – more than doubling over the next two decades – which alone will introduce over 1.3 billion more people to the middle class, according to estimates by Airbus. The proportion of aircraft used for growth is higher in emerging markets, while, conversely, the replacement proportion is higher in developed markets.

As a result of differing market growth rates across regions, there will be a reordering of the world's largest air traffic markets in the coming years. China is estimated to overtake the United States as the largest domestic market, while India is projected to become the third-largest commercial aviation market in the world in the 2020s. These two factors combined will make Asia-Pacific the largest market for travel within the next two decades.

Latin America is also expected to see traffic grow above the global average, with recent investments in Latin American carriers expected to improve their operations and profitability, but only if a commensurate investment in airport infrastructure is made to support tourism growth.

Single-aisle aircraft are anticipated to be most in-demand in these emerging markets and will continue to open up new routes, particularly domestic and intra-regional.

Growth demand driver – low fares are stimulating the market

One of the most significant drivers of growth has been the increased proliferation of low-cost carriers. LCCs subscribe to a different business model from that of the traditional full-service airline, which enables them to stimulate passenger demand with lower fares because of their lower cost base. The typical characteristics of the LCC model include a standardised fleet type of single-aisle aircraft that operate at high utilisation levels with short airport turnaround times across a point-to-point network, often leveraging secondary airports, with a high reliance on ancillary revenues.

LCCs tend to distribute sales primarily through direct channels and have debundled fares so that passengers pay for only what they need. In 2018, LCCs accounted for 30% of the global market by seat capacity, according to data from OAG.

It is evident that LCCs have driven down fares in the markets in which they operate and that there is a degree of demand that is stimulated by these low fares. The LCC model first put down roots in the US market, then further refined in the European market where it popularised the ultra low-cost carrier (ULCC) model and, in more recent years, has rapidly inundated Asia. LCC fares have declined at a greater rate than global averages in regions such as Asia, where the concentration of LCCs is high. While the lower revenues have been accompanied by decreased costs, the savings have been to the benefit of the customer rather than to the bottom line of the airlines.

The LCC model has proven particularly effective where populations are dense and distances are close. In terms of regional LCC penetration by seats in 2018, South-East Asia led the way at 55%, followed by Europe at 42%. Next was Latin America at 36% and North America at 32%. Even so, the LCC market still has a substantial runway for growth.

While the largest two markets (by seat capacity), Europe and North America, have high LCC presence, China, the third-largest market, has just 10% LCC penetration, which is the lowest of all regions globally. But China may follow the trajectory of other countries in rapidly increasing penetration as regulations are relaxed, as was seen in Japan recently and in India, where the LCC share jumped from about 48% in 2008 to more than 69% in 2018, according to CAPA.

LCCs are also responsible for the booming ancillary revenue market. Examples include fees for baggage, onboard food and beverages, assigned seats, etc. IdeaWorks estimated that $92.9 billion in ancillary revenues were collected in 2018, jumping 13% from 2017 and amounting to growth of more than 300% from 2010. This was more than 10% of global airline revenue. Some LCCs have generated in excess of 30% of their revenue from ancillary charges, which are particularly high in the onboard services category.

However, ancillary revenue is no longer only the domain of the LCCs; traditional airlines have made inroads in this space and have generated significant income in adopting these fees, particularly from baggage, preferred seat assignments and frequent-flyer programmes (sale of miles). Naturally, the regions with the highest LCC penetration – the United States, Europe and Asia – are the leaders in ancillary revenue collection.

Growth demand driver – market liberalisation makes more friendly skies

Ongoing market liberalisation, stemming from the deregulation of the commercial airline industry in the late 1970s, has allowed airlines to supply capacity as they see fit in the markets they find attractive, with less government involvement. Not only has liberalisation enabled greater competition, but also it has enabled greater cooperation among airlines. Open-skies agreements have opened up more routes for competition as foreign ownership rules have been relaxed. Domestic deregulation has increased within specific markets, such as India, adding more domestic routes and, in so doing, increasing demand, particularly for narrowbody aircraft. The overall effect has been a reduction of barriers to entry, enabling, most notably, LCCs that would not otherwise have been able to overcome regulatory constraints.

LCCs have opened up more secondary destinations and added more point-to-point routes while driving down fares for consumers. IATA determined that, in 2018, there were 21,314 unique connected city pairs, an increase of 108% over the total in 1998.

Many of the new aircraft will replace those retiring

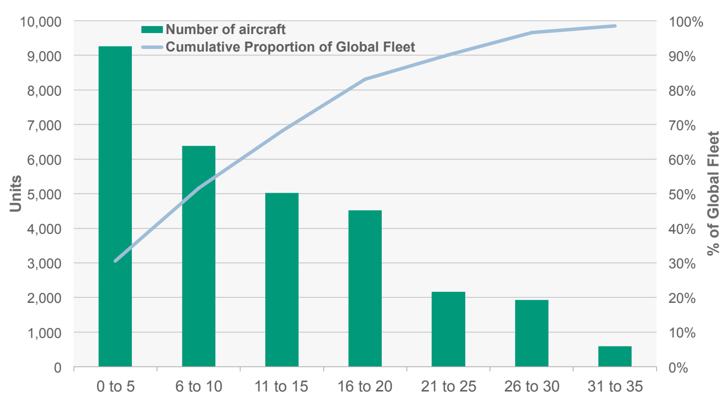
Airbus and Boeing anticipate about 30% and 44%, respectively of new aircraft deliveries will be to replace aircraft that will be retired over the next 20 years.

Drivers of demand for replacement aircraft centre on dynamics related to retirements – such as fleet demographics and economic life, fuel prices, noise and emissions regulations, and demand for passenger-to-freighter conversions.

Replacement demand driver – fleet demographics and trends in economic life attainment impact retirements

An aircraft is retired when it reaches the end of its economic life, which is when the cost of operating and maintaining the aircraft exceeds its

Distribution of aircraft age



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

profit-making ability. By historical standards, the useful life of an aircraft has averaged between 20 and 30 years. In recent years, however, retirements before the age of 25 have been increasingly common for certain aircraft models, sometimes motivated by part-out opportunities with attractive values for teardown compared with the available options for continued operation, particularly for engines.

Some 17% of the current fleet of more than 5,000 units is older than 21 years of age and, as such, are prime candidates for retirement in the coming years. After that, a significant volume of aircraft was delivered 16 to 20 years ago that will form the next wave of retirements over the decade ahead.

For older aircraft, as their useful life wanes, the prospect of upgrading outdated product becomes less attractive. Similarly, impending large maintenance tasks can make keeping an aircraft in service uneconomical and thus accelerate its replacement. More favourable value retention of newer aircraft also drives the economics of replacement – LCCs, in particular, favour new fuel-efficient aircraft as a key element of their business model in minimising operating expenses while maximising utilisation and reliability which impact replacement market trends.

Replacement demand driver – fuel prices can accelerate or delay retirements

While newer aircraft are more fuel-efficient and technologically advanced, a lower fuel price environment eases the impetus for retirement in the short term by decreasing the operating savings that a new aircraft offers, thereby delaying replacement.

With the recent historically moderate fuel price environment, there has been sustained demand for mid-life aircraft and engines. Teething problems with some of the new aircraft types as well as the capacity gap from the grounding of the 737 MAX also have bolstered demand for mature and reliable aircraft as fill-in capacity.

In real terms, the volume of aircraft retirements has been increasing over time as a larger proportion of the global fleet comes of age. The surge in retirements seen from 2008 onwards reflects the corresponding surge in deliveries from about 25 years earlier. This volume of aircraft exiting service spawned significant expansion of the part-out and used serviceable material market, and increased interest in the end-of-life leasing market. The spare parts market is seeing some tightening of supply as a result of the decreased feedstock from decelerated retirements. In particular, the engine overhaul market's capacity is being tested as the long-anticipated bow waves of routine, scheduled overhauls have arrived for narrowbody engines such as the IAE V2500-A5, CFM56-5B and CFM56-7B reaching their first major overhauls as well as mature engines such as CF6-80C2 and PW4000s.

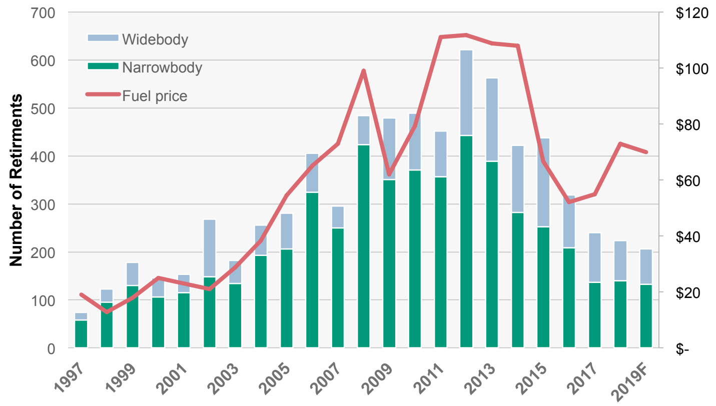
Also taking up engine shop real estate are a cadre of new-generation engines such as CFM's LEAP, GE's GEnx, Rolls-Royce's Trent 1000 and Pratt & Whitney's geared turbofan (GTF), which have all experienced technical issues. The high market share for original equipment manufacturer's (OEM) cost per flight hour engine maintenance, repair and overhaul (MRO) programmes means that the direct cost impact of this pinch is mostly to the OEMs, rather than the operators.

While fuel cost is one of the most significant operating expenses for airlines, its volatility also causes significant uncertainty – an unexpected spike in fuel prices can make or break an airline's financial prospects. Since 2004, fuel has ranged from a low of 17% of operating expenses to a high of more than 35% (in 2008).

In general, cost as a proportion of operating expenses tracks along with fuel price, except for some differences as a result of airline hedging. For 2018, airline fuel amounted to a total global fuel bill of $180 billion, equal to 23.5% of airlines' operating expenses. Although far from the levels seen in 2008 and 2012-13, average fuel prices increased over 2018 as oil supply was tightened. By August 2019, the average fuel price was $79.9 a barrel (Brent crude), with expected softening over the second half of the year to result in an average of $70 a barrel, according to IATA.

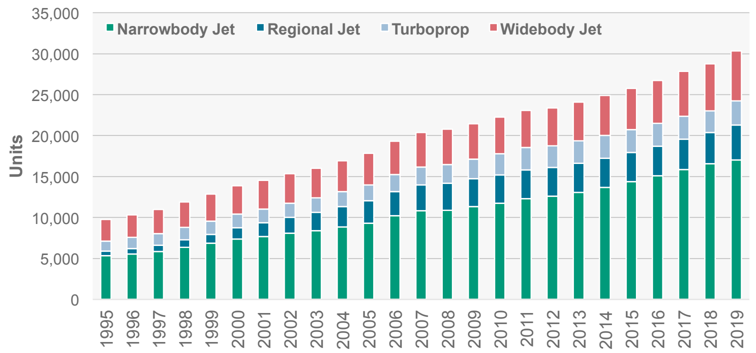
Fuel prices, of course, cannot be predicted with precision, but many industry agencies and banks have forecast the return of higher levels. The Energy Information Agency (EIA) projects more bullish prices, breaching $100 a barrel before 2030 while OPEC and the World Bank project more moderated levels, within the $80 to $100 a barrel range through the next two decades. In August, crude oil futures on the Chicago Mercantile Exchange for 2028 delivery were about $54 a barrel. The forecast total fuel bill for 2019, according to IATA, is $206 billion, accounting for 25% of operating expenses with an average of $70 a barrel.

Annual number of aircraft retirements versus average fuel price



Source: Alton Aviation Consultancy analysis; IATA June 2019 and December 2007

In-service commercial aircraft fleet versus fleet class, 1995-present



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Replacement demand driver – emissions regulations will impact the relevance of new-technology aircraft

As emissions regulations grow in restrictiveness, both retirements and demand for new aircraft rise in response. Industry bodies have debated the issue of carbon dioxide emissions generated by the airline industry and how or whether to regulate them.

Formally, the International Civil Aviation Organization (ICAO), an agency of the United Nations, has worked alongside various national and regional bodies to develop targets and standards to regulate future emissions from commercial aircraft. The Carbon Offsetting and Reduction Scheme for International Aviation (Corsia), a resolution adopted by ICAO, targets maintaining emissions from international aviation at 2020 levels, meaning carbon-neutral growth thereafter. This will be achieved by a combination of technologies that improve efficiency, sustainable alternative fuels and operational improvements such as optimised routes. It will also involve market-based measures and policy tools such as emissions trading schemes. Corsia will initially be voluntary for the ICAO member states but mandatory from 2026.

Such plans and targets are a move in the right direction; however, the pace of real action and impact in reducing the environmental impact of aviation is coming under increasing scrutiny and criticism. The scrutiny of responsibility has spread from the manufacturers and operators to the travelling public. The Swedish-originated *flygskam* (fly shame) movement has propagated the concept that people's own frequency of air travel should be reconsidered for its climate change impact. Other political parties have suggested taxation on frequent flyers.

Further, it is not just frequency that is under public criticism – the indulgent spaciousness of premium travel claims disproportional environmental impact per passenger.

While previously, conservatism with respect to premium travel centered on the cost (particularly in the business or political worlds where others were footing the bill), now the perception of neglectful additional environmental cost appears to be rising. Just recently, the Duke and Duchess of Sussex incited controversy for taking four private jet flights in 11 days and, in apparent response to the court of public opinion, the Duke and Duchess of Cambridge with their family conspicuously flew economy class on Flybe for their holiday.

Replacement demand driver – some of the passenger aircraft are destined for freighter conversion

The freighter conversion market is also a driver of passenger aircraft demand for replacement. A significant proportion of the global freighter aircraft fleet – especially narrowbody aircraft – are conversions from passenger aircraft as opposed to purpose-built production freighters. Conversions are economically feasible when the value of a passenger aircraft declines sufficiently to make the investment of conversion attractive enough for freight operators.

The passenger-to-freighter conversion is available on only certain aircraft types and has served to extend the life and buoy the residual values of those aircraft. Boeing forecasts that more than 63% of the freighter deliveries expected in the next two decades will be passenger aircraft conversions. Recently launched conversion narrowbody programmes are providing attractive options – in late 2017, the first 737NG freighter conversion was completed, offering additional capacity and next-generation efficiency advantages over current generations.

The conversion programme for the A320/A321 is the first for an Airbus narrowbody and is expected to have demand as a 757-200 replacement. For the 737NG and A320/A321 P2F programmes, the availability of attractively priced feedstock is a limiting consideration.

Changing supply – OEM consolidation and new aircraft

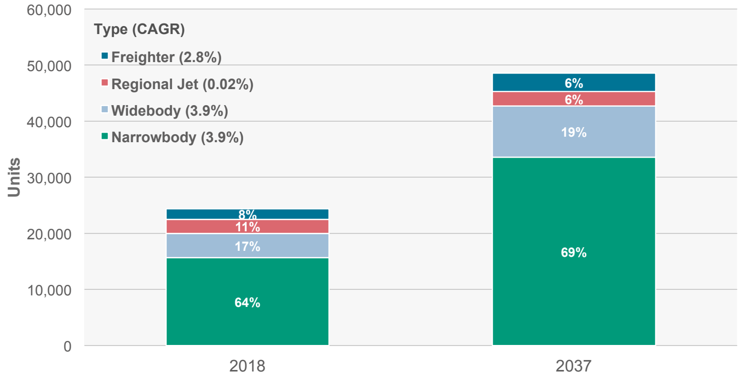
Aircraft supply is comprised of the current in-service fleet as well as additions through new deliveries and subtractions through storage and retirement of aircraft. Over the past 25 years, the supply of in-service commercial aircraft fleet has tripled to more than 30,000 from less than 10,000 units, led by narrowbody and widebody jet aircraft.

The future differing growth rates of the regions, with particularly high levels in emerging markets, will mean not only a shift in the geographical split but also in aircraft class split, with the most notable shift being the dominating growth of the narrowbody fleet by 2037.

Consolidation continues among aircraft manufacturers

Airbus and Boeing dominate the aircraft manufacturing industry in the large commercial (narrowbody and widebody) aircraft segment. Very high barriers to entry have meant these two manufacturers have faced competition from relatively few new entrants over the years. Not only are the technical capabilities and capital requirements prohibitively high, but also the decades-long establishment

20-year fleet projection by aircraft class (CAGR)



Source: Alton Aviation Consultancy analysis; Boeing Commercial Market Outlook 2018-2037

of reputation, reliability, certification and trust of the incumbents are nearly insurmountable for upstarts.

Bombardier had sought growth in the larger regional jet and smaller narrowbody market with its CSeries product but, faced with competitive responses from Airbus and Boeing, experienced challenges in selling the aircraft. Indicative of the magnitude of the challenge new entrants face, Bombardier agreed to sell a majority of its CSeries programme to Airbus (which subsequently renamed the aircraft as the A220) for effectively no cash.

Partially in response, Boeing is poised to acquire an 80% share of Embraer's commercial programmes for $4.2 billion and the deal also encompasses services related to the aircraft. The joint venture is on track to receive antitrust approval by the end of 2019.

In addition, the acquisition of Bombardier's CRJ programme by Mitsubishi for $550 million was announced in June. The deal includes not only the aircraft manufacturing facilities, but also Bombardier's highly regarded global product support and sales force. Bombardier will continue to supply components and spare parts as well as assemble the current CRJ backlog. Pending shareholder and regulatory approval, the deal is expected to close in the second half of 2020.

New entrants into the regional and small commercial jet segment are more likely than in the large commercial segment as the capital requirements are lower and the market is more fractionalised. In August 2019, a new German OEM, DRA, with the support of the German government, was planning to reinstate production of the Dornier 328 twin-turboprop with a final assembly line in Leipzig. It will feature different configuration to the original 30-seater that has been out of production since 2002.

In more regional aircraft acquisition news, Longview Aviation Capital has acquired the Dash 8 turboprop line from Bombardier for $300 million and reinstated the de Havilland name. The line comprises the Dash 8-100, -200, -300 and -400, but only the -400 is currently in production.

More competition may be on the longer-term horizon as China and Russia are developing their commercial aircraft programmes. The Commercial Aircraft Corporation of China (COMAC) was established in 2008 to develop a large passenger aircraft programme. It developed the ARJ21 (a short- to medium-range turbofan regional aircraft) and the narrowbody C919, though the development and testing have been repeatedly delayed.

COMAC announced that it has more than 450 orders from more than 20 customers for the ARJ21 model and 815 orders from 28 customers for the C919. A widebody aircraft is the next goal and will be sought through Russian-Chinese cooperation. The Russian United Aircraft Corporation and COMAC have formed a joint venture for the development of a long-range medium-size widebody, the CR929, comprising 280 seats and a range of 12,000 kilometres, plus a shorter and stretched version to total three variants.

COMAC's customers are ostensibly Chinese airlines and lessors, which are encouraged by the government to purchase the Chinese aircraft. But it remains to be seen to what extent these Chinese and Russian manufacturers will penetrate the global market and erode the incumbents' share. The adoption of their aircraft is highly contingent on certification by the various authorities around the world. In the meantime, after its domestic focus, COMAC's first international target markets are Africa and South-East Asia.

Narrowbody

The market leaders in the narrowbody segment are the A320 and 737 families. The Next Generation (NG) and the MAX variants are currently in production in the 737 family.

The 737NG, developed from the very successful 737 Classic family, brought efficiency and new technologies to evolve into a versatile and efficient new version. The 737 MAX achieves notably lower operating costs – reportedly a reduction of 8% from the 737NG. It also features the new Boeing Sky Interior to enhance the passenger experience.

The MAX variants are 737 MAX 7, 737 MAX 8, 737 MAX 9 and 737 MAX 10. Both the MAX 8 and MAX 9 are now in production, while others will enter service around the end of the decade. The 737 MAX, however, has been grounded since the first quarter of 2019 after the fatal accidents in Indonesia and Ethiopia. While Boeing continues to manufacture the aircraft at a lower rate, these aircraft are not being delivered to customers until the implementation of the fix and regulatory approvals are resolved.

The 737NG programme has been a best-selling aircraft for Boeing amounting to almost 7,000 deliveries since its introduction and continues to be the workhorse of many operators. Boeing has been studying a new "middle-of-the-market" aircraft that would fill a gap in its product line-up between the 737 MAX 10 narrowbody and 767/787 widebody aircraft families but its future is uncertain, especially amid competing priorities at the moment for Boeing.

The A320 family is comprised of four sizes (A318, A319, A320 and A321). The A320neo (new engine option) family is a product upgrade that delivers fuel savings of about 15% relative to the A320. The A320neo achieves this with PurePower PW1100G-JM engines from Pratt & Whitney and LEAP-1A engines from CFM International, together with large sharklet wingtip devices. The original variant, the A320, is still being produced and concurrently with the A320neo (Lufthansa ordered three more A320s in 2018). The A320 pioneered the sharklets, which have been successful in lowering fuel burn and emissions.

Widebody

In the widebody segment, the market leaders have historically been the A330 and 777 models, while more recently the A350 and 787 have entered into service and generated significant orders.

The twin-engine widebody A330 has proven to be one of the most adaptable aircraft products and is operated by international and domestic airlines on medium- and long-haul sectors. It is known for its economical and reliable service and the new engine option has reinvigorated orders.

Until the 787 was introduced, the A330's main competitor was the 777, the world's largest twinjet aircraft and one of the best selling. The upgraded 777X series features composite wings, folding raked wingtips and GE9X engines and is still under development, albeit delayed.

The A350, the latest-generation aircraft, is a midsize widebody aircraft built from more than 70% advanced materials (carbon composites, titanium, aluminum alloys), which makes it lighter and therefore more cost-efficient, and features the latest-generation Rolls-Royce Trent XWB engines. With the efficient engine and the lightweight construction, Airbus calculates that the result is 25% lower operating costs compared with previous-generation aircraft.

Boeing's latest, the 787, is in competition with the A350. It boasts improved fuel efficiency and range over current-generation aircraft. It has been popular with airlines because of its operating economics as well as its potential for serving new routes. Boeing announced that the 787 has so far opened up more than 235 new direct routes and is operating on more than 1,900. With a backlog of 564 aircraft, Boeing plans to ramp up production to meet this demand. The 787 now has total orders nearing that of the 777 (which entered service in 1995).

Very large aircraft

For very large aircraft – the A380 and 747-8 models – demand is soft at best. The market is relatively small because only large global airlines with mega-hub airports have the ability to utilise and fill aircraft of this size. Over one-third of the current A380 fleet in service is operated by one airline, Emirates, while demand from new carriers has been so underwhelming in recent years that the conclusion of the programme was announced by Airbus in February 2019.

The 747, in operation since 1970, has flown on many airlines' high-volume long-haul routes. The demand for the in-production 747-8 passenger variant has notably slowed down, with a total of 47 orders. The freight version, the 747-8F, has had greater traction with 107 orders, of which 20 are unfilled. Therefore, it is demand for the freighter that is driving the continued, albeit modest, production.

Regional

Regional turboprops and jets continue to serve an important function in the market, primarily to connect thin routes to larger hubs. ATR, Bombardier and Embraer account for the vast majority of the market, with ATR's 42/72 aircraft family, Bombardier's (now de Havilland) DHC-8, CRJ and CSeries (now A220) and Embraer's ERJ and E-Jets being the most popular among operators.

Manufacturers have hefty order backlogs…

The largest proportion of the total commercial aircraft backlog is attributable to Asia-Pacific at 27% (likely more, given that 25% of the orders have not yet been attributed to customers nor lessor placements determined) and, corresponding to that region's high demand for narrowbody aircraft, three-quarters will be narrowbody. North America and Europe account for the next highest shares of the backlog at 16% and 14% respectively.

In terms of the manufacturers, Airbus and Boeing combined hold about 88% of the backlog. Of the more than 11,000 aircraft in the backlog that have determined delivery dates, 17% are scheduled for delivery in the remainder of 2019, while 19% are scheduled for 2020. Bombardier and Embraer have their backlog concentrated in the next several years, with Bombardier, in particular, having the majority of its backlog due for delivery by 2020.

…and they are ramping up production rates to meet the backlog

Aircraft deliveries have been on the up but not with the same monotonic trajectory as passenger traffic. Aircraft orders fluctuate with economic cycles and with airlines' financial position and outlook, while deliveries are a function of manufacturers' capacity. Because of the lengthy production cycle of aircraft, deliveries can often be out of sync with demand as airlines place orders years in advance, and because new orders follow the fortunes in airline profitability, a dip in deliveries may lag a downturn by a few years, during which fewer orders were placed. This can be seen as an industry-wide trend when looking at the historical number of aircraft deliveries in the years after major market shocks such as the dip in 2003, two years after the September 11 terrorist attacks on the US, and the two years after the 2008 global financial crisis.

Currently, however, with the strong demand and positive outlook, manufacturers are ramping up production to meet this demand. With a backlog of 4,413 aircraft, production of the 737 MAX was planned to accelerate to 52 then 57 a month in 2019. With the ongoing uncertainty of the return-to-service timeframe and stockpiles of both 380 grounded aircraft and about 200 new-production aircraft halted from deliveries choking up storage, Boeing indicated in July 2019 it may even pause its production.

It also revealed an estimated $4.9 billion in second-quarter production and customer compensation-related after-tax charges associated with the grounding resulting in a record quarterly loss of $2.9 billion.

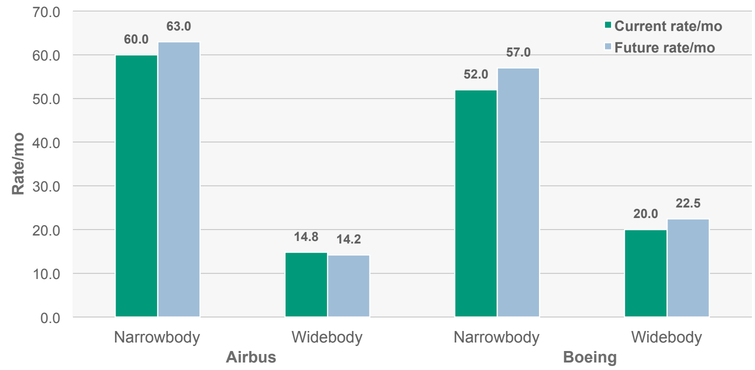
Boeing's assumptions involve the return to service of the aircraft in the fourth quarter of 2019 with the current post-grounding production rate of 42 a month until ramping up to the 57-a-month target in 2020. Many industry insiders remain sceptical of the return-to-service estimation while Boeing continues to work on the software and training, and it must also navigate the regulatory approval process. The production delay affects not only the airframer but also its 600 suppliers, some of which were producing at the 57-a-month rate. Therefore, they face the challenge to moderate and align production planning to the associated workforce.

On its return to service, the boost from the delivery backlog will add an estimated 5% in seat capacity annually to 2025 from 2020 amounting to similar levels as the expected traffic growth over the period, inviting the question of the potential of excess capacity in the market.

The 747 and 767, with a comparatively very modest backlog of orders principally for freighter variants, continue at relatively low levels of production. Boeing expects the 787, which is the fastest widebody aircraft to reach the 500th delivery mark, to increase its production rate to 14 a month by the end of the decade. The 777 production rates are tapering-off, while the 777X, which is still in development, had planned to ramp up production to meet its 434 orders from 2020. However, Boeing recently announced the sliding of its 777-8 development programme expected to result in pushing deliveries for the 777-8 to, at earliest, 2023 after facing significant delays in the 777-9 flight test and certification and the additional resource focus required to tend to the 737 MAX issues. Boeing continues to engage with 777-8 customers to explore its ultra-long-range potential – Qantas's Project Sunrise aims to connect previously aspirational routes such as Sydney to New York. Airbus, having also accumulated a significant backlog, has been increasing its production rate, enabling it to achieve 800 deliveries in 2018 up from 718 in 2017. Most significantly contributing to this was the accelerated production of its best-selling aircraft, the A320. For the A350, the production rate is ramping up while, conversely, the A330 and A380 production rates have slowed.

With these production rates, the supply chains of Airbus and Boeing are stressed. Engine manufacturers have experienced issues with their new engines in recent years and have had difficulty keeping up with demand, forcing Airbus and Boeing not to meet their delivery date commitments. In addition, other supply chain issues ranging from seat shortages to late fuselage deliveries may slow the two manufacturers' planned production increases in the coming years.

Airbus and Boeing – current and planned future production rates



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database; Boeing; Airbus

Aircraft exit the fleet either to parking or teardown

Aircraft are departing the commercial aircraft fleet either by going into parking or teardown.

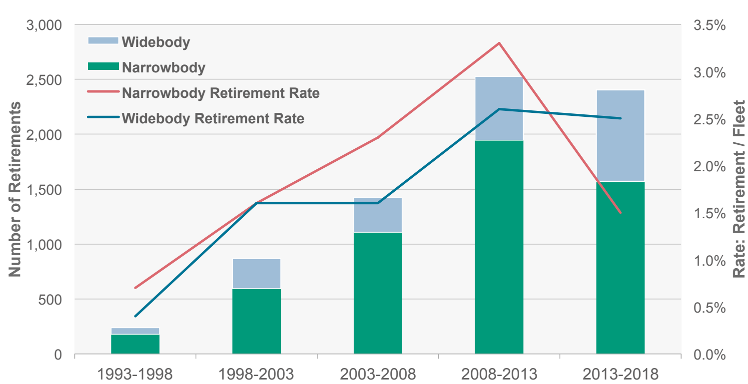
Retirements

The rate of retirements has grown over the decades as the global fleet has aged. While the average retirement rate in the mid-1990s was about 0.6%, retirements reached about 2.5% of the global fleet in the 2008-13 period. A combination of strong growth demand and a more modest fuel price environment have caused the dip over the past five years.

Fewer aircraft are parked in this high-demand market

Over the past 10 years, the parked fleet has increased by almost 1,500 units, equal to an average net

Annual number of aircraft retirements



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

increase of about 150 a year. The parked fleet of aircraft includes: aircraft in excess of the lessee's or operator's immediate requirements, but expected to return to service in the near-term; aircraft owned by lessors and undergoing routine transitioning between operators; aircraft that are uneconomic to operate in the current environment (because of suppressed demand, in which case airlines undertake capacity rationalisation, or because of high fuel price), but may return to service in the medium term; and aircraft that are highly unlikely to return to service, and should effectively be considered retired.

Evaluating the age demographics of the parked fleet can be informative to understanding market dynamics. The number of parked aircraft less than 15 years old has declined to the levels not seen since before 2015, despite the substantially larger fleet. Today, more than half of the parked fleet is older than 20 years of age. The proportion of the fleet that is parked of course varies considerably by aircraft model.

Commercial aircraft leasing industry

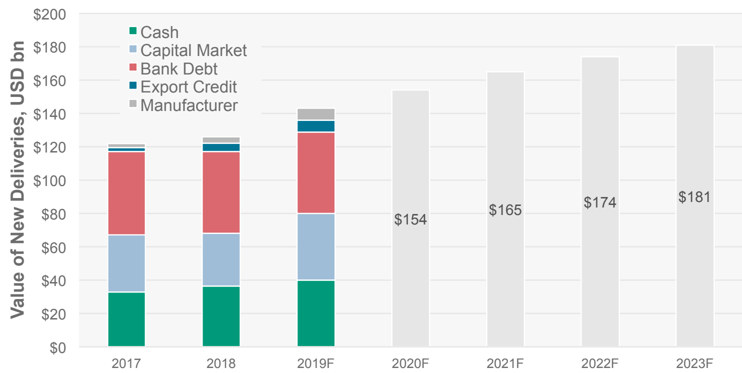
The commercial air transport fleet is valued at more than $800 billion, with the majority of value being in the new/near-new segment of the market at less than five years of age.

In recent years, the volume of new deliveries has increased to levels requiring about $120 billion of financing. A spread of capital sources provides the financing; in recent years, cash (equity) has accounted for about one-quarter of the new delivery funding coming from both airlines and aircraft operating lessors, at about a 60% and 40% split, respectively. Debt financing also plays a very important role in the sector, and a number of products are generally available to airlines and lessors, including commercial bank debt, capital markets products (enhanced equipment trust certificates for airlines, secured bonds, unsecured bonds and asset-backed securitisations for lessors), export credit agency-supported debt (although this has been less available in recent years) and manufacturer financing.

In terms of lessors' funding sources for new deliveries, the largest share currently comes from bank debt (34%), closely followed by capital markets (30%), while sourcing from their own cash (inclusive of both airlines and lessors) constitutes 26%, according to Boeing's Current Aircraft Finance Market Outlook 2019.

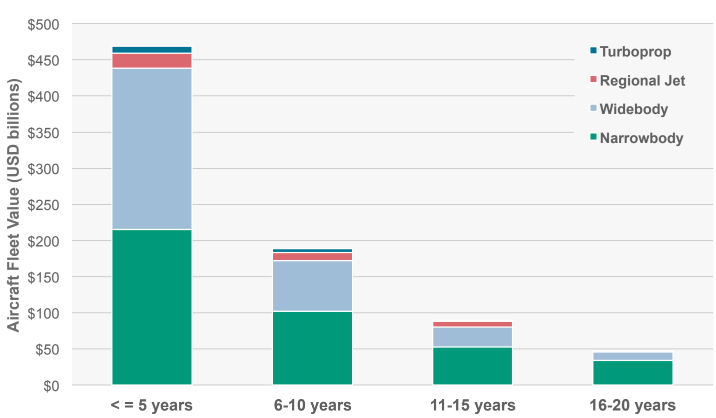
Aircraft manufacturers are expected to increase production volumes in the coming years, which would significantly increase the need for financing new aircraft deliveries to the level of $181 billion by 2023.

New delivery financing requirements and sources, 2017-2023F



Source: Boeing Capital Corporation, Current Aircraft Finance Market Outlook 2019

2019 worldwide commercial aircraft fleet value by aircraft age



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Aircraft leasing industry plays vital role and offers benefits to lessors and lessees

The aircraft leasing industry has seen seemingly strong demand in recent years, with interest driven by both sides – airline lessees and investors.

In an aircraft-operating lease, the airline leases the lessor's aircraft asset for a defined period of time, generally much shorter than the asset's useful life. The lessee is obligated to hold suitable insurance and return it to the lessor at the end of the lease in a pre-agreed maintenance condition. The lessor principally makes its profit through the cash flows generated from the value of the asset. The lessor holds the right to repossess the aircraft in the event of lessee default with the lessee liable for damages, including unpaid rent and other expenses or losses of income that may be incurred in connection with the unexpired portion of the lease.

While for an operating lease the asset is returned to the lessor at the end of the contract, under a financial lease, the lessee typically takes ownership of the asset at the expiration of the lease. Rates are higher for operating leases where the lessor assumes all the asset value risk, unlike a financing lease, where the residual value risk is lower for the lessor.

For lessees...

For lessees, an operating lease not only offers alternative financing to purchasing but also a spread of other attractions. Aside from freeing up cash, it frees up the time and expertise-heavy burden of asset acquisition and disposal. It allows an airline to try out a new route, a new aircraft type or a change in capacity without the commitment of ownership. It allows dynamic management of a fleet to maintain the airline's preferred demographics whether it be age or manufacturer or type. It also allows an airline to take advantage of lessors' superior credit, bulk purchasing power and delivery slots.

On the other hand, leasing may be a more expensive financing option than purchasing in real net present value terms and removes the tax advantages of asset ownership. Further, with changing accounting standards, lessees will have the liability of monthly rent payments on the balance sheet in the coming years.

In Europe and the Asia-Pacific regions, there is a high concentration of LCCs, and less developed capital markets, resulting in many airlines leasing aircraft, while in North America, the deep access to capital markets is such that owning aircraft can be advantageous, particularly for the large, highly profitable carriers with healthy balance sheets.

For lessors...

The attractive returns that some of the leading lessors have generated have attracted newcomers to the market. Compared with some other asset classes, aircraft leasing has historically exhibited relatively stable performance and mild volatility. Its low correlation with global indices has made it appealing for portfolio diversification, decreasing exposure to fluctuations in the global economy. Investors have been attracted to aircraft as a hard mobile asset that exhibits sound residual values and that has a global marketplace. The long-term growth forecasts of aircraft demand support the continued and increasing need for lessors as a source of financing.

For lessors, a fundamental risk is related to the potential default of the lessee. The lessor is also relying on the lessee to maintain the aircraft correctly and return it in the agreed maintenance condition to ensure its smooth remarketability. To attempt to mitigate the maintenance concern, lessors can collect maintenance reserves. Maintenance reserves are funds paid regularly by the lessee that approximate the future maintenance expenses and are held in escrow. Other options include a security deposit or letter of credit at the start of the lease.

The lessor also has exposure to cyclicality; remarketing an aircraft in times of low demand and high supply can not only result in lower rental rates and less preferable terms for the lessor but also can take significant time where the asset is not generating any revenue. Ultimately, the lessor takes residual value risk when it is time to sell the aircraft.

Operating leasing market is hotly contested

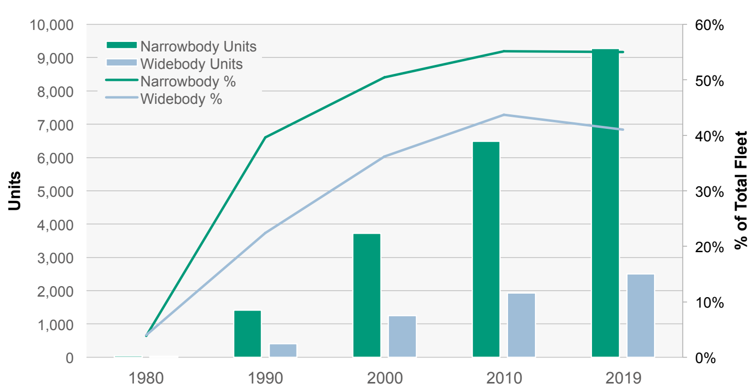
For operators and lessors, the benefits have clearly outweighed the challenges. Aircraft operating leasing has evolved over the decades from niche to mainstream. Today, aircraft leasing accounts for about 45% of the commercial aircraft fleet and is likely to reach half in the next few years. Lessors have a notably higher presence on the narrowbody market compared with the widebody but across both fleet types, including expected sale and leasebacks at delivery, lessors are likely to finance some 40% to 45% of the current order backlog.

The lessor business model is essentially structured on leverage and low cost of financing. The boom in the aircraft leasing industry has been facilitated by a significant level of both debt and equity investment in the space. With the appeal of the demonstrated steady returns, more investors are participating to fuel this highly capital-intensive market.

Despite consolidation, the market has become increasingly competitive in recent years, with a plethora of lessors in the market. Despite the quantity, a few top lessors hold a large share of the market. In 2018, the top 10 largest aircraft lessors in the world collectively owned more than 5,200 aircraft worth about $185 billion. Many of these very large lessors have grown through acquisition as opposed to organic growth. The recent acquisition of CIT by Avolon moved it to the third position in terms of value. Subsequently, Orix acquired 30% of Avolon from HNA. Similarly, DAE Capital significantly boosted its size with its acquisition of AWAS to solidify its position as the ninth-largest lessor.

AerCap, the largest lessor by value, reached its scale with the acquisition of ILFC in 2014 and its associated orderbook. In 2018, it executed 436 aircraft transactions, of which 85 were

Changes in leased fleet as a proportion of total fleet over time



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

widebody aircraft. It reported a fleet utilisation rate of an enviable 98.9% and generated net income exceeding $1 billion.

AerCap and GECAS are leaders in the widebody leasing market, holding a combined total of more than 14% of the widebody leasing market while, combined, the top 10 lessors hold about 40% of this same market by value.

The increasing presence of Asian leasing companies is well noted – some of which have become among the biggest players globally through highly active acquisition.

Just a decade ago, there were no Chinese lessors on the top 10 list, which was populated with European and North American firms. However, in 2007, the China Banking Regulatory Commission relaxed regulations on aircraft leasing, after which, many of China's leading banks promptly started developing their capabilities and dedicated aircraft-leasing divisions. It is these lessors supported by the country's biggest banks that are among the leaders.

Not only has China captured a significant slice of the global market, but also DBS has estimated that Chinese lessors capture about 80% of the Chinese domestic leasing market.

In recent years, the intense competition in the space has been reflected in rising aircraft purchase prices in many sale and leaseback transactions without commensurate increases in rents. Forward placements of next-generation aircraft at lower rents or with lower credits than would have been anticipated at the time of the order have been observed. Fortunately for many lessors, the cost of financing has declined significantly, so the impact on net margins has been reduced in many instances.

Boeing's Current Aircraft Finance Market Outlook 2019 predicts continued steady performance with stable volume and sufficient liquidity in the aircraft financing market. It forecasts new investor participation, attracted by strong industry fundamentals resulting in competitive pricing for aircraft purchasing. Looking further ahead, many expect interest rates to rise and, should that occur, the impact on the aircraft leasing industry would be mixed.

An increase in interest rates would shift the relative demand toward less expensive used assets rather than younger more expensive ones. With respect to leasing, the sale and leaseback market is considered to be a spread financing business; as underlying lessor financing costs increase, so too should the lease rental rates, minimising any medium-term impact on this segment of the industry. In the new-order business, which frequently involves placing an order for future delivery and subsequently securing a lease contract and financing, there may be more impact in the short-term period should interest rates rise meaningfully.

Lessors subscribe to different pages of playbook

When composing and managing their aircraft portfolios, there are a number of key considerations for lessors, top among them being diversification: diversification of operators, their geographies, credit profiles and lease expiries; diversification of aircraft type, manufacturer and age, all to mitigate exposures to markets and economic conditions and to ensure the most liquid, remarketable fleet. Lessors source their aircraft not only from the manufacturer but also from other lessors as well as from airlines (through sale and leasebacks). They leverage their bargaining power across these sources and take advantage of supply and demand dynamics in both the primary and secondary markets.

The market may be segmented to the phase of the life of the assets: new/near-new; mid-life; and end-of-life (including part-out).

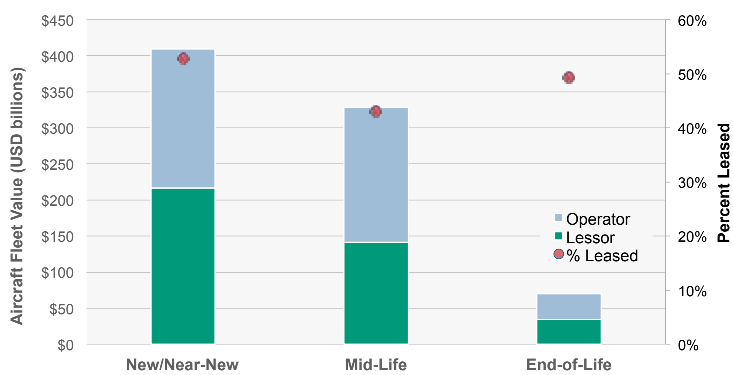
New/near-new leasing market holds most value

The new/near-new market, considered by Alton to be those less than five years old, is the largest market as measured by value, because of fleet demographics (newer aircraft are more populous than older aircraft), and aircraft value and depreciation characteristics (newer aircraft are more valuable than older aircraft). While the value of the new/near-new market is the largest, the lessor penetration is lower than in the mid-life and end-of-life markets given the prevalence of airlines, which purchase their own aircraft new.

Many of the largest global lessors are focused on acquiring the aircraft when new (via their own orderbook with the OEMs, or via sale and leasebacks with airlines) and, in fact, their activity in the mid-life market is simply because of ageing of the aircraft retained in their portfolios. Many of them are publicly listed, with investors showing a preference toward those companies with younger fleets, and those who demonstrate the ability to trade consistently some of the aircraft in their portfolio at gains over book value.

In addition to being viewed favourably by the markets, selling down portfolios of mid-life aircraft provides lessors with the opportunity to manage concentration exposures.

Fleet ownership split versus aircraft age



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Mid-life leasing market is the most populated

Alton considers the mid-life leasing segment as aircraft typically between five to 15 years old. For aircraft of this profile, a significant portion of a lessor's return is dependent on its ability to re-lease on attractive terms after expiration of the existing lease. Based on these definitions, the total mid-life aircraft segment is significant in size, at more than 12,000 aircraft valued at nearly $328 billion.

According to fleet statistics from CAPA, more than 55% of the aircraft fleet in the demographic as measured by value are leased – the highest penetration among any age segment.

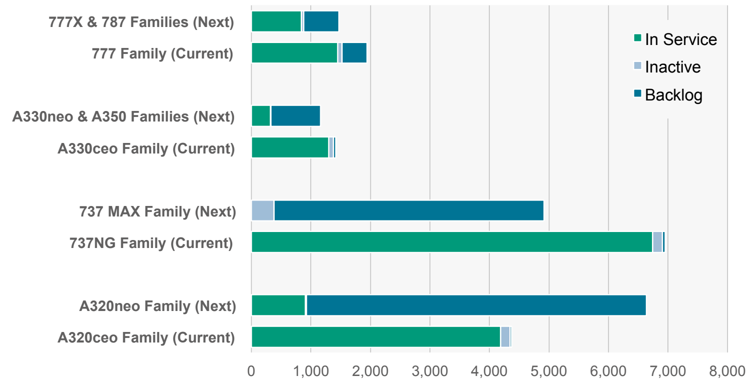
The mid-life fleet of leased aircraft is dominated by those from the A320 and 737NG narrowbody families, and the A330 and 777 widebody families. Collectively, these four families account for more than 70% of the total mid-life fleet of leased aircraft as measured by value. These families not only represent the largest part of the mid-life fleet, but also they are the core workhorses in global airline fleets.

In making fleet decisions, airlines consider total costs, including both operating costs and ownership costs. Generally, newer aircraft offer improved technologies that result in lower operating costs (lower fuel burn and maintenance costs), but have higher ownership costs. It is the ownership costs (values and lease rates) that adjust in the secondary market depending on aircraft supply and demand.

As the core of the market, the supply and demand of mid-life aircraft is largely dependent on the overall health of the industry, which has been favourable for a number of years, and remains so today. Demonstrative of this, many lessors have reported an increase in demand from airline lessees to extend their current leases, rather than return the aircraft at the end.

Another consideration in the mid-life leasing sector is the availability of replacement technology. The most populous mid-life aircraft families feature newer, more-advanced technology products and have recently started delivering to customers, or which will start delivering to customers in the next few years.

Current- and next-generation programme status



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

The accompanying chart details the fleets and order backlogs of the selected current- and next-generation narrowbody and widebody aircraft from Airbus and Boeing.

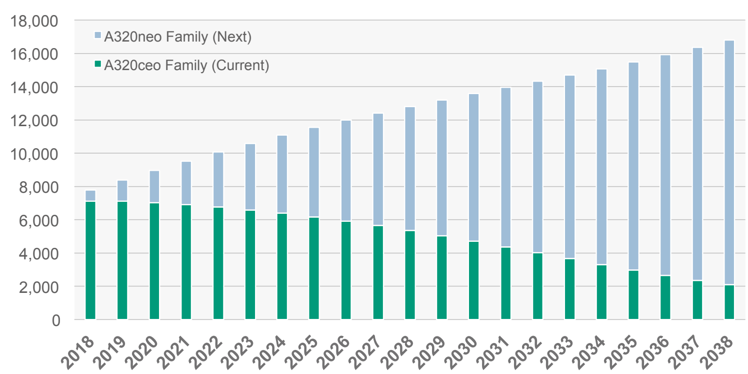
It is worth noting that with the exception of the 787 and A350, the most significant development in these next-generation aircraft programmes is re-engining. Although no commonality of parts will be enjoyed between current- and next-generation aircraft at the engine level, significant airframe component commonality exists between the generations, which is expected to provide some support to residual values.

Because of the size of the current-generation fleets, it will take a significant period of time before they are replaced. As an example, indicative fleet profiles for the A320 and A320neo show that the A320 will outnumber the A320neo until 2027.

Lessors participate in the mid-life segment, for a variety of reasons. The largest owners in this segment are detailed in the accompanying exhibit, and feature many of the largest global lessors.

As mentioned, many lessors' presence in the mid-life market is a result of their maturing but bought-new fleets. Correspondingly, robust demand exists in the market for acquiring mid-life aircraft from these lessors selling down their portfolios, driven by investors seeking higher yields. Few of these large lessors have value-oriented strategies that direct a significant portion of its investments into mid-life aircraft.

Indicative fleet profiles of current versus next-generation A320-family aircraft



Source: Alton Aviation Consultancy Fleet Forecast

Mergers offer leasing companies the attractive benefits of competitive advantage through scale and seem to enjoy simpler integration than in other industries. Merger and acquisition activity continues to be robust. In September 2018, Goshawk acquired Sky Leasing, which was backed by investment from ATL Partners and Canada's pension investment manager PSP. In October 2018, Carlyle Aviation Partners announced its planned acquisition of mid-life-focused lessor Apollo Aviation Group. In the mid- to end-of-life leasing market, lessor AerGen was backed by an investor consortium led by the transportation private equity firm Greenbriar, until the sale of its portfolio.

Another large participant in the sector is Castlelake, a private investment firm, which has invested capital from a series of general and aviation-specific funds into mid-life and end-of-life aircraft. Castlelake has invested more than $4.7 billion in aircraft assets and obligations, acquiring more than 470 aircraft, since inception.

Conversely, the continued influx of new entrants into the leasing market has meant the overall concentration of the market has been largely sustained despite these mergers.

However, it remains to be seen how new, inexperienced entrants may weather a downturn in the industry.

Other notable investments in the sector include Magnetar Capital, which acquired a $600 million portfolio from AerCap and a $240 million portfolio from Fly Leasing.

Various Deucalion funds, advised and managed by DVB Bank, with equity provided by a range of investors, have made significant investments in mid-life aircraft, including one fund with equity from KKR and DVB which acquired a 37-aircraft mid-life portfolio from AerCap in 2016.

In December 2017, AerCap announced another portfolio sale of 21 aircraft worth $800 million to Peregrine Aviation Company Limited, an investment entity established by NCB Capital, the brokerage arm of the National Commercial Bank, the largest bank in Saudi Arabia.

General comparison of leasing markets – newer versus older

Characteristic	Newer Aircraft	Older Aircraft
Investment Returns	Lower	Higher
Volatility of Investment Returns	Lower	Higher
Lease Rate Factors	Lower	Higher
Lessee Credit	Stronger	Weaker
Lease Durations	Longer	Shorter
Debt Loan-to-Value	Higher	Lower
Financing Costs	Lower	Higher
Capital Requirements	Higher	Lower
Lessor Technical Capability Requirements	Lower	Higher
Management Intensity	Lower	Higher

Source: Alton Aviation Consultancy

End-of-life leasing market attracts niche players which specialise in extracting most value out of ageing aircraft

The end-of-life leasing segment has some notable distinctions to the new-life leasing segment as summarised in the accompanying table above. From a financial perspective, yields and lease rate factors (defined as the monthly lease rental rate divided by the value of the aircraft) are often higher for older aircraft, providing investors with the potential to enjoy higher returns than those in the newer aircraft leasing segment, though the range of returns can be more volatile.

One reason for the difference in volatility of returns is the typical credit profile of lessees in each segment. Lessors are typically unwilling to place newer, more expensive aircraft with lower credit airlines but will lease their older, less valuable aircraft to those airlines in order to maximise cash flows and earn a yield premium. However, these airlines are more likely to default, and when such events occur the lessor's returns are impacted. This increased risk, though, is frequently addressed with supplemental security measures of security deposits, letters of credit and maintenance reserves.

While new aircraft are frequently leased for terms ranging from six to 12 years, lease terms for mid-life aircraft are frequently shorter – about four to eight years. As a result, remarketing is required more frequently and, consequently, the aircraft is subject to more downtime and transition costs as well as lease-rental resets. Given that investment returns are dependent on securing subsequent leases, extensive relationships with airlines across the globe are key for success.

Debt financing is generally less available (in terms of both fewer lenders and lower loan-to-value ratios) and is more expensive for mid-life aircraft compared with new/near-new aircraft, although aircraft with good leases attached can attract competitive terms.

Capital to invest in aircraft leasing and financing continues to remain ample, intensifying competition among lessors and pressuring lease rates, particularly in the sale and leaseback arena. At the same time, the abundant investment capital seeking aircraft assets has presented opportunities for many aircraft lessors to rebalance their portfolios through trading to pursue or maintain desired fleet demographics. Stocks of many publicly traded aircraft leasing companies have been under pressure in the past 18 months in this environment of hot competition that may moderate investment returns.

Aircraft transaction landscape

Transactions within the leasing market are triangulated by three main participant groups: manufacturers, airlines and lessors. The complex web of transactions among them over the duration of an aircraft's life begins in the primary market, being the sale of new aircraft directly from the manufacturer, and then spans the secondary market, being the sale of used aircraft among and between airlines and lessors. Finally, the conclusion of an aircraft's life takes place in the tertiary market where it is typically sold to a part-out company.

The high activity of lessors within the industry and their increasing role in financing for airlines have driven a marked rise in the volume of trading in the primary and secondary markets, particularly centered on sale and leasebacks, which involves the purchase of an aircraft by an airline directly from the manufacturer then its subsequent sale to and lease from a lessor.

While primary market sale and leasebacks of new aircraft have become a popular means for lessors to acquire new assets, supplementing their direct orders and effectively jumping the queue by circumventing the wait for slots from the manufacturer is highly contested among lessors.

On the other side of the transaction, savvy airlines can secure favourable lease terms while also enjoying the additional liquidity and, in some instances, a gain on sale where they managed to secure either favourable pricing from the OEM or competitive bidding from courting lessors, or both.

The majority of new aircraft sale and leasebacks have involved medium-sized narrowbody aircraft, primarily the A320 and the 737-800 models, encapsulating the most lessor-appealing features: high liquidity with a broad global customer base. This activity is transitioning to the A320neo and 737 MAX.

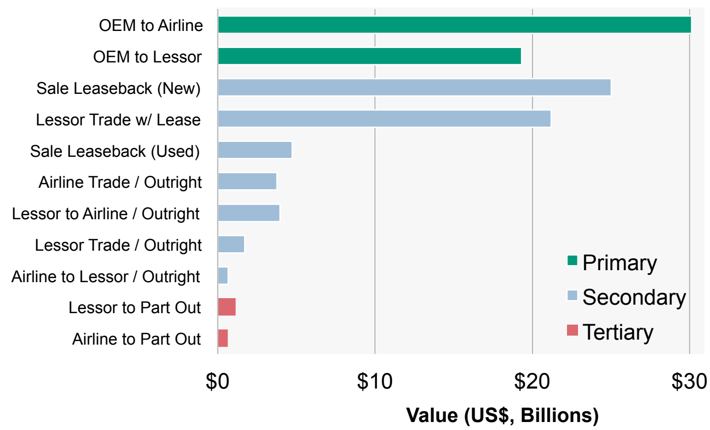
Given this trend of lessor intertrading to rebalance their portfolios, the typical secondary market transaction has evolved over recent years: single metal transactions are a rarity in favour of trades with a lease attached.

Not only are some of these trades significant in size, there have been many instances of sizeable trading gains.

In terms of the profile of the aircraft in these lease-encumbered transactions, 15% of the aircraft are near-new at one to three years, while cumulatively 61% are under 11 years.

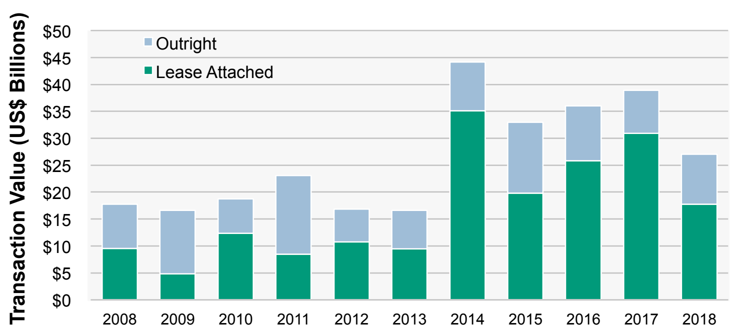
The part-out market has slowed down in recent years as high demand, favourable fuel price and delayed deliveries have postponed retirements. Correspondingly, the squeeze in inventory has pushed prices up in the spare parts market – the part-out value of variants with

Average annual transaction volumes, 2014-18



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Historical secondary market transactions



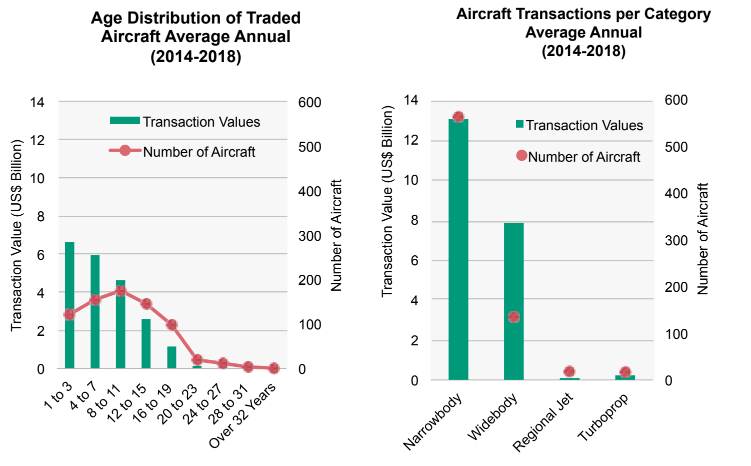
Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Noteworthy acquirers of lease-encumbered aircraft (non-M&A, 2014-18)

Acquiring Lessor	Number of Aircraft	Transaction Value (US$, B)	Average Transaction Value (US$,M)
Aircastle	152	$3.7	$24.3
Orix Aviation	142	$5.0	$35.6
BBAM	65	$3.0	$45.7
Macquarie AirFinance	60	$2.3	$38.7
Accipiter	58	$2.1	$36.5
Goshawk Aviation	56	$2.1	$36.7
Carlyle Aviation Group	56	$0.9	$16.1

Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

Characteristics of lease-encumbered transactions



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

high part commonality for in-demand aircraft. The largest volume of part-outs has taken place on small narrowbody aircraft as the market demand softens for these types (737-300/-400/-500, 737-600/-700, A318/A319). For widebodies, the drivers have been ageing retirement types (747-400, A340-300).

Where is the needle pointing?

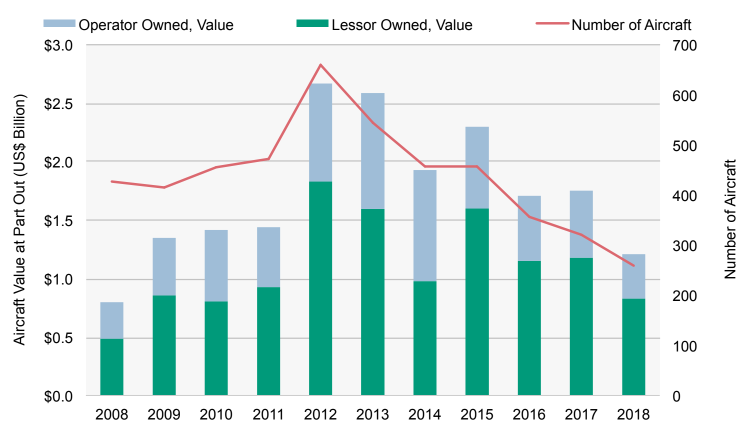
So, considering this backdrop of the commercial aviation industry, where do we stand and what do we face? A defensible view is of an industry that continues to prove its resilience; where airlines' business models continue to be tested such that the industry evolves and reforms, generally coming out healthier on the other side as demonstrated by the recent years of consolidation reflected in record load factors and healthy global airline profits.

On the one hand, some favourable conditions continue to provide a boost – such as moderate fuel prices, middle-class expansion, market deregulation and liberalisation, which have enabled record global traffic demand levels. On the other hand, a plethora of dampening factors headlined by US-China trade tensions and Brexit uncertainty are softening the global economic outlook and affecting passenger and freight markets to different degrees. While the manufacturers are poised to produce aircraft to meet the forecast traffic demand of the coming years, internal dynamics are challenging, with technology issues and teething problems of new aircraft and engine types as well as delayed retirements, production, supply chain and maintenance capacity are squeezed.

The competition, particularly in the sale and leaseback market, continues to be hotly contested pushing up asset prices and down lease rates. Among themselves, lessor aircraft trading is vibrant as they dynamically rebalance their portfolios to their desired demographic, resulting in a shift in the typical type of transaction; those in the secondary market are most represented by lease-encumbered trades. New entrants to the leasing market are attracted by historically strong profits demonstrated by the market leaders, though some inexperienced newcomers may be tested in a downturn.

Nonetheless, over the long term, it is undeniable that lessors will continue to be an extremely important source of finance for airlines.

Aircraft part-out events (2008-18)



Source: Alton Aviation Consultancy analysis; CAPA Fleet Database

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The sum is greater

How GECAS unlocks the value of the world's largest commercial aircraft fleet.

In 1980, aircraft leasing accounted for just 2% of the world's commercial aircraft. Today, that portion of the global fleet encompasses more than 40%, and continues rising.

From its perch in the Atlantic at the western most edge of Europe, Ireland is home to 14 of the 15 top global aircraft leasing companies. From the sector's early days and the founding by Tony Ryan of Guinness Peat Aviation (GPA) in 1975, Ireland has grown to become the world leader in the industry.

With Irish-based lessors owning more than 60% of the world's leased aircraft, it is estimated that an Irish-leased aircraft takes off from a runway around the world every two seconds.

GECAS – the aviation finance arm of General Electric (GE) – issued its first aircraft lease on three Boeing MD90 aircraft in 1967 and expanded its position with GE's acquisition of a large number of GPA assets in 1993. Crucially, in addition to acquiring the assets, the company also brought GPA's expertise on board with a contingent of aviation professionals and was able to deliver seamless stability to the market while it continued to develop and grow in the decades that followed.

Now, with a fleet of more than 1,850 aircraft in service and on order (about 1,500 fixed wing and about 350 rotary), GECAS has evolved into the world's leading aircraft lessor, expanding an operation initially based in Connecticut in the United States and Shannon, Ireland, to a company with over 20 offices, meeting the needs of more than 250 customers in 75 countries around the world.

GECAS provides an ever-expanding array of services with financing solutions on commercial passenger aircraft to air cargo freighters, aircraft engines and materials. GECAS's offerings are complemented by the expertise of the GECAS technical team in the quest to move aircraft around the world in a smooth and efficient manner via a best-in-class, connected service to the world's leading airlines.

The company began life when aircraft leasing was an almost unknown concept to the great majority of the world's airlines. Since the very early days, but more and more as the market has matured, GECAS has recognised that the core proposition of financing and delivering great aircraft is not enough. This willingness to explore new business opportunities and financing models that complement the core business has characterised GECAS throughout the past half-century. This continued innovation and development has seen the company emerge to become the world's only full lifecycle provider in the aviation finance space.

The depth of the GECAS experience helped the company to develop the range of leading-edge support services that exist today. Within GECAS, understanding of the needs of the customers' businesses is aligned with a rigorous focus on anticipating what is coming next, bringing the service innovations that have consistently simplified the process for customers.

As well as its best-in-class service in the core proposition of aircraft leasing, this ethos has led to the development of strong supporting business units in the form of GECAS's engines, cargo, materials and serviced assets platforms – each element in turn supported by the unique in-house expertise of the GECAS technical team and each answering a need driven by the practicalities for the world's airlines to maintain every aircraft operating at optimum capacity. This evolution of service has kept GECAS squarely in its position as the leading player in this singularly specialised global sector.

Thriving in the engine room

Aircraft leasing demand is generally a function of global aircraft capacity and passenger growth, with each factor playing a part in engine leasing. However, as engines are also leased to supply demand for spares, their leasing is similarly affected by other issues such as maintenance cycles and the ratio of spare-to-frontline engines that an individual airline judges conducive to optimum performance. These additional factors make the business of engine leasing less predictable, requiring more flexible management of the portfolio.

The scale of GECAS's aircraft fleet is one of the reasons the company leads in engine leasing. The world's largest aircraft lessor by fleet size, GECAS also offers access to the largest global engine portfolio with more than 700 owned and serviced engines.

Tom Slattery, executive vice-president of GECAS Engines, attributes the company's expertise in this regard to its decades of experience in the business. "We are able to cross-pollinate the expertise from our 50-plus years in aircraft leasing into our 20 years of engine leasing, with the attendant buying power that our scale allows," he says.

"There are many skills and relationships common to aircraft and engine leasing," adds Slattery, "In several areas of our business, our people work across both aircraft and engine deals. We estimate that there's about a 75% overlap in GECAS's aircraft and engine leasing customers. Our ability to leverage strong, internal legal and technical teams for our customers is a substantial benefit to GECAS Engines' leasing efforts.

"As nearly 80% of the value of an older aircraft is in the engines, having deep technical competence and understanding of the associated economics is essential in this sector of the market, and this is where we excel," says Slattery.

"We have strong customer account management processes, particularly in key areas such as credit analysis, airline and country exposure limits. And when airlines run into difficulties, the value of a dual portfolio shines again. Providing access to our spare engine pool can facilitate and speed up the closing of onward leasing deals. The overlap also helps drive deal flow."

Similar to aircraft, transfers of engines on lease via lease novations have become increasingly common. GECAS has specialised expertise derived from aircraft lease novations over the years. This allows the lessor to leverage a proficiency which ensures that engine lease novations occur efficiently and with the minimum amount of disruption to our airline customers.

"As nearly 80% of the value of an older aircraft is in the engines, having deep technical competence and understanding of the associated economics is essential in this sector of the market, and this is where we excel."

Tom Slattery, executive vice-president, GECAS

Other areas of overlap between aircraft and engine leasing include legal, tax and insurance knowledge. However, some elements unique to the engines market require even greater specialised skills. Technical knowledge is one such element, since even a popular in-demand engine type's value can fluctuate widely depending on the unique modifications and repairs applied throughout its life span.

Risk management is another area of divergence, where airline credit risk might be a common starting point for both aircraft and engine. Yet engine lessors assume a wider set of risk qualifications because the assets are more mobile, require less reconfiguration and can access a short-term rental market which is far deeper than that of aircraft leasing.

The modified risk profile associated with the asset mobility relies on accurate records and complete documentation. GECAS manages this process via its bespoke AirVault Asset Transfer System, a state-of-the-art digital records system developed by GE Aviation Digital Solutions with strong GECAS cooperation. AirVault is a prime example of how GECAS's deep investment in leading-edge technology expertise is brought to bear for the benefit of each element of the GECAS service.

Moving cargo in the digital age

GECAS's commitment to the air freighter industry, with more than 25 years' experience, is another example of interconnected synergies across the company. With more than 100 cargo aircraft either owned, serviced or on order, GECAS Cargo has wide portfolio expertise across the key categories of freighter aircraft including narrow- and widebody aircraft, both factory new and converted.

Since 2003, GECAS has managed more than 65 passenger-to-freighter conversions to extend the useful life of aircraft and meet the burgeoning transport demands of expanding online purchases.

Richard Greener, senior vice-president and manager of GECAS Cargo, sees a strong future pipeline for freighter aircraft. "This is driven by a combination of life-cycle replacement needs and the growth in e-commerce worldwide," says Greener. "Increased demand is particularly obvious in the drive to conduct more retail transactions online and the consequent increase in consumers' online buying habits. This, in turn, is driving demand for the transportation of goods by air.

"Industry estimates put the increased demand at over 120 new cargo aircraft required annually over the next decade, and we will be deploying our significant cargo experience to meet the anticipated needs of freight forwarders and others in the air transport segment of the market. It's another example of GECAS's ability to leverage expertise from across the company – to analyse trends across the whole market, anticipate customer demand ahead of time and be ready to deliver."

Living in a material world

Probably the most obvious extension of an aircraft lessor's expertise is the ability to provide aircraft end-of-life solutions. The GECAS Materials platform brings more than 40 years of tear-down and part-out expertise to the lessor. Providing dismantlements, spares distribution and harvesting of engine components to maximise the residual value of assets, the team enables GECAS to deliver the highest quality spare parts for all commercial aircraft and engine manufacturers. Backed by a vast inventory, stocked in strategic locations around the globe, GECAS Materials can move quickly to match engine and replacement part requirements for customers.

"We actively purchase whole aircraft or inventories for a wide variety of platforms," says Sharon Green, chief executive officer of GECAS Materials. "This helps our customers to reduce operating costs while increasing their efficiency with parts leasing, initial provisioning, inventory planning and end-of-fleet solutions. We have a global team of experts in place working across all time zones and regions who can draw on GECAS Materials' inventory and deploy the right equipment immediately, ensuring minimal cost and schedule disruption."

She adds: "For over 20 years, GECAS's dismantlement site has provided expert services to our own business as well as a host of other aircraft owners. We adhere to a rigorous process which ensures that all parts are removed, identified, received, packaged and shipped from the same location. This is an essential, best-in-class approach that minimises risk of loss, damage or cross contamination.

"In common with all other areas of our business, we position ourselves as a partner to our customers. From inventory optimisation to guaranteed pricing and delivery, the quality and depth of our products ensures a strong supply chain, whether on an ad-hoc basis or for a large provisioning. Our clear commitment to in-house technology expertise allows us to efficiently manage the vast GECAS Materials inventory with a digital 'work card' system in place to track each part's journey and deployment."

Broadening asset horizons

Since the mid-1990s, GECAS has been offering the global aviation investor community opportunities to purchase individual and aircraft portfolios, with or without existing leases attached. Aircraft are an attractive alternate investment asset class but require deep sectoral expertise in keeping them on lease. GECAS structures transactions to provide such lease servicing to institutional investors.

Over the past 25 years, GECAS has developed a successful model for servicing third-party aircraft – servicing more than 550 aircraft across 14 multi-owner platforms with portfolio values in excess of $14 billion.

"We see asset trading as integral to our offering," says Greg Conlon, president and chief executive officer Milestone Aviation and executive vice-president GECAS Aircraft Trading, "because it serves to reduce concentrations to enable growth. Portfolio management is key to facilitating fleet rejuvenation, with two of every three sales taking place for the purposes of portfolio management.

We've developed industry-leading transaction platforms which have helped us to grow the franchise, leading to innovative service vehicles which have been recognised for excellence across the industry."

Examples include the Labrador deal in 2016, the first aircraft asset-backed security (ABS) portfolio sold into South Korea; STARR 2018-1, the first aircraft portfolio purchase vehicle structure to include a dedicated asset manager for equity investors (and *Airfinance Journal*'s ABS Deal of the Year in 2018); and STARR 2019-1, the sale of a portfolio of 20 in-production Boeing and Airbus narrowbodies to START II Ltd, which financed its acquisition through a 144A Tradeable E-Note and a follow-on from STARR I.

"We will continue to be an innovator in this important sector of the market," explains Conlon.

Tech excellence

Threaded through all parts of the GECAS range of services is the support from its own technical team, dedicated to developing technology such as the AirVault Asset Transfer System – digitally charting every step in the journey, creating a comprehensive record of each action, leaving nothing to chance for the customer while affording quality assurance and back up.

This investment in technical expertise is testament to GECAS's innovative spirit. By leveraging a deep sectoral knowledge, the lessor brings bespoke solutions to an array of airline operators with best-in-class systems which span the breadth of GECAS's core leasing product, cargo, materials, engines and serviced assets offerings.

Greater than the parts

"Over the next 20 years, growth in the aviation finance sector is set to continue with some estimating there will be between five and six trillion dollars'-worth of aircraft sales over the period," says Alec Burger, GECAS's chief executive officer.

"While much of this will facilitate new-technology aircraft being brought in to refresh ageing fleets, a significant portion of this will come from the Far East, where the expanding middle class will have a compounding effect on demand for air travel. With an annual trend of 100 million people becoming new air travellers, overall passenger growth in Asia is momentous. Albeit from a relatively low base, there is also strong growth in Africa, where demand is expected to double over the next decade.

"Strong demand in mature western countries for replacement aircraft at this stage of the life cycle is also a factor. We're seeing that next generation quieter, more fuel-efficient jets are the preferred option for the airlines," adds Burger.

"From the beginning, GECAS has advanced through many changes and challenges in the airline business. In the same way that the airlines of 50 years ago could not have envisaged the innovations that would characterise air travel today – such as low-cost airlines, greater fuel efficiency, the ability to fly further and longer – it's unlikely that we can truly envisage today the innovations that will characterise the global airline industry of the future.

"Our suite of financing options from leasing through structured deals, capital markets, and the depth of our range of services in engines and materials, is unparalleled. The strength of our global footprint and local presence combined with the scale of our fleet leaves us well positioned for growth."

More recently, the acquisition of Milestone Aviation saw GECAS move into helicopter finance and leasing for the first time. Milestone offers operating lease financing to helicopter operators in 25 countries on six continents. Its current fleet of about 350 helicopters is used in the offshore oil and gas industries, search and rescue, emergency medical services, police surveillance, mining and other utility missions. The division has a forward orderbook of medium and heavy helicopter models from AgustaWestland, Airbus and Sikorsky available for lease to customers.

"This is another example of our outward, innovative focus," explains Burger, "We're always willing to look to new horizons to grow our business and assist our customers on their own growth path.

"The spirit of endeavour that began when the first aviators took to the skies lives on in an industry that is always reaching for the next milestone. GECAS will continue to innovate and match and exceed expectations throughout."

Bird's-eye view of treasury

Demands on corporate treasury are changing. Is your chief financial officer equipped to keep up?

The rapid pace of growth across industries, including aviation, and related regulation have left too many companies lagging behind on carrying out even the most fundamental treasury functions, such as cash management, banking, debt and funding, investments, and risk management for currencies and interest rates. Such shortcomings are only amplified as companies expand into new markets, often lacking an operating model and infrastructure to support their activities, portfolios and risks.

"Be it an operational task or strategic, treasury is a vital function not only of the finance department, but also of the company as a whole," explains Joey Johnsen, Zeevo chief executive officer. "And, while some companies carry out treasury tasks within their accounting or financial planning and analysis teams, other companies have a fully implemented treasury team operation, with an established treasurer role."

As companies evolve so should their treasury function. Treasury is primarily concerned with liquidity and ensuring enough cash, whether in the bank or open credit lines/facilities, is readily available for the organisation to survive – cash is king – it is the lifeline of any organisation, and treasury keeps the heart pumping.

In aviation, funding and liquidity are at the centre of this highly capital-intensive business, as diversity of products, lenders and pockets of capital across the globe are paramount to ensuring obligations can be met.

Any rapidly growing business understands the importance of funding its model, and leadership wants to know how much cash is needed to ensure continued growth. This is why cash forecasting, both long and short term, is so vital. Cash forecasting identifies funding needs, and when they arise. It allows the business to anticipate this need and start now to identify the optimum funding solution and structure it – whether it is equity or debt based, or a combination of both.

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>
> **Joey Johnsen**, chief executive officer, Zeevo Group

As the business begins to enter into contracts, potential contingent liabilities may arise, raising concerns around what it means to the business and, specifically, its debt agreements and balance sheet structure.

Cash flow always remains critical, and, in particular, when the business starts to look for new markets; thus, beginning to deal with foreign exchange risks and other macro environment issues. Moreover, the potential regulatory, taxation and insurance requirements may further complicate matters.

Figure 1: A bird's-eye view of treasury

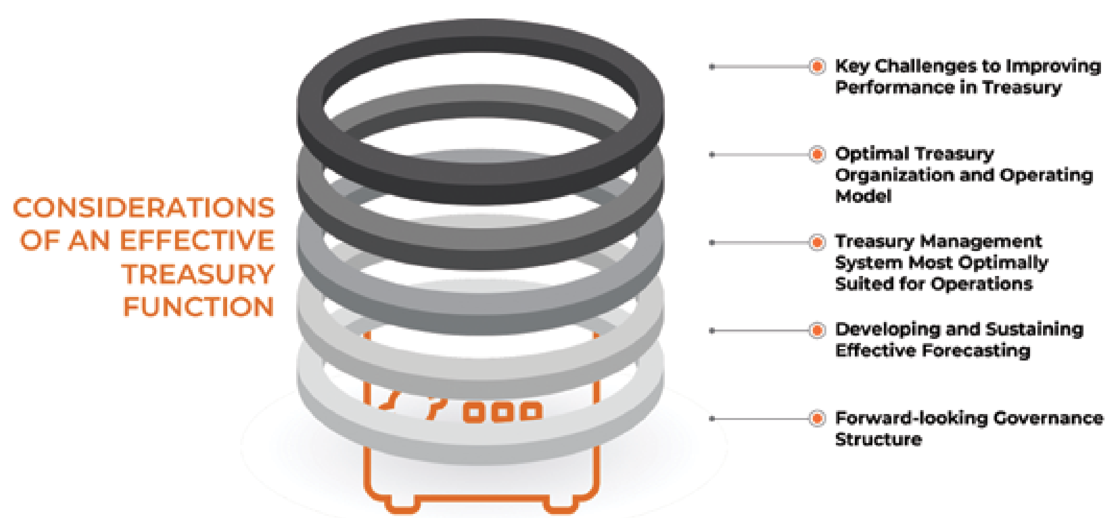


Figure 2: 30K Foot view of treasury

Once the business reaches the maturity stage, where it is generating steady profitability and has excess cash on hand, chief financial officers (CFOs) grapple with challenges such as: how to manage excess cash; what investments to consider; and whether the business has ready access to the cash, or is it in countries whereas the cash is restricted or has a cost to repatriate.

Johnsen underscores that "ultimately, businesses want to be able either to reinvest in their business or do M&A. Alternatively, they also want to return cash to shareholders, repay debt and effectively manage their capital structure, knowing what the optimum cash balance needs to be."

She adds: "In aviation, treasury comes in different shapes and sizes, so to speak. Sometimes receivables management and cash application might be part of the treasury function at one lessor; while at other lessors, treasury is mixed with corporate finance and capital markets."

Nonetheless, no matter where treasury fits in within a lessor's organisation, the connectivity between functions is increasingly important. Forecasting should be linked to capital markets, treasury, contracts teams, as well as to investor relations.

Johnsen argues that "a treasury team in our industry needs to stay very close to all of the business lines to stay on the front foot – aircraft deliveries move around, trading activity, debt raising timelines, and more."

There are a number of other considerations that face treasury teams throughout the industry, including the need to manage bank accounts and banking relationships successfully; the potential of dealing with rating agencies; the need to respond to venture capitalists and investors, both on the debt and equity sides; as well as the importance of executing transactions – all within a controlled environment.

From a 30,000-foot view – this is treasury.

Key challenges to improving treasury performance

The primary challenge to improving performance in treasury activities is the need to ensure the organisation, as a whole, perceives the strategic nature and value of an effective treasury function to its core operations. As an organisation grows, the treasury function may not have the necessary skills or experience to meet the increasing demands. Therefore, in some cases, it is necessary for the organisation to recruit a treasurer from outside in order to develop and scale the treasury function to be a key partner in enhancing performance.

Other challenges are related to an increase in risks related to liquidity, foreign exchange and funding. To manage these challenges, it is vital to employ technology to generate accurate and timely data. Managing these challenges should not be manual or labour intensive. Therefore, it behoves the organisation to invest in proper technology solutions to mitigate risk, as well as improve efficiencies within treasury activities.

"Managing your bank and financing fees is a challenging and critical part of the treasury function, and very much so in aircraft leasing. Relationship management is critical, as ensuring your banking partners receive an equal share of the wallet for their balance sheet and funding commitments is paramount to ensuring a healthy relationship. In addition, relationships with the credit rating agencies are equally paramount in managing your organisation's credit rating and ultimately cost of borrowing," adds Johnsen.

Optimal treasury organisation and operating model

The strategic importance of treasury has increased steadily over the years and has had an impact on treasury departments' structure and operations, with the increasing complexity of business strategies and the accelerating pace of change.

"Finding the right response to the right questions on the CFO's agenda can make the difference between a thriving company with ample liquidity and an organisation struggling with liquidity and credit downgrades," explains Paul W McDowell, a member of Zeevo's advisory board and vice-president and treasurer of GoDaddy.

Let's examine some of these key questions:

How do we instil a scalable and clearly defined treasury organisation and target-operating model (TOM)?

Companies have come under increased pressure from shareholders and regulators to increase transparency and improve financial performance. These expectations are leading to a significant change to the treasury function as activities are increasingly being centralised. Many organisations have just begun designing future target operating models for their treasury organisation.

Many large, global and multinational organisations have implemented shared service centres (SSCs) since the mid-1980s. Some organisations in the mid-market are still evaluating the options and have not yet started the journey, realising their internal implementations are in need of an overhaul. Even the more mature and efficient SSCs continue to face questions such as: what should we look to outsource next? Do we need to move to a global SSC in a low-cost, offshore location such as India? Is it feasible or should we consider moving to a virtual SSC environment? Should we now add new functional areas or acquired companies to the shared service centre(s)? And, specifically, should we look to move certain treasury activities to our SSC?

McDowell elaborates that "the journey is always easier if you have sorted out the fundamentals of setting up and running a well-oiled SSC".

To evaluate your current SSC setup, organisations need to ask questions such as: do we have an appropriate technology configuration? Are we utilising best-in-class solutions and applying leading practices? Have we implemented a continuous improvement, service-oriented culture? Is our internal control environment strong and can it support the new reporting?

Johnsen explains that over many years of engagements with clients across industries, "members of the Zeevo team have collectively amassed a vast knowledge trove and a compendium of leading practices and proven approaches", which have been coalesced into the company's treasury TOM. The underlying foundation for the TOM is its technology architecture, as depicted in figure 2.

Technology is always changing, but as much as things change, the central technology within treasury is the calculation and processing power of the treasury management system (TMS). TMS software has been at the forefront of driving the automation of treasury functions, straight-through processing and integration with other systems to the harmonisation of enterprise technology.

Treasury management system most optimally suited for operations

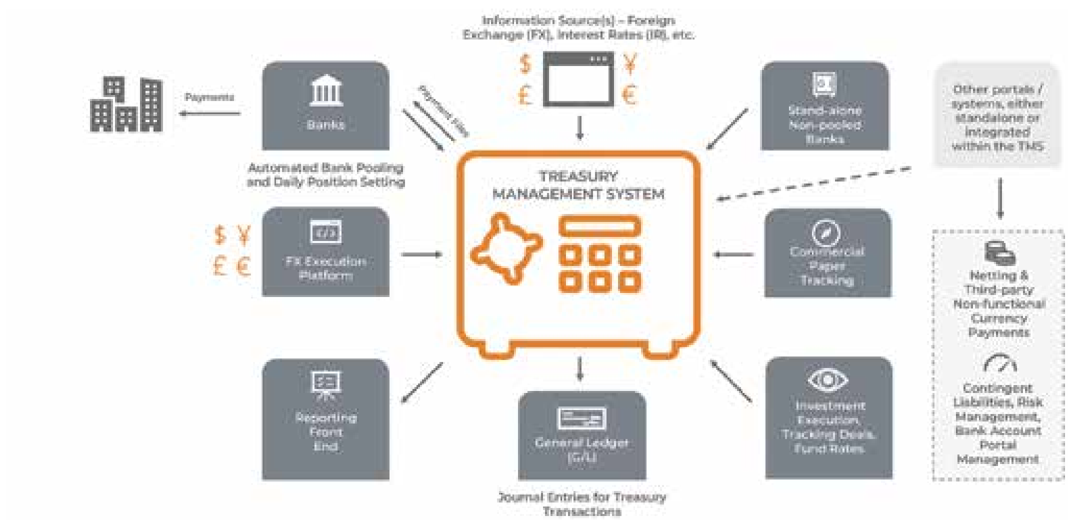
A true TMS provides extended functionality enabling an organisation to centralise or decentralise treasury operations, and manage its banking footprint, liquidity, investments, funding and debt instruments, and derivatives – all within the company's organisational structure, as noted in figure 4.

Furthermore, by automating the majority of treasury management processes, an organisation can effectively eliminate the need for spreadsheets, freeing teams up to focus on adding value elsewhere.

TMS should have bank and trading platform connectivity, support all transactions in global currencies and across an extensive range of financial instruments. The system should provide real-time valuation on all positions, while interfacing with a wide variety of external and internal systems. Optimising cash balances and positions across departments and subsidiaries is a breeze

Figure 3: Treasury operating model

Figure 4: Treasury system architecture design



with a properly implemented TMS supported by robust policies, procedures and people.

Current technology trends include:

- new and disruptive technologies introduced by financial services technology companies (FinTechs) are changing the way customers and businesses interact;
- treasury systems are becoming cloud-based, either as a pure Software as a Service application or as a private cloud on dedicated client databases. Outsourcing IT infrastructure and security to dedicated vendors is cheaper and more efficient than installing systems in-house; and
- blockchain, private or public, has the potential to allow for straight-through settlement, as well as the introduction of new payment considerations and currencies.

The treasury function should ascertain that business requirements are addressed in the scoping, planning, design and testing of new/enhanced functionality that is brought into production. Additionally, with such an array of considerations, which include business requirements, technical upgrade versus required functionality, timing and resource constraints, the establishment of a project management office is recommended.

McDowell stresses that "even with the best of platforms, relationship management is key. Relationships with banks, rating agencies and others can be supported by a well-designed, deployed and maintained TMS."

Let us explore some typical TMS user requirements:

Automated processing

TMS should enable automation of deals through electronic trading platforms, automate processing through electronic matching systems and automatically update all electronic payments on foot of deals traded.

The list of automated processing systems to which Salmon Treasurer, a TMS that our alliance partner, Salmon Software, provides, interfaces in terms of receiving and delivering data is vast.

- **electronic banking**: a key feature of an optimised TMS enables auto-upload of bank statements though interfaces to all major banking systems and multibank platforms such as SWIFT, Bottomline and Fundtech; and
- **electronic payments**: maintaining third-party settlement instructions in an appropriate manner and automating electronic payment processing to banking partners and multibank platforms is key to a well-implemented TMS.

We recommend that the security administrator function be segregated and performed by personnel independent of the cash management group. Irrespective, security administrators access logs should be independently reviewed every month to ascertain that all activities – ie, creation of a new user, change of approval authority, etc – are consistent with senior management's directives and approval.

Similarly, many companies have thousands of wire templates in existence. We often recommend a formal process should be established to review wire templates annually for inactivity. Inactive wire templates should be deleted, and remaining wire templates should be periodically reapproved for continued use.

- **e-Trading platforms**: executing an extensive range of over-the-counter trades using leading independent electronic trading platforms, such as 360T, FXall and Currenex. Uploading orders for execution and downloading executed orders automatically and seamlessly is key to a well-implemented TMS;

- **market rates**: optimise data coverage with up-to-the-second price feeds from top data solutions providers, such as Bloomberg and Thomson Reuters. A number of lessors do this manually, by interfacing TMS directly, rekeying rates manually is avoided and internal control is maintained systematically; and
- **accounting**: produce journal postings in respect of trading transactions, interest accruals valuations and exposures. If TMS is not integrated with general ledger, risk and unnecessary rework may hamper accounting processes.

Cash management and forecasting

In describing the changing role of a treasurer because of evolving regulation and advances in technologies that have altered the global financial landscape, Johnsen says: "Zeevo has been supporting our clients' treasury departments in dealing with the challenges of a rapidly changing international economy."

Depending on an organisation's TMS, the company may be enabled to maintain and monitor – in real time – its positions, accounts, cashbooks and cash-flow forecasts, and to gain greater control in the management of working capital, treasury positions and financial risk.

- **automated balance uploads**: balances from any number of bank accounts should be automatically uploaded for viewing individually or in groupings, such as currency, division, region, manufacturers' serial number (MSN) and business unit;
- **automated account reconciliation**: a number of TMSs enable transaction-level detail to be viewed instantly – or exported – using familiar, standardised reconciliation procedures;
- **cash pooling**: daily cash balances may be pooled physically, using zero balances and target balances, or notionally; and
- **cash forecasting**: a TMS should be configured to bring together a range of inputs to enable daily and longer-term forecasting, providing instant liquidity and cash-flow projections. Cash receipts from aircraft rentals, overhauls, security deposits, aircraft sales, bank financings, capital market issuances, tax refunds and other cash inflows are all key inputs to your day-over-day cash forecasts.

Effective forecasting is key to managing liquidity, and a good treasury management system relies to a great extent on access to timely, quality and accurate information in determining future positions.

TMS's forecasting functionality should ease the complex task of preparing treasury forecasts by providing instantly crucial information to help manage financial risk and determine the optimal financing and investment strategies to undertake.

Reporting should instantly collate data displaying it by currency, business unit, region, MSN, etc, while providing a full forecast update history.

- **what-if scenario simulations**: scenario planning is key to undertaking hypothetical modelling and simulating transactions based on desired outcomes; and
- **commodities panning and forecasting**: in addition to capturing commodity trades, TMS should feature commodities forecasting functionality that enables an organisation to forecast commodity requirements as they relate to the business.

Debt, derivatives and trade financing

A TMS should enable an organisation to execute, record, settle, monitor and value financial instruments across an extensive range of products, while ensuring the ability to monitor and assess risk, exposure and hedging information. Both on- and off-balance-sheet instruments should be catered for using your TMS's debt and derivatives functionality.

- **debt**: monitor and manage lending over multiple interest periods with debt instruments that include bullet loans, amortising loans, bonds (including zero coupon), floating rate notes, medium-term notes, guarantees, annuities, private placements and syndicated lending;
- **derivatives**: a TMS should have responsibility for accurate valuation, recording and posting of transactions and related activity – eg, gains and losses – for various derivative instruments. The TMS should also provide accurate and transparent reporting, especially to provide support for derivative valuations, exposure management and hedge accounting requirements. It should be able to accommodate instruments such as interest rate swaps, amortising swaps, uneven swaps, cross currency interest rate swaps, asset-backed swaps, liability swaps, currency asset swaps, swap options (swaptions), caps, collars and floors;
- **facilities**: manage credit facilities and monitor usage and availability in real-time. Multiple types of facilities should be catered for, including revolving credit lines, multicurrency drawdowns, group facilities, overdrafts, etc. Recording and reporting on fees management, including commitment fees, utilisation fees, arrangement fees, agency fees, management fees, custody fees, participation fees, and fronting fees and guarantee fees is key TMS functionality;
- **trade finance**: manage trade finance instruments, such as letters of credit, letters of comfort, letters of guarantee, letters of support, letters of tender and bid bonds;
- **liquidity planning**: the combination of forecasting cash flow and simulated datasets goes beyond simple working capital management to inform decisions on longer-term strategies;
- **equities**: buy and sell equities; review portfolios; manage coupons, coupon adjustments, redemption and dividends; and calculate profits and losses according to first in, first out (Fifo), last in, first out (Lifo) and weighted averages, as required;

- **e-Trading**: sophisticated TMSs support cross-asset trading, while interfacing with leading technologies from 360T, FX ALL, Currenex, Bloomberg and Thomson Reuters. Deals that are eTraded should be recorded automatically and immediately. For frequently performed deals, templates or wizards should be set up with pre-coded default details. Maturity dates and settlement amounts should be automatically calculated while default pay/receive instructions and journal entries should be automatically produced. A key feature to consider is whether the system will immediately, in real-time, notify a user if a deal is executed or settled on a non-trading day using a unique, in-built, perpetual algorithmic business calendar, which monitors all good business days and automatically adjusts settlements dates accordingly. This is likely a bit different from commercially available lease and asset management systems – eg, Leasepoint and CMS – which likely require a subscription to a holiday data subscription service;
- **money markets**: manage short-term money market activity directly with counterparties by phone or on eTrading platforms using all variations of short-term instruments, including short-term fixed deposits, money market funds, government treasury bills, discounted and interest-bearing commercial paper. The money market functionality of a TMS should facilitate a comprehensive set of rollover activity, including one-to-one, one-to-many and many-to-many rollovers. Off-balance-sheet instruments – eg, the forward rate agreement – should also be accommodated by TMS; and
- **foreign exchange (FX)**: many aviation companies are largely US dollar-based and FX needs may only arise in the area of selling, general, and administrative (SG&A) expenses. Hedge exposure with a comprehensive set of foreign exchange management functionality. These modules are complemented with real-time links to external rates feeds and eTrading platforms. TMS's FX functionality should cover a range of instruments that includes spots, forward contracts, even swaps, uneven swaps, non-deliverable forwards, contract rolling, call options, put options, collars and caps. It should also facilitate partial contract usage, contract rollovers, contract closing and contract net settlement.

In-house banking

TMSs can greatly facilitate the efficient movement of cash and non-cash items to and from entities and among entities.

With highly automated processing capabilities, TMS should enable an organisation to collect and collate zero balance accounts and apply them to intercompany positions in real-time, while also aggregating liquidity and maintaining individual and global currency positions. TMS should provide the data to inform an organisation's risk strategies and the processing power to generate greater efficiencies through optimised cash flow and FX management.

- **in-house banking, intercompany netting and intercompany position keeping**: TMS should streamline the key task of invoicing between departments and subsidiaries with: automated inter-company invoicing from multiple invoicing and ERP systems; same currency and foreign currency netting; and scheduled and automated net settlements. There are commercially available systems which enable fully automated net settlement through multiple accounts with invoice acceptance and approval processing and an in-built process for resolving disputed invoices; and
- **automated real-time interest calculations**: intercompany statements and intercompany interest data should immediately be available while relevant parties should be automatically notified of intercompany statement availability.

Reporting

Increased scrutiny of businesses both internally and externally has highlighted the role of a treasurer as communicator to a diverse stakeholder base that may include senior management, employees, shareholders, investors, regulators, auditors, banks and business partners.

Providing timely and insightful information to senior management on a periodic basis is paramount to an active risk monitoring and oversight process. Specifically, formal management reporting of FX and IR risk activities should occur on a monthly basis to establish that senior management is aware of net exposures, hedge positions and analytical analysis in the context.

Formal monthly reviews may be appropriate to establish that senior management is aware of hedge positions in the context of current market trends and changing/developing exposures.

Reporting to senior management should additionally include the following (in a timely manner):

- changes and updates in risk/exposure estimates and forecasts;
- commentary on derivatives activity (ie, a summary of the most recent risk management activities, including new hedges transacted and old hedges that have matured or terminated);
- open positions of derivatives by type showing critical terms and exposures hedged (including valuation, position balances and market exposures by product type);
- credit exposures for all counterparties/limit exceptions;
- potential impact on financial results;
- the number of unhedged/hedged exposures and their relative place within an approved hedge range;
- breaches of hedge limits (in conjunction with limits set forth in the applicable policy);
- hedge performance against benchmarks;
- proposed hedging strategies; and
- market views.

As a control measure, the derivatives/exposure reporting should typically be generated independent of the function or department executing the hedges – ie, at a minimum, reports should be independently verified.

An organisation requires extensive reporting capabilities to provide instant visibility on cash, exposures, positions, valuations, financing, liquidity and risk in a variety of formats, including dashboards.

Risk management

Tools or methodologies should be employed to quantify the exposure an organisation may have in various areas. Developing this capability can help in understanding risk sensitivity and foster an environment of informed decision-making.

Additionally, the measurement from this process can be readily incorporated into a limit structure that is flexible enough to provide treasury the opportunity for active risk management, while providing insightful information on potential risks in the portfolio.

TMS is a sophisticated system that should enable an organisation to quantify, analyse, and monitor risk and exposure, both operational and settlement in the following areas:

- **cash**: manage cash and liquidity exposure through effective identification and monitoring of multicurrency cash positions across all departments and subsidiaries;
- **counterparties**: monitor and maintain counterparty limits in real time. This includes real-time advices via email on limits breaches or near breaches;
- **foreign exchange**: evaluate open and closed positions and create mark-to-market realised and unrealised gains and losses;
- **interest rate**: monitor, quantify and evaluate exposure to interest rate movements across a variety of instruments including debt and swaps;
- **valuations**: value individual instruments and group positions using live rates; and
- **hedging**: create different hedge types and monitor hedging against an organisation's hedging policies.

Ensuring accurate and consistent performance of hedging activities is dependent on the timely, accurate identification and aggregation of FX exposures – ie, balance sheet, forecasted and translational – across an organisation. In many companies, this data is traditionally collected in treasury, with links into the controller's organisation and FP&As.

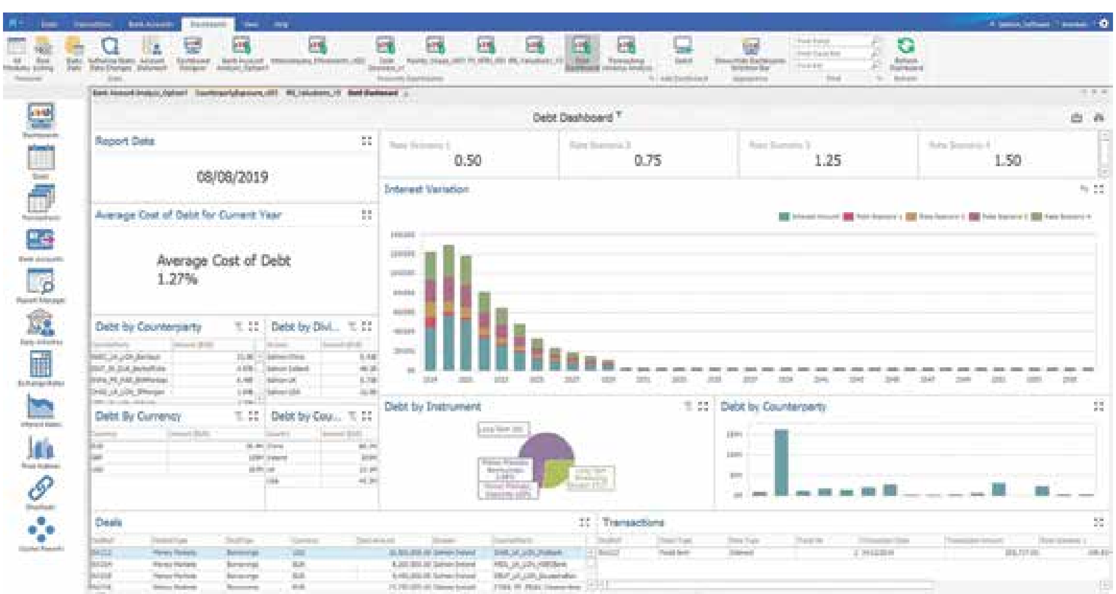
Implementing and enforcing regular controls over internal sources of information in a timely and accurate manner is critical to obtaining a complete picture of an organisation's global risk exposure. The consolidated exposure information should be analysed before hedge execution.

In addition, it is important to work in conjunction with an organisation's reporting team to develop reporting formats to extract currency views of foreign currency-denominated payables/receivables on subsidiaries' financial statements.

For interest rate risk management, a formal range/target for the fixed and floating debt mix should be defined in an organisation's risk management policy based on the optimal capital structure. Accordingly, a formal capital structure model should be developed to optimise cost of capital either via structured debt issuance or proactive management of interest rate exposure through the use of interest rate derivatives.

Even with the changes in technology trends, the core treasury technology is still the TMS. A TMS uses static or

Figure 5: Zeevo clients, in particular aircraft lessors, now have access to the firm's comprehensive treasury advisory services augmented with Salmon Software's integrated treasury platform



reference data, rate and pricing feeds, bank statements and information entered by users to capture transactions, generate settlements, calculate forecasts, valuations, and accounting transaction and disclosure data. No matter where the TMS is located geographically and how it interacts with banks, information services such as Bloomberg, accounting and trading systems, third-party business intelligence tools and robotics, the TMS is what provides visibility into liquidity positions, settlements, forecasts, exposures and risk management happens. The TMS is the most critical technology component within treasury.

Developing and sustaining effective forecasting

Cash-flow forecasting is an essential tool for all companies and provides treasurers with numerous benefits. Good forecasting can help treasurers optimise their cash buffers, as well as serve as an early warning system for potential cash shortfalls.

Cash flows should be forecasted on a daily, weekly and monthly basis. Short-term forecasting covers periods of up to 30 days and includes daily and weekly views. Medium-term forecasting provides monthly projections of up to one year.

While short-term cash forecasting helps treasurers effectively execute daily investments and funding actions, a medium-term forecast can help optimise the duration of the investments, hedge maturities and minimise funding mismatches.

"Forecasting is as much an art as it is a science. Accuracy is largely dependent on the experience of cash managers who supplement the forecast with adjustments based on historical trends and patterns," explains McDowell.

Cash-flow forecasting is generally compiled from treasury and business flows. Treasury flows include liquidity balances and cash movements expected as a result of investments, funding and foreign exchange transactions, while business flows include accounts payable and collections projections received from the finance and sales/marketing/leasing teams. Finer adjustments to the forecast are then carried out by treasury considering historical trends, seasonal patterns and end-of-period adjustments.

McDowell stresses that "long-term forecasting is critical to corporate decision-making in areas such as capital planning, capital allocation, budgeting, strategic investments and long-term funding decisions".

Long-term forecasting is often done by corporate finance and strategic planning teams to capture the accounting projections for revenue, expenses and changes in balance sheets over three to five years. Such forecasting should be subject to sensitivity analysis to make allowances for factors such as currency fluctuations, interest rate movements, inflation, economic influences, and other industry and market changes. Companies using sensitivity analysis have produced cash-flow forecasts under multiple scenarios for corporate decision-making.

"Even companies with sophisticated TMS applications that have automation functions sometimes face issues with non-standard data formats, multiple information sources and system integration problems," expounds McDowell, underscoring the fact that "a lack of integration between ERP and TMS software applications results in a process that remains largely manual, often requiring treasury teams to complete the forecast".

Forward-looking governance structure

Treasury management is more complex and challenging than ever. Johnsen points to "mergers, globalisation and complex organisational models that have become the norm". Statutory and regulatory requirements demand greater accountability, transparency and control than ever before.

Johnsen further paints the picture of today's treasury function, describing the need for it to "be lean and controlled in order to drive value. Governance is a critical initiative that can transform the treasury organisation by increasing efficiency and reducing risk".

A corporate treasury should have its own specific individual policies, procedures and delegation of authority, which are approved by the organisation's audit/finance committee or board. Treasury policies should be treasury specific and separate from accounting policies, which are generally GAAP related.

In addition, treasurers should be provided enough delegation of authority to perform their roles without unnecessary additional bureaucracy, while still operating in a controlled environment. The treasury function should also have its over forms/templates or ideally workflow processes, which should cover the key aspects of treasuries' business and be communicated to the organisation.

"Treasury matters are complex even to the professionals. Even to other finance experts, treasury is complex. Therefore, it is critical that a treasurer communicates effectively to the board, senior management and other teams within an organisation," contends Johnsen.

Treasury reporting should be standardised, similar to an organisation's monthly financial statements, and should be jargon free, and timely, to ensure the audience becomes familiar and comfortable with the presentation and information furnished.

"This is vital in order to enable directors and senior managers, who are the decision-makers and authorisers/approvers of much of the treasury activity, play a proper role – essential governance," concludes Johnsen.

Zeevo can assist

The world's most progressive companies link corporate strategy to the finance and treasury functions. Zeevo's finance and treasury team provides end-to-end finance transformation solutions, covering finance strategy and vision, finance organisation and talent strategies, finance process redesign and adoption, and finance systems changes.

Zeevo has the capability to assist companies in each of these areas of treasury:

Target operating model

- **feasibility assessments**: developing a shared vision, business case development, understanding the benefits of shared services, stakeholder assessments, objective articulation and identifying the processes to be shared;
- **organisational design**: determining how processes will change and which application/IT infrastructure solutions are needed, site selection, tax impacts, security and controls, and program, project and change management;
- **building and testing the model**: creating detailed business process models and user documentation, building interfaces and supporting data conversion, and training development;
- **implementation**: developing a migration strategy, providing post-implementation support, and managing the relationships with third-party and internal business partners; and
- **optimisation**: analysing actual performance against the original business case, designing and implementing continuous improvement processes, refining policies and procedures, training development, optimising resource models, analysing and updating service levels and service level agreements.

Treasury management system selection, implementation and/or optimisation, covering:

- planning and scoping;
- business requirements analysis;
- RFP development and deployment;
- vendor selection;
- project management of implementation/optimisation;
- system configuration;
- testing; and
- post go-live support.

“Zeevo can help transform your treasury team, not only as far as systems, but also global banking footprints, cash pooling, cash forecasting, investing, business flow structures, capital structure and other related areas.”

Paul W McDowell, a member of Zeevo’s advisory board and vice-president and treasurer of GoDaddy

Effective forecasting, covering:

- TMS enhancements to automate the collection and consolidation of inputs;
- requirements analysis with respect to enhanced management reporting;
- custom report/forecast development; and
- integration of lease and asset management systems with TMS systems.

Governance, covering:

- treasury policy statement creation;
- treasury governance arrangements, including investment policy creation;
- treasury strategy presentations and related departmental branding;
- risk identification and mitigation; and
- treasury operations advisory work, including dealing, treasury procedures, treasury controls, reporting and disclosure.

“Zeevo can help transform your treasury team, not only as far as systems, but also global banking footprints, cash pooling, cash forecasting, investing, business flow structures to minimise foreign exchange, capital structure and other related areas,” says McDowell. “In a nutshell, Zeevo has your leasing platform covered in all aspects of treasury, from nose to tail.”

The Zeevo Group difference

Our team of industry experts is highly skilled in management consulting, technology, software development and implementations, and all aspects of aircraft leasing.

We are committed to remaining unbiased regarding vendors, technologies and platforms. Zeevo service offerings provide end-to-end treasury transformation solutions, from planning through implementation, deployment and optimisation. Services range from strategic to support of tactical and operational initiatives.

Aviation finance M&A activity – investor considerations

Matt Dolan, partner in the financial services tax department at Deloitte Ireland, looks at the key tax considerations in aircraft leasing mergers and acquisitions.

As we head towards 2020 the aircraft leasing market continues to be buoyant, albeit with an acknowledgement that we may have reached the peak of this particular cycle. From an airline perspective, the forecast is less positive because International Air Transport Association downgraded its 2019 airline profitability forecast by $7.5 billion. The ongoing trade war between the US and China and, at the time of writing, the ambiguity surrounding the timing and specifics of Brexit continue to cause uncertainty.

Despite this, there continues to be ample liquidity available to the aircraft leasing industry as investors continue to flock to the asset class in a variety of investment formats.

There has been continued M&A activity over the past few years with an expectation of more activity into 2020. New leasing platforms continue to be established, investors still find attractive returns in aviation funds, aircraft asset-backed security (ABS) investment opportunities are abundant, joint-venture/sidecar deals continue in numbers and portfolio acquisition availability is healthy.

KKR will invest up to $1 billion in partnering with and investing in Altavair Airfinance. In the fund space, Falko, WNG and SMBC, among others, launched dedicated aviation funds. Elsewhere, GIC invested into Nordic Aviation Capital, Orix acquired a 30% interest in Avolon, the Sky Leasing fleet was acquired by Goshawk, while the Carlyle Group took over Apollo Aviation Group. More recently, Tokyo Century Corporation has entered into an agreement to acquire 100% of Aviation Capital Group (Tokyo Century Corporation already being a shareholder in ACG). There was and continues to be unrelenting launches of aircraft ABS and additional aviation fund structures.

Industry commentators agree that this M&A activity will continue because participants are looking for scale as well as access to new financing opportunities and markets. Investors continue to see attractive returns.

There is also an expectation of consolidation within the Chinese leasing company fraternity given there are more than 60 leasing companies in China which some consider unsustainable. The ultra-competitive marketplace is also likely to see a number of lessor casualties, which have found the challenging market conditions and weakening airline profitability too much to contend with, the result being they are consumed by a larger competitor.

With that landscape in mind, the focus of this article is to outline the key tax considerations in an aircraft leasing M&A scenario. There are, of course, common issues in an M&A tax scenario which are well understood, but other considerations have been brought about by the rapidly evolving global tax reform agenda punctuated in recent times by the OECD Base Erosion and Profits Shifting programme, the EU Anti-Tax Avoidance Directive and recent US tax reform. This article will conclude by highlighting some areas to consider for purchasers/investors with respect to the human capital side of M&A.

As outlined above, there are a number of forms of M&A activity in an aircraft leasing context but primarily they can be simplified into two classic M&A categories: a share acquisition or asset acquisition. Each alternative has its own intricacies and are likely to have two very different purchaser profiles.


Matt Dolan, partner in the financial services tax department, Deloitte

Tax due diligence

Diligence is a prerequisite in an M&A context – as a purchaser you need assurance that there are no surprises in what you are buying and/or that you are appropriately protected from any latent liabilities. For larger M&A in a share acquisition context, a vendor due diligence (VDD) or tax fact book is usually prepared by the seller.

In theory, this should reduce the time target's management spends on the sale process and ideally streamline the diligence process for the purchaser as well. In practice, a purchaser would generally have their own advisers undertake a certain level of diligence or at least stress test the VDD or tax fact book content by way of a red flag report.

Positive tax attributes

A key consideration in a share acquisition is the ability for an investor to preserve positive tax attributes that a target group may hold. This is generally in the form of deferred tax assets driven by tax losses and additional tax depreciation which are usually available for carry forward to shelter future income from the leasing activity of the group. Clearly, such a benefit needs to be preserved. As such, it is necessary to understand the tax rules governing the carry forward of tax losses in the vendor jurisdiction of residence and, more importantly, how a purchaser may forfeit or jeopardise the continued availability of such losses in a takeover/investment scenario.

From an Irish tax perspective, if a purchaser was taking over a leasing platform, generally the tax losses should continue to be available for carry forward against future leasing profits where there is no change in the nature or conduct of the trade (which is generally the case) and there are no fundamental alterations to, for example, the customer profile or markets served. However, this is not always the case, and rules can be complex in jurisdictions such as China.

Crystallisation of deferred tax charges

Many jurisdictions (including Ireland) offer group relieving provisions whereby taxable gains which may have arisen on intergroup transfers of assets are deferred for a period of time. Similarly, indirect tax/stamp duty exemptions can apply on intergroup transfers of assets but generally would be subject to clawback provisions within certain timeframes and subject to certain conditions.

For example, in an Irish group context, it is usually possible to transfer capital assets, trades, etc, intergroup and to mitigate capital gains tax and stamp duty implications. However, where there is a cessation in the group relationship (which could, of course, occur on a subsequent third-party sale of some or all of the entities involved) then it is imperative that a prospective buyer understands the quantum of potential exposures, to who the liability may rest with and to ensure that the purchaser is appropriately indemnified in the sale and purchase agreement (SPA) documentation.

Tax management function

A basic consideration when undertaking a tax due diligence is to verify the overall compliance of the target group in terms of tax return filings as well as whether the group has a dedicated tax function or relies on external tax advisers (and if so to what extent).

Does the group have a history of filing returns or making tax payments late? If so does this increase the chance of tax authority intervention or have they been subject to a tax audit to date? In an aircraft leasing context, given the cross-border nature of the business, it is recommended that a general understanding of how the target approaches tax risk is sought. In particular, in respect of buy, sell and lease transactions – how often does the target obtain tax advice?

Is there evidence that the tax advice received is adhered to with any requisite registrations or filings completed? Does the target group take an aggressive position where there may be, for example, a technical tax registration obligation in a certain jurisdiction but where in practice the group does not so register? It is important for a potential buyer to understand the risk profile of how the group manages its global tax exposures – particularly given the potential costs of, for example, VAT on the acquisition of an aircraft which could be in the millions of dollars.

In a similar vein, additional comfort can be gained from understanding whether the target group utilises the services of a reputable and experienced tax adviser in assisting with its tax compliance and international tax advisory requirements.

Employment taxes

Where an investor is acquiring or investing in an existing platform,

an area that routinely gives rise to issues is employment and payroll taxes. This is a particular focus area of a lot of tax authorities because it generally generates tax revenues for tax authorities on the back of interventions and tax audits given the propensity for errors in this specific tax area.

In an Irish context, a key question for a target group would be how it has managed the recent pay as you earn (PAYE) modernisation programme introduced by the Irish Revenue – it is effectively real-time reporting of employee remuneration.

It can be a complex area and penalties for failing to adhere to real-time reporting can be punitive. For aircraft leasing companies, another area of focus should be the taxation of a director's remuneration in various jurisdictions where the group may hold special purpose companies. Many jurisdictions would seek to challenge arrangements whereby an internal group director was not remunerated for holding the office of director of a company in a particular jurisdiction.

Tax residence and double-tax treaty relief

While historically always an important focus area, the above topic is now a key consideration for investors looking to invest into an existing platform on the back of the introduction of the principal purpose test (PPT) under the OECD BEPS initiative.

The nature of the industry is such that invariably double-tax treaty access will be required in order to mitigate withholding taxes on lease rental income paid from one jurisdiction to another. Whereas, in the past, the provision of a tax residency certificate may have been sufficient for an airline to get comfortable on the right to treaty access, the PPT has placed additional emphasis on the rationale for the use of a company in a particular jurisdiction with the aim being to ascertain whether treaty access was one of the principal purposes in entering into an arrangement or transaction.

An in-depth analysis of the impact of the PPT is outside the scope of this article and has been discussed in detail in other articles we have written but, in an M&A context, there are some key PPT-related matters to consider:

- does the target have sufficient substance in the jurisdiction (by way of functions, assets and risks) from which it is seeking to claim tax treaty benefits?
- does the target lease to any jurisdiction where tax authorities are particularly aggressive in targeting perceived treaty shopping or have unique local beneficial ownership requirement rules?
- is the investor investing into a fund or platform where the servicer sits outside of the group structure (an ABS, fund or joint-venture/sidecar structure) and what does that mean for treaty access? and
- does the investor profile strengthen or weaken treaty access (for example, for satisfying the Limitation on Benefits clause present in US tax treaties among others)?

From a practical perspective, the tax due diligence should encompass a review of lease agreements which the target has entered into to determine whether any particular risks exist vis-à-vis change in law risk or where the target may have made representations around being a "beneficial owner" of the lease rental income. The latter concept is one that is continually evolving but which remains undefined with guidance being drawn from case law in the area as well as OECD commentary.

The use of "lease in lease out" vehicles should also be examined in the course of a tax due diligence as to the long-term viability of a particular structure. Where an entity does not own the aircraft, has no exposure to credit or financial risk and has no employees/functions residing within that entity, it may come under pressure in accessing tax treaty benefits in future. This should clearly be a factor in the investor's evaluation of the opportunity the target represents.

Whereas the relevant lease agreement may contain protections for the lessor against future withholding taxes that may arise, whether commercially such additional taxes could be absorbed by the lessee should be evaluated. The area of treaty access is one that needs to be considered in depth at the outset of an investment. While there is no bright line test at present, and tax jurisdictions will invariably interpret the PPT in differing ways, tax practitioners should have a good sense of what substance is the right substance in order for a platform to be in a position to avail of tax treaty benefits or recommend steps to bridge any potential gap.

Similarly, protecting tax residence is also of increasing importance. With a seemingly ever-increasing number of avenues in relation to the exchange of information between tax authorities, it is likely that challenges to the likes of the tax residence of a company will become more commonplace. Cementing tax residence in a particular jurisdiction by ensuring management and control or the place of effective management resides in that jurisdiction and that jurisdiction alone is important.

Limitations on the deductibility of interest

Thin capitalisation rules or interest-limitation rules are a feature of many tax regimes around the world; however, the introduction of such rules under the EU ATAD has brought such restrictions into the remit of many EU tax regimes where no such rules existed before.

The leasing industry is by its nature highly leveraged and so a fundamental question for investors into a leasing platform should be: "how do the new rules impact the tax profile of the target group?" Investors should probe and determine whether existing models take into account such interest deductibility limitations, whether models require stress testing or whether new financing structures need to be considered completely.

From an Irish aircraft leasing perspective, this may not have been a focus in a tax due diligence process before but will certainly become more and more prevalent going forward.

Permanent establishments and foreign taxable presence

Similar to the interest deductibility and treaty access discussions, this should be nothing new in terms of being a topic for consideration in an M&A context; however, the OECD BEPS initiative has resulted in a number of jurisdictions lowering the threshold for which a permanent establishment may be triggered under the terms of a double-tax treaty.

While many jurisdictions, including Ireland, made the decision to forgo any changes to the permanent establishment threshold, leasing groups with non-Irish servicing entities should consider the impact having sales and marketing personnel in various jurisdictions may mean – in particular, where such employees are negotiating the material terms of a contract in a particular jurisdiction.

It is important that as part of the diligence process, an investor gains an understanding of the processes a target group has in place to monitor, evaluate and manage foreign tax exposure risk. The outcome should impact the risk level attributed to tax in the overall target evaluation.

Controlled Foreign Companies (CFC)

Many jurisdictions are very familiar with the concept of CFC rules, having had such rules in their domestic tax law for some time. For other jurisdictions, the introduction of EU CFC rules effective 1 January 2019 was a fundamental change in how and on what income a company could be subject to tax.

As part of a tax due diligence, it is important to understand, particularly if the target group is in a jurisdiction for which CFC rules are relatively new, what work the target group had undertaken in ascertaining the impact of CFC rules on their group and the effective tax rate. Particular attention should be paid to any financing structures which fall within the remit of the CFC rules.

Transfer pricing

In many EU jurisdictions the CFC rules introduced broadly refer to safe harbours where the arrangement between a company and its CFC has been appropriately transfer priced.

Transfer pricing is an extremely important component of a tax due diligence process. The intergroup transactions within a leasing group can have a fundamental impact on the tax profile of a group and so it is necessary for a potential investor to be fully comfortable that intergroup transactions are appropriately priced and that there is sufficient transfer pricing documentation in place to support the positions should the need arise during the course of a tax authority intervention.

Given the availability of readily transferable information between tax authorities, it is likely that tax payers can expect increased interventions from tax authorities in respect of cross-border transactions. Transfer pricing will be a key element of this and so the importance of a target group having appropriately priced intergroup transactions cannot be underestimated. If no such documentation is in place or there are what the investor determines to be weak controls in place, the cost of rectifying the position should be considered in terms of acquisition price and the overall transaction.

Substance requirements – low/no tax jurisdictions

The use of Cayman Islands, BVI, Bermuda, and Channel Islands incorporated companies is relatively common within the aircraft leasing industry. The EU intergovernmental Code of Conduct Group on Business Taxation introduced a number of substance requirements aimed at jurisdictions with low or zero rates of corporate income tax. As a result of this pressure, many jurisdictions, including those outlined above, introduced economic substance rules into their respective domestic legislation.

The rules are broadly similar across the jurisdictions involved and essentially require entities tax resident in those jurisdictions to have minimum substance requirements in those jurisdictions where relevant activities are taking place. "Finance and leasing" is generally considered a relevant activity.

As such, in a tax diligence scenario it is important for potential investors to inquire as to substance footprint or future substance plans in any target group entities that are resident in such jurisdictions.

There are further considerations for a potential investor where a target group has entities which are incorporated in a low tax/no tax jurisdiction but are tax resident elsewhere (which is quite common). Let us take the Cayman Islands as an example and the guidance issued by their authorities.

A key point discussed within the guidance was in respect of entities which are Cayman incorporated but tax resident outside of the Cayman Islands. The guidance notes that (author's emphasis):

"A company, limited liability company or limited liability partnership incorporated or established in the Islands is not regarded as a relevant entity for the purposes of the ES (Economic Substance) Law if it is tax resident outside the Islands. The Authority will regard an entity as tax resident in a jurisdiction other than the Islands if the entity ***is subject to corporate income tax on all of its income from a relevant activity by virtue of its tax residence, domicile or any other criteria of a similar nature in that other jurisdiction****."*

As such, provided a Cayman incorporated and, for example, Irish tax resident company engaged in leasing activities can produce satisfactory evidence demonstrating that all of the leasing income it earns is subject to corporate income tax in Ireland, then such a company should not be considered a "relevant entity" for the purposes of the Cayman Economic Substance Law.

However, if in a particular structure involving a Cayman incorporated entity that is not tax resident in Cayman, some of the income from a "relevant activity", as defined, is not subject to corporate income tax in another jurisdiction (eg, if it is completely exempt) then the entity in question may need to consider the impact of the Economic Substance rules.

As noted, the use of Cayman incorporated vehicles which are tax resident outside of the Cayman Islands is relatively common. As such, investors should consider whether any such entities are within a potential target group and ascertain what risks this may present, if any.

Structuring considerations

The structure of the deal from a tax perspective will also be influenced by the form of the deal – namely, whether it is an acquisition of assets or shares.

There are a number of considerations for a purchaser in a process whereby a trade or assets are being acquired. The acquisition of assets can be beneficial in that the aircraft are generally rebased for tax purposes (ie, tax depreciation should be able to be claimed on the purchase price of the aircraft) versus a share deal where the investor is stepping into the shoes of the previous owner.

The issues identified above as part of the diligence process become equally important where the investor is establishing their own holding/investment platform on the back of an asset or portfolio acquisition. Questions to ask include: will treaty access be an issue? How will interest limitation rules impact my financial models? How do I ensure sufficient substance in the holding company jurisdiction?

Of course, of significant importance for any investor is the tax implications that may arise on exit from the structure. Many jurisdictions exempt capital gains arising from the disposal of shares, subject to conditions being met. A key consideration on exit should be the potential tax cost for a future purchaser. Indirect taxes such as stamp duty can be extremely costly for a purchaser (in Ireland, for example, stamp duty on share transfers is 1%) if it cannot be mitigated. Setting up the structure correctly from the outset considering cash repatriation, treaty access, tax-efficient funding and ensuring a commercially viable exit strategy are all very important.

From a commercial perspective, in an asset acquisition scenario consideration could be given as to whether the aircraft should be acquired into a trust which is "GATS ready". GATS is the Global Aircraft Trading System due to be launched in 2020. The system has the backing of a number of major lessors which are active in the aircraft trading market and the goal of the system is to make the acquisition of aircraft, and an associated lease novation, a far more straightforward process for the buyer, seller and the airline.

The people-side of M&A

Ensuring due consideration is given to the management and employee impact of M&A can greatly increase the ultimate success of the investment.

Where an investor is acquiring an existing platform complete with management team, a pivotal area to consider is employee and management incentivisation. Ensuring key personnel remain in their roles can be a key consideration, particularly in scenarios for example whereby the investor is a private equity firm which is not looking to merge the target with an existing leasing platform.

Consideration should be given as to whether there is an existing employee incentivisation scheme and the tax implications for existing staff should this need to be wound up or replaced with a new scheme. Management incenvisiation programmes are now commonplace in aviation M&A and are generally by way of share options schemes, restricted stock units (locking in management for a particular time) or classic private equity-style carried interest returns, which are more common where an investor is providing funding for a servicer platform.

For those investors looking to establish their own platform, they face a unique war for talent. The Irish marketplace is particularly competitive and employees with industry experience are in high demand. The wider financial services employment market continues to be very active from a recruitment perspective and so new lessors face competition not only from other lessors but also larger banks, investment managers, private equity firms and others in the race to attract top talent.

When looking to attract top talent across international borders consideration needs to be given to a number of factors including the personal income tax regime in the country in which the target employee is being asked to move to, the availability of affordable residential housing, the education system (including availability of international schools) and the standard and cost of living. It is imperative that a robust and appropriate talent management programme is in place to attract top talent.

There is an expectation of continued M&A activity between lessors. Many lessors see M&A an efficient and rapid method of achieving scale. For those lessors in acquisition mode, employee integration is of paramount importance; indeed, this is a facet of M&A that is routinely overlooked and one which can make or break the success of an acquisition. In such scenarios, it is necessary to identify where the expanded organisation wants to be in terms of its structure and to scope fully the impact of the merger on new and existing roles within the group. It will be important to identify the key, critical workforce and develop a best-in-class retention and talent strategy.

Given the competitive employment environment this is easier said than done. From the outset, the human resource department will need to support the transition, determining the appropriate process that needs to be in place to reach the desired organisation structure and culture goals. Communication is key in any change management process. Engagement with specialist providers such as Deloitte can greatly enhance the success of an employee-integration process.

Regardless of the direction in which the industry will travel, consolidation and M&A activity is anticipated to continue. Numerous lessor platforms are looking to boost their scale; other lessors may face stress in the near to medium term as airline profitability continues to come under pressure, impacting airline credit risk and potentially resulting in defaults, or as a result of remarketing pressures. The latter will be prime M&A targets for the former.

There are myriad considerations in an M&A process across tax, accounting, financial, commercial, legal, regulatory and more. Advanced planning on both the part of vendor and purchaser can greatly reduce the pain that can come with such work streams.

Airlines grab the headlines

Lessors place fewer firm orders at this year Paris air show, which saw the launch of the A321XLR.

This year's Paris Air Show started with an expected announcement: Airbus launched the A321XLR first thing in the morning on the first day to achieve maximum impact. Air Lease, which was also the launch customer for the A321neo, was the first to commit to the new variant, signing a letter of intent (LOI) for 27 A321XLRs.

The European manufacturer booked 43 firm orders for the type at the show, commitments for a further 79 aircraft and 99 conversions from A321 to the XLR.

Airbus says the A321XLR is the next evolutionary step from the A321LR. It is designed to become the world's most-efficient and longest-range single-aisle aircraft, which will enable operators in this segment to access markets requiring more range and payload.

From 2023, the A321XLR will deliver an unprecedented narrowbody range of up to 4,700 nautical miles – 15% more than the A321LR.

With this added range, airlines will be able to operate a lower-cost single-aisle aircraft on longer and less heavily travelled routes – many of which can now only be served by larger and less-efficient widebody aircraft, says the manufacturer. This will enable operators to open new worldwide routes, such as India to Europe or China to Australia, as well as further extending the family's non-stop reach on direct transatlantic flights between continental Europe and the Americas.

Changes on the A321XLR vis-a-vis the A321neo(LR) include: A new permanent rear centre tank (RCT) for more fuel volume; a modified landing gear for an increased maximum take-off weight of 101 metric tonnes; and an optimised wing trailing-edge flap configuration to preserve the same take-off performance and engine thrust requirements as today's A321neo.

In particular, the new optimised RCT holds more fuel than several optional additional centre tanks did previously, while taking up less space in the cargo hold – thus freeing-up underfloor volume for additional cargo and baggage on long range routes.

Airfinance Journal recorded a total of 810 aircraft announcements during the air show week, comprising 140 firm orders placed by all-airline customers. Those included only 140 firm orders, all made by airline customers. Airbus booked 114 firm orders, while Embraer had 24 firm orders. There were no firm orders from Boeing.

On the "other commitments" side, airline customers represented 65% of the announcements.

Embraer announced two E1 orders (United Airlines and Fuji Dream), as well as one E2 order (Binter Canarias, exercising two purchase rights).

Airfinance Journal understands that a fairly large order for the E195-E2 was to be announced in Paris but got postponed at the 11th hour. That order for 25 E195-E2s followed a fiercely-contested battle with Airbus, which offered the A220.

Airfinance Journal understands that the E1 will be traded in, as part of the commitment. Bombardier and de Havilland of Canada did not record any new orders at the air show. Their combined total for the year remains at 15 aircraft: nine CRJ900s and six Q400s.

ATR banks on lessors

Turboprop manufacturer ATR arrived in Paris with only three orders but announced a total of 75 aircraft at the air show.

The Franco-Italian airframer chief executive officer Stefano Bortoli disclosed deals covering 23 more aircraft including a follow-on order for one ATR42-600 from Colombian carrier EasyFly and a further 22 ATR72 commitments from undisclosed customers.

These follow the letter of intent for 35 turboprops, spanning both ATR42-600 and ATR72-600 models, from lessor Nordic Aviation Capital (NAC) – which expects to firm the commitment shortly – and the 17 commitments secured for the new short take-off and landing variant of the ATR42-600 variant.

Those commitments include 10 aircraft for launch customer Elix Aviation Capital, two aircraft for Air Tahiti and five for undisclosed customers.

ATR is finalising the process for the official launch of the ATR42-600S and received authorisation to take in orders for the aircraft, subject to the final confirmation for launch from the company's board of directors, expected before year-end.

The variant offers capabilities to take-off from and land on runways as short as 800 metres. The ATR42-600S has a bright commercial outlook, says ATR, with 1,200 in-service turboprops of between 30 and 50 seats needing to be replaced in the coming years.

Thanks to its economic performance and operational flexibility, the ATR42-600S is ideally placed to meet this requirement. Beyond its performance on short runways, the aircraft offers 50 seats at the same operating costs as 30-seat aircraft.

Elix Aviation Capital commitment represents the first time the lessor has placed a strategic order directly with an aircraft manufacturer.

The lessor's chief operating officer John Moore says the new aircraft fits "well into Elix's long-term strategy" to offer a wide range of specialised and complete solutions to regional turboprop operators.

The NAC commitment for up to 105 aircraft represents a very successful and long-standing collaboration between the parties as well as a long-term vote in confidence in the ATR products.

Since 2010, NAC has taken delivery of in excess of 100 speculative ATR aircraft. During that time, NAC has risen to become the number one regional aircraft lessor with a portfolio of almost 500 regional aircraft.

"To plan for a successful future, it is vital for us to invest in the very best technology so that we can offer flexible and efficient solutions to our clients," says NAC chairman Martin Møller. "Aviation is moving towards a sustainable future, and with this 100+ aircraft deal, we are making a strategic decision to ensure that airlines can lease and operate the most modern and eco-responsible regional aircraft available in the market."

CFM International stole the headlines at the show with a total of 1,060 LEAP engines ordered. The Franco-US manufacturer secured 370 orders from the leasing community with ALAFCO, Avolon, Macquarie Airfinance, and CDB Aviation all placing significant orders in Paris.

AirAsia finalised a deal for 200 LEAP-1A engines to power 100 A321neos. The aircraft order and intent to purchase the engines were announced in July 2016.

IndiGo ordered CFM International LEAP-1A engines to power 280 A320neo and A321neo aircraft. The Indian carrier becomes a new LEAP customer, having until now used the Pratt & Whitney PW1100G to power its A320neos.

Peach Aviation selected the CFM LEAP-1A for its 2016 A320neo order. The Japanese low-cost carrier ordered 20 LEAP engines.

Pratt & Whitney announced SMBC Aviation Capital and an undisclosed lessor for 55 aircraft. Its airline customers included VivaAerobus for for 41 A321neo aircraft AND JetSMART for 85 A320neo-family aircraft on firm order. An undisclosed airline selected the PW1100G for 28 A320neo-family aircraft.

General Electric announced orders for 110 engines from United Airlines (40 CF34-8Es), Qatar Airways (10 GE90s), Korean Air and ALC (60 GEnx engines).

GECAS boosts 737-800 conversion market

Operating lessor GECAS strengthened its relationship with Amazon's all-cargo airline Prime Air with the announcement of 15 additional Boeing 737-800BCFs (Boeing Converted Freighters) under lease agreements. The lessor already has an order with the US carrier for five aircraft that will be delivered by the end of this year.

Alex Burger, the GECAS chief executive officer, says the new commitment is the beginning of a new relationship. The 15 additional aircraft will be delivered through 2021.

Prime Air says it will base some of its 737-800BCFs in Cincinnati, a new hub it hopes to have in operation by 2021. By then Prime Air will have 70 aircraft, comprising 50 767 freighters and 20 737-800BCFs. GECAS was the launch customer for the 737-800 passenger-to-freighter conversion programme in 2016. The first 737-800BCF was delivered last year to West Atlantic Group. The 737-800BCF features a rigid cargo barrier and 12 maindeck pallet positions, with a maximum structural payload is 23.5t (51,800lb) and a maximum range in excess of 2,100 nautical miles – providing capability to open new markets. It also offers operators newer technology, lower fuel consumption and better reliability than other standard-body freighters. It primarily will be used to carry express cargo on domestic and short-haul routes.

At the show, GECAS exercised 10 purchase rights to firm orders and adding 15 more purchase rights. The announcement marked the third time GECAS had purchased Boeing's newest freighter aircraft. It has commitments for 55 firm orders and 10 options for the type.

"Our leasing customers are very pleased with the versatility and reliability of these freighters," says Richard Greener, senior vice-president and manager, GECAS Cargo. "It's enabling operators to replace ageing freighters and meet the rapidly growing express cargo market."

Orders for the 737-800 freighter are beginning to take off as operators and lessors look for alternatives to the 737 freighters, which are seeing feedstock begin to dry up.

GECAS has delivered 13 converted cargo aircraft to customers since the second quarter of 2018. West Atlantic and Amazon Air have four units, Ethiopian Airlines and ASL Airlines Holdings have two, while Atran has one. Another six units are scheduled for delivery in the second part of this year.

"Many airlines are now operating the aircraft. The performance and reliability of the 737-800 freighter is the key reason why they are transitioning to this aircraft type," says Greener.

Widebodies lose further ground with investors

***Airfinance Journal* analyses the industry's favourite aircraft and reviews the impact of the new-technology options on the current-engine jets.**

Investors' appetite clearly remains in mainstream aircraft. Few investors venture outside the most popular types of narrowbody and widebody aircraft: the Airbus A320 and Boeing 737/Max families and the 787/A350s.

Of the top 10-favoured aircraft in 2018, the first six were narrowbodies. Five years ago, the favoured model was the 777-300ER and the top six included three narrowbodies (737-800/Max 8/A320neo), as well as three widebodies (777-300ER/787-9/A350-900).

The current environment continues to favour current-technology narrowbody aircraft. In 2018, the A320neo-family aircraft was still subject to delays because of engine issues, affecting monthly production rates. Oil prices globally remained at reasonable levels, making a viable case for current-technology aircraft.

This is why the likes of the 777-300ER, A330-300 or even 767-300ER are still mixed up with new-technology widebodies in the charts.

Narrowbodies

The first A320neo aircraft are entering their third year of service, while the Max 8s are now more than 18 months in service.

Despite Airbus and Boeing increasing production rates, it remains unclear when and how residual values for the current-technology aircraft will be impacted. What is certain, given the backlog of orders for the Neo and Max versions, is that the impact on current-technology aircraft continues not to be felt immediately.

Over the past year, second-hand 737-800s have been placed rapidly and demand has been strong. Start-up carriers continue to source eight- to 10-year-old aircraft before committing to newer models.

As a result, the 737-800 model continues to top the charts in *Airfinance Journal*'s Investors' poll.

One leasing company said aircraft trading for the 737-800 model is at a premium and lease rates for newer aircraft are close to the Max 8.

"Some airlines prefer next-generation aircraft to Max at the moment and due to ongoing issues," says the leasing company source.

The 737-800 remains among the most remarketable assets but competition makes it hard to access for value, says another leasing source.

The A321neo claimed the top spot for residual values, narrowly beating the 737-800. The poll shows the Airbus model scored 4.52. The 737-800, which first delivered in 1998, scored 4.48.

Single-aisles

Aircraft type	Residual value	Value for money	Operational success	Remarketing potential	Overall score	Last year's score	Difference
737-800	4.48	4.12	4.95	4.73	4.57	**4.58**	-0.01
A321neo	4.52	4.20	4.06	4.74	4.38	**4.49**	-0.11
A320	4.00	4.04	4.86	4.52	4.36	**4.36**	0.00
737 Max 8	4.33	4.16	4.21	4.58	4.32	**4.29**	0.03
A320neo	4.45	3.90	3.88	4.74	4.24	**4.30**	-0.06
A321	4.12	4.08	4.48	4.35	4.26	**4.13**	0.13
737 Max 10	3.75	3.79	n/a	3.87	3.80	**3.85**	-0.05
A220-300	3.29	3.53	3.71	3.19	3.43	**3.55**	-0.12
737 Max 9	3.28	3.50	3.58	3.35	3.43	**3.17**	0.26
737-900ER	2.91	3.37	3.50	2.86	3.16	**3.29**	-0.13
737-700	2.85	3.22	3.60	2.56	3.06	**3.22**	-0.16
A319	2.65	3.10	3.56	2.57	2.97	**3.27**	-0.30
737 Max 7	2.50	2.79	n/a	2.35	2.55	**2.81**	-0.26
A319neo	2.35	2.54	n/a	2.00	2.30	**2.60**	-0.30
737-600	1.29	1.73	1.77	1.38	1.54	**1.98**	-0.44

Regionals

Aircraft type	Residual value	Value for money	Operational success	Remarketing potential	Overall score	Last year's score	Difference
ATR72-600	3.17	3.32	3.92	3.19	3.40	**3.37**	0.03
Q400	3.03	3.09	3.73	3.03	3.22	**3.34**	-0.12
ATR72-500	2.86	3.31	3.67	2.71	3.13	**3.19**	-0.06
CRJ900	2.92	2.92	3.42	2.92	3.04	**3.23**	-0.19
E175	2.60	2.92	3.64	3.00	3.04	**3.24**	-0.20
A220-100	2.63	3.00	3.23	2.67	2.88	**2.82**	0.06
ATR42-500	2.71	3.00	3.08	2.67	2.87	**2.89**	-0.02
ATR42-600	2.85	2.71	2.96	2.83	2.84	**2.89**	-0.05
E190	2.34	2.84	3.59	2.53	2.83	**3.24**	-0.41
E190-E2	2.69	2.70	2.67	2.67	2.68	**3.40**	-0.72
E195-E2	2.67	2.79	n/a	2.54	2.66	**3.11**	-0.45
E195	2.22	2.80	2.79	2.31	2.53	**3.08**	-0.55
CRJ700	2.38	2.33	2.75	2.33	2.45	**2.77**	-0.32
CRJ1000	2.31	2.63	2.67	1.92	2.38	**2.54**	-0.16
E175-E2	2.15	2.29	n/a	2.08	2.18	**3.11**	-0.93
CRJ200	1.69	2.00	2.83	2.08	2.15	**2.56**	-0.41
E170	2.00	2.08	2.42	2.00	2.13	**2.63**	-0.51
ERJ145	1.50	2.00	2.85	1.77	2.03	**2.24**	-0.21
MRJ	1.62	2.04	n/a	1.64	1.76	**2.27**	-0.51
SSJ100	1.15	1.79	1.25	1.17	1.34	**2.44**	-1.10

In comparison, the A320 remained unchanged at 4.00.

The gap between gets tighter when it comes to remarketing potential. The 737-800 scores 4.73 versus 4.52 for the A320. In 2017, the 737-800 scored 4.67 versus 4.36 for the A320 model.

Interestingly, demand for 737-700 part-out aircraft with engines is still high because of fewer -800 part-outs than expected, says a source.

The 737 Max 8's overall score this year was higher than last year, probably because more units delivered in 2018 compared with 2017, and the model gets more market acceptance.

The A320 remains popular but the A321 aircraft is the model that has shown the biggest progress over the past year. Its residual value is 6% up year on year, while value for money increased by 2%. Remarketing potential shows an increase of 5%. "Cargo conversion opportunity provides more residual support," says one trading source about the A321.

The market continues to be active in second-hand A319s, but the model is rivalled by new-technology aircraft such as the Embraer E195-E2 and A220-300.

Airbus new-technology aircraft remain penalised for their operational success (one of the four criteria in the poll).

The A320neo scores better than the 737 Max 8 in terms of residual values and remarketing potential but less in value for money and operational success.

"Most operators and financiers see the [predominantly Pratt & Whitney-driven] engine issues are short-term issues and thus any impairment in the type's popularity is likely temporary," observes one trader.

The A321neo is dominant in its segment and, as a result, scores higher than competition in three of the four criteria, perhaps highlighting the need for Boeing to address the 225-seat and above market with the New Midsize Aircraft later this year?

"A true competitor won't emerge for some time, though the Max 10 is promising," says one leasing source.

Regionals

The ATR72-600 reclaimed top spot in the regional aircraft market scoring 3.4 overall, a marginal increase over the previous year.

The turboprop is now a mature aircraft and will have more than eight years of service in 2019.

The first ATR72 variant delivered in October 1989. The Franco-Italian manufacturer had delivered 187 ATR72-200s, 365 ATR72-500s, as well as 448 ATR72-600s, when it reached 1,000 deliveries in July 2018.

As the aircraft penetrates more markets, lessors are still in this model. Nordic Aviation Capital remains the largest leasing company for ATR aircraft, but Avation continues to commit for the ATR72-600s.

The ATR72-600

Clifford Chance maintains top spot but rivals gain ground

***Airfinance Journal*'s legal survey remains the most comprehensive of its type.**

Airfinance Journal would like to thank all the law firms which participated in the survey this year. For those unfamiliar with the survey, aviation finance deals are counted based on submissions from law firms and *Airfinance Journal*'s Deal Tracker, and are subsequently aggregated to create the winners.

Airfinance Journal received submissions from 14 firms, compiling 1,550 deals overall, including transactions gathered from Deal Tracker.

This is the third year *Airfinance Journal* has used data from Deal Tracker for our legal survey and it provides us with a more accurate picture of the 2018 activity because it includes law firms which were not able to submit or chose not to submit. The firms that did submit have the most accurate representation of their deals in 2018.

The survey continues to highlight less activity in the export credit agencies sector. Export credit agency-backed structures are becoming scarce as a consequence of continued liquidity in the space. The growth of emerging markets, particularly in Asia, has increased demand for new aircraft, in a leasing environment that is more competitive than ever. Transactions closed in Asia accounted for 27% of the year's total in 2016. They count for 30% today.

The activity in Europe has lowered over the past two years. Today, 35% of the submitted deals originate with European customers versus 40% in the 2016 Legal Survey. Europe still represents 540 transaction points. North America remains third by region with about the same percentage of transaction (21.5%).

Activity in Latin America has slightly decreased over the past two years. Some 4.3% of this year's total involves clients from that region, against 6% two years ago. The activity in Africa remains at the previous year's level, while transactions in the Middle East are slightly lower than the previous year.

Methodology

Aviation law firms are invited to submit deals to be included in Deal Tracker. The *Airfinance Journal* data team then reviews the different deals and selects those eligible for Deal Tracker.

This list is then used to select the most active law firms, which are then selected by region and product type. The legal survey reviews transactions from 2018 only. This is significant because we recognise that markets change, as do law firms; however, we felt this was the only way to offer an accurate snapshot of total global legal activity.

Our aim is to be transparent and impartial. All of the deals used to judge the winners are eventually loaded into Deal Tracker and can be reviewed by our readers. In this sense, our survey is unique.

Our researchers assess each deal to verify them and to avoid double counting. The benefit of using Deal Tracker is that we can offer a granular presentation of law firm activity by both product type and region.

There are limitations to the survey. Client confidentiality may be an issue for law firms when submitting deals and some firms opted not to participate.

As a consequence, the survey does not necessarily represent all of the deals in the market. But it remains the most comprehensive survey of its type and crucially offers real insight into the aviation market. The survey gives a strong indication of which law firms are most favoured for certain deal types and for certain regions.

Overall rankings

Like previous years, the survey records the overall number of deals for each law firm. A deal, as defined by the survey, represents one mandate and can include multiple aircraft and lawyers.

In addition to presenting the most active law firms by product and region, the survey also aggregates how law firms have performed to produce an overall ranking. Law firms secure points based on where they are placed for each region, product and category.

For instance, a law firm that tops Africa or capital market rankings, receives five points and the second receives four points, and so on.

Overall winners

The legal survey is split by product type, category and region. In addition to summarising the most active law firm by the number of deals, we have also aggregated the results, awarding points to firms based on how they place in each respective region and product type. We have produced overall rankings based on these results.

Clifford Chance came top in the Asia-Pacific, Europe, Middle East and Latin America, commercial loan, operating lease, and sale and purchase of aircraft. The firm's global asset finance group has topped the overall rankings in the Legal Survey for the seventh consecutive year.

"This achievement is a result of the continued trust our industry-leading clients have placed in our legal services offering and the dedication and expertise of our international network of lawyers in meeting their expectations," says William Glaister, Clifford Chance's global head of asset finance.

"The aviation finance sector continues to grow, with the establishment and expansion of leasing and funding platforms, and the level of aviation capital markets issuances are both clear indicators of investors' sustained interest in the asset class and in the corporate credit of operating lessors and strong airlines," he adds.

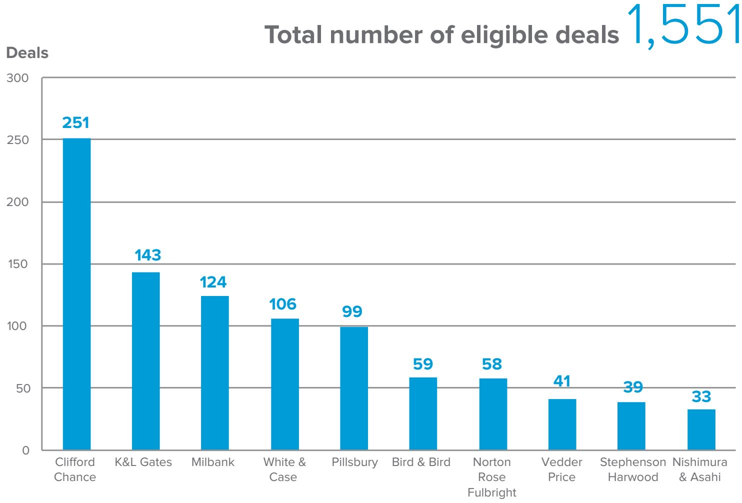
Banks and arrangers remain supportive of the sector, notwithstanding global trade tensions and incidents of insolvencies and restructurings. Macro trends, such as implementation of the OECD's BEPS [base erosion and profit shifting] project, ever-increasing regulatory restrictions on banks, accounting changes and global benchmark reform, continue to influence the types of structures industry participants are utilising and the commercial terms being negotiated by borrowers and financiers," says Glaister. .

The contest between the other four lead firms is closed. Milbank remains second this year with a score of 31 while White & Case and Pillsbury are ranked equal fourth with a score of 25 each. K&L Gates, in third, is the firm which improved the most year-on-year with a score of 30 in 2018, up from 19 the previous year.

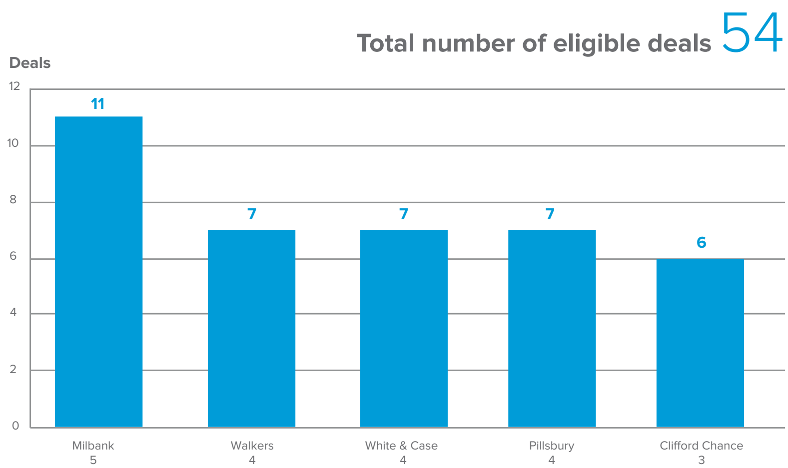
Top 10 law firms by score

Rank	Firm	Score
1	Clifford Chance	52
2	Milbank	31
3	K&L Gates	30
4	White & Case	25
4=	Pillsbury	25
6	Norton Rose Fulbright	12
7	Walkers	7
8	Stephenson Harwood	6
9	Delnessahou Tadesse	5
9=	Smith Gambrell & Russell	5
9=	Nishimura & Asahi	5

Top 10 law firms by number of deals



Africa



The African market recorded the same level of activity in 2018 as in 2017 with about 55 deals. Milbank came first in this market with 11 transactions closed.

Commercial loans and operating leases were the bulk of the activity in that region in 2018. Ethiopian Airlines was a big issuer of debt in 2018 in Africa and financed several Boeing deliveries in using the Aircraft Finance Insurance consortium (AFIC)-supported financing structure. The financing marked the first time the African carrier used this product and it was also the first deal with a commercial junior debt.

It also represented the first-ever AFIC financing that involved both a 12-year senior and a seven-year junior loan facility for the financing of five Boeing 737-Max 8 aircraft. Three separate AFIC-backed facilities were negotiated and closed for three 777 freighters.

The transaction demonstrated the strength, capacity, efficiency and speed of AFIC-supported financing in the absence of US Exim, with the strong support of the AFIC insurers and the three leading AFIC lenders – SMBC, ING, Société Générale –bringing AFIC financing to the next stage.

"We were pleased to represent the AFIC insurers in connection with the financing of eight aircraft for Ethiopian Airlines. The financings demonstrated the strength of the AFIC product and the confidence that the market has in Ethiopian Airlines," says Drew Fine, partner at Milbank.

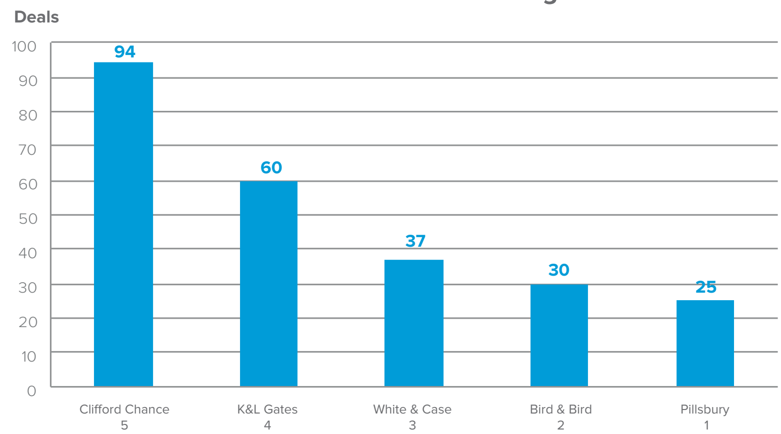
Another AFIC-supported financing closed on Royal Air Maroc last year. The transaction represented many firsts: the first 787 acquisition for the Moroccan carrier; its first AFIC transaction; and its first French lease structure, which diversified its funding sources. Other commercial loans closed for used aircraft last year in the African market, notably with Comair, Fastjet and SA Airlink.

"Potential remains the best descriptor for aviation in Africa," observes Paul Jebely, Pillsbury's Hong Kong office managing partner. "On the positive side, Ethiopian Airlines continues to be the resilient star of the show despite a tragic setback [the 737 Max crash in March], and we are seeing new entrants into the African market offering new seats and funding. On the negative side, the implementation of the 2018 Single African Air Transport Market [SAATM] has yet to materialise, the saga that is the restructure of South African Airways has seriously undermined confidence in the carrier, and the apparent nationalisation of Arik Air and other developments in Nigeria spooked many in the leasing and financing community. It remains foremost for the Nigerian authorities to re-establish confidence in their legal, regulatory and political framework," says Jebely.

He adds: "We are in the privileged position of representing long-established players like Ethiopian Airlines, Investec, Rand Merchant Bank and Nedbank, and we are now beginning to see the emergence of new sources of capital, both from Africa and elsewhere, to meet some growing demand (including from emerging carriers)."

Asia-Pacific

Total number of eligible deals 469



Clifford Chance maintained its lead in Asia-Pacific as the law firm closing the most transactions during the year.

The firm was particularly involved in Chinese lessor Ping An's first PDP financing for nine 737 Max deliveries. The $330 million loan adopted a structure that balances between a conventional PDP financing and a working capital loan. This financing was on top of a lessor PDP financing to the lessee, Aeromexico.

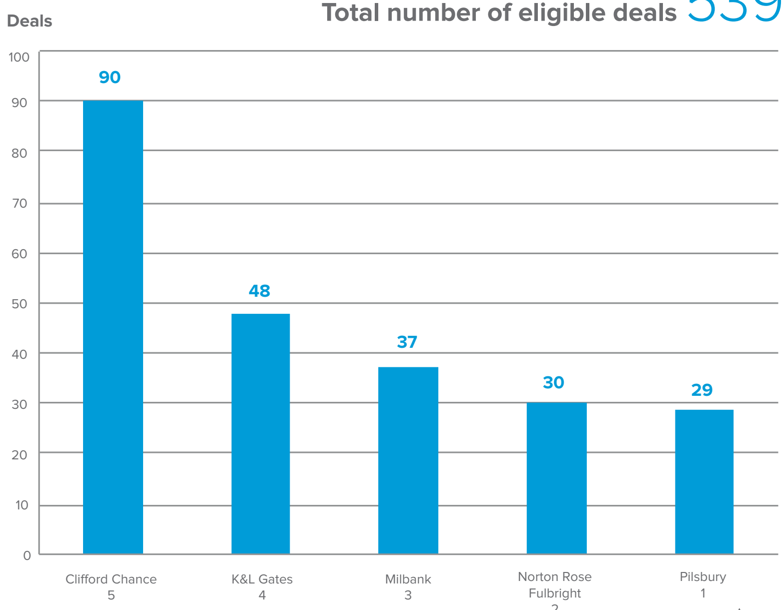
Clifford Chance's Simon Briscoe says Asia continues to be a source of new equity for the aviation market with continued investor appetite from the People's Republic of China, South Korea and Japan seen on single aircraft deals, joint ventures, funds, portfolio acquisitions and the Japanese operating lease (Jol)/Jolco market.

"With highly liquid capital markets and a very competitive commercial debt market there is still sustained downward pressure on bank pricing," he adds.

The firm's standout deals in the Asian market included advising on the Avolon joint venture with Cinda Leasing (HK) Limited to form Jade Aviation. Clifford Chance also acted as an adviser for Avolon's nine-aircraft portfolio financing. It also advised Skyco International Financial Leasing on the sale and lease novation of eight A320s from an affiliate of AviaAM Leasing on lease to Aeroflot Russian Airlines.

Europe

Total number of eligible deals 539



Europe remains the number one market with 539 eligible deals submitted in 2018. Clifford Chance topped the rankings followed by K&L Gates and Milbank.

The European market continues to see airlines issuing on an unsecured basis in the European and US capital markets. In 2018, some companies, such as Nordic Aviation Capital, tapped the Jolco market for the first time (while Iberia returned to the market for the first time since 2004), reflecting the Japanese appetite for new issuers.

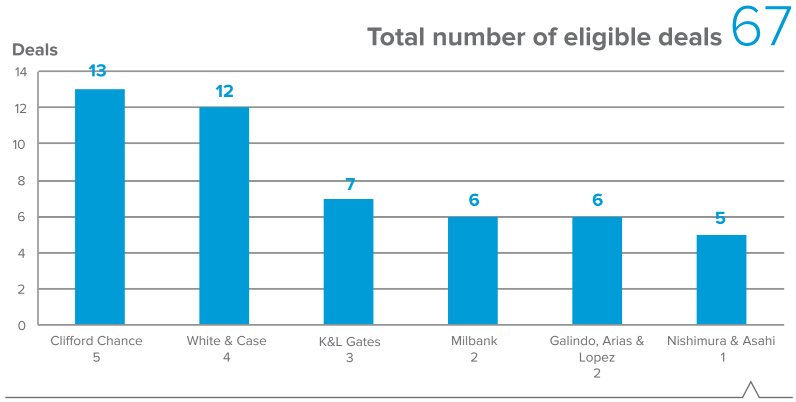
Another European landmark transaction featured British Airways' (BA) $607 million EETC. Consistent with the 2013-1 precedent transaction, BA's 2018-1 EETC incorporates a Jolco tax equity. The Jolco structure allows BA (as a lessee) to raise additional proceeds while reducing overall transaction financing cost.

Clifford Chance said this transaction represented BA's first major secured financing post-Cape Town implementation in England and required negotiated revisions to BA's standard form lease. The purchase option for each aircraft is exercisable before the term of the EETC debt, and the transaction was novel in that it allows the airline to keep the EETC debt in place and convert the Jolco to a finance lease until the debt is repaid.

The law represented Nordic Aviation Capital on the $227 million 12 Embraer 190 Jolco financing. In addition to the jurisdictions in which the aircraft were registered, English, Irish, Japanese and California law were all relevant to the transaction. The size and complexity of the transaction was significant given the number of aircraft, multiple jurisdictions and short timeframe in which to complete the transaction. The timing was such that all 12 closings took place within about a two-week period in September 2018, which presented multiple challenges given the number of aircraft, jurisdictions and documents required.

K&L Gates partner Sidanth Rajagopal says the firm "worked extensively with lessor clients, including setting up lessors in Ireland and England".

Latin America



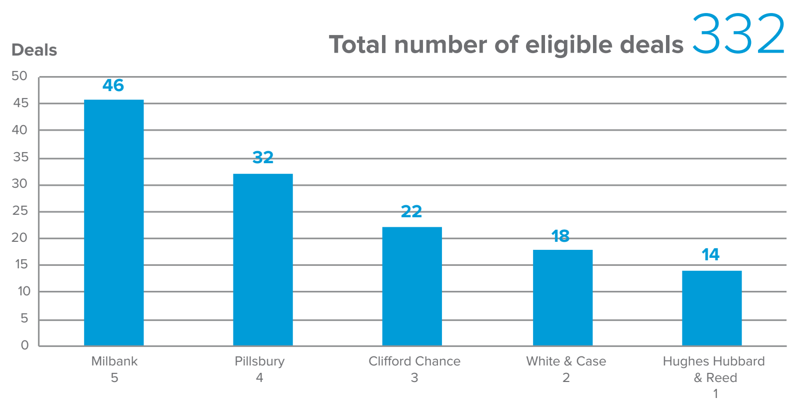
Clifford Chance and White & Case were neck and neck in the Latin American region. It was a big change from the previous year when Clifford Chance had closed almost twice as many transactions than White & Case.

Avianca's UK Export Finance (UKEF)-guaranteed Japanese operating lease with call option (Jolco) financing for one 787 aircraft was a regional highlight in 2018. The transaction was Avianca's first UKEF-backed Jolco financing. It was also the first UKEF-guaranteed financing structured as part of a Jolco for a Latin American carrier.

Operating leases in the region accounted for one-third of the activity by structures. One landmark deal was a sale and leaseback transaction by Viva Air/Irelandia Aviation with GECAS for 10 A320s delivering over a two-year period. As part of the structure, GECAS financed the PDPs for each delivery. Last year also featured one of the largest aircraft financing transactions in the Americas: the $302 million financing of a 32-aircraft portfolio for LATAM Airlines Group, on behalf of a bank syndicate composed of five institutions. The mid-life aircraft portfolio had a 14.7 years weighted average age and featured 767 freighters. The company was raising cash to finance its capital expenditures for the year. It opted for secured financing against its large unencumbered fleet.

The transaction is full recourse to LATAM, a global airline with $1.5 billion in cash and a large footprint in Latin America. All the aircraft are cross-collateralised/cross-defaulted with each other.

North America



North America is often associated with capital markets. The region increased its dependence on this structure with 37% of the overall capital markets deals in 2018.

"US debt and equity sources have remained plentiful throughout 2018-19, with a very active structured portfolio debt market supporting an equally active asset trading market from the seed/warehouse phase through the term/take-out phase," says Mark Lessard, Pillsbury partner and finance section leader.

"This has resulted in multiple new leasing platforms, some of which have been launched on the back of a few large portfolio trades, and significantly reduced the time between ramp up and take-out. This fragmentation of the market comes as the largest lessors continue to sell metal to new entrants and equity shares to financial investors in the form of joint ventures, sidecars and E-notes (tradable by book-entry in many cases). On the airline side, the general credit picture continues to glow while a multiyear refleeting exercise continues for large carriers, if at a slightly slower pace," he adds.

Lessard says the sale and leaseback market continues to be very attractive to airlines, but intense interest from investors has also led to innovative private placements and cross-border leasing structures. Milbank, Pillsbury and Clifford Chance were the lead trio in the region last year. Milbank was a clear winner with 46 transactions. The law firm was especially involved in two high-profile ABS deals in 2018: GECAS Starr 2018-1 and ALC Thunderbolt II.

The GECAS 2018-1 transaction brought a new development into the sector: it was the first aircraft ABS transaction to utilise a 144A tradable E-note.

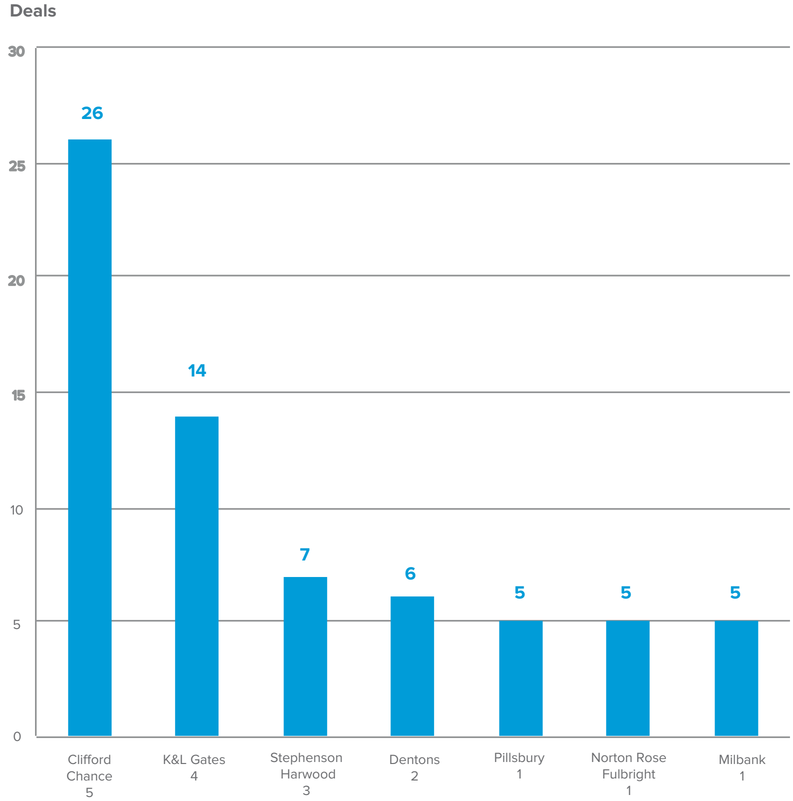
The Thunderbolt II transaction, which also used tradable E-notes, was the first deal to use a Passive Foreign Investment Company (PFIC) tax structure that facilitates offshore ownership and removes tax-related transfer restrictions, with the goal of further broadening distribution and secondary market liquidity. The transaction used the DealVector platform to share more detailed models with investors in an effort to increase transparency and facilitate investor analysis.

But the law firm was also involved in other interesting transactions: Willis Lease WEST IV $373.4 million ABS, the only engine ABS deal last year; VX Cargo 2018-1, the 100% narrowbody freighter ABS transaction; and Horizon 2018-1.

"The North American aircraft finance market was very robust across the board in 2018," says Milbank's Fine. "The capital markets were particularly hot, with aircraft ABS having another record year and plenty of unsecured offerings and EETCs [enhanced equipment trust certificates]. When the ABS market is hot, that typically means the warehouse and other acquisition finance facilities are also plentiful. Overall, a banner year in the US aircraft finance market."

Middle East

Total number of eligible deals 90



Clifford Chance was a distant first in the Middle East last year. K&L Gates and Stephenson Harwood completed the trio of leading law firms in this region.

The big three Middle Eastern carriers, Etihad Airways, Emirates Airline and Qatar Airways, continue to see challenges.

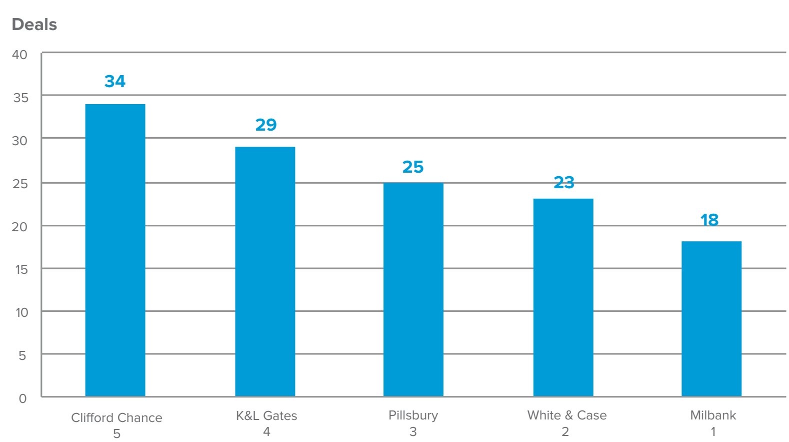
Etihad financed a new 787-10 delivery through a senior loan from BNP Paribas and a mezzanine Murabaha facility from Warba Bank. The transaction was important because it was one of the first 787-10 aircraft delivered into the Etihad fleet and was financed using a combination of senior debt and Islamic mezzanine financing. It is notable that the borrower was a UAE entity incorporated in the Abu Dhabi Global Market region.

The region's only export credit agency (ECA)-supported transaction was a notable one: two Airbus A380 deliveries for Emirates. It marked the first ECA-supported Airbus aircraft financing for the Dubai-based carrier after the temporarily closure of ECA activities. The transaction was also the first ECA financing in combination with Korean euro-denominated junior loan notes.

Another landmark deal in the region in 2018 was the asset-backed securities (ABS) portfolio sale (Kestrel) with debt placed in the US capital markets and equity placed in South Korea. The transaction represented lessor Dubai Aerospace's inaugural ABS deal, which featured turboprops. It was also the first mid-life aircraft portfolio with E-notes sale into Asia.

Sales & Purchases

Total number of eligible deals 344



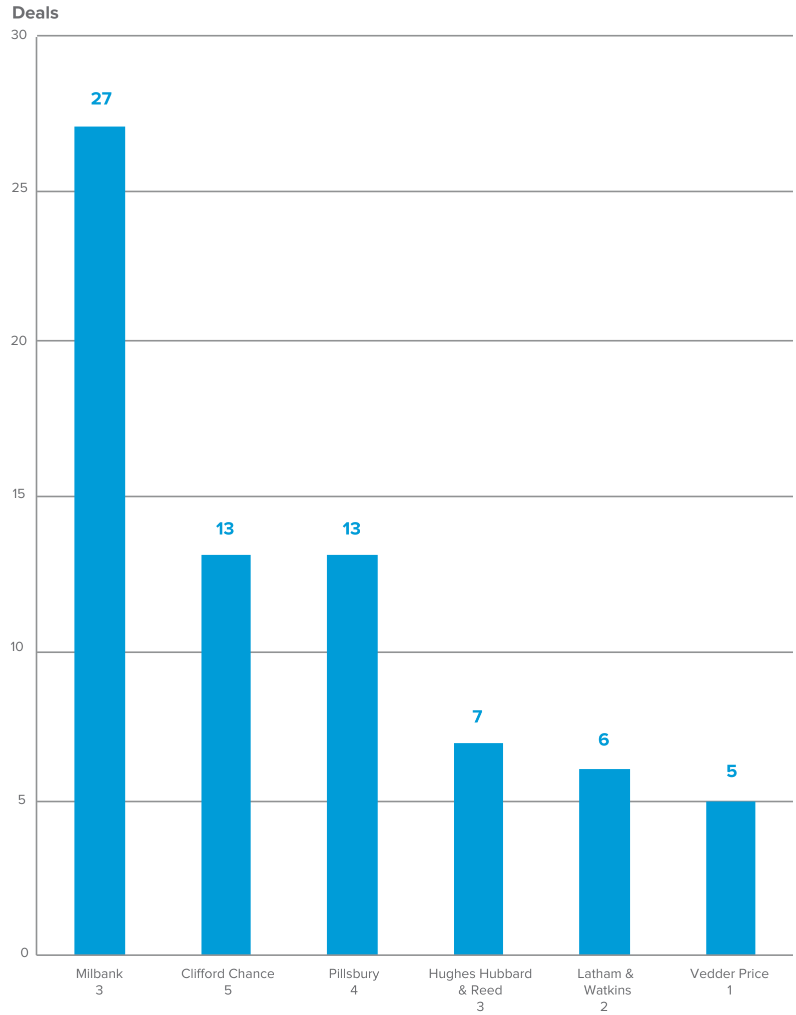
Clifford Chance was the most active law firm in the sale and purchase market in 2018, ahead of K&L Gates and Pillsbury.

"We saw a range of sale and purchase transactions not only between lessors and investors, but also on the airline front," says K&L Gates Charleston & New York partner Amanda Darling.

"There was a significant uptick of direct sales and purchases at the airline level, in particular in relation to vintage aircraft where the airline was operating the aircraft pursuant to a lease," she adds.

Capital Markets

Total number of eligible deals 116



Airfinance Journal received fewer submissions in 2018 featuring airline and lessor capital market transactions than the previous year. But it was on par with activity in 2016. In 2018, much of the action was in the Asian-Pacific region and North America.

The unsecured bond market had a busy 2018, with 46 deals closing for airlines and lessors during the year, according to data from *Airfinance Journal*'s Deal Tracker.

The EETC market had a quiet year with $2.5 billion-worth of transactions. Only American Airlines, United Airlines, Spirit Airlines and Air Canada issued notes to refinance new deliveries. Milbank's Fine agrees that the dearth in EETC issuance last year was because of the major US airlines, the prime EETC issuers, being successful from a liquidity perspective. "The EETC market has been slower the last couple of years in large part due to the wide range of financing options available to US carriers, not least in the sale and leaseback market. However, we have seen more interest recently, including with non-US carriers, with transactions sometimes taking the form of private placements," says Pillsbury's Lessard.

The lessor unsecured bond market was healthy in 2018 with an estimated $14 billion-worth of deals but this fell way short of the $20 billion recorded the previous year.

The aircraft ABS industry saw heavy issuance growth between 2016 and 2017, from $4.2 billion to $6.6 billion. Last year the sector reached an all-time high of $7.3 billion in new issue volume.

The ABS product continued to improve and the biggest development last year was the introduction of equity offerings pursuant to 144A. That new element was introduced first with the GECAS deal: the tradable E-notes.

Fine says the 144A tradable equity market has given ABS issuers more options from an investor standpoint.

"The 144A equity product permits investors to purchase smaller pieces of equity and ultimately results in more liquidity," he says. "The ABS market has continued red-hot during the first half of 2019."

Clifford Chance was also instrumental in the creation of tradable E-notes in structured aircraft portfolio financings and in the incorporation of Japanese equity investment in these structures.

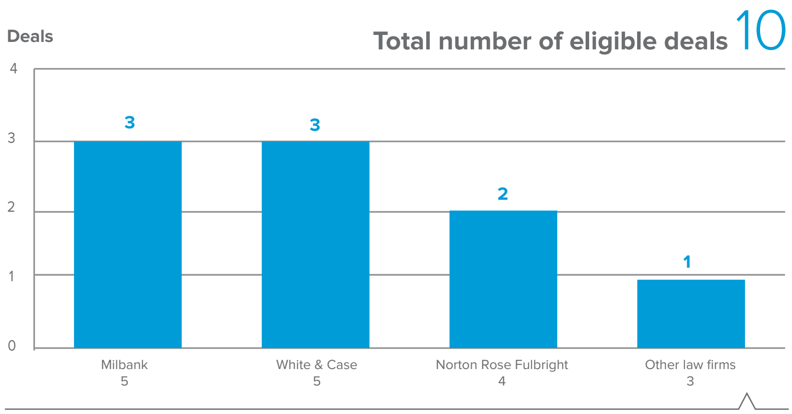
"The introduction and proliferation of tradable E-notes has resulted in a number of large fund investors previously familiar with structured aircraft portfolio financings taking "anchor" positions in E-notes," says New York partner Zarrar Sehgal.

It has also created opportunities for a broader group of new equity investors to take smaller positions in these structured transactions.

"The creation of the first structured aircraft portfolio financing with Japanese equity further expanded the market for equity investors outside of the core base of US fund and insurance investors," adds Sehgal.

"The increasing number of new investors in the structured aircraft capital markets space could help to keep the cost of capital relatively low and serve to keep that market frothy."

Export Credit



"Now that US Exim has been restored to its full capacity, market participants are reasonably optimistic about a resurgence of support for Boeing deliveries," says Milbank New York partner Helfried Schwarz.

"It remains to be seen what direction the new board will take and the level of support it is willing to provide. This will likely be part of the political discussion in connection with the upcoming reauthorisation of US Exim," he adds.

Milbank and White & Case were joint winners in the export credit category, which included deals ranging from the A380 model (Emirates) to the ATR42-600 model (Aeromar).

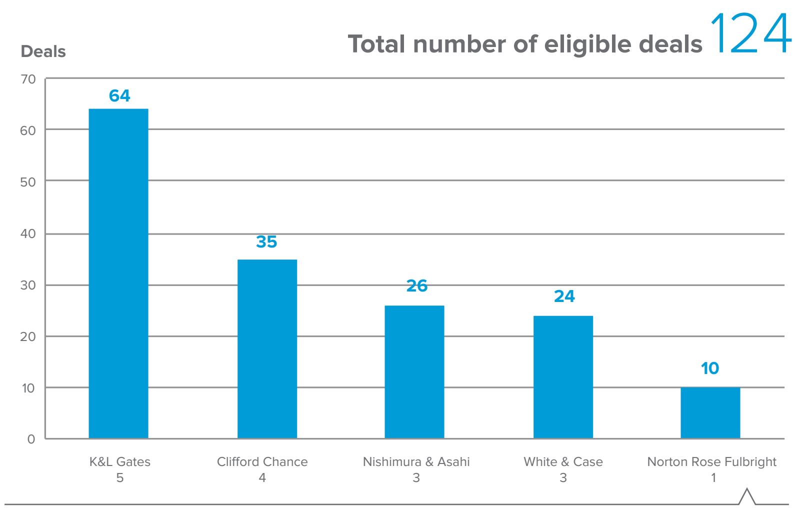
The export credit market was also fairly represented in Africa last year with Rwandair, which refinanced two A330-200 deliveries with KfW IPEX-Bank and Deutsche Pfandbriefbank. The transaction marked the return of Airbus ECA-support.

Solenta also financed two ATR72-600 deliveries in the ECA market with Export Development Canada on the debt side. Earlier this year Air Senegal was in the market for two A320neo deliveries.

The Aeromar transaction was innovative because it represented a take-out of manufacturer financing with ECA support for turboprops into Mexico. The transaction is an export credit agency-guaranteed debt that refinanced manufacturer-supported sales of a batch of relatively new ATR42/72 aircraft.

This deal was particularly complex because it involved the refinancing of sales finance, with ECA-guaranteed financing (Bpifrance/SACE and Export Development Canada) separately supporting different aircraft. It also included commercial debt for aircraft that were all in operation. Λ

Structured Lease



K&L Gates was the clear winner in the structured lease category in 2018 with half of the total's eligible transactions recorded by *Airfinance Journal*.

The firm says it has seen consistent interest in the aviation finance sector utilising Jol/Jolco transactions, with some novel transaction structures being used. K&L Gates advised Virgin Australia on its first-ever Jolco financing, for six used 737-800 aircraft.

"This transaction involved two separate sets of lenders with different hot button issues. We were responsible for negotiating the financing and leasing documentation with such lenders simultaneously, which was a logistically challenging undertaking, particularly in light of this being the airline's first-ever Jolco financing," says Singapore-based partner James Bradley.

The transaction was unique because of a combination of financing complex assets in local Australian dollars (vintage aircraft), using a complex structure to ameliorate any tax burden (ie, the structure was in strict application of the Australian/Japanese tax scheme to mitigate any withholding tax under the Jolco leases) and introducing a new name to the Jolco market.

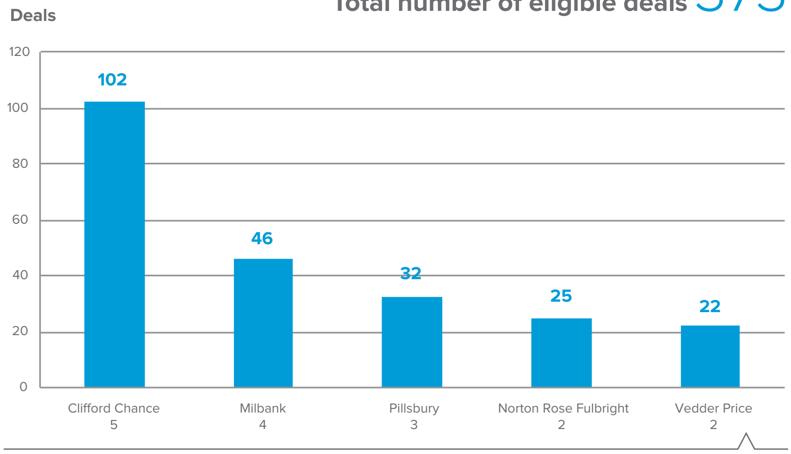
Bradley says the firm sees more interest and activity across the board in Jolco space in Vietnam. "We recently acted on behalf of VietJet on Jolco transactions financed by BNP Paribas and Natixis. These VietJet Jolco financings are a landmark Jolco transaction completed for any Vietnamese company. Moreover, they are indicative that there is an expansion of the Jolco market, and equity arrangers and equity investors are becoming more flexible as to the airline credit," he says.

K&L Gates also recently advised a major Japanese leasing company and Asset Brok'Air International in a Jolco transaction with ICBC Aviation Leasing for two new A321neo aircraft leased to Vietnam Airlines. This was ICBC Aviation Leasing's first Jolco financing involving a Vietnamese lessee.

"In 2018, we observed an increased enthusiasm for structured lease transactions and, in particular, we saw new airlines (some in brand-new jurisdictions) availing themselves of the popular Jolco product; initial indications are the proposed change to the Japanese taxation laws are having little-to-no impact on the appetite for Japanese investors to continue their Jolco involvement," says K&L Gates Tokyo-based partner Bob Melson. Λ

Commercial Loan

Total number of eligible deals 373



Clifford Chance was the most active law firm in the commercial debt market in 2018, ahead of Milbank and Pillsbury. The firm recorded more than 100 transactions during the year, or more than 25% of the total submissions.

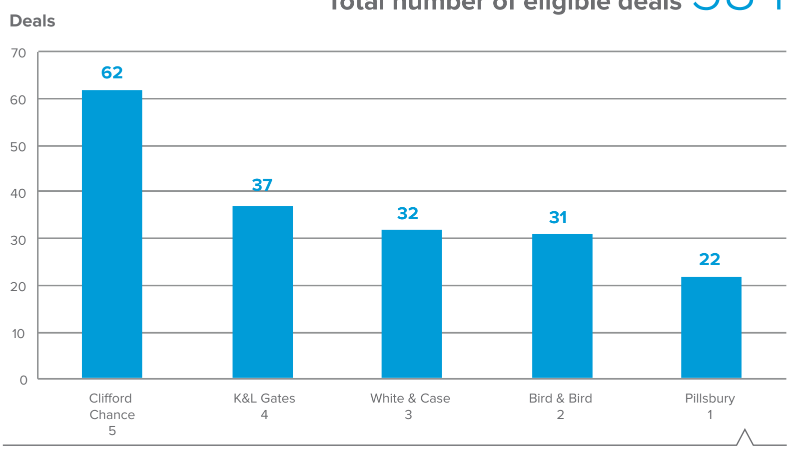
"Whether it be term loan facilities, revolving credit facilities or warehouses, the commercial loan market was very strong in 2018", says Milbank's Fine.

"This includes loans made to aircraft leasing companies and airlines globally. Large term loan facilities and warehouses were made available with the goal of eventually being taken out by ABS. Also, AFIC-supported financings continued at a steady pace with the 50th AFIC insured aircraft being financed," he adds.

The traditional aviation banks have faced intense competition on airline mortgage debt from the sale and leaseback, Jolco and bond/private placement markets, among others, according to Pillsbury's Jebely. "As a result," he says, "many of them have honed in on lessor portfolio/warehouse financings, which require significantly more expertise to underwrite and syndicate. Notwithstanding, competition among banks and an overall shortage of product to finance (made worse by the 737 Max delays) has kept margins tight. Continued regulatory tightening hasn't helped either. Many banks appear to be eagerly awaiting the day when their ability to move quickly and their emphasis of long-term relationships will become more valued again by the market."

Operating Leases

Total number of eligible deals 584



Operating leases are one of the most popular financing solutions in the market, providing more than 40% of all aircraft deliveries. Last year saw many transactions among leasing companies in the M&A market.

Goshawk Aviation acquired Irish lessor Sky Aviation Leasing International from the Public Sector Pension Investment Board, one of Canada's largest pension investment managers, and private equity firm ATL Partners in September 2018.

Airfinance Journal reported on 31 May 2018 that Goshawk had been involved in the bidding process, along with Avic International Leasing and Aviation Capital Group. Chinese lessor Avic was originally the frontrunner, but was pipped to the post by Goshawk. The acquisition accelerates Goshawk's already fast growth trajectory with the addition of 51 young aircraft with long leases.

One of the largest transactions in 2018 involved AirAsia Group. It entered into agreements to dispose of its aircraft leasing operations (Asia Aviation Capital) to entities managed by BBAM for $1.18 billion. Under the terms of the agreement, Fly Leasing purchased 33 aircraft and seven engines, Incline B Aviation acquired 38 aircraft and seven engines and Nomura Babcock & Brown acquired 13 aircraft. Of the 84-aircraft portfolio, 79 are leased back to AirAsia and its affiliates. Fly and Incline also entered agreements to acquire 48 aircraft ordered by AirAsia, and took an option on a further 50 deliveries.

AirAsia Group also sold a 25-aircraft portfolio from Asia Aviation Capital to entities controlled by Castlelake for a reported $768 million. The most innovative product-related transaction involved the A220-300 type. European carrier AirBaltic mandated a series of sale and leasebacks to the leasing community: Avation and CMB Leasing. The transaction represented the first open market sale and leasebacks for the type: up to that point the asset was derided by competitors and shunned by investors with just 249 sales accumulated over eight years.

The carrier has since added FPG Amentum as a lessor customer.

Darling of K&L Gates Charleston and New York says: "Within the JOL market we have seen an exponential upsurge of new investors, and a steady increase by well-established and existing investors – the investors are leasing to a significant cross-section of airlines all around the world"

...for

Air Transportation

APRIL 2019

GE Capital Aviation Services

USD 474,000,000

START II 2019-1
ABS Securitization

Joint Bookrunner

APRIL 2019

SMBC AVIATION CAPITAL

USD 500,000,000

3.550% Senior Notes
Due 2024

Joint Bookrunner

MARCH 2019

Ethiopian

1 A350

JOLCO

JOLCO &
Debt Arranger

MARCH & JULY 2019

GOL

USD 345,000,000
USD 80,000,000

3.75% Exchangeable
Senior Notes Due 2024

Joint Bookrunner

MARCH 2019

BBAM

1 B787-9

Leased to

WESTJET

JOL Commercial Financing

Debt Arranger

MARCH 2019

MERX AVIATION

USD 429,064,000

MAPS 2019-1 Limited
ABS Securitization

Joint Bookrunner &
Liquidity Facility Provider

FEBRUARY & JUNE 2019

VERMILLION

2 A321-200

Leased to

WIZZ

Commercial Financing

Mandated Lead Arranger, Facility
Agent & Security Trustee

FEBRUARY 2019

UNITED

USD 1,013,070

2019-1 EETC

Bookrunner

FEBRUARY 2019

AVOLON

USD 1,100,000,000

5.25% Senior Notes
Due 2022
5.25% Senior Notes
Due 2024

Lead Bookrunner

JANUARY 2019

JACKSON SQUARE AVIATION

1 A320 NEO

Leased to

GO

Commercial Financing

Arranger

JANUARY 2019

cargolux

1 B747- 400F

JOLCO

JOLCO &
Debt Arranger

JANUARY 2019

AERCAP

USD 1,100,000,000

4.45% Senior Notes
Due 2021
4.875% Senior Notes
Due 2024

Joint Bookrunner

Are OEMs thinking of new narrowbody?

Airbus' latest plans may involve a new narrowbody aircraft as the European manufacturer is believed to start hiring staff, according to job postings seen in the final quarter of last year by Bloomberg.

While the European manufacturer may record higher levels of research and development over the next few years as it starts developing a new narrowbody aircraft, possibly with some technologies applied to the A350, the current pipeline of A320 current generation aircraft and new engine option will provide enough capacity through 2030 at least.

The success of the Airbus A320neo and Boeing Max products is unprecedented. When Airbus and Boeing approached the market at the beginning of the decade with a re-engining narrowbody aircraft, no one could have guessed that seven years later the commitments for those programmes would be over 11,000 units.

"There is clearly more development potential in the A320 family," said Mark Pearman-Wright, head of leasing and investor marketing at Airbus at *Airfinance Journal*'s Asia Pacific conference in November 2018.

"In terms of the timing for the development, the engine industry sets a lot of that technology timeframe. We don't expect any major steps forward to sometimes post 2030," he adds.

The A320 and the 737 have fantastic productions runs and that is "great for every aircraft investor" says Pearman-Wright.

At 31 December, 2018, the Airbus' backlog for the A320 current engine family included 11 A319s, 70 A320s and 84 A321s. The European manufacturer had 55 A319neo, 3,678 A320neo and 2,158 A321neo backlogs.

Airbus has confirmed plans to produce 60 narrowbodies a month by the middle of this year and is studying higher rates.

"With the Neo generation of aircraft, we expect another long production run but we know with the modern design of the A320, we have the first iteration. We are clearly looking at potentially having a second iteration but that would not be before 2030," says Pearman-Wright.

For Boeing managing director marketing Kemp Harker, the Max is not about new engine only, as "significant improvements" have also been done is on the flightdeck.

"For lessors and investors, the fact that we now have an aircraft that will be at the end of the first lease and moving into a second lease will be similar to other aircraft operated by other airlines," he says.

Harker says the Max aircraft programme has been collecting more data through health monitoring capabilities for the customers.

"Both improvements, in addition to the engine efficiency, position the Max to be a good aircraft until Boeing reaches a point where it will be ready to replace with an all new single-aisle aircraft," he says.

Harker says Boeing remains focused on the entry into service of the Max 7 in the first quarter of this year and the Max 10 in 2020. "Then we will have the New Midsize Airplane (NMA) in the middle of the next decade before we come back to the single-aisle aircraft," he adds.

Boeing continues to assess the market for the NMA. "We think the addressable market is between 4,000 and 5,000 aircraft. But more importantly it is the kind of the market will compete in and it comes down to three categories: short-haul, high density market where we have multiple frequencies that may be served by single-aisle and twin-aisle aircraft."

The second area Boeing sees this aircraft competing is what he calls the "mis-assignment of aircraft" in the aviation network. Airbus and Boeing both build aircraft that fly long ranges, but those are heavier and built for those distances. They are then assigned to shorter range routes where the range of the single aisle is not sufficient. But it is not specifically designed for that market and not as economical. We think the NMA will be able to compete and take some of that market.

"Last, like we've seen with the 787s, we believe the NMA will provide opportunities to open new routes, which are beyond the range of the 757 or below the range of the 767 and beyond the range of the A321LR."


Airbus A320neo


Boeing 737 Max 8

Vietnam: the next aviation powerhouse

Vietnam is one of the fastest-growing aviation markets globally. Opportunities for aircraft manufacturers, lessors and the supporting industries are bountiful.

Vietnam is on a fast trajectory to becoming one of the global aviation powerhouses by 2037, the latest data from the International Air Transport Association (Iata) shows. Addressing the country's vast potential, Vietnamese airlines have their books filled with about 450 aircraft on order over the next 10 years.

The total number of passengers in Vietnam is expected to almost triple to 150 million by 2037, up from a forecast 100 million in 2028 and 58 million in 2018. This represents an average annual growth rate of 6.3%, versus 3.4% for the world on average and 4.7% in the Asia-Pacific over the same period.

The domestic market is particularly hot. Domestic passenger numbers are forecast to more than double to 60 million in 2028, up from 28 million in 2018.

Iata believes Vietnam will be the 19th-largest market in terms of total passengers in 2028, up from 23rd position as *Airfinance Journal* went to press. Only taking domestic into account, Vietnam is expected to be the ninth-largest market in 2028.

Drivers behind unprecedented growth

Vietnam's air transportation industry got a boost with the implementation of the Association of Southeast Asian Nations (Asean) open-skies policy in January 2015, allowing airlines to fly without restrictions throughout Asean.

Just as important, the emergence and proliferation of low-cost carriers (LCCs) in Vietnam some 10 years ago put the socialist republic on the aviation world map at last.

LCCs in Vietnam will account for about 60% of market share in 2019, which is much higher than the regional average of 35% and significantly higher than about 18% in Japan.

VietJet Air, a LCC which listed in 2017, has overtaken rival AirAsia in terms of market capitalisation. The $2.7 billion capitalisation is the second highest for a South-East Asian airline after marquee carrier Singapore Airlines ($8.75 billion). Meanwhile, AirAsia's market value stands at $2.2 billion.

"The new entrants – Jetstar Pacific, VietJet and now Bamboo Airways – are LCCs that feel the market is not being served well by the established flag carrier. It looks like Vietnam is following the same patterns we have observed in Thailand and Malaysia over the past decade. And it makes sense as Vietnam has a young population and incomes are rising sharply, similar to what we've seen in other Asean countries previously," says David Yu, adjunct professor of finance at New York University's Shanghai campus.

> *"Vietnam's aviation industry is moving in the right direction. Clearly, the government sees the importance of facilitating the industry's growth and the economic benefits that it brings on the country."*
>
> **Conrad Clifford**, regional vice-president for Asia-Pacific, Iata

Other key factors driving aviation growth in Vietnam are the country's booming tourism industry, which grew 19% for domestic passengers and 29% for foreign passengers last year, and Vietnam entering several free-trade agreements, which stimulates import, export and domestic consumption.

"Vietnam's aviation industry is moving in the right direction. Clearly, the government sees the importance of facilitating the industry's growth and the economic benefits that it brings on the country, although an area that we encourage Vietnam to review is the visa entry requirements. Relaxing the entry requirements can be a boost to travel to the country," Conrad Clifford, Iata's regional vice-president for Asia-Pacific, tells *Airfinance Journal*.

"Vietnam is a very interesting case in terms of how aviation plays a key role in social and economic development. It's still a relatively poor country with low per capita incomes and yet we've seen spectacular growth in demand for air travel," Association of Asia Pacific Airlines (AAPA) director-general, Andrew Herdman, says.

"Ho Chi Minh City-Hanoi is the fifth-busiest domestic route in the world now. I think this reflects the fact that ground transportation in the country is limited and air transport is by far the easiest way to get around and it's used by everybody now," says Herdman, who adds that attention must also be paid to the cargo sector.

"I remember the days when cargo out of Vietnam was basically limited to fresh produce and seafood. Nowadays, Vietnam is a very competitive manufacturing centre, not just for footwear and apparel but also consumer electronics like mobile phones. There are massive cargo infrastructure projects underway," says Herdman.

To meet the breakneck demand, the government in Hanoi last year revised the country's aviation industry development plan through 2030. Under the revised masterplan, the Civil Aviation Administration of Vietnam estimates that passenger traffic will reach 131 million by 2020 (up from 94 million in 2017) and 280 million a year by 2030. These numbers far exceed Iata's forecasts.

In the same vein, freight traffic is forecast to increase to 2.2 million tonnes with an average 18% growth a year through 2020. Some 10 years later, the cargo sector is estimated to handle 6.8 million tonnes of freight.

The only way for Vietnam to achieve these numbers is through unprecedented fleet growth driven largely by the country's sprawling LCCs. Nevertheless, rising interest rates could put a damper on growth.

"The low cost of capital has enabled ambitious start-ups to ramp up very quickly. Low interest rates have meant that aircraft financing has been an attractive investment. We've seen that through the growth of leasing companies here in the region. Also, these companies are ready to provide airlines with capital, even those with limited equity cushions," says Herdman.

"This environment has enabled even fledgling airlines to quickly ramp up, place big orders and scale up in ways that would have been difficult prior to the low interest rates we've seen over the last decade," he adds.

But what if the rates keep rising, a trend that has continued over the past 18 months? If you apply the stress test, if the interest rates rise, what do the operating economics look like for some of those carriers then?

"Many of them have limited equity, there hasn't been a lot of IPO [initial public offering] activity, so they're heavily geared. But so far they've bought at very competitive prices. Airbus and Boeing are still heavily backlogged. So even if the airlines can't use all the aircraft they've ordered themselves, the delivery slots can be transferred to other operators. This is acting as a kind of safety net in terms of whether people have over-ordered. Look at what Lion Group has done for example, selling or leasing out excess capacity that they bought at very good bulk rates," says Herdman.

VietJet Air

Although only in operation since late December 2011, low-cost carrier VietJet has snapped up 45% of the local market. The budget carrier will soon emerge as Vietnam's largest airline. It operates 64 aircraft, but has an impressive backlog of Airbus and Boeing narrowbodies in its orderbook.

VietJet was the first privately owned airline to be established in Vietnam. The carrier is owned by Sovico Holdings, HDBank, other organisational investors and its chief figurehead – president and chief executive officer, Nguyễn Thị Phương Thảo, Vietnam's first female billionaire with an estimated net worth of $4 billion.

Thảo met with early success while studying finance and economics in Moscow, where she began selling goods

from Japan, Hong Kong and South Korea in the USSR. She owns several resorts, as well as a 90% stake in Ho Chi Minh City's Dragon City development.

In February 2017, VietJet completed its IPO and became a fully listed entity on the Ho Chi Minh City Stock Exchange (HOSE), making it the first airline in Vietnam to be listed on the bourse. BNP Paribas, Deutsche Bank and JP Morgan Chase were the IPO's joint global consultants.

VietJet's order backlog comprises about 110 Airbus A321neos, 20 Boeing 737 Max 8s, 80 737 Max 10s and 100 737 Max 200s. The Hanoi-based airline has previously flagged long-haul aspirations, although this has quieted down quite a bit after a local rival – Bamboo Airways – entered the playing field in 2018 with significant Airbus and Boeing orders, including 787-9 widebodies.

With 200 737 Max aircraft on order, VietJet is one of the top five customers for the programme.

"The deal for 200 Boeing 737 Max aircraft is an important move for us to keep up with our international flight network expansion plan with a higher capacity," Thao said at the latest signing ceremony in February.

"I believe that our fleet will have breakthroughs thanks to new-generation technologies, which helps improve flight quality and enhance operational reliability, while reducing operating costs in the future. Passengers will then have more opportunities to fly with reasonable fares," she adds.

In addition to massive aircraft purchases, Airbus and Boeing will partner with VietJet to enhance technical and engineering expertise, train pilots and technicians and improve management capabilities at the airline and in Vietnam.

VietJet offers more than 385 flights daily, carrying more than 65 million passengers, with 106 routes covering destinations across Vietnam, Japan, Hong Kong, Singapore, South Korea, Taiwan, China, Thailand, Myanmar, Malaysia and Cambodia. The airline has a Bangkok-based subsidiary, Thai VietJet Air.

VietJet has been adding new routes through codesharing with more established carriers, including marquee carriers Japan Airlines and Qatar Airways.

Vietnam Airlines

For decades, flag carrier Vietnam Airlines faced little to no competition. This changed rapidly with the arrival of VietJet.

State-controlled Vietnam Airlines is conscious that it needs to trim some fat and become more agile in its new operating environment. The carrier hopes to list on the HOSE by mid-year as the Hanoi government looks to reduce its stake to 51% from 86% by 2020.

The proceeds from the IPO are to be used to fund Vietnam Airlines' fleet expansion.

In 2016, Vietnam sold an 8.77% stake to ANAHD, owner of Japan's All Nippon Airways, in a $108 million transaction.

Vietnam's flag carrier also operates LCC Jetstar Pacific as a 70%-30% joint venture with Australia's Qantas Airways.

Vietnam Airlines' order backlog is easy to grasp. The flag carrier has outstanding commitments for 15 A321neos and eight 787-10s. These will join an existing fleet of 89 aircraft, comprising 57 A321s, five A321neos, two A330-200s (to be phased out within the first half), 14 A350-900s and 11 787-9s.

ICBC Aviation Leasing closed a Japanese operating lease with call option (Jolco) financing covering two Vietnam Airlines A321neo aircraft on operating lease at the end of 2018. The overall transaction was arranged by Asset Brok'Air International, while Société Générale-CIB acted as debt arranger, debt underwriter, facility agent and security trustee in the transaction.

The Hanoi-based carrier has also financed two of its A350 deliveries in the Jolco market, while the remaining 12 are under leases.

The state protégé needs to make order decisions soon if it wants to stay relevant in Vietnam's evermore crowded skies and not end up with a fleet size a mere fraction of VietJet's.

Vietnam Airlines could very well decide to keep its domestic and regional fleet at current levels (with VietJet and others picking up the surplus demand) in favour of more long-haul operations. With incomes rising and the US Federal Aviation Administration giving Vietnam a Category 1 rating at last, there are plenty of long-haul opportunities, especially with flights catering toward the large Vietnamese diaspora on the US west coast.

Earlier in 2019 Vietnam Airlines said that its current A350-900s and 787-9s did not have the legs to go nonstop to the US without payload restrictions, which makes the A350-900ULR and 777X programme the frontrunners ahead of an expected widebody order this year.

Bamboo Airways

Bamboo Airways will become Vietnam's third-largest carrier within the first five years of operations if its ambitious business plan is successful.

Before receiving Air Operator's Certificate (AOC) approval, Bamboo had signed to buy 24 A321neos. Airbus executive vice-president, Jean-François Laval, said at the time that Airbus would help expedite the airline's licence application processes and prioritise A321neo delivery slots in 2022-25.

It does not stop there. As *Airfinance Journal* went to press, Bamboo chairman, Trinh Van Quyet, had confirmed that the A321neo order would be increased to 50 units.

Bamboo got its AOC approved in early January and launched domestic service on eight routes with five leased aircraft, comprising four A320s and an A319.

CDB Aviation has signed a lease agreement with Bamboo for three new A320neos from "the second half of 2019". The CDB aviation deal is the first aircraft leased by the carrier and the lessor's first lease to an airline in Vietnam.

Perhaps more interestingly, Bamboo plans to launch widebody flights to the US late this year or in early 2020. In late February, it confirmed an order for 10 787-9s. This came after a 2018 memorandum of understanding (MoU) for 20 aircraft of the type.

Bamboo will be a hybrid carrier offering a mix of premium and budget fares on the same flight. It has announced plans to serve Asia and also long-haul routes to Europe and North America.

The biggest challenge to aviation development in Vietnam is infrastructure bottlenecks. The airports in Hanoi and Ho Chi Minh City are filling up quickly with slots and ramp space at a premium. Addressing the growing congestion, Bamboo said it would fly passengers directly to Quy Nhon, Quang Ninh, Haiphong, Thanh Hoa, Phu Quoc and Nha Trang, destinations where parent FLC Group operates hotels and resorts.

Jetstar Pacific

Founded as Pacific Airlines in 1990, Jetstar Pacific was the first LCC in Vietnam. In 2007, Qantas took a 30% stake and flag carrier Vietnam Airlines purchased the remainder in 2012.

Jetstar Pacific's fleet consists of 15 A320s. The budget carrier has not announced any fleet additions, and it is unlikely it will attempt to compete with the aggressive expansion of VietJet and Bamboo.

AirAsia Vietnam

LCC conglomerate AirAsia Group is planning to enter the market through a joint venture with Hai Au Aviation, a subsidiary of tour operator Thien Minh Group, to establish AirAsia Vietnam. The latest deal between the parties was struck in December 2018 and calls for the establishment of the new airline in the second half of 2019. AirAsia Group will hold a 30% stake in the joint venture (the maximum allowed under Vietnamese investment laws for a foreign entity).

If materialised, it is expected that AirAsia Vietnam will tap the group's impressive orderbook counting more than 400 A320-family aircraft and up to 100 A330-900neos.

Infrastructure requirements

The growth of Vietnam's airlines hinges on the country's ability to provide sufficient infrastructure.

Vietnam's Ministry of Transport has announced plans to spend $3.7 billion by 2020 and $15.4 billion by 2030 to develop 20 airports with a design capacity of 144 million passengers and 2.5 million tonnes of cargo a year by 2020. By 2030, plans call for 28 airports with a design capacity of 308 million passengers and 7.5 million tonnes of cargo a year.

"It is encouraging to hear of the government's plans to expand their airport infrastructure to eventually 28 airports with a handling capacity of over 300 million passengers and 7.5 million tonnes of cargo by 2030. The timely implementation of the airport masterplan is critical to ensure that the right infrastructure and capacity is available to support the expected growth. Already, the key gateways at Hanoi, Ho Chi Minh City and Da Nang are congested," says Iata's Clifford.

Airports Corporation of Vietnam (ACV) data shows that key airport development projects include upgrading and expanding Hanoi's Noi Bai airport (about $500 million) and Ho Chi Minh City's Tan Son Nhat airport (about $550 million). New airports are being built in Phan Thiet and Sapa, while Hai Phong, Hue and Quang Ngai are receiving new terminals.

The one project to trump them all is the under-construction new hub airport for Ho Chi Minh City – Long Thanh. ACV says investments of $4 billion were made in 2018 alone to build Long Thanh.

The new airport is expected to open in 2025 with one runway and a terminal capable of handling 25 million passengers and 1.2 million tonnes of cargo a year. In Phase 2, from 2035, the facility hopes to increase capacity to 50 million passengers and 1.5 million tonnes of cargo a year with two runways, followed by 100 million passengers and five million tonnes of cargo on five runways from 2050.

Long Thanh carries a price tag of $15.6 billion. Once operational, it hopes to compete with the traditional Asian transfer hubs in Singapore, Hong Kong and Bangkok.

No matter the angle, it is clear that Vietnam's aviation industry is gearing up for massive expansion. Aircraft manufacturers, leasing firms, lenders, arrangers and law firms should take note.

New order for ULCCs in Canada

The Canadian ultra-low-cost carrier market has attracted new operators aiming at providing disruption in an already challenging industry.

Like Argentina and Chile, which saw a new wave of low-cost carriers (LCCs) last year, Canada does not have that much of a population density. Furthermore, the new ultra-low-cost carriers (ULCCs) look at challenging the incumbent airlines: Air Canada and WestJet.

The Canadian ULCC market is still relatively untapped. But so was the low-cost market in the early 2000s in Canada when Jetsgo and CanJet provided competition for Air Canada.

Jetsgo, whose slogan was "pay a little, fly a lot", ceased operations in 2005. Established through the merger with Canada 3000, CanJet was rebranded as a LCC between 2002 and 2006 before operating charter flights. It eventually discontinued operations in 2015.

Zoom Airlines, although concentrating on low-fare transatlantic services, stopped operations in 2008 after six years of service, while Air Canada's discount airline, Zip, ceased flying in 2004 after two years of operations, returning its aircraft to the mainline operations.

The start of the Iraq War in 2003, the steep rise in oil prices, the Sars epidemic and the poor investment climate for airline projects all contributed to add pressures on the start-ups in the early 2000s.

The ULCC arrival will probably spark a price war. But can the likes of Canada Jetlines and Swoop succeed where Zoom Airlines, Zip, CanJet and Jetsgo have failed?

Jetlines' strategy is to target primarily unserved or underserviced catchment areas and secondary airports, flying point-to-point routes.

Swoop is designed to be "incremental" to the WestJet network rather than cannibalising it. The carrier, which was described by Ed Sims, the WestJet chief executive officer (CEO), as a "competitive weapon", is said to have a cost base 40% below the mainline carrier.

Canada Jetlines

Canada Jetlines has not had the best of starts. Although it has made public its plans since November 2013, the carrier missed the start of its operations in June last year because of a lack of aircraft.

Over the past 12 months, Jetlines has appointed two ULCC veterans, one of whom, Javier Suarez, became CEO in September 2018.

It plans to start operations later this year with two 12-year-old Airbus A320s leased for six years from AerCap. The two committed A320s, which are expected in the first half of 2019, are sister aircraft, having virtually identical conformity in design, features and equipment, allowing Jetlines to expedite the necessary training and maintenance processes to commence operations.

"Jetlines is committed to becoming Canada's first true ultra-low-cost carrier. It's not fair for Canadians to have to consistently overpay for their air travel."

Javier Suarez, CEO, Jetlines

According to its latest filing, the carrier has paid about $2.2 million in deposits for the aircraft. Its rental commitments are $5.1 million this year, and $5.9 million a year between 2020 and 2024. In 2025, its lease rental commitment is $1.2 million.

Jetlines initially looked at the Boeing 737-800 model to start operations and consequently signed a purchase agreement with Boeing for 21 737 Max aircraft in December 2014. The contract has now been terminated.

Jetlines issued late last year shares to fund its operations and secured $7.5 million additional funds from SmartLynx Airlines, the ACMI aircraft lease services provider in Europe for A320 models. SmartLynx also has the option exercisable for a period of 12 months to

Swooping into the Canadian market

Swoop's initial network 2018, with Halifax, Abbotsford, Winnipeg, Hamilton and Edmonton destinations

complete a second financing for variable voting shares for additional gross proceeds of up to $7.5 million.

Jetlines recently entered into a letter of intent for a financing of up to $14 million with a Korean special purpose fund led and established by InHarv Partners. The offering consists of convertible debentures and 1,785.71 variable voting share purchase warrants for every $1,000 of principal of the debentures for gross proceeds of an initial tranche of $7 million. The SPV has the option to increase the total gross proceeds to up to $14 million. The offering carries a 10% interest rate and has a 36 month's tenor.

The timing of the launch of airline operations remains subject to the completion of its air operator certificate from Transport Canada. Jetlines now targets 17 December 2019 for launch of operations.

The carrier has recently unveiled Vancouver airport as its main base but has also announced plans from Montréal Saint-Hubert Longueuil airport to several destinations in Canada, including Québec City, as well as US destinations to Florida and New York.

Saint-Hubert is being expanded as part of a plan to position itself as a low-cost airport serving the Montérégie region of Québec and Montréal. The airport recently upgraded its runway, a project that received support from the federal government, which injected $13 million, while a new passenger terminal is planned.

"Our low fares should encourage people from Montréal and the surrounding areas to travel more often. Driven by these low fares, Montréal should experience an increase in the number of tourists and visitors it receives," says Suarez.

"Jetlines is committed to becoming Canada's first true ultra-low-cost carrier. It's not fair for Canadians to have to consistently overpay for their air travel, whether be it to travel for leisure, or to visit their friends and family. Jetlines is here to put an end to this," says Mark Morabito, the carrier's executive chairman.

Jetlines says it will use the proven commercial aviation ULCC profitability model in the USA (Allegiant Air and Spirit Airlines), Europe (Ryanair) to stimulate demand in Canada. The company is targeting a 40% reduction in costs below their nearest competitor, thereby creating new passenger demand by market stimulation.

Swoop

WestJet's Swoop started operations on 20 June 2018 with a pair of 737-800s configured with 189 seats in a single-class configuration.

WestJet placed Swoop's headquarters in Calgary to enable the new airline to share infrastructure and services with the parent company.

Bob Cummings, WestJet executive vice-president, strategy, said the name demonstrates how the carrier plans to "swoop in to the Canadian market with a new

business model that will provide lower fares and greater opportunity for more Canadians to travel". About 60% of Swoop passengers are expected to be for leisure, 30% to visit family and friends and 10% for business.

The ULCC subsidiary of WestJet initially launched operations on domestic sectors connecting Abbotsford, Halifax, Hamilton, Edmonton and Winnipeg, taking over these routes from its parent company.

WestJet says it intends growing Swoop's network in a way that would not cannibalise the parent's operations.

Initially, Swoop deployed two 737-800s. A third unit was added last July and another in August. By the end of 2018, Swoop operated six aircraft. The initial target is to operate a fleet of 10 aircraft by November.

All 737-800s will be transferred to Swoop from WestJet – they were identified as excess capacity for the mainline carrier.

The new carrier launched international services in December. "We will look to continue to grow the Swoop network and we plan to launch exciting destinations in the transborder and international markets later this year," WestJet CEO Sims said at the time.

It has since expanded into the Mexican market but the carrier has also added five new domestic markets, two new transborder markets and an extension of two international routes.

"The summer 2019 schedule focuses on realising economies of scale," says Swoop's president, Steven Greenway. "We have created a schedule that leverages our existing network while expanding to a limited number of strategic destinations."

The carrier plans to reach C$6 cents ($4.6 cents) per cost per available seat-mile (CASK) this year. WestJet's CASK in the third quarter of last year was C$10 cents.

WestJet's group of airlines plans between 6.5% and 8.5% capacity growth in 2019, with only 1% to 3% domestically.

Flair Airlines

On the day that Swoop took to the skies (20 June 2018) Flair Airlines said it welcomed competition from other airlines in Canada. "The carrier aims to fill a void left by Air Canada and WestJet," commented David Tait, Flair's executive chairman at the time.

"What this country has needed in this area is competition for years," adding: "It's a question of keep being a thorn in the side of your competition and leveraging that smallness, so we're very excited about what we can do in this country, and flying south of the border as well."

Flair Airlines has been around since 2005, mainly as a charter carrier.

After its rebranding and change of business model to an ULCC in late 2017, Flair appointed Jim Scott, the former Jetlines chief executive officer, as CEO in January 2018. He was joined by Jerry Presley, the company's new executive board chairman, who represents a private group of investors which holds a majority stake in the carrier, after Flair's former president, Jim Rogers, sold his shares. The change of ownership was announced six months after the purchase of the assets of NewLeaf Travel, the ticket reseller of flights operated by Flair, in June 2017.

As part of the changes, Kelowna-based Flair announced Edmonton airport as the discount flyer's new main transfer hub, saying it settled on Edmonton because of the airline's popularity in the city and the growth potential it sees at the airport.

But Flair also deviated from its strategy by starting services from major airports, rather than staying put with secondary airports. In December 2017, it added Toronto Pearson and Vancouver to its list of destinations. The carrier is seen as tapping into a larger crowd at those cities, especially in the off-peak season. This will also translate into higher landing fees.

One area where Flair may have an advantage is fleet costs. The carrier purchased two 737-400 aircraft in autumn 2017 and now operates seven aircraft of the type equipped with 156 seats.

It upgraded to the larger 737-800 model for the 2018/19 winter season and operates three aircraft of the type under lease agreements.

In 2019, Flair expects to add four more Boeing aircraft to accommodate the nearly 1.5 million ULCC passengers it forecasts this year.

Race to the South

The Canadian ULCCs will try to stimulate demand among people who do not fly regularly but it seems inevitable that they will rapidly pursue the hefty cross-border markets, especially to sunny destinations in the USA and Mexico.

Swoop became the first Canadian ULCC to announce flights to the USA, in August 2018. The carrier initially served US destinations connecting Hamilton to Phoenix-Mesa, Fort Lauderdale, Orlando and Tampa.

It also consolidated its position in the US market with services from Edmonton, Alberta; Hamilton, Ontario; and Abbotsford, British Columbia.

Interestingly, WestJet has terminated a nonstop service between Edmonton and Las Vegas, opting to offer flights via Vancouver, Calgary or Winnipeg instead.

Flair Airlines also announced services to the USA in the final quarter of last year with three scheduled destinations this winter: Las Vegas, Mesa and Orlando.

Swoop then became the first ULCC to open the Mexican market. Last October it announced service into Mexico with the addition of four new routes serving the cities of Cancún, Mazatlán and Puerto Vallarta from its Abbotsford and Hamilton bases starting in January.

"Mexico continues to flourish as one of the most popular vacation destinations for Canadians," says Greenway. "Combining Swoop's ultra-low fare with the favourable exchange between the dollar and peso makes the value proposition of exploring Mexico enticing for families and budget travellers alike," he adds.

FlyToo

FlyToo is a temporary placeholder name by parent company Enerjet, a Calgary-based charter airline. Tim Morgan, one of WestJet's founders, has been working to turn Enerjet into an ULCC for a number of years. It has run into trouble raising sufficient funds to get off the ground. Darcy Morgan, the chief commercial officer and brother of Tim, says that

“We believe there are millions of Canadians who would jump at the chance to have a simple, safe and affordable alternative to the sky-high costs of air travel.”

Tim Morgan, founder, WestJet

Enerjet tried on three different occasions to raise funds. “We were always able to raise some money,” he adds, “but not enough to de-risk the project.”

The shift in foreign ownership rules for new airline entrants in 2017 helped the search for cash, and Tim Morgan says there is smart money behind his proposed ULCC.

However, while Enerjet got a green light to bring in more foreign money, there are other regulatory considerations the Canadian Transport Agency is weighing — whether the foreign investment leaves Enerjet under what is called Canadian “control in fact”. The issue is whether, with the foreign money in place, FlyToo’s day-to-day operations and strategy will still be controlled by Canadians.

Enerjet stopped operating its charter business in anticipation of launching its ULCC model, hence the anxiety to get off the ground. But, in late December, an investor group led by Tim Morgan, announced the launch of ULCC service this year. Backed by significant financial commitments from a consortium of Canadian investors and Indigo Partners, a leading private equity firm specialising in the aviation industry, Enerjet is to be rebranded.

“We believe there are millions of Canadians who would jump at the chance to have a simple, safe and affordable alternative to the sky-high costs of air travel,” says Morgan. “We are extremely pleased to have the backing of leading Canadian investors and our partners at Indigo. Together, this group has the financial capacity, experience, and operating expertise to transform Enerjet into a world-class, ultra-low-cost airline that will bring increased choice and competition to the Canadian market.”

The move marks the penetration into the Canadian market by Indigo Partners, which has several investments in South America and Europe.

“We believe we can significantly increase the size and competitiveness of Canada’s domestic and transborder aviation market by offering an ultra-low-cost alternative to the high cost of air travel,” says Bill Franke, Indigo’s managing partner.

Incumbent response

The new entrants believe there is a space for the ULCC model in Canada but WestJet and Air Canada have the financial muscle to subsidise their low-cost arms.

They also plan to go after a small piece of the market for Air Canada and WestJet leisure travellers.

WestJet’s response to the ULCC threat in Canada is Swoop. Air Canada launched leisure low-cost division Rouge in 2013.

Air Canada says Rouge pursues a long-term cost structure consistent with that of its leisure market competitors, effectively lowering costs per available seat-mile (CASM) on leisure routes through increased seat density, lower wage rates, more efficient work standards and reduced overhead costs. This is yielding enhanced margins and providing new opportunities for profitable growth in international leisure markets.

The Air Canada Rouge fleet is estimated to generate 25% lower CASM compared with the same aircraft in the mainline fleet.

Air Canada continues to upgauge the size of its Rouge fleet. It has added four aircraft in the first half of this year to reach 53 units. It may have 56 aircraft – 31 narrowbodies and 25 767s – by the end of next year.

The battle for the Canadian skies is underway and the success of the ULCCs will heavily depend on how attractive they are for the new travellers. To survive, support from their investors will be key.

ULCCs may stimulate markets but there may be not be space for four airlines. Regardless, this is an exciting time for Canadian travellers.

Data-driven insights

The aviation industry has embraced opportunities with technology and data to drive customer-focused innovation over the past decade. The next phase of this trend is delivering genuine data-driven insights in finance and operational functions, according to Kieran O'Brien and Brendan Crowley of KPMG in Ireland.

In recent years, the aviation industry has used data to improve the customer experience, impacting on highly visible processes such as loyalty programmes, targeted booking systems, automated check-ins and apps. These changes are all highly visible but back-office functions and strategic decision making offer the next round of innovation.

While customers may have benefited, airlines and lessors are increasingly asking themselves whether they are making the best use of data for their own decision making, profitability and cost control.

Kieran O'Brien says that there are continuing challenges with siloed data-sets, changing business plans and legacy technology. These factors have inhibited organisations in utilising data to drive performance and data-driven insights. Furthermore, the capital-intensive nature of the industry can swiftly punish poor decision making as shown by recent airline failures in both Europe and the United States.

How are management teams looking to take control of their data?

Airlines and lessors are increasingly focused on integrating their data-sets across finance teams, maintenance teams, contracts management teams and HR. While the use of data warehouses and data lakes has increased, the key challenge is ensuring that you have the tools to provide the right insights and the ability to run scenarios and deep dive on questions.

In the leasing industry, competition is forcing lessors to be both innovative and strategic with how they structure their contracts, account for credit risk, manage their maintenance programmes and make key trading decisions. While companies are getting to grips with data quality and integrity, there is still a distance to travel to utilise that data effectively for the C-suite.

We have seen other industries utilise Enterprise Performance Management (EPM), not just to provide access to data but to provide real insight and the ability to run scenarios and push driver-based planning into the hands of the C-Suite. This must be the next step for the aviation industry to utilise fully the power of data.

We examine below some of the trends shaping the aviation industry.

Digitalisation

The aviation industry is making rapid strides with the digitalisation of its data. Maintenance records, contract management and asset specifications are at the forefront of this revolution:

- in the medium term, our clients are looking towards Optical Character Recognition (OCR) to digitalise automatically their paperwork and turn this into a data-set that can be analysed. Brendan Crowley says that this technology already exists for established contracts with structured data. The next challenge is harnessing artificial intelligence (AI) to interpret bespoke amendments. KPMG has partnered with IBM and is leveraging its Watson technology with clients and applying lessons from other industries to analyse lease contracts;

- longer term, the aviation industry will change its processes to remove fully the need for paperwork. Smart contracts will be immediately interpreted and field agents will rely on digital signatures; and

- a new wave of start-ups are already pre-empting the advent of full digitalisation and are encouraging all market participants to share their data for mutual benefit.

Operational efficiency
O'Brien says that digitalisation is transforming operational efficiency from an art into a science:

- airlines are using AI to produce analysis on fuel efficiency and cost savings, breaking down digital boundaries between data-sets to identify correlations that may otherwise be hidden;

- more traditional activity-based costing initiatives and benchmarking continues to make strides by having access to more relevant data. Executives should never underestimate the power of harnessing comprehensive data-sets and applying established techniques by using new technology; and

- we have already started to see this trend in fuel saving through predictive analytics for airlines and lessors using robotics to drive operational efficiencies and integrate legacy systems.

Real-time reporting
Airline customers have seen huge benefits from getting access to real-time information. Delta Air Lines is continuing to position itself as an industry leader with innovative online baggage-tracking software for customers. Aircraft tracking and customer relationship software are now the norm in the industry. However, back-office functions across many industries, including aviation, have still to realise the benefits from these innovations:

- the aviation industry has been hit with a number of airline collapses in 2019 that have raised questions about the effectiveness of financial planning and analysis functions. The speed of such collapses clearly surprised many of the executives in these companies, with mixed messages contributing to a sense of a company not in control of its data or business plan;

- aviation companies are proficient at evaluating individual opportunities but fail to monitor how such opportunities evolve over time, in favour of macro-level performance indicators. Real-time reporting will allow executives to monitor their performance and take corrective action before it is too late; and

- real-time reporting can also help executives understand the limitations in their current approach when they compare the realisation of their forecasts with their predictions. "What-if analysis" can account for factors outside of their control and can help to remove "market forces" and "fuel prices" being used as reasons to avoid engagement in real assessments.

Enterprise Performance Management (EPM) systems
The opening up of data-sets to management encourages them to frame their own questions and discover their own answers:

- EPM systems encourage collaboration among teams, and put structure on processes and procedures. In addition, "drag-and-drop reporting" provides an invaluable resource to management by allowing them create their own bespoke reports instead of relying on their IT teams;

- the key to unlocking real insights is choosing tools with a full range of capabilities, including workflow, visualisation, automated controls, etc;

- drill-down reporting, automated alerts and access to transactional level detail democratises data and means that underlying trends and patterns can be identified and challenged; and

- KPMG's Powered Enterprise solution provides an effective framework and technology platform for organisations looking to bring their finance functions into the 21st century.

Blockchain
International Air Transport Association published a whitepaper in October 2018 called BlockChain in Aviation, identifying five applications for the aviation industry as follows:

- **Smart Contracts:** the codification of terms and conditions and neutral confirmation sources can revolutionise a typical "procure to pay" service delivery mechanism;

- **Certification:** certification of maintenance events and individuals can be streamlined and monitored in realtime;

- **Tokenisation:** digital assets and liabilities can contribute to automated reporting and accounting;

- **Provenance:** asset and status tracking can be facilitated via Blockchain and can create an immutable history; and

- **Digital Identity:** identity management solutions and authentication software are facilitated by Blockchain technology.

We are already seeing clients dipping their toe into Blockchain solutions, such as Singapore Airlines' frequent-flyer programme. O'Brien notes that while there continue to be some scepticism in the industry about the applications of Blockchain, we continue to see the development of the technology and the emergence of specific Blockchain companies focused on aviation. To benefit truly from this technology quickly, we will need consensus within the industry regarding data standards and consistency. Blockchain is encouraging executives to think big and that can only be a good thing. If a different technology can better solve the problem then this should be embraced.

Rules-based decision making and exception reporting
As airlines, lessors and service providers grow in scale and the data available to inform their decisions becomes increasingly vast, executives are challenged with focusing their attentions on where it is most important:

- exception reporting allows management to set thresholds, limits, watch-items and receive automated alerts when these are breached. Has an aircraft held its value to the point that it no longer becomes economically viable for a lessor to continue to lease it? An effective decision-making engine will prompt management to consider a trading decision before a more arbitrary annual review comes up;
- rules-based engines are an incredibly effective means of tapping into a company's intellective property and knowledge base. It encourages leaders to evaluate how they make decisions and document their thought process for the benefit of other future executives and the company good; and
- trading decisions require detailed analysis for both airlines and lessors. Airlines need to evaluate new technology and the benefit that it brings.

Cloud-based applications
Having distributed models, decision-support tools and certification and procedural software streamlines administration activities for field users. It also provides real-time data to management in head office and avoids needless paperwork.

Automated data sharing
The aviation industry is a unique ecosystem of participants encompassing airports, regulators, airlines, manufacturers, lessors, maintenance, repair and overhaul companies and numerous service providers.

Crowley argues that cost efficiency, safety and regulatory requirements are accelerating the trend towards sharing of digital records and that once this trend is established, participants will be encouraged to conform, as with the upcoming GATS initiative, which KPMG has had the privilege of supporting on a number of fronts.

However, there are challenges with the vision of a fully integrated ecosystem:

- participants worry about the obligations imposed on them with having access to too much information. Could a third party have been more alert to warning-signs and come forward to regulators with concerns?
- is there an obligation on participants to analyse the data if it is available?
- in Europe, there are General Data Protection Regulation (GDPR) considerations around customer data and cross-border data sharing challenges; and
- Crowley identifies disparate technology solutions as one of the key roadblocks to achieving this vision. He believes that industry bodies have a key role to play in defining the standards expected and encourage a shift towards interoperability.

How do you know if you are on the right track?
KPMG's Connected Enterprise research with Forrester identified eight capabilities that will improve organisational alignment and drive growth. The Connected Enterprise methodology, or a similar approach, allows organisations to assess their organisational and operational alignment in a clear and structured manner.

O'Brien notes that investing in the right areas is critical, and honest structured self-assessments allow investment to be made where it has the most impact; from product and pricing and supply chain to technology architecture and advanced data and analytics.

Once companies have completed an assessment of their operational alignment, effective change management programmes can be implemented.

Crowley notes that over the past decade many executives have chosen the right technology but adopted the wrong implementation model, frustrating their vision. For this reason, KPMG's Powered Enterprise suite of EPM transformational solutions combines technology with the processes, governance and best-in-class procedures to make the implementation a success. Companies should be honest with themselves regarding where their project management strengths lie.

What are the obstacles to achieving your aims?
Our experience has identified three key obstacles that impede the C-Suite's ability to achieve their vision.

1. Thinking big, planning small:

- aviation companies are alive to the possibilities of the data they hold. Increasingly, chief information officers have a vision of what is possible if data is integrated and analysed to support real-time decision making;
- however, strategic visions require strategic planning and an acknowledgement that developing a best-in-class solution will take time, effective design and hands-on involvement of management; and

- statements such as "we don't want to change our processes, we just want to change the technology" often end up understating the degree of complexity in a process and sets the technology solution up for failure. Managers need to recognise that change will take time and technology solutions require cross functional steering groups, careful business requirements and a realistic timeline. Otherwise, initiatives are doomed to failure or being relegated to proof of concepts that cannot meet management's expectations.

2. Inflexible solution:

- technology solutions often fail as soon as they are implemented because users need to deal with a bespoke situation. Airlines and lessors need to be honest with themselves about how codified their existing models really are;

- existing processes and models are not always as structured as many companies believe. Developing a strategic solution is never as simple as "I just want to convert my current Excel Model to the cloud". In most cases, a single Excel Model does not exist. Your process is ever changing and dependent on subject matter experts; and

- your solutions need to allow room for expansion, overrides and management judgments. An inflexible rules-based solution can quickly become unworkable and users will be forced back into their old bad habits and processes.

3. The wrong technology:

- companies offer off-the-shelf solutions for contract management, technical management and financial management that will allow aviation companies put in place a solid technology foundation. These are important building blocks;

- airlines and lessors need to give careful attention to the technology they choose, how their disparate software can work together and what bespoke technology they need to meet their strategic vision; and

- success factors should be reviewed including:
  – in-house support;
  – interoperability, including online access;
  – scalability;
  – visualisation software;
  – processing power; and
  – licencing.

Why should you change?

- investors and management are increasingly demanding real-time access to information. The competitive environment for lessors and airlines is intense, meaning *pricing, trading and investment decisions are often made with increasingly fine margins*. Having the most accurate information available is critical. Negotiations often involve time-sensitive "what-if analysis" to evaluate whether concessions or opportunities make economic sense;

- *industry trends* including the introduction of GATS and regulatory demands means digitalisation of records and automated data-flows are no longer nice to have but are essential to companies which want to participate in global markets;

- a *scalable* business platform requires that executives have the tools and technology to support their growth plans. In particular, lessors which previously relied on Excel to manage their fleet are increasingly asking themselves whether automating their models can allow them to focus on strategic decision making;

- *GDPR* requirements means that aviation companies are increasingly focused on the data they hold, and its power; and

- *employee satisfaction* requires that staff focus on tasks that interest them. Opening up your organisation and embracing the opportunities afforded by digital insights can energise staff, democratise decision making and generate new and innovative ideas.

What should you do now?

O'Brien defines a number of activities that all executives and chief information officers should be actively pursuing to ensure they take advantage of digital and technology change:

- define a vision of your digital landscape: it can be difficult to look beyond your short-term challenges and systems. Consider what the future might look like and what your company's intellectual property and differentiators will be as your industry matures. Think big;

- catalogue your current models and systems: how can you make your current models more efficient, more accurate and timelier? Identify recurring tasks that may benefit from automation and ask yourself how processes are adding value;

- engage with industry bodies and participate in discussion: listening to other market participants can help shape your view of where change is needed;

- survey your customers and employees: what excites or antagonises your customers and employees?

- look to other industries to see what can be learned: an over-focus on your own industry can limit your vision of what is possible. Embrace an innovative mind-set and consider how unrelated solutions have transformed experiences for people in other industries and even your pastimes and interests; and

- don't be afraid to ask for help.

Challenging times in Indian aviation

The Indian aviation industry has continuously witnessed turbulent weather, despite registering a 15% annual growth, on a conservative estimate, for the past several years.

After the closure of Kingfisher Airlines in 2012/13 and the near collapse of SpiceJet in 2015, April 2019 witnessed India's first full-service private airline – Jet Airways – being grounded, operations shut and the carrier facing insolvency proceedings. Jet was established more than 25 years ago and was considered by many as India's premier airline with a fleet of about 120 aircraft consisting of Boeing, Airbus and ATR models, both narrow- and widebody, and servicing domestic and international sectors.

Several aircraft on operating leases have been either repossessed by lessors or have been re-leased to other Indian operators. At the time of publishing this article, the Resolution Professional appointed under the provisions of the (Indian) Insolvency and Bankruptcy Code (IBC) was looking into prospects of resurrecting the airline. It will be interesting to see whether Jet Airways (as reported in January 2019 and the figures being as on September 2018) with accumulated loss of Rs130 billion ($1.8 billion) and a net debt of Rs80 billion ($1.1 billion) is able to attract investors and fly again or will go down the insolvency route.

The closure of the Jet Airways operations has allowed other private airlines, such as Indigo, SpiceJet, Vistara and GoAir, and the government-owned Air India, to take over (at least temporarily) the slots made available by Jet. Although SpiceJet is the only airline flying the Boeing 737 aircraft (and which has acquired many 737s from the existing lessors of Jet Airways), airlines flying the Airbus A320, such as Vistara, have also opted to take on lease the 737s from Jet Airways' existing lessors.

Jet Airways was grounded in April 2019

Nimish Vakil

Sneha Gaikwad

Indigo, which has always been proud of operating brand new aircraft, has raced to a total of about 240 aircraft; SpiceJet, from a near collapse in March 2015 when it was left with barely 16 737s, is now flying a mix of 737s and Bombardiers, with a fleet of about 110 aircraft (and 200 on order); and GoAir has a fleet of 50 A320s (and about 100 on order).

With the closure of Jet Airways (which at its peak had a market share of more than 40%), Indigo leads the way with a market share of 48%, operating about 1,400 flights a day, followed by SpiceJet at just over 15% and about 535 flights a day and GoAir touching 10% market share and 300 flights a day.

Low-cost carriers have been consolidated as the major market players in the Indian domestic sector. Many private airlines have already started international operations to the neighbouring countries and are looking at acquiring widebody aircraft to fly longer routes and take over the slots made available by the closure of Jet Airways' international operations.

After an unsuccessful attempt in 2017 by the Indian government to sell a 76% equity in Air India, which is reported to be reeling under a debt of Rs310 billion after the government took more than Rs290 billion debt off its books, the Indian government is again attempting to sell it's 100% stake in the carrier.

This comes in the wake of Jet Airways, through the process under the IBC, looking for a strategic foreign investor. Interestingly, Air India and Jet Airways are the only two Indian airlines which cater to the long-haul international routes and which are being operated by Air India alone.

Various new enactments by way of circulars or notifications from the Indian Director General of Civil Aviation (DGCA) and the tax department have been put to the test. The process of deregistration, which was considered by the courts in the SpiceJet litigation in 2015 and enacted in statute and further improved on by DGCA notifications/circulars in 2019 paving the way for deregistration in a maximum period of five working days of an application being received by the DGCA, was successfully achieved. Other issues such as payment of outstanding Goods and Services Tax (GST), which is payable by the Indian operator but made payable by the lessor to obtain the GST clearances, is posing a challenge. The new law relating to insolvency, the Insolvency and Bankruptcy Code, 2016, is for the first time being tested in relation to an airline company.

It would not be inappropriate for the government to step in and give the necessary impetus to an industry with an annual growth rate of 15%. Measures that can be initiated include enacting the provisions of the Cape Town Convention (which India ratified in 2008) into a statute thereby paving the way of concessions on lease rentals. Present statutes need to be amended, doing away with the old provisions and bringing clarity and transparency to the procedures.

Tax on air turbine fuel (which is one of the highest in the world) needs to be cut to make it profitable for airlines, as 40% to 45% of the operational costs of a carrier is on fuel. Although some airports have been privatised, many more need to go private and new airports need to be constructed to increase connectivity. Incentives need to be given to private investors for bettering infrastructural facilities.

In the coming months Indian carriers are going to encounter challenging times keeping up with the ever-persistent price war, increasing passenger demand and the slow progress by the government.

India still remains an attractive market with about seven scheduled airlines, around 100 non-scheduled carriers and a large number of private operators accounting for more than 1,000 aircraft in what is one of Asia's largest aviation markets.

Irish legal update

Irish law firm Matheson discusses the new legislation covering aviation in Ireland.

It has been a busy year for the aviation industry in Ireland with new legislation impacting aircraft lessors, financiers, trustees and airlines operating in and through Ireland being implemented with which stakeholders across the industry should be aware.

In this article, we provide a high level overview of some of these legislative changes, including the expansion of the scope of reporting obligations to the Central Bank of Ireland (Central Bank) under the Credit Reporting Act 2013 (Credit Reporting Act) to include finance leasing, the publication of the European Union (Anti-Money Laundering: Beneficial Ownership of Trusts) Regulations 2019 (Beneficial Ownership of Trusts Regulations) and European Union (Anti-Money Laundering: Beneficial Ownership of Corporate Entities) Regulations 2019 (Beneficial Ownership of Corporate Entities Regulations) and the implementation of the Consumer Protection (Regulation of Credit Servicing Firms) Act 2018 (2018 Credit Servicing Act).

Central Credit Register

After the 2008 financial crisis and subsequent bailout programme in Ireland, the European Commission, the European Central Bank and the International Monetary Fund emphasised the need for more clarity in the Irish banking market and, in particular, relating to the extent of credit advanced to Irish borrowers. In response to this desire for greater transparency, the Credit Reporting Act provided for the establishment of a Central Credit Register (CCR), which among other things, required any person providing loans, deferred payments or other financial accommodation in certain circumstances to Irish resident borrowers to report details of such credit to the Central Bank.

The Credit Reporting Act applies both to regulated and unregulated lenders. For the purposes of the Credit Reporting Act, a "*credit information provider*" (CIP), who, as the name suggests, may have an obligation to provide information to the Central Bank thereunder includes any person who provides credit. Under the Credit Reporting Act, a credit recipient is defined as the "*credit information subject*" (CIS).

In terms of the information to be submitted, CIPs are required to submit certain personal and contract data to the Central Bank. At a high level, the personal data required of credit recipients will include, among other things, name, nature of entity, sector, size, address and company number. The contract data to be submitted will differ depending on the type of credit agreement but would generally include the nature and term of the credit, currency, amount, rate of interest, date of drawdown, maturity date and repayment conditions.

The Credit Reporting Act also requires a CIP to, among other things, keep records and take reasonable steps to: verify the identity of CISs; verify the accuracy and completeness of information obtained from CISs; and ensure the accuracy of personal and credit information provided to the CCR.

The scope of the Credit Reporting Act was expanded in 2019 by the Markets in Financial Instruments Act 2018 and, effective from 30 June 2019, finance lessors operating in Ireland may have new obligations in relation to the CCR as the definition of 'credit' under the Credit Reporting Act was expanded to capture, among other things, finance leasing.

Details of finance leases governed by Irish law or entered into with Irish resident finance lessees may be within the scope of the Credit Reporting Act and be reportable to the Central Bank. For any lenders intending to lend to Irish resident borrowers or finance lessors intending to lease to Irish lessees, Irish legal advice should be sought as to the application of the Credit Reporting Act and whether documentation and procedures may need to be adopted to comply with this legislation.

Credit servicing in Ireland

On 21 January 2019, the 2018 Credit Servicing Act commenced. In recent times, a political issue surfaced in Ireland surrounding the sale of consumer and small and medium enterprise (SME) loan portfolios by a number of Irish regulated institutions. The loan portfolios were often acquired from such regulated institutions by unregulated special purpose vehicles (SPVs). The Irish government announced that it intended to introduce new laws "*to ensure that borrowers whose loans are sold by a regulated entity to a currently unregulated entity maintain the same regulatory protections as they had prior to the sale*".

The Consumer Protection (Regulation of Credit Servicing Firms) Act 2015 (2015 Credit Servicing Act) was introduced to fill the regulatory void under consumer and SME legislation where loans advanced by an Irish regulated lender to an Irish consumer or SME (considered for the purpose of the 2015 Credit Servicing Act as 'Relevant Borrowers') were sold to an unregulated entity.

The 2015 Credit Servicing Act introduced a regulatory regime for a new type of entity called a 'credit-servicing firm'. The 2015 Credit Servicing Act required that, in circumstances where, a loan to a Relevant Borrower was transferred to an unregulated entity, that unregulated entity was required to appoint a 'credit-servicing firm' approved and regulated by the Central Bank, to service that loan.

The scope of the 2015 Credit Servicing Act was expanded by the 2018 Credit Servicing Act, which now also requires the legal owners of in-scope credit agreements or any person who has material decision-making powers in relation to such credit agreements that are provided to Relevant Borrowers to be authorised by the Central Bank. This is to ensure that the holders of legal title to loans advanced to Relevant Borrowers are on the same statutory footing as credit servicing firms.

The definition of SME is derived from EU Commission Recommendation 2003/361/EC of 6 May 2003 and includes companies, partnerships and sole traders which employ fewer than 250 persons and have an annual turnover of not more than €50 million and/or an annual balance sheet total of not more than €43 million.

All lenders which are: authorised by the Central Bank to carry on the business of a credit servicing firm; or a regulated financial services provider authorised, by the Central Bank or an authority that performs functions in an EEA country comparable to the functions performed by the Central Bank, to provide credit in Ireland (Regulated Provider) that have advanced loans to Irish individuals or SMEs in the past may need to be aware that the transfer of such loans may be more complicated than in the past.

Where such loans are transferred to another Regulated Provider, no particular issues should arise under the credit-servicing legislation. However, where such loans are transferred to an unregulated entity, the transferee may need to appoint a credit-servicing firm to administer the loans and the acquirer of such loans may need to be authorised by the Central Bank. Purchasers of Irish loans should consider this as part of their due diligence.

It is important to note that certain loan sales are also exempted from the scope of this legislation and advice on the application of the credit-servicing framework should be sought on a case-by-case basis.

Central registers of beneficial ownership

There were a number of developments in relation to anti-money laundering legislation in the first quarter of 2019, including the publication of the Beneficial Ownership of Trusts Regulations and the Beneficial Ownership of Corporate Entities Regulations.

Central Register of Beneficial Ownership of Companies

On 22 March 2019, the Irish minister for finance signed the Beneficial Ownership of Corporate Entities Regulations into law. The Beneficial Ownership of Corporate Entities Regulations give effect to the Fourth Anti-Money Laundering Directive (MLD4) and replace the earlier regulations introducing the requirement for Irish companies to maintain a beneficial ownership register under the European Union (Anti-Money Laundering: Beneficial Ownership of Corporate Entities) Regulations 2016 (2016 Regulations) that came into force in Ireland in November 2016.

The Beneficial Ownership of Corporate Entities Regulations established the Central Register of Beneficial Ownership of Companies and Industrial and Provident Societies (Central Register) with effect from 22 June 2019. The Central Register was established on 29 July 2019 and will be maintained by the Irish Companies Registration Office (CRO).

What has changed?

All companies incorporated in Ireland *before 22 June 2019*, must make their first filings at the Central Register by 22 November 2019. All Irish entities that are incorporated *after 22 June 2019* will be required, within five months from their incorporation, to submit their beneficial ownership information to the Central Register.

Irish companies continue to be excluded from the scope of the Beneficial Ownership of Corporate Entities Regulations if they are listed on a regulated market that is subject to disclosure requirements consistent with the law of the EU or are already subject to equivalent international standards which ensure transparency of ownership information. Irish incorporated subsidiaries of listed Irish companies are not exempt.

The Beneficial Ownership of Corporate Entities Regulations also require that any changes to the information contained in a relevant entity's beneficial ownership register be reflected by a corresponding change being made in the Central Register. Accordingly, relevant entities are required to deliver information within 14 days to the CRO so as to allow any change to be reflected in the Central Register; this is referred to as the "*follow-up obligation*".

The obligation on a relevant entity to list its "senior managing officials" on the Central Register where it cannot identify any beneficial owners remains.

Who has access?

In terms of access to information filed in the Central Register, the public may access the Central Register but access will be restricted to certain of the content only and it should be noted that PPS numbers and residential addresses will not be made available to the public. Certain authorities such as An Garda Siochana (the Irish police force), the Revenue Commissioners, the Criminal Assets Bureau or a competent authority engaged in the prevention of money laundering will have open access to the Central Register. The authorities may exchange this information with other EU competent authorities.

Beneficial Ownership of Trusts

On 29 January 2019, the Irish Department of Finance published the Beneficial Ownership of Trusts Regulations, which will give partial effect to the Fifth Anti-Money Laundering Directive (MLD5). Trustees will be required to take all reasonable steps to obtain and hold adequate, accurate and current information in respect of the trust's beneficial owners, keep the register up to date and retain records for a period of five years. Trustees who fail to comply with the regulation will be liable, on summary conviction, to a class-A fine (up to a maximum amount of €5,000) under the Companies Act 2014.

The Beneficial Ownership of Trusts Regulations set out new obligations which represent significant developments for trusts, their ultimate beneficial owners and their trustees and transpose part of MLD4 aimed at increasing transparency in relation to the ownership of express trusts and other arrangements.

What trusts is this relevant to?

The Beneficial Ownership of Trusts Regulations apply to all express trusts (whose trustees are resident in Ireland or where the trust is otherwise administered in the state) irrespective of whether or not the trust generates a tax effect. These include, among other things, bare trusts and charitable trusts. Bare trustees (which regularly hold real property) will be required to establish a beneficial ownership register.

What are trustees required to do?

Trustees should keep and maintain a beneficial ownership register. Each local register must hold the information collected pertaining to the relevant trust's beneficial owner(s).

There is an obligation on designated persons to "*take reasonable steps*" to maintain and hold adequate, accurate and current information on the trust's beneficial ownership. It is unclear what actions will be considered a sufficient discharge of this responsibility, where such actions have not yielded the required information. It is important that policies are developed by designated persons to ensure that they demonstrate the actions taken to discharge their obligations pursuant to the Beneficial Ownership of Trusts Regulations.

There is also an obligation on trustees to keep information in the trust's beneficial ownership register up-to-date. A trustee must "*as soon as practicable*", after learning of the change in information, alter or delete the information on the relevant register in order to ensure that the change is reflected. Not only are trustees required to keep the information on the register up-to-date, but they must also record the actions taken to keep the register up-to-date.

Who is a beneficial owner?

Beneficial owner is defined in MLD4 as "*the natural persons... on whose behalf a transaction or activity is being conducted*". Beneficial owners therefore include the settlor(s), trustees, the protector(s) (if any), beneficiaries (who are natural persons) and any other natural person exercising ultimate control over the trust.

For the purposes of the Beneficial Ownership of Trusts Regulations, reference to beneficiaries is to natural persons. Every natural person who is in the beneficial class is a beneficial owner. The following information in relation to each natural person must be obtained under the Beneficial Ownership of Trusts Regulations: name, date of birth, nationality and residential address(es).

It will be important for each body of trustees to determine the appropriate level of diligence required depending on the nature of the trust and each natural person's beneficial entitlement. The Beneficial Ownership of Trusts Regulations do not identify any such areas of lower risk. It should be sufficient for a designated person to contact a beneficiary in advance of the point in time when that person, by reference to their entitlements, is about to receive a financial benefit from a trust.

The Irish High Court has authority to determine whether a person's name should or should not be recorded on a beneficial ownership register and also has the power to order rectification of a trust register. Aggrieved persons may apply for rectification where a name is mistakenly entered, omitted or unnecessarily delayed from being removed from a register. The High Court has also been given power to award damages for any loss sustained by an aggrieved party. It is unclear what loss is regarded as relevant in this context.

Next steps

The Beneficial Ownership of Trusts Regulations have been in operation since 29 January 2019 and trustees will therefore need to take immediate action to ensure they are in compliance with the new obligations.

The Beneficial Ownership of Trusts Regulations must also be considered in light of MLD5, which is required to be transposed into law by 10 January 2020. MLD5 requires trustees to include information on the beneficial ownership of trusts in a central national register.

Ireland is required to establish its central register by 10 March 2020. MLD5 broadens the scope of those who can be granted access to beneficial ownership information held on the register and includes competent authorities, financial intelligence units (without any restriction) and provision for any person who can demonstrate a "legitimate interest" to access such information.

How can Matheson help you?

Matheson is the law firm of choice for internationally focused companies and financial institutions doing business in and from Ireland with offices in Dublin, Cork, London, New York, Palo Alto and San Francisco. More than 700 people work across Matheson's six offices, including 96 partners and tax principals and over 470 legal and tax professionals.

Matheson services the legal needs of internationally focused companies and financial institutions doing business in and from Ireland.

The Aviation Finance and Transportation Group at Matheson is a fully dedicated aviation and transportation practice and advises on leasing, commercial debt and export credit agency-supported financings, as well as aircraft, aircraft engine and helicopter portfolio trading. We advise both domestic and international asset-financing banks in relation to financing and leasing of commercial and corporate aircraft, aircraft engines, simulators, helicopters, ships, trucks, industrial and agricultural equipment.

We also regularly act as deal counsel or Irish counsel in complex cross-border financings, including those supported by the Export-Import Bank of China, the European Export Credit Agencies and the US Export-Import Bank.

Being part of Matheson's broader Finance and Capital Markets Department, we regularly advise on structured finance, asset-backed securitisation and repackaging transactions relating to all such asset classes, including the establishment of special purpose companies funded by public and private issuances.

We also have a strong aviation regulatory practice and regularly advise Irish airlines and leasing companies on airline licencing and registration issues with the Irish Aviation Authority and Commission for Aviation Regulation in addition to all aspects of the Cape Town Convention and Aircraft Protocol.

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Trends and influences – Ireland and beyond

Caroline Devlin, partner and co-chair aviation, and Fintan Kerins, associate, aviation, at Irish law firm Arthur Cox, highlight recent trends in regulation and tax in Ireland.

Ireland remains a destination of choice for the aviation industry. The well-quoted attractions of deep experience; Ireland's double-tax treaties; EU member state; Common law creditor-friendly jurisdiction still apply in force.

Below we explore recent trends in regulation and tax.

Regulation highlights

- **Central Bank reporting**
  Since late 2018, the existing registration and reporting regime for credit transactions was extended to certain asset financing transactions – in particular, affecting Credit Information Providers (CIPs) engaging in finance leasing, especially involving arrangements with Irish lessees or where such finance leases are governed by Irish law. Those affected include lenders, lessors and, indeed, special purpose vehicles (SPVs). In the context of the aviation industry, CIPs include SPVs in structured finance transactions, corporate lenders and leasing companies, and those involved in finance leasing, and more traditional lending are registered to register with the CBI, which is not particularly onerous. Thereafter, CIPs are required to report monthly on certain information on specific transactions (including, in particular, finance leases to Irish lessees or governed by Irish law). Lessees have no reporting obligations under these provisions.

- **Anti-money laundering**
  An important step for finance lessors, in particular, is to conduct anti-money laundering checks on their customers. The requirements are known as "risk based", which in practice is a subjective test for lessors, taking into account their industry knowledge. The policies should be in writing, and reviewed regularly.

- **Ultimate Beneficial Owner (UBO)**
  The Fourth Money Laundering Directive (MLD4) requires corporates to obtain and hold "adequate, accurate and current information on their beneficial ownership". While there are certain exemptions (such as for listed entities), companies affected (relevant entities) that are in existence before 22 June 2019 must deliver detailed information on their ownership to the registrar by 22 November 2019. Relevant entities that come into existence after 22 June 2019 must deliver the above information to the registrar within five months of incorporation.

Caroline Devlin

Fintan Kerins

- **GDPR**
  Businesses are familiar with General Data Protection Regulation (GDPR) and data privacy regulations – in particular, the deadline of May 2018 for the introduction of the GDPR requirements. The level of personal data in possession of an aircraft leasing company may well have been a surprise to leasing companies, but since then policies have been put in place, and relevant agreements should continue to be monitored for compliance with data privacy regulations. An important aspect is for companies to monitor compliance with the policies and, in particular, the procedures if a breach occurred. In the event of a Brexit, existing arrangements should be reviewed if the UK becomes a third country. In addition, the Schrems 2 case before the European Union Court of Justice has caused some doubt on model clauses in contracts. This will be of interest within the EU and indeed beyond. On a related IP point, and a further Brexit aspect is that IP, which enjoys protection under EU law, should be examined to establish whether separate legal rights should be protected in the UK.

- **EMIR – derivative reporting**
  EMIR is a European Union regulation that primarily regulates over-the-counter (OTC) derivatives contracts and the parties who enter into them (counterparties). These obligations include, among other things, a requirement to report details of each OTC derivative contract entered into (the Reporting Obligation) and a requirement to include certain terms relating to exchange of information and dispute resolution in each OTC derivative contract. The competent authority with responsibility for EMIR compliance in Ireland is the Central Bank of Ireland (CBI). In June 2019, new EU legislation that amended EMIR came into force (EMIR

Refit). Leasing companies, generally not being licenced entities would generally be considered to be non-financial counterparties, which have lesser reporting obligations than licenced entities. However, any required reporting is required very promptly and should be considered in advance of entering into a relevant transaction.

- **Central Bank reporting for Section 110 companies**
  Section 110 companies are obliged to report quarterly data to the Central Bank of Ireland.

Tax direction

The Irish tax regime is one of Ireland's main attractions for companies. Irish companies have access to an extensive double-tax treaty network of 74 treaties to date, with more currently being negotiated. The treaties enable lessees to pay rent to the Irish lessor free from withholding tax in their local country. Increasingly, lessees are focused on the substance of the lessor as a key factor to the lessee obtaining treaty access, and Irish companies are well placed to satisfy this requirement.

Ireland offers a highly competitive headline corporation tax rate of 12.5% applying to active trading profits and most inbound dividends, being one of the lowest "onshore" statutory corporate tax rates in the world. The effective tax rate is however lower, when the available deductions and allowances are factored in. Also, Irish holding companies benefit from a participation exemption from capital gains tax on the ultimate disposal of most shareholdings.

Ireland has also become a leading jurisdiction for the establishment of SPVs for structured finance transactions. In particular, Section 110 of the Irish Taxes Consolidation Act 1997 (TCA) permits certain SPVs to engage in a wide list of financial and leasing transactions in a tax-neutral manner when the SPV is involved in the holding or management of "financial assets" that, given its broad definition under the TCA, covers mostly all type of assets (with the exception of direct holdings of real estate). Introduced in the context of the OECD BEPS project, the European Union adopted directives laying down rules against tax avoidance practices directly affecting the functioning of the European internal market (ATAD). ATAD set out general provisions in relation to interest limitation rules, controlled foreign company rules, exit tax, general anti-abuse rule and anti-hybrid rules to be implemented by all EU member states in the manner that would best fit their corporate tax system.

The Irish authorities have consulted widely in relation to the introduction of ATAD in Ireland. Anti-hybrid legislation is due to be introduced with effect from 1 January 2020, with interest-limitation rules likely to be implemented with effect from 1 January 2021. Leasing platforms across the world are anticipating with interest how these will be implemented.

Anti-hybrid rules are already in place in many jurisdictions, and effectively look at entities which have hybrid status or an instrument which is a hybrid – ie, treated differently in different jurisdictions. The aspect for leasing companies of particular interest is the funding piece. Leasing companies are typically highly leveraged, and securing an ongoing deduction for funding costs remains a key priority.

Lessors are preparing for not yet published legislation by continuing to bolster their substance in Ireland, and to keep close to the consultation process. Regulated entities are also being considered, and may well continue to offer a combined structural solution, which offers efficiencies and a platform to access the continuing wide base of investors.

Conclusion

Many of the regulatory and tax developments derive from the EU and, indeed from a policy perspective, the OECD in turn. While it does require more resources to be devoted to "corporate housekeeping" than before, it follows the EU and indeed worldwide trend of transparency. Regulation light should ensure a level of compliance which is beneficial for the operation of the business, and should facilitate attracting investors and lenders, and follows the direction of travel on shore.

Airfinance Journal's 2018 deals of the year awards

***Airfinace Journal* reveal the winners of our prestigious annual Global Awards and China Awards, recognising the most innovative deals, individuals and teams in aviation finance.**

Asia Pacific Deal of the Year: **Project Melville Macquarie AirFinance – $4bn unsecured revolver and term loan**

Borrower/Issuer: Macquarie AirFinance

Structure: $1bn unsecured revolving credit facility and $3bn term loan

Assets financed: 135 aircraft

Lawyers (and role): Vedder Price acted for the borrower; Clifford Chance represented the lenders

Banks (RCF): Citi, Deutsche Bank, National Australia Bank, BNP Paribas, J.P. Morgan, Mizuho, Natixis as mandated lead arrangers

Banks (Term loan): Citi, Deutsche Bank, National Australia Bank, BNP Paribas, HSBC, ABN Amro, DBS, ING, Societe Generale, Wells Fargo, Westpac as mandated lead arrangers

Date closed: 30 June 2018

Two companies, Macquarie Aerospace Finance and Macquarie Aerospace Holdings acted as the borrowers of this combined $4 billion financing for a total of 135 aircraft leased to 67 airlines.

The transaction is believed to be the largest non-recourse aircraft secured portfolio term loan globally. It represented the refinancing of the entire business moving to a wholly-independent funding structure. With this transaction, Macquarie AirFinance achieved significant goals, including the diversification of funding sources, allowing the company to efficiently fund the expansion of its businesses.

The financings were widely syndicated among Macquarie's core relationship banks, specialist aviation banks, and Asian commercial banks.

BNP Paribas, Citi, Deutsche Bank, HSBC, National Australia Bank acted as mandated lead arrangers, underwriting banks and bookrunners on the term loan. Wells Fargo, Westpac, DBS, Societe Generale, ING and ABN Amro were the mandated lead arrangers on the term loan.

On the revolver facility, BNP Paribas, Citi, Deutsche Bank, HSBC, National Australia Bank acted as mandated lead arrangers, underwriting banks and bookrunners. BNP Paribas, J.P. Morgan, Mizuho and Natixis were the mandated lead arrangers of the RCF.

The $3 billion term loan has a seven-year tenor with a margin of Libor + 150 basis points. It successfully refinanced and upsized a previous $1.8 billion 2016 Spitfire term loan, which was set up to complete the acquisition of a portfolio from AWAS.

The term loan facility is paired with the $1 billion unsecured revolving credit facility that is supported by existing unencumbered assets and provides funds for future growth over the next five years.

Europe Deal of the Year: **Nordic Aviation Capital $227m 12 Embraer 190 Jolco**

Borrower/Issuer: Nordic Aviation Capital

Structure: Japanese operating lease with call option (Jolco)

Assets financed: 12 Embraer 190 aircraft

Lawyers (and role): White & Case acted for the underwriter; Clifford Chance represented the sponsor's counsel, Nishimura & Asahi represented the equity underwriter

Banks (and role): Deutsche Bank as debt arranger, sole structuring agent and sole underwriter

Lessor: Financial Products Group

Amount: $227 million

Tenor: Nine years

Date mandated: 1 April 2018

Date closed: 21 September 2018

The transaction marked the first ever lessor Jolco financing for regional jets and features the first ever cross-collateralisation within a lessor Jolco structure. It also represented the largest regional aircraft Jolco and, in terms of number of aircraft, the largest lessor Jolco.

The transaction involved an innovative cross-collateralised structure whereby the aircraft were divided into batches and owned and leased by four Japanese borrower/lessors, leased to NAC owned special purpose vehicles SPVs and subleased to various airlines.

The transaction involved 12 aircraft leased to three airlines (three to Kenya Airways, seven to Air Europa and two to AeroMexico). In addition to the jurisdictions in which the aircraft were registered, English, Irish, Japanese and California law were all relevant to the transaction. The size and complexity of the transaction was significant given the number of aircraft, multiple jurisdictions and short timeframe in which to complete the transaction.

The Jolco structure required security to be granted in three separate jurisdictions.

The Jolco nature of the structure allowed NAC to raise significant additional financing against the aircraft (100%) while uniquely maintaining operational flexibility when combined with the portfolio features relating to covenants and events of defaults, which the transaction entailed.

It provided Nordic Aviation Capital a diversification of its financing sources. Deutsche Bank successfully syndicated part of the debt to new lenders thereby diversifying the lessor's international debt investor profile.

Latin America Deal of the Year: **Avianca UKEF-guaranteed Jolco financing for one Boeing 787 aircraft**

Borrower/Issuer: Avianca

Structure: UKEF-guaranteed financing structured as a Jolco

Assets financed: One Boeing 787-8

Lawyers (and role): White & Case acted for Avianca; Allen & Overy represented ING and UKEF, Nishimura & Asahi, Tokyo represented Sumitomo Mitsui Finance and Leasing

Banks (and role): ING as UKEF debt arranger, initial lender, and ECA facility agent

Jolco arranger: Burnham Sterling

Equity provider: Sumitomo Mitsui Finance and Leasing

ECA: UK Export Finance (guarantor)

Tenor: 11 years

Date mandated: 1 August 2018

Date closed: 28 September 2018

Avianca mandated and successfully closed a loan guaranteed by UK Export Finance (UKEF) to finance one Boeing 787-8 delivery.

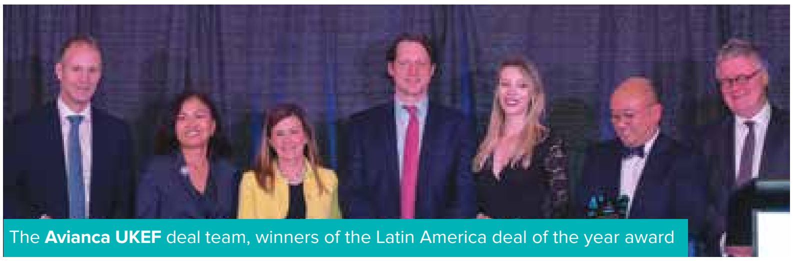
The UKEF loan was the debt portion of a Japanese operating lease with call option (Jolco), and was arranged by Burnham Sterling with Sumitomo Mitsui Finance and Leasing (SMFL) providing the equity on the transaction.

The Jolco equity combined with the UKEF debt provided Avianca with 100% financing for the aircraft at an attractive all-in cost. ING's structured export finance team, based in New York, acted as the arranger of the UKEF loan, initial lender and facility and UKEF agent. Burnham Sterling acted as adviser to Avianca for the Jolco equity structure.

The transaction marked Avianca's first UKEF-backed Jolco financing.

It was also the first UKEF-guaranteed financing structured as part of a Jolco for a Latin American carrier.

This was ING's first Jolco financing under a UKEF guarantee, and also the first time that ING could book Jolco debt outside of Japan.



The **Avianca UKEF** deal team, winners of the Latin America deal of the year award

Middle East & Africa Deal of the Year: **Ethiopian Airlines $670m AFIC-supported financing for eight Boeing aircraft**

Borrower/Issuer: Ethiopian Airlines

Structure: ANPI-insured loan facility

Assets financed: Five Boeing 737 Max 8s and three 777 freighters

Lawyers: Pillsbury, White & Case, Milbank LLP and Vedder Price

Banks: ING Capital, Investec, Societe Generale and SMBC Europe Ltd

Credit Enhancer: Aircraft Finance Insurance Consortium (AFIC)

Date mandated: 1 May 2018

Date closed: 29 June 2018

Ethiopian Airlines became the first African carrier to raise financing through the Aircraft Finance Insurance consortium (AFIC) structure.

The financing also marked the first AFIC structure with a commercial junior debt.

The transaction consisted of a 12-year $230 million loan facility covered by Aircraft Non-Payment Insurance ("ANPI") to finance five Boeing 737 Max 8 aircraft - Ethiopian Airlines' first aircraft of this type. The 737 Max 8 senior loan facility was structured with ANPI cover under the AFIC programme and was coupled with a seven-year $25 million junior loan facility from Investec Bank to provide Ethiopian Airlines with 95% financing for the aircraft at an attractive all-in cost.

Each of the Boeing 777 freighter facilities were structured with $137 million ANPI-covered loan. The senior loan had a 12-year tenor, the junior loan was seven years.

The 777 facilities were negotiated and closed on short timetables (approximately one month from start of documentation to closing).

Four of the six aircraft delivered over a weekend requiring the lenders to make special arrangements to pre-position the funds with Boeing to allow the delivery to occur during non-banking hours.

The **Ethiopian Airlines AFIC** deal team, collecting their award

North America Deal of the Year: **Zephyrus Aviation Partners ZCAP 2018-1 $336.6m 21 aircraft ABS**

Borrowers/Issuers: Zephyrus Capital Aviation Partners 2018-1 Ltd and Zephyrus Capital Aviation Partners 2018-1 LLC

Structure: Asset-backed securitisation

Assets financed: 21 aircraft

Lawyers (and role): Clifford Chance acted for the lead arranger; Vedder Price represented the issuer; A&L Goodbody as Irish counsel for the issuer, Maples Group

Banks (and role): Deutsche Bank as sole structuring agent and lead arranger

Adviser: Seabury Capital

Rating Agency: KBRA

Date mandated: 4 June 2018

Date closed: 9 October 2018

The transaction involved a newly-launched company acquiring a substantial portfolio of mid-life aircraft directly into an asset-backed securitisation (ABS) structure.

Zephyrus Aviation Capital was established in 2018, staffed by experienced executives from CIT and supportive equity backers: Virgo Investment Group (majority) and Seabury Capital (minority). The transaction is a tremendous start for a new company. It also marks the first time a newly-formed company launched its inaugural aircraft portfolio acquisition directly into an ABS.

The pace of the transaction saw most of the aircraft close into the structure within three months of the initial close of the ABS. Zephyrus Aviation Capital priced its debut ABS at 98.52% of par value, according to Damon D'Agostino, the new lessor's chief executive officer.

"We came in at 210 over swaps, which is within 10bps of other first time issuers," says D'Agostino in an interview with *Airfinance Journal*. "For doing an ABS out of the box, that's a really favourable outcome, especially when you consider the age of the portfolio - 13.3 years is slightly higher touch."

The $336.6 million single A-tranche deal was used to finance a portfolio of 21 aircraft, comprising 18 narrowbodies and three widebodies. The aircraft – seven Airbus A320s, three A319s, eight Boeing 737NGs and three A330s – have a weighted average age of 13.3 years and are on lease to 19 airlines.

"The book was more than two times oversubscribed which I think was also a nice outcome," he adds. "The investors who bought into this deal are very sophisticated players who know the space. That was also a very nice endorsement."

Under the $336 million ZCAP 2018-1, ZAL Limited is the seller and Zephyrus Aviation Capital is the servicer.

The single Class A tranche of loans has a fixed coupon of 4.605%, yielding 5.153%. The loan-to-value (LTV) is 74.07%.

Bank Loan Deal of the Year: **Limited recourse financing of four 777-300ERs leased to British Airways for Novus Aviation Capital**

Borrower/Issuer: Novus Aviation Capital

Structure: Limited recourse facility

Assets financed: Four Boeing 777-300ERs

Lawyers: Milbank LLP, Stephenson Harwood

Banks: BNP Paribas, MUFG

Date mandated: 6 September 2018

Date closed: 21 December 2018

The transaction represents the first direct order by Novus Aviation Capital with an OEM.

Novus Aviation Capital announced the four 777-300ER order at the 2018 Farnborough air show. The announcement also marked the first lessor order for the 777-300ER model since 2014 at the time of announcement.

The aircraft were placed under a long-term lease agreement with British Airways. This transaction will be financed through a senior secured limited recourse facility provided by Mitsubishi UFJ Financial Group and BNP Paribas. Novus Aviation Capital is the overall arranger.

The transaction was structured to allow for financing terms to be agreed almost two years ahead of delivery in 2020 - which was a requirement for Novus. Total tenor of the risk is effectively 14 years from signing to final loan repayment.

The financing is a combination of Shariah compliant and conventional lease-in lease-out structure. MUFG Bank and BNP Paribas structured the transaction into an amortising tranche and balloon tranche.

MUFG says the large underwriting (total deal size was $416 million) was successfully sold down to incoming participant banks.

The financing from the banks allowed Novus to secure end of line 777-300ERs that are to be placed with British Airways Bertrand Dehouck, head of aviation for BNP Paribas said: "There are three key elements that make this deal significant: One, it marks a substantial transformational phase for Novus Aviation Capital; two, it helps Boeing secure a new direct customer; and three, it supports the fleet expansion of a major European airline."

The **Novus Aviation** deal team, winners of the Bank Loan deal of the year award

Export Credit Deal of the Year: **Aeromar ECA-guaranteed loans for eight ATR aircraft**

Borrower/Issuer: Aeromar

Structure: ECA-backed loan

Assets financed: Two ATR42-600s and six ATR72-600s

Lawyers: Watson Farley & Williams, Norton Rose Fullbright, Matheson, Mason Hayes Curran, Carillo & Asociados, Patton Moreno & Asvat, Ritch Mueller

Banks: Apple Bank for Savings, Export Development Canada

ECA: Bpifrance Assurance Export, SACE, Export Development Canada

Date mandated: 1 December 2017

Date closed: 25 July 2018

The export credit deal of the year features takeout of manufacturer financing with export credit agencies support for turboprop aircraft into Mexico. The manufacturer financing was made available to the Mexican carrier on an interim conditional sale basis.

The transaction is an export credit agency-guaranteed debt that refinanced manufacturer supported sales of a batch of relatively new ATR42/72 aircraft.

The collateral includes two 2016-vintage ATR42-600s as well as six 2016/17-vintage ATR72-600s that were ordered by Mexican carrier Aeromar in November 2016. The order also included six options for the ATR72-600 model.

This deal was particularly complex as it involved the refinancing of sales finance, with export credit agency guaranteed financing (Bpifrance/SACE and Export Development Canada) separately supporting different aircraft. It also included commercial debt in respect of aircraft that were all in operation.

BNP Paribas acted as senior agent and security trustee on five aircraft while Apple Bank for Savings was lender on those aircraft. Export Development Canada acted as senior agent, security trustee and original senior lender on three ATR72-600s.

The transaction was disrupted on several occasions by the eruption of the Fuego volcano in Guatemala and a number of incidents relating to the aircraft.

Tax Lease Deal of the Year: **Virgin Australia $120m Jolco financing for six used Boeing 737-800s**

Structure: Japanese operating lease with call option

Amount: $120 million

Tenor: 57 months

Lawyers (and role): K&L Gates (borrower), King & Wood Mallesons (lenders), Herbert Smith Freehills (airline)

Jolco arranger: Asset Brok'Air International

Equity underwriter: JP Lease

Lessee: Virgin Australia

Banks (and role): Australian and New Zealand Banking Group (debt arranger). DVB Bank, IBJ Leasing and Standard Chartered Bank as debt underwriters

Date mandated: 15 August 2018

Date closed: 31 October 2018

Virgin Australia's Japanese operating lease transaction with a call option (Jolco) for six Boeing 737-800s marked the carrier's debut for this financing product.

The transaction involved a portfolio of six aircraft, manufactured between 2003 and 2007, for a total amount of $120 million. The debt portion was provided in Australian dollars while the equity was disbursed in US dollars.

The transaction was executed in strict application of the Australian and Japanese tax scheme to avoid any withholding tax under the Japanese lease.

The deal's originality also came from the combination of financing complex assets in local currency (vintage aircraft) and having introduced a new name to the Jolco market.

It closed in a unique context following the company's recent business turnaround plan.

The overall transaction was co-arranged by Jolco specialist Asset Brok'Air International and Australian and New Zealand Banking Group (ANZ).

DVB Bank, IBJ Leasing and Standard Chartered Bank were the debt underwriters for four aircraft in the transaction. DVB Bank was facility agent and security trustee on those aircraft.

Standard Chartered Bank acted as debt underwriter, facility agent and security trustee on the remaining two aircraft.

King & Wood Mallesons advised the lenders, Herbert Smith Freehills advised Virgin Australia and K&L Gates advised the lessor.

Asset Brok'Air International acted as overall arranger and JP Lease Products & Services as equity advisor.

The **Virgin Australia** deal team, collecting their award

Islamic Finance Deal of the Year: **DAE Capital $800m revolving credit facility**

Borrower/Issuer: DAE Capital
Structure: Unsecured revolving credit facility
Amount: $800 million
Tenor: Four years
Lawyers: Clifford Chance, Clyde & Co
Banks: Ahli Bank of Kuwait, First Abu Dhabi Bank
Date mandated: 1 May 2018
Date closed: 1 October 2018

Dubai Aerospace Enterprise (DAE) signed an unsecured four-year revolving credit facility with an initial commitment of $480 million in May 2018. The financing has an accordion feature that allows the facility to grow to up to $800 million.

Al Ahli Bank of Kuwait was the mandated coordinating lead arranger and joint bookrunner of the transaction. First Abu Dhabi Bank was a mandated lead arranger and joint bookrunner as well as global agent and Islamic Investment Bank. Noor Bank acted as a mandated lead arranger.

The transaction closed in October 2018 and eight additional banks entered the deal using the accordion feature to bring the facility to $800 million.

The facility is atypical. It features a conventional tranche of debt combined with an Islamic tranche, the first of its kind amongst lessor financings.

The facility has very limited covenants and does not have the standard unsecured revolving credit facility covenants such as interest coverage, leverage ratio or unencumbered assets test, making it very unique. It provides a good execution of the deal and full flexibility to the borrower.

The DAE Capital treasury team had a busy year in 2018. The Dubai-based lessor signed a four-year unsecured revolving credit facility worth $535 million, which can be increased up to $600 million in December, to support its future financing needs. The RCF was arranged by Emirates NBD as sole mandated arranger and bookrunner.

In November BNP Paribas and Credit Agricole were involved in another new revolver for a total of $720 million. The unsecured revolving credit facility has a maturity of five years.

The previous month DAE Funding, the wholly-owned subsidiary of Dubai Aerospace Enterprise, priced $500 million aggregate principal amount of senior unsecured notes due 2021 and $500 million aggregate principal amount of senior notes due 2023. The net proceeds from those offerings was to refinance existing secured indebtedness and to pay the related fees and expenses, and to use any remaining net proceeds for general corporate purposes.

Operating Lease Deal of the Year: **airBaltic $72.4m two A220-300 sale and leasebacks**

Borrower/Issuer: airBaltic
Structure: Sale and leaseback
Tenor: 12 years
Lawyers: Clyde & Co
Adviser: Skytech-AIC
Debt provider: Export Development Corporation of Canada
Lessor: Avation plc
Date mandated: 16 February 2018
Date closed: 12 June 2018

Leasing company Avation agreed a 12-year purchase and leaseback transaction with airBaltic for two Airbus A22-300s (formerly Bombardier CS300 aircraft), in a transaction arranged by Skytech-AIC.

The transaction represented the first open market sale and leaseback for the type: up to that point the asset was derided by competitors and shunned by investors with just 249 sales accumulated over eight years. It also represented the first open market sale and leaseback for the Latvian carrier, which had narrowly escaped bankruptcy previously and remained thinly capitalised.

The deal achieved a $36.2 million per aircraft sale and leaseback price – a figure that was rejected by major lessors as being 'unrealistically high'.

Skyteck-AIC said the winning leasing party, Avation plc, showed real flexibility, understanding and creativity to win the competition and build an excellent relationship with the airline.

The Latvian airline was seeking to diversify its sources of funding away from a concentration on Export Development Corporation of Canada supported debt/finance leases and adding the flexibility of operating leases to its funding options going forwards. The success of this transaction was also crucial to the future success of the aircraft type.

The two A220-300s formed part of a total sale and leaseback package of six aircraft conducted by Skytech-AIC on behalf of airBaltic in early 2018 with the finance of the balance of four aircraft awarded to CMB Leasing.

Since the transaction closed, Avation has been mandated another four A220-300 deliveries under a similar transaction arranged by Skytech-AIC. The first two aircraft closed in March and April 2019 while the remaining two aircraft are due in the third quarter of this year.

The **airBaltic** deal team, collecting their award

Structured Lease Deal of the Year: **Smartwings Euro-equivalent $140m AFIC supported financing of three Boeing 737 Max 8s**

Borrower/Issuer: Smartwings

Structure: AFIC supported finance

Amount: $140 million

Lawyers: A&L Goodbody, Clifford Chance, Norton Rose Fullbright, Pillsbury

Credit enhancer: Aircraft Finance Insurance Consortium (AFIC)

Banks: Credit Agricole-CIB

Date mandated: 10 November 2018

Date closed: 19 December 2018

The Smartwings Aircraft Finance Insurance Consortium (AFIC)-supported multi-aircraft transaction wins the structured lease deal of the year.

The financing represents the first time the Czech carrier had availed of the AFIC-supported financing product.

It was also the first time an Irish structure has been used for an airline AFIC deal. The AFIC product has been a recent innovation in aviation finance, which is growing in popularity but prior to this deal, no airline had structured an AFIC deal through Ireland. The structure demonstrated that airlines could avail of the AFIC support and maximise Ireland's extensive double-taxation treaty network.

The structure also ensured that no withholding tax would apply to payments of rent by the Czech carrier to the finance lessor or payments of interest by the borrower under the loan agreement. Ireland was selected as the optimum jurisdiction for incorporation and Irish tax residency of the borrower/lessor.

The transaction was completed in a very short timeframe notwithstanding the fact that the structure was different to previous AFIC transactions and for some of the lenders this was their first AFIC-supported transaction.

The **Smartwings** deal team, collecting their award from *AFJ's* managing director **Olivier Bonnassies**

Engine Deal of the Year: **Willis Lease Finance Corp. WEST IV $373.4m ABS for 55 engines**

Borrower/Issuer: WEST IV

Structure: Asset-backed securitisation

Amount: $373.4 million

Lawyers: Millbank LLP, Pillsbury

Rating Agencies: KBRA, Fitch Ratings

Banks: Bank of America, Wells Fargo, MUFG

Date mandated: 10 November 2018

Date closed: 19 December 2018

Engine lessor Willis Lease Finance closed an asset-backed securitisation debt offering covering 55 engines in the second half of last year through the Willis Engine Structured Trust IV (WEST IV), a subsidiary of, Willis Lease.

The $373.4 million 144A transaction was the largest engine financing of the year.

The fixed-rate notes were issued in two series, with $326.8 million of Series A notes and $46.7 million of Series B notes. The notes are secured by WEST IV's direct and indirect interests in a portfolio of 55 engines and one Boeing 737-800 airframe only on lease to Scandinavian Airlines.

The Series A notes have a fixed coupon of 4.75%, an expected maturity of approximately eight years, an expected weighted average life of 6.3 years and a final maturity of 25 years.

The Series B notes have a fixed coupon of 5.438%, an expected maturity of approximately eight years, an expected weighted average life of 6.3 years and a final maturity of 25 years.

The Series A notes priced at 99.99504% of par and the Series B notes priced at 99.99853% of par. Bank of America, MUFG and Wells Fargo acted as active bookrunners in the transaction. Willis Lease posted a record annual pre-tax profit of $56 million last year, up 56% from $36 million in 2017.

The engine lessor's 2018 pre-tax results were driven by 27% revenue growth, to a record $348 million, from its core leasing business and higher spare parts and equipment sales.

The **WEST IV ABS** deal team, winners of the Engine deal of the year award

Used Aircraft Deal of the Year: **Air Canada 25 Embraer 190 sale and leasebacks**

Borrower/Issuer: Air Canada

Structure: Sale and leaseback

Lawyers: Fafinski Mark & Johnson

Advisor: SkyWorks (exclusive remarketing agent for the seller)

Lessors: BeauTech Power Systems, Nordic Aviation Capital

Date mandated: 1 December 2017

Date closed: 1 August 2018

US part-out trader BeauTech acquired a 25-aircraft fleet from Air Canada. The 25-aircraft have short lease periods (terms at closing ranged from less than one month up to 20 months) with the Canadian carrier.

BeauTech plans to retain a portion of the fleet but the company also entered into a joint venture agreement with Nordic Aviation Capital (NAC).

The formation of the joint venture brought together two separate segments in the industry value chain. BeauTech had one of the largest CF34 engine lease portfolios and well-established sale channels in the CF34 aftermarket, which created certainty in managing the immediate aircraft deliveries. NAC, the world's largest regional jet lessor, had the network to re-lease a large volume of E190s and appetite to hold them long term.

The joint venture's unique blend of expertise and purchasing power meant it could manage the size of the transaction. At the same time, it offered an innovative solution allowing Air Canada to optimise the green-time remaining on the E190s, creating a significant degree of flexibility and cost savings as Air Canada gradually phase out the E190s. The sale allows Air Canada to accelerate the removal of its 25 E190s from their mainline fleet in lieu of ageing A319s in advance of the first A220 delivery, which start in 2019.

SkyWorks says the market conditions for E190s had softened considerably after most of the original operators had started to phase out the type. Few if any of the prospective new operators would be in a position to purchase the aircraft, and many would be challenging lessees (from a credit/jurisdiction point of view) for Air Canada, a reluctant lessor in either case.

The **Air Canada** deal team, collecting their award from *AFJ's* managing director **Laura Mueller**

Airline Unsecured Bond Deal of the Year: **Delta Air Lines $1.6bn unsecured notes**

Borrower/Issuer: Delta Air Lines

Structure: Bond

Amount: $1.6 billion

Lawyers: White & Case, Kilpatrick Townsend & Stockton

Joint Book-Running Managers: BNP Paribas, Credit Suisse, Deutsche Bank Securities, Fifth Third Securities, Morgan Stanley, Wells Fargo Securities, Barclays, BBVA, BofA Merrill Lynch, Citigroup, Goldman Sachs, ICBC Standard Bank, J.P. Morgan, PNC Capital Markets, SMBC Nikko, Standard Chartered Bank and US Bancorp

Co-managers: Credit Agricole, Natixis, Siebert Cisneros Shank and The Williams Capital Group

Date mandated: 17 April 2018

Date closed: 25 April 2018

Delta Air Lines tapped the capital markets with $1.6 billion unsecured bonds over three series with varying maturities. The $600 million first tranche has a three-year term to 19 April 2021. The notes were priced at 3.4%, representing a 90 basis points (bps) spread to the benchmark Treasury.

The $500 million second tranche has a five-year term to 19 April 2023. The notes were priced at 3.8%. This represented a 115bps spread to the benchmark Treasury.

The $500 million third tranche has a 10-year term to 19 April 2028. The notes were priced at 4.375%. This represented a 155bps spread to the benchmark Treasury.

The notes were used to refinance the company's Pacific term loan B-1 and its 2015 term loan facility, which had a combined outstanding balance of just over $1.5 billion at the end of 2017. The notes rank equally with Delta's existing unsecured debt.

Fitch Ratings rated the notes 'BBB-' and currently rates the airline at 'BBB-'; the corporate rating is unaffected by the proposed issuance.

According to Fitch, the transaction will continue Delta's transition from secured financing toward unsecured, and will free up the collateral previously encumbered by the two term loans, including Delta's Pacific route rights and certain accounts receivable, aircraft and spare engines.

A key ratings driver, according to Fitch, is that "Delta's investment-grade corporate rating reflects the company's modest leverage, its ability to consistently generate positive and sizeable free cash flows, and its market position as one of the leading network carriers in the US".

ABS Deal of the Year: **GECAS STARR 2018-1 $687m for 24 aircraft ABS**

Borrower/Issuer: START Ltd and START USA LLC

Structure: Asset-Backed Securitisation

Amount: $687 million

Collateral: 24 aircraft

Lead bookrunners/Structuring agents:
Citi, Deutsche Bank

Liquidity provider: Natixis

Equity provider: Och-Ziff Management

Lessor: GECAS as servicer and manager

Rating Agencies: KBRA, Standard & Poor's

Lawyers: A&L Goodbody, Clifford Chance, Conyers Dill & Pearman, Milbank LLP, Vedder Price

Date closed: 26 June 2018

The GECAS 2018-1 transaction brought a new development into the asset-backed securitisation (ABS) market last year: the first aircraft ABS transaction to utilise a 144A Tradeable E-Note.

In STARR 2018-1, an affiliate of GECAS retained a small minority percentage of the equity.The structuring agent said it was a game changer because the transaction was sold down to the E-notes. The structure has transformed the E-note market by expanding the traditional E-note buyer base to institutional investors of all sizes to participate in the space with enhanced liquidity and significantly improved transparency on the performance of the underlying transaction.

The structure, which is repeatable, also allows investors to purchase both the debt and equity in a deal.

In STARR 2018-1, the $430 million series A notes carry an interest rate of 4.089% and an initial loan-to-value (LTV) of 61.8%. The $120 million series B notes have an interest rate of 5.315% and an initial LTV of 79.1%, while the $36.9 million series C notes have an interest rate of 6.899% with an initial LTV of 84.4%.

Proceeds from the sale of the notes were used to acquire 24 aircraft (23 narrowbodies and one widebody) on lease to 16 lessees. The initial weighted average aircraft age of the portfolio was approximately 7.7 years, with a weighted average remaining lease term of approximately 4.5 years.

GECAS is the servicer for the transaction, which is the 11th securitisation serviced by the lessor.

Oz Management serves as the asset manager for equity investors.

The **GECAS STARR 2018-1 deal** team

News Event of the Year: **Boeing-Embraer Partnership**

While no one anticipated Airbus and Bombardier announcing a CSeries partnership in October 2017, the proposed Boeing-Embraer joint venture had been a rumour for most of the first half of 2018.

Boeing dismissed the Airbus-Bombardier tie-up but news emerged rapidly they were engaged in talks with the Brazilian manufacturer.

The US and Brazilian manufacturers announced a Memorandum of Understanding in July 2018 for a strategic partnership: Boeing will hold 80% of a joint venture for Embraer's commercial aircraft operations for $4.2 billion, and Embraer will own the remaining 20%.

The companies have also agreed to the terms of another joint venture (JV) to promote and develop new markets for the multi-mission medium airlift KC-390. Under the terms of this proposed partnership, Embraer will own a 51% stake in the JV, with Boeing owning the remainder.

The partnership aims to generate $150 million in synergies by the third year and add to Boeing's earnings per share from 2020.

The closing of the transaction is subject to shareholder and regulatory approvals. The transaction is expected to close by the end of 2019. Boeing will control the new company, which will be managed from Brazil. Heading the joint venture is John Slattery, the president and CEO of Embraer Commercial Aviation and executive vice-president of Embraer. He was named president and chief executive officer (CEO) for the commercial aviation and services joint venture between Boeing and Embraer.

The **Boeing-Embraer** team, winners of the News Event of the year award

Airline of the Year: **Southwest Airlines**

Airfinance Journal selects its Airline of the Year on a 100% objective and quantitative basis using data from The Airline Analyst. The parameter used is Return on Total Capital (EBIT/ Average of Adjusted Net Debt and Equity) which clearly conveys the airline that had the most success during the year in generating returns not just on its capital but also its resources such as aircraft and staff. The winner for 2018 is Southwest Airlines which generated a phenomenal 27.6% Return on Total Capital. Runner-up was IAG and third-placed was Ryanair.

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

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

Overall Capital Markets Deal of the Year: **Air Lease Corp. TBOLT II $450m ABS for 18 aircraft**

Borrower/Issuer: Thunderbolt II Aircraft Lease Limited and Thunderbolt II Aircraft Lease US LLC

Structure: Asset-Backed Securitisation

Amount: $450 million

Global Coordinator, Joint Lead Structuring Agent and Joint Lead Bookrunner (equity and debt): Bank of America Merrill Lynch

Joint Lead Structuring Agent and Joint Lead Bookrunner (equity and debt): Mizuho Securities, Goldman Sachs & Co

Joint Lead Bookrunner (equity and debt): Citigroup

Joint Lead Bookrunners (debt): BNP Paribas, MUFG

Rating Agency: KBRA

Lawyers: A&L Goodbody, Hughes Hubbard & Reed, Milbank LLP, Vedder Price, Walkers

Date closed: 1 July 2018

The transaction was described as a groundbreaking 144A tradeable E-note ABS for Air Lease. This innovative structure has transformed the aircraft ABS market into an investible and tradeable asset class for a broader set of both equity and credit buyers.

The collateral comprise a mix of narrowbody and widebody aircraft that had an average age of eight years (as of April 2018) and were leased to 16 lessees.

The Thunderbolt II ABS included issuing $450 million of debt and $215 million of equity, each issued pursuant to Rule 144A.

The structure included two series of fixed rate notes and equity in the form of Aircraft Portfolio Shares (APS), comprised of 90% Global Aircraft Portfolio Shares (GAPS) and 10% Certificated Aircraft Portfolio Shares (CAPS). The CAPS were purchased by an investment vehicle controlled by ITE Management, and ALC retained 5% of the equity as planned. Ryan McKenna, ALC's head of strategic planning said at the time that there were 56 orders and oversubscription across all the three classes of securities, highlighted by 23 unique investors and 6.7 times oversubscription for the equity.

The transaction was the one of the largest aviation ABS marketing efforts in history comprising a four-week non-deal roadshow canvassing 60 investors across 21 cities.

Final pricing was seven basis points (bps) tighter than initial price talk for the A Notes, 37.5bps tighter for the B Notes and 100bps tighter for the GAPS. Thunderbolt II was the first Deal to use a Passive Foreign Investment Company (PFIC) tax structure that facilitates off-shore ownership and removes tax related transfer restrictions, with the goal of further broadening distribution and secondary market liquidity.

The transaction used the DealVector platform to share more detailed models with investors in an effort to increase transparency and facilitate investor analysis.

The **ALC TBOLT II deal** team

Innovative Deal of the Year: **Spirit Airlines $160m PDP financing for 43 A320neo**

Borrower: Spirit Airlines

Structure: Revolver credit facility secured by Pre-delivery payment financing

Amount: $160 million

Collateral: 43 Airbus A320neo aircraft

Banks: Crédit Agricole and Nord/LB as co-lead arrangers

Arranger and adviser: SkyWorks

Lawyers: Debevoise & Plimpton, Vedder Price

Date mandated: 1 July 2018

Date closed: 30 October 2018

ULCC Spirit Airlines closed a $160 million pre-delivery payment (PDP) revolving facility, related to 43 Airbus A320neo aircraft in October 2018.

According to its fleet plan, the ULCC has 14 A320neo deliveries this year, five were planned for the first quarter of 2019, three in the third quarter and the remaining six in the final quarter.

In 2020 Spirit is due to take 16 new A320neo aircraft. The A320neo aircraft are scheduled to be delivered through December 2021.

The facility is traditionally secured by the collateral assignment of certain of Spirit's rights under its purchase agreement with Airbus. The facility was innovative as it allows the borrower draw down and repayment flexibility. As direct borrower, Spirit is free to decide how much it wants to draw, repay or redraw on a monthly basis, subject only to pre-agreed maximum amounts as determined by the aggregate PDP payments made by Spirit to Airbus across all 43 aircraft under the facility.

The PDPs paid in by Spirit serve essentially as the borrowing base for the facility. In other words, unlike in traditional PDP financings, Spirit makes 100% of the PDP payments due directly to Airbus from its own cash first and subsequently decides how much it wishes to refinance with full flexibility to adjust on a monthly basis.

Despite the complexity of the structure, size of the facility and large number of aircraft involved, the facility was closed in record time (four weeks from signing of the term sheet in early October to closing at the end of October).

The **Spirit Airlines deal** team, winners of the Innovative deal of the year award

Editor's Deal of the Year: **Fly Leasing & Incline 84-aircraft portfolio acquisition**

Seller: AirAsia

Buyers: Fly Leasing and BBAM

Structure: Portfolio acquisition

Mandated lead arrangers and bookrunners: MUFG, First Abu Dhabi Bank

Sell-Side Financial Advisors: BNP Paribas, Credit Suisse, RHB

Acquisition Financiers: BNP Paribas, Citi, Commonwealth Bank of Australia, Deutsche Bank

Lawyers: Clifford Chance, Milbank LLP, Vedder Price

Date closed: 28 February 2018

AirAsia Group entered into agreements to dispose of its aircraft leasing operations (Asia Aviation Capital) to entities managed by BBAM for $1.18 billion.

Under the terms of the agreement, Fly Leasing purchased 33 aircraft and seven engines, Incline B Aviation (Incline) acquired 38 aircraft and seven engines, Nomura Babcock and Brown (NBB) acquired 13 aircraft. Of the 84-aircraft portfolio, 79 aircraft are leased back to AirAsia and its affiliates.

Fly and Incline also entered agreements to acquire 48 aircraft ordered by AirAsia, and took an option on a further 50 deliveries.

This transaction was described as a 'game changer' for Fly Leasing as it exposed the lessor to new technology aircraft.

Fly completed the acquisition of 33 used A320s and seven engines on lease to AirAsia group airlines in the fourth quarter of 2018.

Later this year, Fly will also start the second phase of the AirAsia project, with the first new-technology aircraft to be acquired under purchase and leaseback transactions.

Four A320neo deliveries are planned for late this year, six in 2020 and the final 11 in 2021. All aircraft will be under 12-year lease terms. As part of the transaction, Fly also acquired options to purchase up to 20 A320neo-family aircraft from AirAsia.

The transaction gave Fly more than 20% overall exposure to AirAsia group airlines but the lessor is looking to reduce its exposure.

Fly started to sell some A320's last December and has set a target towards a 3.5/1 leverage ratio.

"We're way ahead of our targets in deleveraging following the portfolio acquisition and we expect to be down very close, all else being equal to be very close to three times by the end of the year," says chief executive officer Colm Barrington.

Overall Deal of the Year: **ORIX Aviation $2.2bn acquisition of 30% stake in Avolon**

Structure: M&A

Seller: Bohai Leasing

Buyer: ORIX Aviation

Amount: $2.2 billion

Lawyers: Clifford Chance, Linklaters, Maples Group, Milbank LLP, Pillsbury, Weil, Gotshal & Manges

Date closed: 5 November 2018

ORIX Aviation agreed to pay $2.2 billion for a 30% stake in fellow Dublin-based lessor Avolon in early August 2018.

"ORIX is a strong, investment grade institution with a proven track record in the leasing sector over multiple industry cycles," said Avolon chief executive officer Dómhnal Slattery, adding: "We will benefit from ORIX's experience and relationships as we continue to build Avolon's financial strength and industry franchise."

As a 30% shareholder in Avolon, ORIX will benefit from the Chinese-owned lessor's cash flows and profits.

James Meyler, who at the time was ORIX Aviation deputy chief executive officer and ORIX Aviation Hong Kong chief executive officer said his company will also benefit from the returns made from Avolon's orderbook, but it will not be taking any of the orders itself.

"We're buying into the business plan that Avolon has set out and we want Avolon to keep growing, increase in value and reach investment grade. That's very much our target for the investment. ORIX Aviation will continue to grow by its business plan." Since the purchaser is owned by Japanese corporation ORIX, one benefit of the deal may be greater market share for Avolon in Japan.

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

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


The **ORIX Aviation/Avolon** deal team, collecting their award

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

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

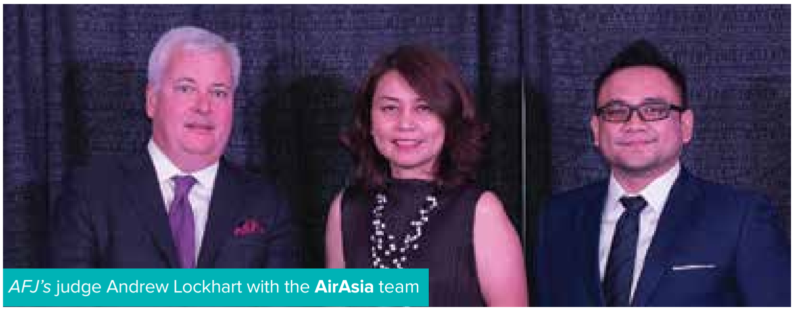
In addition to managing the AirAsia Group Berhad group of airlines operations, the team handled two major aircraft divestment portfolio projects from its aircraft leasing business (Asia Aviation Capital). The team was instrumental and dedicated in closing:

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

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

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

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


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

Lessor Treasury Team of the Year: **BOC Aviation**

BOC Aviation wins this year's Lessor Treasury Team of the year award after an impressive 12-month period.

In 2018 the Singapore-based lessor was active in the loan and bond markets, raising over $2.7 billion in unsecured funding.

BOC Aviation continued to tap the capital markets and raised $1.7 billion through five issuances with different terms under its $10 billion 'Global Medium Term Note' programme.

Issuances of $300 million, $500 million and $90 million had five-year terms, one $500 million issuance had a three-year term and the lessor also issued $350 million of unsecured notes with a seven-year term.

The May 2018 $350 million floating rate transaction achieved a new benchmark: the transaction was the lessor's inaugural seven-year floating rate notes, the first out of Asia in over two decades, as well as from the global aircraft lessor space.

Demand peaked in excess of $3 billion (or oversubscription ratio of 8.6x) before pricing from more than 190 accounts at final price guidance, which represented a record high for BOC Aviation.

In 2018, The BOC Aviation treasury team also raised $1 billion from loan markets, including a new benchmark $750 million term loan that was un-utilised at 31 December 2018 and is available for 2019.

BOC Aviation has steadily reduced its secured debt over the past few years. At the end of 2018 that debt was composed of 57% from notes issuances in debt capital markets, 36% from commercial loans and 7% from the export credit agencies. The lessor maintained strong liquidity with $243 million in total cash and short-term deposits, and $3.6 billion in undrawn committed credit facilities, as of 31 December 2018.

BOC Aviation ended the year with a debt to equity ratio of 3.0 times.

The lessor supported a total of 55 deliveries through ongoing financing during the year and finished the year with a lending group of over 80 financiers, one of the largest in the aircraft leasing industry.

Once again, BOC Aviation achieved a very attractive overall debt cost in 2018 at 3.3%, based on the average of opening and closing debt. This reflects the strength of the credit, the strong investment grade ratings, the treasury team's experience and the tapping of different markets and tenors in size (total raised in 2018 $1.8 billion).

It maintained 'A-' credit ratings from S&P Global and Fitch Ratings.

Aviation Finance House of the Year: **BNP Paribas**

BNP Paribas wins this year's Aviation Finance House of the Year Award demonstrating a broad variety of transactions, as well as creativity across many financing structures. The bank particularly seemed to punch above its weight in the asset-backed securitisation (ABS) and debt capital markets.

The French bank's involvement in aviation transactions in 2018 totalled more than $50 billion. It included more than $39 billion of capital markets and revolving credit facilities and over $11 billion of commercial loans.

Last year the bank was involved in more than 30 capital markets deals, 17 revolving credit facilities as well as 51 aircraft financings and refinancings.

BNP Paribas' Aviation teams in EMEA, Americas and Asia Pacific, were able to deliver significant value for their clients in a challenging context last year.

The depth and breadth of the French bank's aviation franchise can be summarised as below:

- First Aircraft Finance Insurance Consortium (AFIC) combined with first French tax lease with Royal Air Maroc for the financing of their first ever Boeing 787-9 and Max 8 aircraft,
- Project Aladdin - Sale of AirAsia's aircraft leasing operations to Fly Leasing as advisor and lender,
- Project Melville - $3 billion secured term loan combined with $1 billion unsecured revolving credit facility, involving 135 aircraft on lease with 67 lessees,
- Sole non-AFIC non-sovereign-guaranteed aircraft financing (through commercial Jolco) in 2018 for Turkish Airlines,
- Virgin Atlantic's first ever revolving credit facility,
- Arranger/bookrunner in five Asset-backed securitisations (ABS) transactions (Sapphire Aviation, CLAS 2018-1, TBOLT 2018-A, HORZN 2018-1, CARGO 2018-1),
- Goshawk's Schuldschein issuance,
- Goshawk TLA financing for the acquisition of SKY Leasing International, and
- Long term debt commitment for Novus Aviation Capital's first ever direct order from Boeing for four 777-300ERs.

The **BNP Paribas** team, winners of the Aviation Finance House of the year award

Lessor of the Year: **Avolon**

Avolon made the headlines in early 2018 because its parent company, the HNA Group, had been trying to liquidate assets and raise capital in a bid to reduce an estimated $94 billion of debt.

Despite the problems at the parent level the Dublin-based lessor pushed ahead.

However the ORIX Aviation acquisition of a 30% stake in Avolon, was a turning point.

Since then it has been a smooth road and this is a testament to its chief executive officer Domnhal Slattery and his team.

Avolon, which is owned by HNA unit Bohai Capital, had a robust year in 2018.

It executed a total of 153 lease transactions, comprising new aircraft leases, second leases and lease extensions, plus 130 sale agreements. The lessor delivered 61 new aircraft including 28 transitions to 30 customers.

"Avolon enters 2019 following another strong quarter and full year. We now have a portfolio-offering that is focused exclusively on young, modern, new technology and fuel efficient single and twin aisle aircraft types," said Slattery.

The lessor made the headlines at the end of the year with a 100 Airbus A320neo family aircraft order, including 75 A320neos and 25 A321neos. Deliveries are scheduled from 2023 onwards.

The announcement made Avolon Airbus' largest lessor customer by size of backlog. At 31 December 2018, Avolon had over 220 single-aisle and 45 twin-aisle aircraft on backlog.

"Our recently announced Airbus order provides us with locked-in growth for the medium-term, helping us support the fleet requirements of our airline customers around the world," said Slattery.

During the year Avolon raised $4.2 billion of debt (excluding its Sapphire ABS transaction) including $1.5 billion of senior unsecured notes and $1.3 billion of warehouse and other revolving credit capacity. It had total revolving debt facilities of $4.2 billion at 31 December 2018.

"Our business continues to deliver strong results and our financial strength, coupled with our increasingly unencumbered asset base and diversified shareholder base, positions us well to achieve an investment grade rating," said Slattery.

The **Avolon** team, winners of the Lessor of the year award

Aviation Finance Persons of the Year: **Robert Korn** and **Bill Hoffman** (Carlyle Aviation Partners)

Bill Hoffman

Robert Korn

Robert Korn and Bill Hoffman have been the architects of the rise of Apollo Aviation Group (now Carlyle Aviation Partners) since its inception in 2002.

The company they co-founded has grown from a mid-life trading company to a very active operating lessor.

The lessor's trajectory has further accelerated over the past 18 months.

Hoffman and Korn took full control of Apollo at the end of 2017.

In October 2018 the Carlyle Group agreed to acquire 100% of Apollo from its owners Korn and Hoffman. The transaction closed on 19 December.

Apollo became a new business line, operating as Carlyle Aviation Partners, within Carlyle's global credit segment.

The acquisition allows Carlyle's global credit platform to offer long-duration exposure to commercial aviation markets through a variety of credit, equity and structured finance instruments.

As of January 2019, Carlyle Aviation Partners had total assets under management of $5.6 billion, with over 80 employees and offices in the US, Ireland and Singapore. Its portfolio included 246 aircraft owned, managed or committed to purchase with 107 airlines lessees in 57 countries.

Carlyle co-chief executive officer Kewsong Lee said: "This corporate acquisition expands Carlyle's Global Credit capabilities, particularly in the growing asset-based credit market. Apollo Aviation Group is a scalable platform with strong growth prospects given its 16-year history and track record of performance."

Hoffman said: "The Carlyle Group has demonstrated itself to be one of the leading alternative asset managers worldwide and Robert and I couldn't think of a better home for the business we've built over the past 16 years."

"Joining forces with The Carlyle Group allows us to continue to support our airline customers and play an even greater strategic role in the aviation sector," said Korn.

Independently of the ownership change the company had an impressive year. According to *Airfinance Journal*'s Fleet Tracker, the company was the most active buyer in 2018 with a total of 83 aircraft for an estimated $1.6 billion by market value.

In 2018, the company also launched two asset-backed securitisations AASET 2018-1 and AASET 2018-2 with proceeds exceeding $1 billion. The refinancings involved about 60 mid-life aircraft.

Lifetime Achievement Award: **Dick Forsberg**

Richard (Dick) Forsberg retired as head of strategy at Avolon in March 2019, the culmination of almost 50 years of continuous experience in the commercial aviation industry.

During that time, he has held a variety of positions with airlines, operating lessors, arrangers and capital providers in areas that include business strategy, industry analysis, forecasting, asset valuation, portfolio risk management and airline credit assessment.

Forsberg began his career in the UK's national and independent airlines of the 1970s and '80s, in roles covering market analysis and forecasting, network and fleet planning, strategic planning and operations. This experience developed a firm grounding in airline economics and strategy that has been leveraged over the subsequent 30 years in the aircraft leasing, financing and arranger sectors.

He joined Guinness Peat Aviation (GPA), at that time the largest of the nascent aircraft lessors that was regarded as a pioneer of the industry.

Following GPA's acquisition by General Electric, he remained with GECAS for the next six years, primarily supporting the development of its risk management and strategy activities.

In 1999, he re-connected with Dómhnal Slattery, previously a colleague in GPA, at IAMG, a boutique aviation advisory and arranger business that was acquired by the Royal Bank of Scotland in 2001 and became the nucleus of RBS Aviation Capital. As a founding executive and head of risk at RBS Aviation Capital, he shaped the investment strategy and risk management framework for what quickly grew into the world's third largest aircraft lessor. While in GPA and IAMG Forsberg successfully advised airlines on their fleet strategy, which subsequently led to aircraft orders.

At RBS Aviation Capital he created the relative equity model and residual value model. He played a significant role in defining a capital allocation strategy for the bank's aircraft leasing business.

In 2010, he left RBS Aviation Capital to launch Avolon with a small group of close colleagues, leading the development of Avolon's strategic direction and risk management processes. There Forsberg worked closely with investors, financiers, OEMs, ratings agencies and other key stakeholders to establish Avolon's brand and business credentials. He prepared industry analysis and trends for investors, financiers and rating agencies required by the IPO process, which resulted in a successful floating on the New York Stock Exchange in 2014.

He also led the lessor's Thought Leadership activities, publishing numerous White Papers ('Buckle up-2019' is the latest paper) and developing narratives on topics and issues affecting the industry. Forsberg is currently serving on the ISTAT Appraisers International Board of Governors.

Dick Forsberg

Airline of the Year: **Spring Airlines**

Shanghai-headquartered Spring Airlines wins the top-rated Chinese airline award for the second consecutive year after showcasing stellar financial performance.

Spring was the first low-cost carrier (LCC) in China. It was launched in 2005 and closed its initial public offering in January 2015. As of 24 May 2019, the airline had a market capitalization of RMB38.5 billion ($5.6 billion). Its fleet size numbers 86 Airbus A320 aircraft with an average age of 4.8 years. Load factor has been above 90% since 2010. The budget carrier serves 100 destinations.

Spring has outstanding orders for 39 A320neos and 15 larger A321neos.

The airline has a subsidiary in Japan, Spring Airlines Japan, which is based at Tokyo Narita. It was the first Chinese airline to raise a Japanese affiliate. Spring partnered with Japanese investors in 2011 to establish the Japanese LCC with a 33% stake. With JPY1.5 billion in equity capital, Spring Japan received its air operator's certificate in December 2013. The remainder of the airline's capital was provided by Japanese financial institutions, IT enterprises and trading companies. Although its Chinese parent is an all-Airbus operator, Spring Japan operates 737 aircraft exclusively. That decision was made because of Boeing's greater popularity in Japan and related relative ease of finding 737 cockpit crew (most of Spring Japan's pilots are former JAL pilots). Spring Japan's current operating fleet comprises six Boeing 737-800s. Unlike its ultra-low-cost parent, the Japanese affiliate offers 12 premium seats in the front.

Last year was very successful for Spring Airlines. Despite higher fuel costs and a weaker RMB, Spring posted a 2018 net profit of RMB1.5 billion ($220 million), up 19.1% from RMB1.26 billion the previous year. Total operating income increased 19.4% year on year, to RMB13.1 billion, while operating costs increased 22.9% to RMB11.8 billion, with fuel accounting for 33.8% of that figure. Excluding fuel, costs decreased 1.3% as a result of "improvements in major cost items".

This year started well, too. In the first quarter, Spring posted a profit of RMB475 million, up 23.1% year on year. This was achieved on 12.7% growth in operating revenue, to RMB 3.6 billion, and EBITDA of RMB702 million.

Due to the airline's high ratings across five parameters – average fleet age, EBITDA margin, fixed charge cover, liquidity and leverage – Spring Airlines is the top-rated Chinese airline in *Airfinance Journal*'s Financial Ratings for 2018.

Spring Airlines, collecting their award from *AFJ's* managing director **Laura Mueller**

Best Domestic Financing: **CCB Leasing SPV for eight 737-800s**

Borrower/issuer: A CCB Financial Leasing SPV in Tianjin Dongjiang Free Trade Zone

Structure: Mortgage loan with two currencies in two tranches

Asset Financed: Eight Boeing 737-800s

Lawyers (and roles): RuiBai as lender's legal counsel, CCB Financial Leasing used in-house lawyer

Banks (and roles including overall arranger): China Ex-Im Bank, Tianjin Branch

Date closed: 31/01/2018

Based on a RMB-denominated operating lease for eight Boeing 737-800s between CCB Financial Leasing and Xiamen Airlines, CCB drafted a two-tranche mortgage loan with two different currencies (RMB and USD) together with China Ex-Im Bank's Tianjin branch. One tranche is an amortised loan in RMB to match the RMB rent, while the other is a balloon loan in USD to match the USD residual value. This was the first aircraft mortgage loan in China using two currencies in two tranches for one aircraft.

CCB Financial Leasing was set up on 26 December, 2007. As a non-financial institution, CCB Financial Leasing is a wholly-owned subsidiary of China Construction Bank, with a registered capital of RMB8 billion ($1.1 billion).

Its business covers financing, leasing, assignment and acceptance of finance lease assets, investment in fixed income securities, lessees' security deposit acceptance, inter-bank lending, financial institution borrowing, offshore borrowing, sales and disposal of lease assets, economic consultancy and other business approved by Chinese regulator CBRC. Total assets for CCB at 31 December 2018 were RMB147 billion, while net profit and net asset value were RMB1.3 billion and RMB14.5 billion, respectively.

The **CCB Leasing** deal team, collecting their award from *AFJ's* managing director **Laura Mueller**

Best Cross-Border Financing: **Minsheng syndicated PDP for eight 737 Max 8s**

Borrower/issuer: Cayman orphan SPV managed by Minsheng Financial Leasing's Hong Kong subsidiary

Structure: Cross-border syndicated PDP financing

Asset Financed: Eight Boeing 737 Max 8s

Lawyers (and roles): King & Wood Mallesons (Hong Kong): Lead, English law counsel for Minsheng Financial Leasing and Hong Kong deal counsel Clifford Chance (Singapore): English law counsel to financiers Mourant Ozannes: Cayman counsel

Banks (and roles including overall arranger): Natixis, Bank of Communications and Mega Bank

Date closed: 22/03/2018

Natixis, Bank of Communications and Mega Bank co-arranged and co-funded Minsheng Financial Leasing's pre-delivery payments (PDPs) for eight Boeing 737 Max 8 aircraft.

The initial purchase agreement was signed onshore in China between Boeing and Minsheng, but the novation-out and financing took place offshore, in this case via an SPV in the Cayman Islands. As there is recourse back to Minsheng, this transaction is one of very few, if not the only, PDP transaction where the recourse is via a put option.

The initial purchase agreement was signed onshore, but the forward sale is to an offshore entity, Minsheng's HK platform.

The **Minsheng** team, winners of the Best Cross-Boarder Financing of the year award

Best New Leasing Entrant: **Haitong UT Leasing**

Haitong UT Leasing HK Limited is a wholly owned subsidiary of Haitong UniTrust International Leasing. In January 2014, Haitong Securities, through its wholly owned subsidiary, Haitong International Holdings, completed the acquisition of Haitong UniTrust, setting a precedent in mainland China for acquisition of a financial leasing enterprise by a securities house. Haitong UT Leasing HK Limited was subsequently established in Hong Kong for conducting international leasing businesses, including aircraft leasing and financing.

At the end of 2018, the registered capital of Haitong UniTrust reached RMB7 billion and its domestic credit rating was AAA (stable outlook). Its total assets exceeded RMB80 billion of which net assets accounted for more than RMB12 billion. It has over 1,400 employees providing services to a large client base in more than 400 cities in mainland China.

Haitong UniTrust has grown into a leading financial leasing company. Its parent company, Haitong Securities, is a Chinese state-owned financial conglomerate with total assets exceeding RMB 570 billion at the end of 2018.

Headquartered in Shanghai, Haitong UniTrust has branches and subsidiaries in 26 provinces in mainland China. Its businesses span multiple fields, including industrial equipment, transportation and logistics, building and construction, healthcare, consumer financing. Fully combining its finance lease business with capital market resources within Haitong group, Haitong Unitrust is capable of providing comprehensive one-shop "investment banking + direct investment + leasing" financial services to customers. The listing of Haitong UniTrust on the Hong Kong Exchange has further enhanced its capital market strength to support further growth in aviation and other businesses.

Haitong UT Leasing, collecting their award from *AFJ's* managing director **Laura Mueller**

Best Finance Lease: **ICBC Leasing French tax lease for 12 aircraft**

Borrower/issuer: One French SPV (a subsidiary of BPCE) for one aircraft

Structure: French tax lease financing structure

Asset Financed: Three Boeing 737 Max 8s & five Airbus A320neos & four 737- 800NGs

Lawyers (and role):

For ICBC Aviation Leasing: Lead English Law Counsel: Bryan Cave Leighton Paisner LLP (Hong Kong); PRC Counsel: Han Kun Law Offices

For borrower/lender: Lead English Law Counsel: Norton Rose Fulbright (Paris); PRC counsel: JunZeJun Law Offices; US counsel: Davis Wright Tremaine

For Lessee (China Southern Airlines): PRC Counsel: King & Wood Mallesons (PRC)

Banks (and roles including overall arranger): Natixis, Landesbank Hessen-Thuringen Girozentrale and BPCE as lenders; Natixis as facility agent and security trustee

Date closed: 13/08/2018

Chinese lessors have shown a strong appetite for combining French tax lease financing with domestic PRC sublease structuring to obtain secured debt financing for new aircraft.

In this deal, ICBC Finacial Leasing (ICBCFL) sought secured debt financing for 12 aircraft leased to China Southern Airlines (CSA) using a French tax lease structure, highlighting how the French tax lease is capable of adapting to change and pushing the boundaries of traditional tax lease financings.

Special purpose vehicles (SPVs) incorporated in France are the legal owners and borrowers under the commercial loan. They then lease the aircraft to PRC SPVs incorporated in Tianjin under a French tax lease structure.

This structure derives a combination of financial benefits from local French tax laws and depreciation allowances gained from French SPVs' ownership in aircraft. Tax rebates on interest-withholding taxes paid on loan interest payments between a Tianjin SPV and a French SPV also allows for significant savings to overall financing costs. The Tianjin SPVs sub-lease the aircraft to CSA. In this structure, CSA would not be obliged to pay withholding tax given the onshore nature of the sub-lease and this structure further enabled ICBCFL and CSA to continue to benefit from certain PRC tax credit/rebate benefits.

The **ICBC Leasing** deal team, winners of the Best Finance Lease of the year award

Best Operating Lease: **ICBC Leasing PDP, loan and SLB for four SpiceJet 737 Max 8s**

Borrower/issuer: SpiceJet

Structure: PDP financing, commercial Loan and sale and leaseback

Asset Financed: Four Boeing 737 Max 8s

Lawyers (and role):

For ICBCFL: Lead English Counsel: Bryan Cave Leighton Paisner LLP (Hong Kong), Indian Counsel: Wadia Ghandy and Co., Irish Counsel: A&L Goodbody

For Spicejet: Represented by its in-house legal team and led by Chandan Sand (General Counsel)

For HSBC: Lead counsel: Allen & Overy LLP, (Shanghai, China), Indian counsel: AZB & Partners, Irish Counsel: Arthur Cox

Banks (and roles including overall arranger): HSBC as facility agent/ security trustee/arranger

Date closed: 22/12/2018

SpiceJet engaged Industrial and Commercial Bank of China Financial Leasing (ICBCFL) to enter into a sale and leaseback transaction for four Boeing 737 Max 8 aircraft.

As part of the deal, SpiceJet also sought pre-delivery payment (PDP) financing support from an Ireland-incorporated affiliate of ICBCFL for the portfolio. The first SpiceJet 737 Max 8 delivery from this deal occurred on 27 September 2018 and the last of the four was delivered on 22 December 2018.

The PDP financing provided by ICBCFL was approximately $60 million, with a tenor of 1-1.5 years.

Long-term financing of approximately $170 million covering, inter alia, the four 737 Max 8 aircraft, was provided by HSBC.

ICBC Leasing deal team, collecting their award from *AFJ's* managing director **Laura Mueller**

Young Person in Chinese Aviation Finance: **Wang Jing, Bocomm Leasing**

At the age of 32, Ms. Jing Wang is the deputy head of the non-RMB financing department of Bank of Communications Financial Leasing (Bocomm Leasing), which is a wholly-owned subsidiary of the Bank of Communications.

Bocomm Leasing, established in 2007, has grown to be one of the largest leasing houses as well as one of the top aviation lessors in China.

To support the rapid growth of Bocomm Leasing's multi-billion-dollar non-RMB business, Wang has leveraged her expertise across a variety of financing products while supervising the daily operation of the company's offshore treasury centre in Hong Kong.

Wang is responsible for the company's aviation and shipping asset financing. She has experience across diverse structures including Japanese operating lease with call option, French tax lease, export credit agency financing, portfolio financing and others.

In 2017, she closed the company's first French tax lease transaction, which financed deliveries of seven Boeing 737s on lease to Hainan Airlines and Kunming Airlines. The deal has incorporated flexibility accommodating US Ex-Im support. In 2018, with US Ex-Im not being forthcoming, the debt was restructured from export credit financing to a commercial debt loan. As arguably one of the first French leases into PRC SPC being refinanced, the deal was awarded "2018 Restructuring Deal of the Year" by *Airfinance Journal*. Wang oversees the company's capital market financing activities. Since joining the company in 2015, she has handled seven bond offerings with combined notional amount of $7.5 billion.

In 2016, she participated in the company's first offshore asset-backed securities issuance, the back-leveraging of seven aircraft.

Wang Jing, accepting her award from *AFJ's* managing director **Laura Mueller**

Innovative Deal of the Year: **Three-year unsecured Samurai term loan with cross currency swap**

Borrower/issuer: CMB International Leasing Management

Structure: Unsecured Samurai term loan

Financing tenor: Three years
Lawyers (and role): Milbank acted for the borrower, B&M acted for the finance parties

Banks (and roles including overall arranger): MUFG Bank as original lender, agent and arranger

Date closed: 10/12/2018

This deal was a JPY10 billion ($90 million) three-year unsecured Samurai term loan with a cross-currency swap with CMB Financial Leasing as parent via a Keepwell deed.

The deal was the first of its kind for CMB Financial Leasing, reflecting the lessor's increased range of financing options and its ability to choose between asset-based borrowing and corporate borrowing at competitive rates with diversified investors.

The deal illustrates the savviness of Chinese lessors, particularly their ability to tap foreign currency funding options to meet their USD funding requirements, and couple such funding with complex cross-currency derivatives in order to remain FX neutral despite foreign currency funding. Japan's MUFG Bank acted as original lender, agent and arranger, while Milbank acted as legal agent for the borrower and B&M as legal counsel for the finance parties.

The **CMB International Leasing Management** team, winners of the Innovative deal of the year award

Asia Editor's Deal: **CALC's CAG 18-aircraft seed portfolio**

Project Sponsor: CALC

Servicer: a wholly owned subsidiary of CALC

Borrower: China Aircraft Global Limited (CAG)

Structure: Joint venture, non-recourse portfolio financing, based on a sidecar structure

Asset financed: 18 aircraft

Lawyers (and role): Clifford Chance: as the legal advisor to the structuring agents and senior lenders

Linklaters: as the legal advisor to the borrower and project sponsor

Banks (and roles including overall arranger): Structuring agents: Credit Suisse Securities (USA) and Goldman Sachs

Date closed: 28/6/2018

This is a $1.34 billion sidecar structure secured by a seed aircraft portfolio, as well as new deliveries and additional assets. The vehicle has been capitalized through debt, mezzanine capital and equity across several jurisdictions.

As part of the structure, CALC set-up China Aircraft Global Limited (CAG), a joint venture aircraft co-investment vehicle with a number of co-investors.

CALC then agreed to sell aircraft (and in the future to refer future sale opportunities) to the joint venture vehicle and to act, through its subsidiary, as servicer to the portfolio.

The $1.34 billion facility comprises $95 million of equity provided by CALC and $380 million of mezzanine capital provided by co-investors, four reputable state-owned enterprises engaged in outbound investment, insurance business and aviation sector investment.

CAG also raised a senior syndicated loan of $865 million, arranged by four global top-tier aviation/investment banks and three reputable PRC banks. The portfolio will be built up to around 18 aircraft. The facility provides for a revolving feature for up to 25% of the facility size.

CALC, collecting their award from *AFJ's* managing director **Laura Mueller**

Chinese Lessor of the Year: **CDB Aviation**

CDB Aviation is a full-service aircraft leasing platform with a global footprint. Since the appointment of Peter Chang as chief executive officer in January 2017, the company has been rapidly accelerating its business to support the continued growth of its leasing platform.

CDB Aviation was chosen as Chinese lessor of the year for its outstanding performance in 2018. That year, the company executed a record 107 aircraft transactions, including lease transactions for 62 aircraft with 22 customers, agreements to sell 17 aircraft and acquire 28 aircraft and the acquisition of 42 aircraft on operating lease, representing more than 20% growth by number of aircraft in the fleet at the start of 2018.

During the year, CDB Aviation signed financing transactions worth $3.2 billion. It ended the year with 104 employees, adding 36 new members of staff members in 2018, as well as nine new airline customers.

CDB Aviation is wholly owned by China Development Bank Financial Leasing, a 30-plusyear-old leasing company listed on the Hong Kong Stock Exchange. Its parent is the dedicated leasing arm of China Development Bank and enjoys Chinese sovereign credit rating (A1 / A / A+), one of the highest international credit ratings among Chinese financial institutions and the highest rating among all aviation lessors.

CDB Aviation prides itself in providing innovative and comprehensive aircraft fleet financing solutions to airlines in all key markets of the world, delivering a competitive cost of funding and an unrivalled customer-oriented, full-service approach that is focused on execution and is rooted in the culture of competency.

"This past year's growth is evidence of the strength and scale of our platform, as well as demonstrates our unwavering commitment to execution, through a combination of following our business model, opportunities with the manufacturers – a relationship we prize very highly, and strong relationships with the airlines," says Peter Chang.

"When CDB Aviation receives recognition for our performance – it is a reflection of a true team effort. I am very proud of our team of industry's best-in-class professionals who are the backbone of CDB Aviation as that is what has and will continue to move us forward to succeed both in China – where are roots are – and across all global markets where we now are present," he adds.

"2018 was another benchmark year for CDB Aviation, setting an all-time record for activity across the many facets of our fast-evolving business. This past year's growth is evidence of the strength and scale of our platform, as well as demonstrates our unwavering commitment to execution, through a combination of following our business model, opportunities with the manufacturers – a relationship we prize very highly, and strong relationships with the airlines," concludes Chang.

The **CDB Aviation** team, collecting their award from *AFJ's* managing director **Laura Mueller**

Overall Deal of the Year: **Haitong SPV portfolio purchase**

Borrower/issuer: Hong Kong SPVs

Structure: Portfolio purchase and financing

Asset Financed: A portfolio of aircraft including A350-900 aircraft, A320 aircraft and 737-800 aircraft

Lawyers (and role): Bryan Cave Leighton Paisner (Hong Kong) - legal counsel to purchasers, lessors and borrowers

Norton Rose Fulbright (Singapore and Hong Kong Offices) - legal counsel to lenders

Banks (and roles including overall arranger):

Mandated lead arrangers: BNP Paribas and Natixis

Lenders: BNP Paribas, Natixis, DVB Bank, Bank of China (NY Branch) and Korea Development Bank

Facility agent and security trustee: BNP Paribas

Swap bank: BNP Paribas

Account bank: BNP Paribas

Advisors (and roles):
PricewaterhouseCoopers - Tax advisor to purchasers, lessors and borrowers

Haitong UT Leasing HK Limited has entered into a sale and purchase agreement for the acquisition of a portfolio of aircraft being leased to airlines in a number of jurisdictions, utilising four new leasing structures under Hong Kong's new tax concessions regime.

The deal has set a precedent for the market to follow in respect of the use of those leasing structures in Hong Kong. It shows that the new tax concession regime for aircraft leasing in Hong Kong is compatible with market practices and is conducive to Hong Kong developing into an aircraft leasing and financing centre.

The aircraft were financed at delivery by a syndicate of lenders arranged jointly by BNP Paribas and Natixis, each acted as mandated lead arranger. BNP Paribas also acted as facility agent and security trustee.

The lender's syndicate included BNP Paribas, Natixis, DVB Bank, Bank of China (New York) and Korea Development Bank. Bryan Cave Leighton Paisner (Hong Kong) acted as the legal counsel to the purchasers, lessors and borrowers, and Norton Rose Fulbright (Singapore and Hong Kong) acted as the legal counsel to the lenders.

The **Haitong** deal team, winners of the Overall deal of the year award

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