

The Aviation Industry Leaders Report 2018:

Navigating the Cycle





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THE AVIATION INDUSTRY LEADERS REPORT 2018

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NAVIGATING THE CYCLE



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2017 was another extraordinary year for the aviation sector. Aided by the low fuel and interest rate environment, airlines posted very healthy profits for the third year in a row (2015 saw a step change in airline profitability with an almost tripling of profits). Capacity was managed, load factors increased and RPK growth was well above the ten-year trend of 5.5%. Airlines were able to expand their networks and renew their fleets with more efficient aircraft.

Leasing companies continued to grow their businesses. In 2015 there were approximately 33 companies with assets worth in excess of \$1 billion and five companies with assets worth in excess of \$10 billion. In 2017 the number of leasing companies with assets in excess of \$1 billion stood at over 50 and the number of companies with assets in excess of \$10 billion almost doubled.

The capital and banking markets remained very open with more investors and institutions coming into the sector searching for attractive and stable returns, leading to greater liquidity. Pricing of transactions has become incredibly tight indicating a maturing of the sector and the level of competition in the market.

The question remains whether the industry can continue on this upward trajectory or whether we will see a moderation or downcycle in the next few years. In the past, the aviation business cycle lasted for eight or nine years from peak to peak. Industry economists have been expecting the top of this cycle since 2015 but the growth period has continued to today, supported by the ultra-low-interest rate environment and airlines stimulating demand for travel. Profit forecasts for 2018 continue the upward trend. Change, if it is to come, however will no doubt present opportunities.

Over a four-month period, we surveyed a variety of industry leaders in three areas of the aviation market – lessors, airlines, and bankers. We are delighted to provide you with their insights on the state of the industry, areas of strength and the main challenges they face today. I would like to thank all of those who participated for their time. I hope you enjoy the read.

About this report

For this report, rather than rely on an online survey engine to collect the maximum amount of responses, *Airline Economics* and KPMG focused on personally interviewing major aviation industry leaders in a series of in-person in-depth interviews to delve deeper into the real issues impacting the market.

Airline Economics and KPMG conducted in-person interviews with 40 senior industry executives at leasing companies, banks and airlines, 17 of which were videoed at *Airline Economics Growth Frontiers* events located around the world between October and December 2017. The edited video report will be made available online at aviationnews-online.com after the results and themes discussed in this report have been presented during a panel discussion at *Airline Economics Growth Frontiers* Dublin 2018 on Jan. 22, 2018, which can also be viewed at aviationnews-online.com after the event.

KPMG and *Airline Economics* would like to thank all of the industry leaders and experts that contributed to this report for their time.



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Executive Summary

The aviation industry is a major contributor to global economic growth and prosperity. It has fuelled the rise of globalisation by bringing businesses and people together. Air transport has doubled in size every fifteen years and is set to continue to expand potentially at a faster rate. The demand for travel has fuelled the demand for more flights, more destinations and, of course, more aircraft. The worldwide commercial fleet – estimated at approximately 25,000 in-service aircraft – is forecast to expand to 35,000 over the next decade. Airlines, aircraft and engine lessors and aviation banks have grown in scale with demand, which has attracted evermore investors and capital into the sector over the past decade.

We sought to gain a better understanding of the current state of the aviation industry through the lens of three specific segments of the market. For this report, rather than rely on an online survey engine to collect the maximum amount of responses, we focused on personally interviewing major aviation industry leaders in a series of in-person, in-depth interviews to delve deeper into the real issues impacting the market. This executive summary provides an overview of the major themes highlighted by executives from the three market segments – airlines, lessors and banks – discussed in the paper in detail.

MAIN CHALLENGES

INDUSTRY CYCLES AND AREAS OF STRESS

Aircraft lessors are bullish about the global demand for aircraft and the relative health of airlines around the world. Despite some airline bankruptcies, mainly in Europe, and other areas of stress around the world created by terrorism and war, sanctions and regulatory pressures, the airline industry remains profitable and passenger demand continues to rise, boosting demand for lift.

The relatively muted impact of the recent airline bankruptcies in Europe – Alitalia, Air Berlin and Monarch – is demonstrative of the current robustness of the aviation sector. Despite all three airlines failing within a short space of time, the aircraft were quickly taken up by other carriers, mostly in Europe, which is seen as a healthy development by lessors and airlines that view this as “back-door” consolidation, which most respondents say is still needed in the European market.

Lessors have differing views on whether the aviation business cycle should be revised in light of a change in the relationship between GDP growth and revenue passenger kilometres (RPKs). Despite the benign environment, lessors are always looking for signs of stress in the marketplace – rising interest rates, oil prices and operating costs, changes in liquidity and aircraft production rates. Rising competition is a major issue for

lessors with new entrants coming into the space with lower cost of funds, which is being blamed for pushing down lease rate factors considerably.

Airlines are showing signs that rising costs are beginning to impact the bottom line, which are predicted to continue rising in 2018 at the same time as fierce competition is pushing down yields.

Banks are focused on interest rate changes and the continued robustness of the capital markets, while changes to the regulatory capital requirements rules dominate European bankers’ lists of challenges.

REGIONAL OUTLOOK

Challenges and areas of stress do vary by region. We asked executives from each of the three segments how optimistic or pessimistic they were for continued growth and opportunities in several areas of the world. The results were unsurprising – with optimism levels highest for China and Asia in general, although pockets of stress in South East Asia are a concern for some.

FINANCING TRENDS

Leasing companies are using the burgeoning capital markets more and more for raising debt and equity. In 2017, 12 ABS transactions were closed, which is the most since before the financial crisis. Furthermore, leasing companies are tapping into the secured and unsecured bond market to regularly raise operating capital. Capital markets investors are gaining a greater confidence in the robustness of the aircraft finance

industry through cycles which lessors hope will ensure the markets remain open in future downcycles. However, there are concerns that the new investors coming into the space will exit when defaults do rise and some complex deals need to be unwound.

The American carriers continue to benefit from record-breaking price stamps on enhanced equipment trust certificates as well as unsecured bond issuances in the capital markets. The commercial bank market is also very open to airline credits, with the major aviation banking entities being challenged by financial institutions reopening or creating aviation finance teams, with balance sheet capacity for aviation deals.

NEW TECHNOLOGY AIRCRAFT AND USEFUL ECONOMIC LIFE

The entrance of new technology aircraft has changed the market and the number of variants being introduced by the manufacturers has complicated the environment. The 737Max family of aircraft, for example, has five variants,

OPTIMISM LEVELS OF REGIONAL GROWTH

	LESSORS	AIRLINES	BANKS
China	4.00	4.29	4.50
India	4.00	4.00	3.80
North America	3.43	3.57	4.00
Europe	3.08	3.17	4.00
Asia-Pacific	3.38	3.00	4.00
Middle East	3.00	3.33	3.67
Latin America	2.58	2.86	3.50
India	1.56	3.20	3.40

which is more than any product grouping in history. The Airbus A320/1 family is less stratified but this may change if Airbus launches a re-engined A321, dubbed the A322. For lessors, the key to purchasing assets is assessing the user base and in this regard the A320 Neo and B737 Max 8 should remain the industry workhorses. The financing of new, more liquid assets is also favoured by the banks but they mostly take credit risk rather than residual value risk on aircraft investments. However, for airlines the main driver of aircraft choice is operational efficiency.

The speed of technological advancements to engine and airframe design has led some to question again whether the economic useful life of an aircraft should remain at the standard 25 years. While most lessors agree that a 25-year depreciation curve makes the most accounting sense, there is some division on whether the economic life of a new aircraft is shortening or lengthening. Some consider the useful life of an aircraft to be closer to 20 years, where the economics of overhauling an 18-year old aircraft and revitalising the interiors doesn't make sense.

Others view the technological advancements as increasing the useful life of an aircraft. Airlines, depending on their business models, either operate aircraft for their full life – 25-30 years – or tend to depreciate owned aircraft over 20 years to 10%.

There is a delicate balancing act for airlines between using new technology aircraft to hedge their fuel consumption, or owning lower cost, older aircraft that require more maintenance. However, most airlines agree that the customer's preference is always for new airplanes.



TECHNOLOGY

Advances in technology is not confined to the equipment in the aviation industry. Like other industries, aviation is being impacted by the move to digitalisation, the advent of advanced technologies such as distributed ledgers, or blockchains, to big data and artificial intelligence.

For lessors, the onus to date has been on digitalising aircraft maintenance records – a major underlying factor

in the appraised value of an aircraft asset – as well as how to manage and commoditise big data. More firms are leveraging software tools to streamline processes and have better visibility on the detail in the information they have already.

For airlines, the addition of predictive maintenance capabilities is a major benefit to their business, helping to reduce costs and time on ground, keeping their aircraft in the air generating revenue. Big data is also a major area that airlines are working on to commoditise their product offerings and to distinguish them from their competition.

The challenge for airlines and lessors for the near-term is to determine who owns the data generated by their aircraft – the OEM, the airline operator or the owner.

The financial services industry is undergoing a period of accelerated change as financial technology (fintech) disruptors encroach on market share in the commercial lending market particularly and internally, more and more financial processes are being digitalised and automated as banks find ways to become more efficient, regulatory compliant and meet rising customer demands. However, advanced technologies such as distributed ledgers (blockchain), artificial intelligence and machine learning, are yet to impact aviation finance in a meaningful way, according to most survey respondents, who maintain that the aviation business is relationship based and would not benefit from such developments, although there are those that would like to see most vanilla commercial banking transactions done online.



FINAL THOUGHTS

The mantra of many aviation industry economists over the past few years has been that the current operating environment is “as good as it gets” and there are few signs yet of that changing in the near-term. Despite the arguments over the shape of the cycle, the industry remains a cyclical business that will continue to be driven and impacted by changes in GDP even though its relationship with RPKs has altered slightly, which is making it very difficult for economists to predict the

next downturn.

Pressures are building, however all three areas of the industry. Interest rates, oil prices and operational costs, such as salaries, are all rising. Increasing competition is impacting airline yields although passenger demand is offsetting that to keep profits up, for now. Liquidity remains but the recent past has shown that market shocks can cut off sources of liquidity abruptly.

Airlines are generally better at managing capacity, but competition pressures have fuelled expansion in pockets of the world that could see a correction.

New entrants to the leasing space and the desire for scale to heighten efficiencies and cut costs is driving consolidation in the leasing market but the general sense is that there will likely be more smaller scale deals than larger scale mergers although there remains the potential for some larger scale transactions, particularly if the market changes.

Awash with liquidity, banks are helping renew fleets. New technology aircraft are aiding the sector with airlines hedging their fuel risk with more efficient equipment, although there are some concerns over values being impacted by too many variants and a potential impact on the useful life of aircraft.

Advances in technology and big data to help drive predictive maintenance and better consumer services is helping airlines and lessors alike to cut costs and attract more customers. Despite being impacted by new technology disruptors in the financial services space, the aviation finance business seems insulated from the worst of this change and lags behind advances that could help to commoditise products, although there are differing opinions on the benefits of such progression.

The robustness of the aviation sector is attracting new investment into the space with aircraft leasing more recognised globally for generating strong and stable returns. This is attracting more talented individuals into the industry. Airline profitability is healthy thanks to better capacity and cost management and strong demand. The state of the industry is strong and durable and certainly as good as it gets going into 2018.

Lessors:

The aviation leasing community has grown in size and stature over the past decade. Leading aircraft lessors share their views on the major issues impacting this burgeoning industry.



Aircraft lessors are bullish about the global demand for aircraft and the relative health of airlines around the world. Despite some airline bankruptcies, mainly in Europe, and other areas of stress around the world created by terrorism and war, sanctions and regulatory pressures, the airline industry remains profitable and passenger demand continues to rise.

In December 2017, the International Air Transport Association (IATA) increased its estimates for 2018 industry net profit to \$38.4 billion. Passenger numbers are expected to increase to 4.3 billion in 2018 with passenger traffic, measured in revenue passenger kilometres (RPKs), expected to rise 6.0% (slightly down on the 7.5% growth of 2017 but still ahead of the average of the past 10-20 years of 5.5%). The average load factor is pushing up to a record 81.4%. Passenger revenues are expected to grow by 9.2% to \$581 billion in 2018, all aided by the support of expected robust GDP growth of 3.1%.

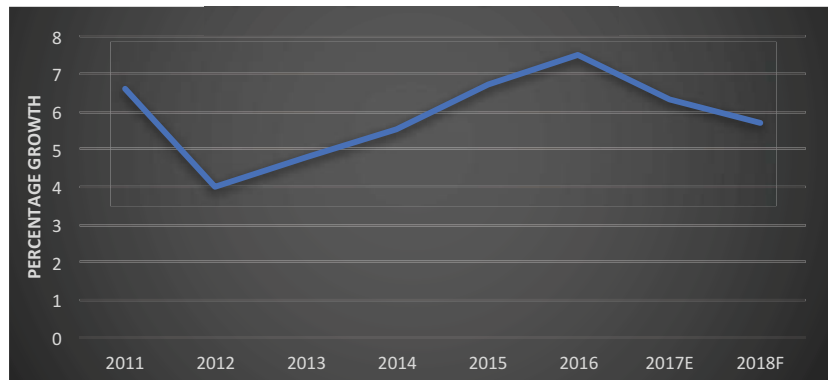
Colm Barrington, CEO of FLY Leasing and vice chairman of Finnair, points to the record load factors being reported by IATA carriers and by low-cost-carriers (LCC). "One of the incredible factors is how positive load factors have been," he says. "For example, despite the significant crewing problems and the negative media exposure that Ryanair experienced in the fourth quarter, it reported a 96% load factor in November. That is just remarkable for that time of year. At Finnair we are also experiencing very, very high load factors. High load factors mean demand for more aircraft. Demand for more aircraft is good for lessors."

Peter Barrett, CEO of SMBC Aviation Capital, sees the market as strong. "We have been in a pretty benign environment for a while...with a few bumps on the way ...but generally we view the market as strong."

DECOUPLING RPK AND GDP

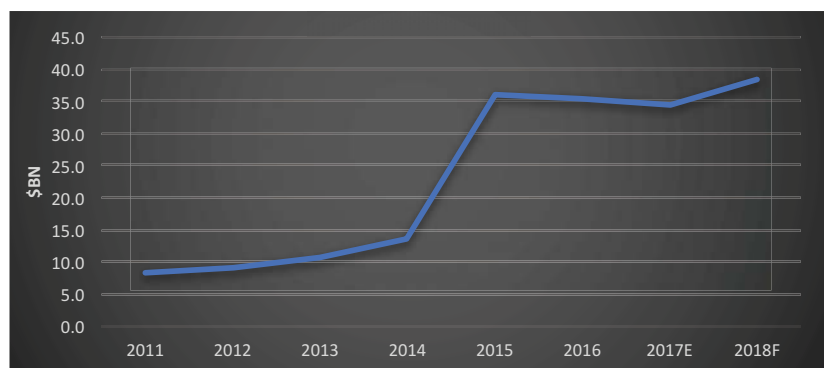
The positive environment has endured for considerably longer than previous cycles and the RPK growth rate of almost 8% in a sub-optimal global GDP growth is indicative of the robustness of the aviation sector. The RPK growth

FIGURE 1: PASSENGER AIRLINE NET PROFIT GROWTH



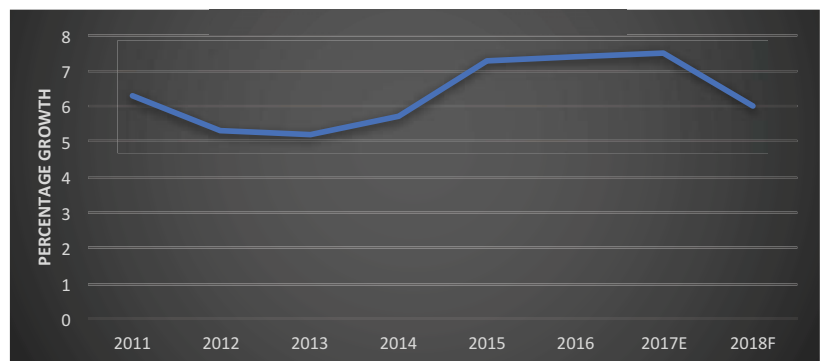
Source: IATA

FIGURE 2: PASSENGER AIRLINE RPK GROWTH



Source: IATA

FIGURE 3: PASSENGER AIRLINE ASK GROWTH



Source: IATA

rate has surpassed what is required for the industry to achieve the sustainable replacement of older aircraft with new aircraft coming into the market. Production levels (see Fig. 4) are being closely monitored by lessors to keep a keen eye on residual values and overcapacity risks. With airline profits increasing, airline credits are improving across the board, aided by the availability of liquidity, healthy demand and a low oil price.

Overall these factors have combined to create a benign environment for aircraft leasing to flourish – with many new entrants coming into the space in the past few years, notably from China and Asia, attracted by the robust market demand and stable and positive returns (see Fig.2).

“Ten years ago, the operating lease aircraft fleet was approximately 4,000 aircraft, today it is closer to 10,000,” says Peter Chang, president and CEO of CDB Aviation Lease Finance (CDB Aviation). “So, it is not surprising that there are more operating lessors because there are more opportunities..”

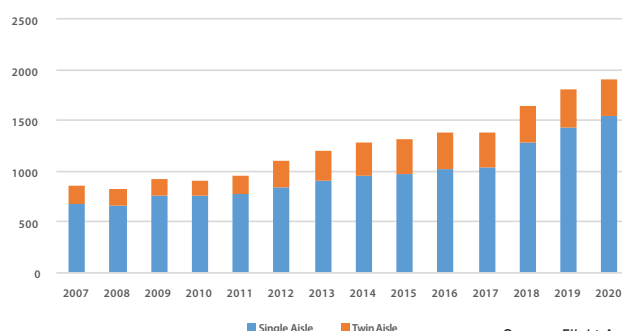
The relatively muted impact of the recent airline bankruptcies in Europe – Alitalia, Air Berlin and Monarch – is demonstrative of the current robustness of the aviation sector. Despite all three airlines failing within a short space of time, the aircraft were quickly taken up by other carriers, mostly in Europe.

“We have seen significant uptick in demand for used aircraft,” says Aengus Kelly, chief executive of AerCap. “We have seen a lot of airplanes going into the wider European market, which for us includes Poland, Hungary, Turkey, North Africa, parts of the Middle East, the Ukraine and Eastern Russia. A few years ago, the US market was absorbing a lot of used capacity... the American carriers led the way somewhat on taking used airplanes for long leases. We are seeing more of that now in the European arena.”

The fact that European airlines are seeking used aircraft for additional lift also shows the need for additional capacity as demand continues to rise.

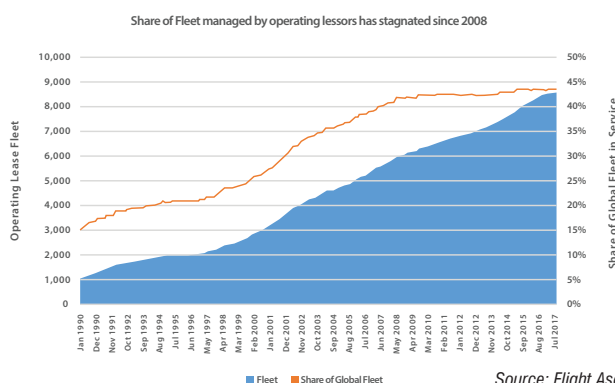
This benign environment has led many to consider the relationship between RPK and GDP growth to have uncoupled to an extent, driven by changes

FIGURE 4: PRODUCTION RATES



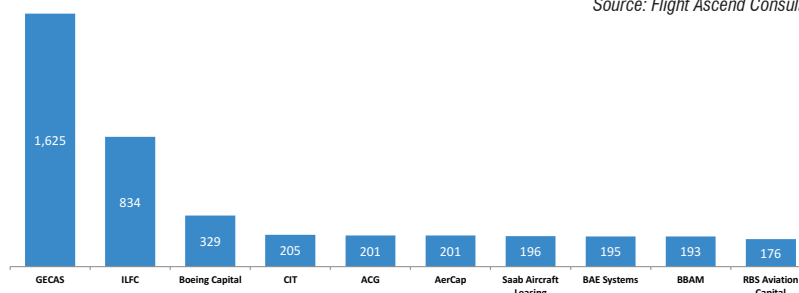
Source: Flight Ascend Consultancy

FIGURE 5: OPERATING LEASE FLEET



Source: Flight Ascend Consultancy

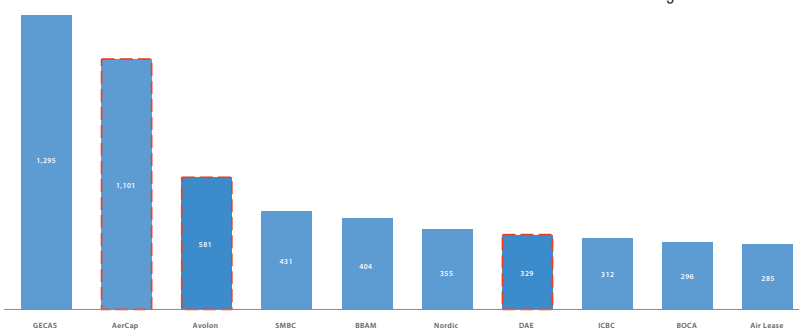
FIGURE 6: LARGEST AIRCRAFT LESSORS IN 2005



Source: Flight Ascend Consultancy

Total Aircraft – Top 10 Lessors: 4,155

FIGURE 7: LARGEST AIRCRAFT LESSORS IN 2017



Source: Flight Ascend Consultancy

in the way people travel, according to David Power, CEO of ORIX Aviation: “We are seeing a structural change in the way people travel,” he says. “Ireland, for example, is a small country but it has one of the highest number of per capita passenger transits per person of 2.0. Compared to China at 0.4 per individual – which could treble over the next 20 years, based on current projections – it would still be below the US which is 1.8 and below other countries, developed countries which may be at 1.5 or 1.6. Indonesia is even lower even though it has a population of 260 million people. Based on these figures, there should be a decoupling between GDP growth and RPK growth.”

While there are new stimulants in the market place, the consensus is that should GDP materially fall, RPK would follow but at a different rate than before due to these additional drivers. The charts on the right (Figs. 8.1-8.3) shows RPK growth compared to world real GDP growth between 2011 to forecasts for 2018. Chart 8.1 shows a clear correlation between the two measurements until 2014 where the relationship trend appears to widen. This is being caused by the growth of emerging markets, which is shown in Fig 8.3. Established economies GDP growth (Fig. 8.2) also show a slight decoupling from the RPK growth trend.

Ruth Kelly, CEO of Goshawk Aviation, agrees that there has been a slight change in the ratios between GDP growth and passenger growth but believes that the sector continues to be strongly correlated to the GDP cycle. “If you look back over history, the cyclical nature of our sector has always trended the general GDP pattern,” she says. “I don’t really think our sector is going to lead the downturn. If and when a downturn comes, we will follow the general economic cycle because fundamentally our sector is driven by demand for travel – demand is strong when GDP performance is strong, and it weakens when GDP performance weakens.”

Kelly agrees that there has been a change in the ratios between GDP growth and passenger growth, the ratios differ by region and there are other drivers to consider as well, but over the longer-term she sees strong correlation



“Our industry has been through a level of change that maybe the ratios [between GDP growth and passenger growth] have changed.”

Ruth Kelly, CEO of Goshawk Aviation

FIGURE 8.1: GLOBAL PASSENGER TRAFFIC (RPK) VS WORLD REAL GDP GROWTH

Source: IATA and IMF

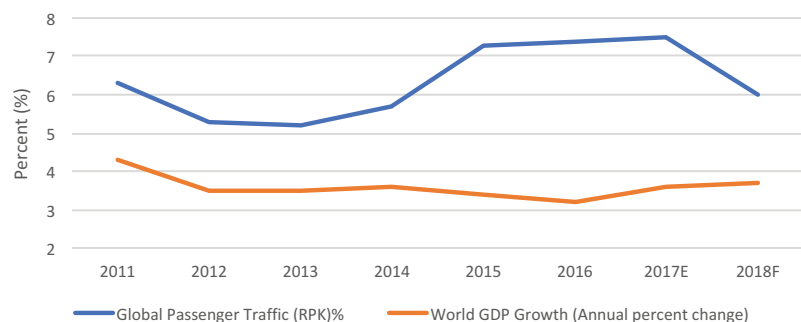


FIGURE 8.2: GLOBAL PASSENGER TRAFFIC (RPK) VS REAL GDP GROWTH - ADVANCED ECONOMIES

Source: IATA and IMF

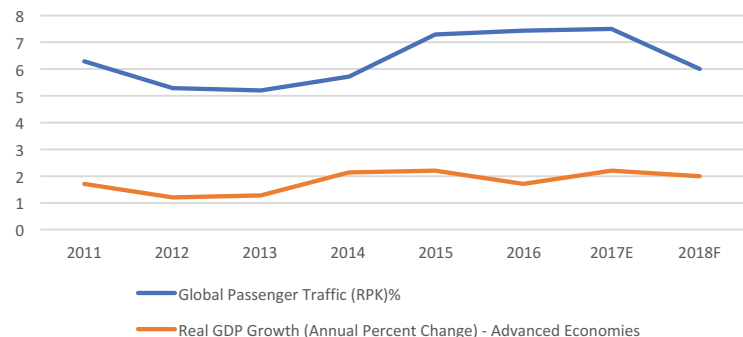
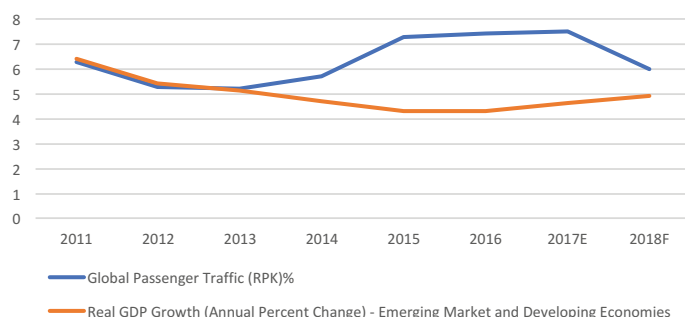


FIGURE 8.3: GLOBAL PASSENGER TRAFFIC (RPK) VS REAL GDP GROWTH - EMERGING MARKET & DEVELOPING ECONOMIES

Source: IATA and IMF



continuing between the two measures.

“Our industry has been through a level of change that maybe the ratios have changed a little bit in the medium and short-term,” says Kelly. “GDP growth has been benign in the western world, but it certainly hasn’t been in Asia... I see that pattern continuing. The big change in the western world is that airlines have become more cost efficient and are able to offer lower prices, which kicks on demand a little bit [despite benign GDP growth]. Perhaps a lot of that work is now done in the western world and the restructuring that has taken place over the past 15 years is done and we will see those kinds of patterns return to normal. I don’t particularly see a decoupling. When we break it down, there are reasons for everything. When looking for triggers, we should probably look to what economists are saying about the world economy.”

John Plueger, chief executive of Air Lease Corporation (ALC) is equally upbeat on passenger demand even during times of stress: “I don’t see any major crumbling of the stock market that can make people stop travelling suddenly,” he says. “There is a constant trend of traffic stimulation. Young people are spending their money on experiences rather than consumer products, which is an important aggregating factor globally. People in the US, Asia, and all over China, and Hong Kong want to travel, so it’s hard to see what would put any significant brakes on the global traffic growth in the near-term future.”

REDEFINING THE CYCLE

The extended period of continuing growth in passenger demand, the relative health of airlines, the availability of cheap funds and new investment into the sector have led some to question whether the cyclical nature of the aviation industry has been eradicated or at the very least redefined. Most of the leaders in the aircraft leasing community surveyed for this report agreed that the cycle remains but that the sector is experiencing an “extended peak”. Few leaders could be drawn on to call the top of the cycle – although most agree it has reached, or is approaching, its zenith.

One of the main roles of the chief executive is to prepare for all market eventualities – seeking signs of stress is one of those roles. For the aviation community, substantial increases in airline insolvencies are usually a key trigger point but there were five in 2017, which did not dent the global health of the industry. Low GDP growth is another but as already discussed the relationship with passenger demand is changing. Interest rates are creeping upward but have not yet had a major impact on the sector. Oil price remains relatively low, if increasing. When considering these macro-economic factors, it is easy to see why so many in our sector remain bullish.

“We’re in a continued expansion phase both in aviation as well as aviation finance sectors,” says Alec Burger, CEO of GECAS. “I think that’s going to continue. We are in a cyclical world. The trees do not grow to the sky, but the market is very liquid. There is a lot of capital that’s still looking to come into the space. Margins are being compressed as a result, but I think we can continue to grow for the foreseeable future.”

Others are more bearish. “We have been in a triple L period – lacklustre growth, lame in terms of interest rates, which is luring people into complacency,” says Khanh T. Tran, CEO of Aviation Capital Group (ACG). “We are starting to see some pockets of weakness – there was some surprise with respect to some of Western European operator [insolvencies] but as a lessor to two of those entities, we had seen the train coming and had been preparing and managing for it.”

“This upcycle has lasted longer than prior cycles in our space,” he adds. “The big question will be when will interest rates rise. It is tough to see oil price spiking except for event risks – North Korea for example. Airline consolidation and low oil prices have helped the industry a lot, so we may not be on the downside just yet, but it may be levelling off a bit – the question is how fast will things change over the next several years. I don’t see a lot of risk necessarily in 2018 but beyond this year is more questionable.”

Tran’s more bearish view is the

“I don’t see any major crumbling of the stock market that can make people stop travelling suddenly. There is a constant trend of traffic stimulation... People in the US, Asia, and all over China, and Hong Kong want to travel, so it’s hard to see what would put any significant brakes on the global traffic growth in the near-term future.”

*John Plueger,
CEO, Air Lease Corporation*



“We have been in a triple L period – lacklustre growth, lame in terms of interest rates, which is luring people into complacency”

*Khanh T. Tran
CEO of Aviation Capital Group (ACG)*



current “triple-C threat” – capacity, cost and competition– will “morph into a triple-A opportunity – attractive asset acquisition for those who have equity, expertise and experience through a downcycle. New competitors in this industry is not a new thing. This has happened time and again over the past three-to-four decades. The question is which company has not only survived, but was able to capitalise through downturns.”

Robert Martin, CEO of BOC Aviation, which is headquartered in Singapore and listed on the Hong Kong Stock Exchange, is very positive about the aviation leasing sector in general.

“I don’t have a good enough crystal ball [to call the cycle] but what I can tell you is it feels like 1998 all over again,” says Martin. “Why do we think it’s going to continue? It’s because of this wall of liquidity.” He explains that fund managers are investing more and more in the aviation sector, specifically aircraft leasing, because of the relatively low default rate and stable returns in an otherwise low yield environment.

“Leasing companies today are so large that the diversification is significant and brings credit strength provided there is a very strong risk management focus within the company,” he says.

David Power agrees with his peers that the industry is in a “long peak of a cycle” but cautions that the macro economic environment is only one part of the puzzle. “We look at supply, demand, and liquidity, as well as the structure of the companies involved in aircraft leasing and financing, which often leads us to paint quite a different picture,” he says. “You need to be able to transit aircraft for deliveries and redeliveries, which requires a liquid market for aircraft transfers but there are bottlenecks in the novation market currently, and there are wide discrepancies between financiers’ requirements. Then you need to consider the active capital markets and the increasing interest rate environment. You can’t just look at the macro and say all is rosy; you have to look at the various markets that influence aircraft leasing – the demand for aircraft, the credit worthiness of airlines, the health of the capital markets and the banking market, the amount of liquidity and return expectations – at certain points



“You can’t just look at the macro and say all is rosy; you have to look at the various markets that influence aircraft leasing – the demand for aircraft, the credit worthiness of airlines, the health of the capital markets and the banking market, the amount of liquidity and return expectations – at certain points in the cycle, they all change.”

David Power, CEO of ORIX Aviation



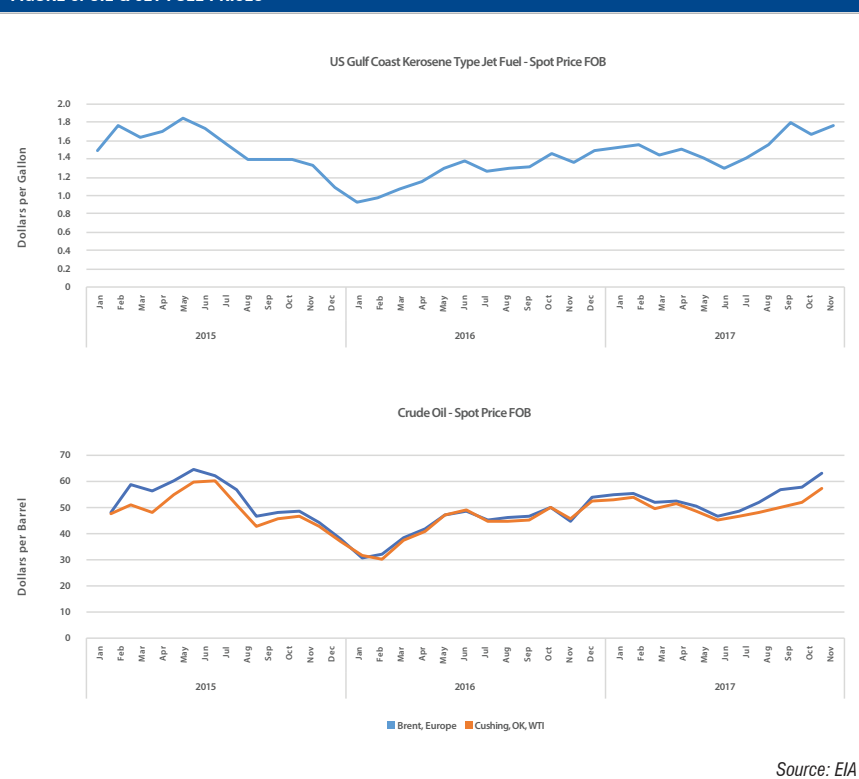
in the cycle, they all change. Sometimes they interact together and sometimes they interact quite differently.”

STRESS, SCALE AND CONSOLIDATION

Despite the huge amount of liquidity that has entered the market, with strong demand for aircraft, airlines are facing areas of stress. Costs are rising slowly – there has been a small spike in the fuel price (see Fig. 9) and competition among airlines is increasing. The GDP growth required to maintain the current production level of aircraft is a very narrow margin and lessors are always mindful that the aircraft market does not go into surplus. The strength of the dollar remains a concern for some airlines, namely those that have revenues in foreign currencies (see Fig. 10.1 and 10.2), while regulation and changes to the tax regime in the US may change the industry dynamic further once the impact has been properly assessed. The true impact of the impending departure of the United Kingdom from the European Union – Brexit – remains an unknown but one that could disrupt the European market, which otherwise has been showing strong growth with the capacity from the failing airlines in 2017 being absorbed quickly and efficiently by the market. In Asia, the status of the shadow banking system in China continues to cause concern especially considering the amount of Chinese liquidity being poured into the sector that could contract suddenly.

As head of aviation finance at Standard Chartered and CEO of Pembroke Group, Kieran Corr, sees many banking clients are becoming attracted to the aviation industry. “Private equity funds, hedge funds, sovereign wealth funds are evaluating the aviation sector to see whether they should be participating,” he says. “New investors will continue to move into the industry but you will see some of the new entrants realise that it’s difficult to build out your existing platform and they will recognise that you do need to have global reach... one way to get scale and build out your technical and marketing infrastructure is to acquire another entity. But with any M&A activity, there are challenges with integration, chemistry and synergies, etc. There will be some further consolidation

FIGURE 9. OIL & JET FUEL PRICES



“We’re in a continued expansion phase both in aviation as well as aviation finance sectors. I think that’s going to continue. We are in a cyclical world. The trees do not grow to the sky, but the market is very liquid. There is a lot of capital that’s still looking to come into the space. Margins are being compressed as a result, but I think we can continue to grow for the foreseeable future.”

Alec Burger, CEO, GECAS

but a lot of new capital will keep coming into the sector.”

“All around us are issues and risks but that’s why you have well-established older leasing companies that can deal with that,” says ORIX Aviation’s Power, who believes an event is coming that will drive further consolidation in the leasing market. “As soon as there is some turmoil in the market – which there will be and possibly in two or three years’ time – there is certainly going to be consolidation because many firms won’t be well established to deal with that type of carnage.”

One veteran leasing chief executive who requested anonymity suggested that the coming downturn would result in “blood in the street” especially targeting those new entrant leasing companies with little experience of a pronounced stressed environment.

“We have had a bull run in this industry from 2004 to now, and things that should have turned the industry upside down didn’t – the credit crisis didn’t; high fuel prices didn’t; but that’s ending now,” he predicts. “There will be blood in the street and clearly, the strong guys will come through but there will be a few people who panic and exit. People forget that Morgan Stanley bought AWAS for \$4 billion and sold it for \$2.5 billion after 9/11, and it took them a couple of years to sell.”

According to data from FlightAscend’s Fleets Analyzer, the top 50 aircraft lessors have portfolios valued at more than \$1bn. The top 15 lessors have portfolios worth more than \$5bn, while the top 10 are all above \$10bn portfolio size. Those below the top 10 really need to get enough scale to gain an investment grade credit rating and to be self-sustainable throughout a downturn when the defaults start,” says BOC Aviation’s Martin, who adds that the leasing market ecosystem, segmented into large, new aircraft lessors, and mid-life to end-of-life players, is vital for the health of the industry.

There has been a demonstrable shift in the size of operating lessors, with a trend towards upscaling. This has fuelled M&A activity in the sector beginning with AerCap’s ground breaking acquisition of International Lease Finance Corporation in December 2013.

FIGURE 10.1 US DOLLAR RATES COMPARED TO SELECTION OF FOREIGN CURRENCIES

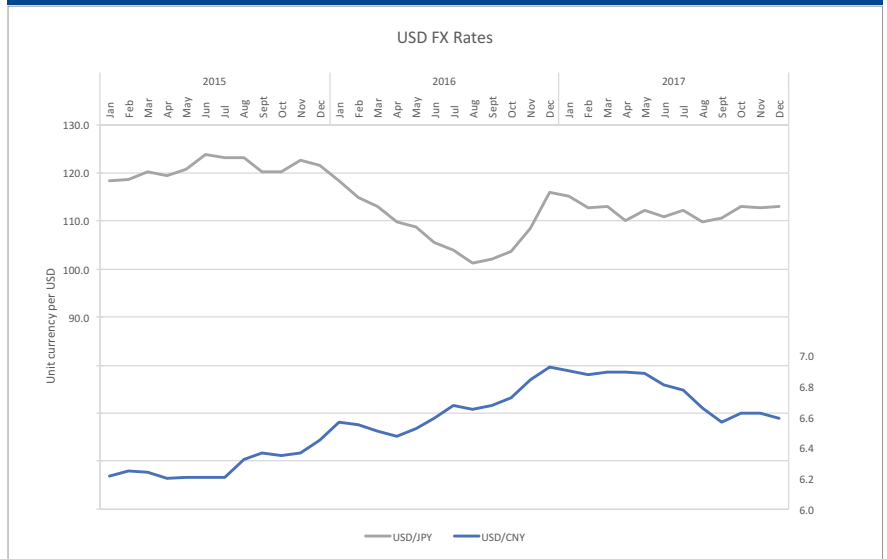
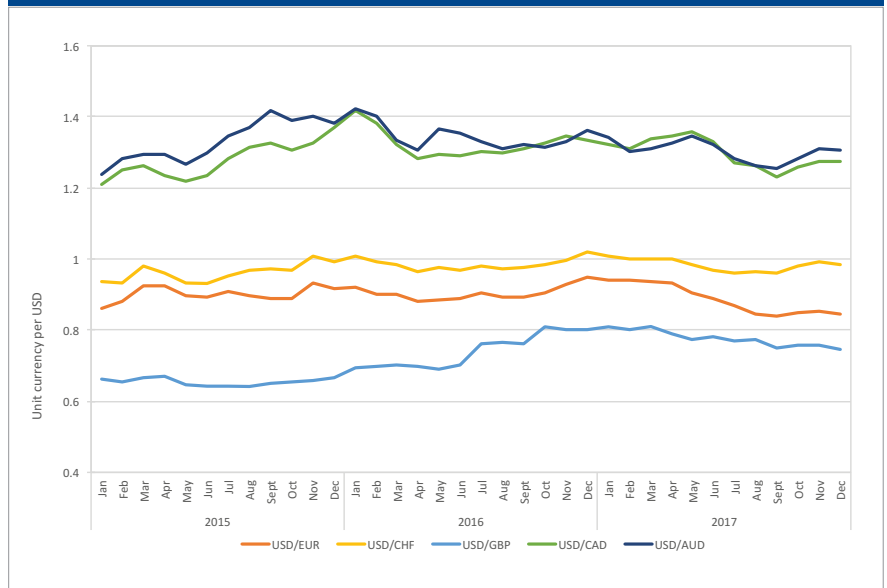


FIGURE 10.2 US DOLLAR RATES COMPARED TO SELECTION OF FOREIGN CURRENCIES



“Private equity funds, hedge funds, sovereign wealth funds are evaluating the aviation sector to see whether they should be participating.”

Kieran Corr, head of aviation finance at Standard Chartered and CEO of Pembroke Group

Avolon's strong organic growth from its beginning in 2010 to 2016, followed by step change growth from the merger of Hong Kong Aviation Capital in 2016 and the acquisition of CIT Leasing in 2017, has propelled it to the third largest lessor in seven years. AWAS sold 40 aircraft to Macquarie in 2015 ahead of its full sale to DAE Capital in 2017. There have been numerous large portfolio sales between lessors as some of the larger lessors took advantage of the attractive pricing driven by the robust market.

The consensus among industry leaders is that lessor consolidation will likely continue as smaller entities are acquired. The large scale deals that we saw in previous years are less likely unless a change in market conditions presents such opportunities.

"Consolidation is part of the natural flow of the industry," says Chang, "which contracts and expands depending on market forces. For the past six-plus years, operating lessors and airlines have consolidated – the formation of IAG for example and the rise of IndiGo – the trend is toward scaling up. We are becoming a larger, more capital-intensive business than we have ever been. Scale is one of the critical, comparative advantages, which is why the industry is growing so fast. Scale gives a company relevance with clients, banks, investors, suppliers, manufacturers; as well as a competitive advantage in terms of unit cost. So, those that can scale up, will. Consolidation is one of the most direct routes to achieve that aim."

Despite the general acceptance that consolidation will continue, whether this is the right time to sell or to buy is debatable.

"Many owners ... are not keen to sell because [lessors are] very stable, steady producers of cash flows and profits," says AerCap's Kelly, "so they are not in any great hurry to sell, particularly when there is a paucity of opportunity for reinvestment of the proceeds. There would have to be specific stress to the owner that would force a sale at the moment. I don't think we'll see any rush of consolidation in the near term, but there could be some. [An increase in market share is great], but you want to have market share in the right market. There's no point in cornering 100% of a

market that's dead in the water. You have to be careful about that when it comes to building scale."

Goshawk's Kelly says that consolidation is likely to be a continuous feature for our sector: "There is a lot of capital out there waiting to be invested and in the current environment it is difficult to find good investment opportunities, generally. The current environment is conducive to buyers and sellers transacting. Even if there is a downturn, consolidation will continue but for different reasons and at different pricing levels."

Firoz Tarapore, CEO of DAE Capital, which purchased AWAS in August 2017 and is currently in the final stages of a successful integration process, also believes there is an "impetus for further industry consolidation due to the need for scale to be truly relevant in today's leasing industry". For Tarapore, a successful acquisition begins with strong due diligence on the acquisition target to be able to understand the true value of the purchase. He also advises that integration efforts should begin as early as possible and focus on maintaining and developing the strengths of both companies. Adopting the processes and systems of the larger entity limits disruptions to customer interfacing segments, he adds. Tarapore and DAE Capital is eager to expand further. Because AWAS had sold the large portfolio to Macquarie, the merged company has the platform with the ability to do so easily. In an interview with *Airline Economics* in October 2017, he said: "Now we have a platform, which is impressive, solid, and scalable, we will be looking to buy another portfolio. It is conceivable that in three years' time, a second acquisition may be possible."

In China, says Peter Huijbers, CEO of CALS Aviation Group, a new aircraft leasing company headquartered in Shanghai, China, "there are about 100 Chinese operating lessors but maybe only 15 that are really in business. That leaves another 85 companies that somehow needs to find their place, which is when it is a good opportunity to consolidate."

LEASE RATE FACTOR PRESSURES

The new entrant lessors have been criticised for driving down lease rate

"Many owners ... are not keen to sell because [lessors are] very stable, steady producers of cash flows and profits," says AerCap's Kelly, "so they are not in any great hurry to sell, particularly when there is a paucity of opportunity for reinvestment of the proceeds."

Aengus Kelly, CEO, AerCap



factors, particularly in the sale-leaseback market in recent years as they build market share seemingly at any cost. The race to the bottom in buying deals with lease rate factors (LRF) reported to be lower than 0.6 has many more seasoned observers predicting their demise once the cycle turns.

“New operating lessors need to follow the customs that we are used to, be it from the evaluation of portfolios, be it from the way we deal with airlines, be it from the types of deal we close – leasing companies cannot survive if they buy deals at a 0.6 lease rate factor,” says Huijbers. “There are a few issues that need to be resolved and they will either correct themselves, be swallowed by others, by beefing up themselves, or just leave the market altogether.”

Lease rate factors at 0.6 are being debated in public as an indication of the fiercely competitive nature of the sale-leaseback market, with some deals rumoured to have been closed at 0.5, which is denied by most leasing companies.

For AerCap’s Kelly, paying too much for even a good asset is never a good idea: “Do I think that some people who have bought assets that they’re going to lose money? Sure, I do, but that’s the nature of business. What we’re going to see over time, is that anyone who bought an airplane at a lease rate factor below 0.6 is going to lose money. That’s going to happen. They can postpone the day of reckoning, but it’s going to happen. This isn’t anything new, we’ve seen this before when there were a lot of investors that came into the industry in the early 1990s from Japan who left because asset values were overheated for certain asset classes.”

However, as previously mentioned, Kelly isn’t predicting a continuation of the old industry cycle. He argues that the deep pools of capital that are now available to the industry – which has matured considerably – has created much more stability around asset values. “The level of cyclicity that we have experienced in the past was driven by a combination of small pools of debt capital (there were no unsecured capital markets until 2010) and investors buying the wrong assets and/or overpaying for good assets. Of course, you will always

lose money if you buy poor assets or overpay for good ones but the lack of debt capital amplified the effect of downturns considerably.”

Nevertheless, there are some companies where low levels of return may make sense due to their low cost of funds.

“Rather than a high-risk market, more investors see our industry as a pretty mature market and one where lower returns are acceptable, but there are some variations to that theme,” says Power. “The low lease rate factors will need to match a particular type of credit profile, the length of the lease and the return conditions. Firms with good cost of funds and confidence with banks can achieve that level of return, but not everyone. The sale and leaseback market is acutely competitive but at the same time, I think it’s quite rational. We’re actually winning some deals in the sale and leaseback market where we may not have won them a year ago because we have good cost of funds, we can assess the risks but also we are probably offering longer lease terms and some changes in return conditions.”

The sale-leaseback market remains dominated by the more commoditized narrowbody assets, with new entrants particularly shunning widebody aircraft – Robert Martin believes that is a mistake. “In dollar terms, 55% of the market is widebodies, with 45% narrowbodies. About 40-45% of those narrowbodies will go directly to the source and will not be available for sale-leasebacks, which leaves about 25% of the market (in terms of dollar value) remaining. Of that 25%, about half are going to North American carriers, who are not interested in sale-leasebacks, which reduces the available pool to about 10% to 15%, and it is all that’s left for all these new lessors to fight over. That is what is causing purchase prices and sale-leasebacks to be bid up and yields to be bid down. We see this towards the end of every business cycle. It is no different.”

ALC’s Plueger predicts that within a one year from now, there will be fewer bidders in the sale-leaseback market for deals as the conversations surrounding low yield returns is having a “dampening effect”.

“You still hear widely inflated stories

“Aircraft are the perfect assets for the capital markets. They are long-term, physical assets, they have immeasurable utility and they are mobile.”

*Peter Barrett,
CEO, SMBC Aviation Capital*



- 40-50 responses for an RFP – that’s impossible. A dozen, fine. My sense is that these returns are not sustainable if, in fact, they’re all true for any business, even if you have a zero cost of capital,” he says.

Others believe this situation can continue for as long as the new money continues to flow into the industry: “Many of the residual assumptions are very aggressive and expect pain to be felt, but there is so much money flowing in, this may not stop the musical chairs, it may just hurt individual players who are then replaced in the mix by newer entrants,” warns Robert Korn, chairman and CEO of Apollo Aviation.

FINANCING TRENDS

Fresh from a roadshow where a bond issuance was four times oversubscribed, Peter Chang described today as a “golden era” for the capital markets. 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 in the future. Equally, more mid-life lessors have tapped the secured markets – notably the ABS market – both as a refinancing tool and to facilitate portfolio sales.

“Aircraft are the perfect assets for the capital markets,” says Peter Barrett, chief executive officer of SMBC Aviation Capital. “They are long-term, physical assets, they have immeasurable utility and they are mobile.”

Although the banking market remains open for lessors – indeed banks are clamouring for their business – the majority of deals are in the structured space, rather than traditional balance sheet financing, which with Basel IV will be curtailed even more in the next few years (see *Financial Institutions* section below for a more detailed discussion on the impact of Basel IV and other pressures on the banking market).

Given the extended reliance on the capital markets for the leasing community, their relative health, along with interest rate rises, is being carefully monitored for any signs of weakness that could trigger a downturn that would lead to a repricing of risk in the mid-life and older aircraft space.

DAE Capital’s Tarapore believes



“Ultimately, the choice comes down to what do we want to invest our money in. We placed our bets accordingly. At the same time, the 737-800 and now the MAX 8 are just blockbuster airplanes. They are just phenomenal.”

John Plueger, CEO, ALC



that capital markets investors “seem to be gaining a greater confidence in the robustness of the aircraft finance industry through cycles and in the time-tested returns offered by prudent investing in aircraft. Hopefully, this will result in the capital markets remaining open in future downcycles rather than closing up shop as they have often done during past downcycles in the aviation sector.”

Sibylle Pähler, founding member and global head of structuring and financing at Doric Asset Finance, worries how those new entrant investors, which have been attracted to the market over the quantitative easing phase and have brought in capital from sources that have not been exposed to this industry before, will react to a standard industry event. “Will [a downturn] lead to them pulling out of this market leading to fire sale activities, or will they continue to be attracted to the asset class and be prepared to live through that cycle?” she questions. “It is a cyclical industry, but if you can manage the cycle and you’re not exposed to a fire sale, then it has always proven to provide a stable return, but for the new market entrants this is not yet obvious.”

Lessors are also at the forefront of financial innovation. Intrepid has taken advantage of the new insurance-guaranteed product offering by Marsh’s Aircraft Finance Insurance Consortium. CALS is raising funds using crowdfunding in China as a source of equity.

The demand for funding is rising steadily as the new technology aircraft are delivered, which drives the constant search for new capital sources.

“There needs to be new types of capital sources and funding structures than what we have today. Bank funding continues to be limited by regulatory restrictions and the capital markets as they exist today are inadequate to meet the OEM demand projections for aircraft growth and replacement, even if you haircut those projections materially,” says ACG’s Tran.

Lessors will continue to tap the capital markets in ever greater numbers so long as they remain open and an efficient source of debt financing. The bank market will also remain open despite



regulatory pressures as new entrants, with balance sheet capacity, mainly from Asia, drive liquidity for commercial bank financing products. Sources of equity capital remains a challenge but within that market too there are deep pools of capital from Asian investors, although there are signs that this market is cooling a little and may present more challenges in the future.

NEW TECHNOLOGY AND ECONOMIC USEFUL LIFE

When access to capital becomes easier, the onus is on the lessor to make the right assets choices to both service customer demands but also to protect the investment through the cycle. The entrance of new technology aircraft has changed the market but the number of variants being introduced by the manufacturers has complicated the environment. The 737Max family of aircraft, for example, has five variants, which is more than any product grouping in history.

“Ultimately, the choice comes down to what do we want to invest our money in,” says Plueger. “We placed our bets accordingly. At the same time, the 737-800 and now the MAX 8 are just blockbuster airplanes. They are just phenomenal. On the used aircraft today, you can’t find enough good 737-800s. Do I think that that’s going to be taken away by these new derivatives? Probably not because it’s a really sweet spot airplane. If anything, it just makes us more cautious on how many 9 MAXs or 10 MAXs we may want to buy against sticking to where the most breadth is.”

The Airbus A320/1 family are less stratified but the A321-200 is a considered to be a “niche-y” aircraft, while the issue may be further compounded if Airbus launches a re-engined A321, dubbed the A322.

“Most operating lessors are very active in the single aisle aircraft 737 family, A320 family,” says Kieran Corr. “When you look at the widebody market, the predominant focus is on the smaller twin-aisle aircraft where there is a wider operator base, more liquidity. When you start moving into more niche aircraft, there are opportunities to make higher returns but also they may have less liquidity. There are some very niche areas



that do very well in that sector, but we are focused on the more liquid aircraft types, the 737, A320, A330, B787, B777 and A350 family aircraft types.”

“The key to purchasing assets is looking at the user base,” says AerCap’s Kelly. “That will determine the stability of the value of the asset over the long-term. If there is a significant user base for the asset, then you’ll do well. If there isn’t, then it’s more challenging, you’re subjecting yourself to more risk.”

AerCap collates information from its customers over the course of the relationship to use to inform its buying choices. “When you pick these airplanes, you’ve got to listen to the market, you’ve got to canvas the market,” says Kelly. “Every time, anyone in AerCap interacts with an airline, a manufacturer, a bank, or any financial institution, there’s a trip report written back to management overnight. That information is collated over years and years, which is used to see a) what the customer wants, and b) what they’re willing to pay for it.”

Widebodies are harder investments for leasing companies. The number of units of the new widebodies are relatively low, which makes it more difficult to assess the potential user base.

“There have been few sales of 777X and A350-1000,” says Plueger. “Although Singapore just reaffirmed an order on the 777X, those units are hard pressed. We have not ordered a 777X yet and only have a very small number of A350-1000s

“If you think that technology is going to make your job easier and that it’s going to make your information tell you the answer, you’re doomed to failure at the outset... Great systems are about what you have put into them to be able to produce get those outputs.”

David Power, CEO, ORIX Aviation



Lessor CEO Wish Lists

Industry leaders in the leasing community were asked to highlight the main challenges in the industry and what they would change. The responses – a selection is provided below – were varied, some were amusing (eradicating airshows for example as too noisy and environmentally damaging), but many give an interesting perspective on the leasing market today and how it may change in the future.

Transitioning aircraft between operators

One of the most common areas lessors would like to change is the novations process.

Peter Barrett would make it easier for lessors to move assets, which will have several owners or operators over their 25-year useful life. “The owner or operator may change several times,” he says, “and each of those transitions is very complex, very time consuming and expensive. Finding a better way to do that will be really important for the business because it will attract even more capital into the industry as assets will become more liquid and pricing will become more competitive.”

David Power agreed that overhauling the novations process would help the industry and improve liquidity. “It seems to be an unnecessary strain on the industry generally.... People with a mutual interest in the residual value of the asset have to take a more global view that it is a liquid asset, it's a chattel, it moves about, it can go from registry to registry. With the Cape Town [Convention] we should have proper protections for transferees at no additional cost or change in tax,” he says. “These are well-established factors that have been agreed at the time of the novation and the net worth. There's enough common ground for us to ... work [together] on [this].”

DAE Capital's Tarapore would waive a magic wand to see an industry with “less arbitrary regulations across jurisdictions that needlessly complicate the transition of aircraft and that add significant cost to lessors and financiers and, ultimately, to airlines and the travelling public.”

The industry, via the Aviation Working Group, is already working towards this goal but it will be a long and potentially arduous process.

Paul Sheridan, CEO of Accipiter, considers easier novations to be one of the most helpful and most likely changes to help the leasing industry, believing it will become a possibility over the next few years. “Nobody is enjoying novations at the moment. They take a long time. Airlines are hassled. We want to buy; the sellers want to sell but it can take quite a while for it to happen. People are putting a lot of thought and effort into how to make this process easier.”

Expanding Cape Town Signatories

GECAS's Alec Burger would sign all countries up to the Cape Town Treaty to again assist with the movement of aircraft assets around the world, which would aid liquidity with that extra comfort for investors as well as standardising the leasing process globally.

Leasing company valuations

Goshawk's Ruth Kelly would change how leasing companies are currently valued. Unlike other public companies, lessors are valued on their book value without taking into account the profitability of the platform or the business “It would be a fair reflection of a leasing company's valuation if there was a shift in that valuation metric from asset-based to price/earnings (P/E) measure.”

She argues that companies may pay the same price for an asset on day one but have a very different outcome in terms of profitability over the life of the same asset. “The asset valuation is the base case valuation if they need to be sold in a fire sale or even in a more controlled way, but we focus on retaining the assets to generate profits, rather than selling. In that scenario, fundamentally, the practical realities of how we make money in the sector is much more aligned to a P/E valuation metric.”

Talent, Training and Knowledge

Peter Chang would improve the knowledge of people who work in the aviation leasing business due to the shortage of skilled and talented professionals in the marketplace today. CDB Leasing and other lessors around the world are investing in education to encourage and train new professionals that will sustain the business for the future. “Knowledge and professionalism are the qualities we need to drive and elevate our business,” says Chang. “The ability to attract talent is what will enable leasing platforms entities to survive and prosper and meet the needs of their customers. The majority of those new entrants will eventually go away because they lack that ability to attract talent. Cheap money is not enough to survive in this business; the knowledge-base, the educated and talented workforce are just as important as low-cost funding.”

AerCap and SMBC Aviation Capital, as well as many other leading leasing companies, also focus on talent generation and development.

“The most valuable commodity is not people, it's good people,” says AerCap's Kelly. “Finding the right people is very important, and then making sure that they are challenged and motivated within the business.”

Aircraft leasing is becoming less niche and it is certainly now recognised as a mainstream industry by more people. “When I started in this industry a long time ago you had to explain to people exactly what you were actually doing for a living,” says Barrett. “Today it's very different – particularly here in Ireland – leasing is very well known. I can see a real interest from graduates. They are very aware of the industry and its importance to Ireland.”

AerCap, SMBC Aviation, Avolon, GECAS, Safran and KPMG are supporters of the University College Dublin's Master of Aviation Finance programme.

“Dublin is the nexus of the global industry,” says Kelly, “which has been borne out by the success of the master's in aviation finance that KPMG, AerCap and the other major lessors all sponsor because we recognise that we do need to create a pipeline of very high-quality talent for this niche business.”

on order that have already been placed.”

“We have a belief that widebody aircraft are riskier assets,” says Accipiter’s Sheridan. “We’re not against them but we’ll price them more conservatively. Where we are focused is the well-priced narrowbodies with good airline credits.”

The speed of technological advancements to engine and airframe design has led some to question again whether the economic useful life of an aircraft should remain at the standard 25 years. While most lessors agree that a 25-year depreciation curve makes the most accounting sense, there is some division on whether the economic life of a new aircraft is shortening or lengthening.

“The maintenance programmes, the composite structure, from a materials and technology point of view, supports the argument that the new technology aircraft are actually longer life airplanes,” says Plueger. He points to the development of new engine technology – CFMi’s LEAP and Pratt & Whitney’s geared turbofan (GTF) – each has had some introductory issues, but the OEMs will be hard pressed to develop yet another set of engines that promise another step change of 10-15% fuel burn reduction. Moreover, he stresses, since most of the engine companies today make little money selling their engines, with the bulk of the profit in the aftermarket and engine care agreements, expending further R&D dollars to develop new technology engines is unlikely.

For other operating lessors, the useful life of an aircraft is closer to 20 years, where the economics of overhauling an 18-year old aircraft and revitalising the interiors often doesn’t make sense. From a purely economic perspective, the returns may be higher overhauling and selling the engines alone.

The cost of designing and producing a clean-sheet aircraft are significant, which AerCap’s Kelly says is helping to maintain a long technology cycle. “The investments are just extraordinary. A clean-sheet aircraft is a “moonshot”, which is what Boeing called the 787. The A380 was another moonshot. These are huge risks for these businesses to take, so for large commercial airplanes, evolution is better than revolution.



It’s just not worth the risk. Airbus and Boeing have close to 90% of the market, they have the ability to be able to evolve their products at a lower risk and still get a decent return, rather than take that revolutionary approach, which is all or nothing risk.

FUTURE OF THE AVIATION INDUSTRY

Advances in technology are not confined to the equipment in the aviation industry. Like other industries, aviation is being impacted by the move to digitalisation, from the advent of advanced technologies such as distributed ledgers, or blockchains, to big data and artificial intelligence.

For lessors, the onus to date has been on digitalising aircraft maintenance records – a major underlying factor in the appraised value of an aircraft asset – as well as how to manage and commoditise big data. More firms are leveraging software tools to streamline processes and improve visibility of the detail in the information they have already.

“The ability to manage and use our data changes an entire complexion about our business,” says Chang. “It allows us to trade with more accuracy and to protect our asset values.

David Power agrees that technology is

“The use of maintenance data to predict when future maintenance requirements has the potential to save the industry a fortune. But one of the major unsolved issues is who owns the data? The manufacturer? The airline? The aircraft owner? The answer is that all of them have to.”

Robert Martin, CEO, BOC Aviation





playing a terribly important role and is becoming a competitive advantage, but it can only be as useful as the inputted data. “If you think that technology is going to make your job easier and that it’s going to make your information tell you the answer, you’re doomed to failure at the outset,” he warns. “Aircraft leasing is very subjective; it’s all about debate. When it comes down to serious decisions about what you do with aircraft or how you invest, it’s about a real debate about what are the merits of various points on the lease, on the aircraft and its technical condition. Great systems are about what you have put into them to be able to produce those outputs.”

He adds: “Ultimately, the whole objective is to be a much more coherent and communicative organization rather than about control-driven systems. Our fundamental controls and systems will be providing a lot of information that will drive our decision-making process.”

ORIX Aviation and many other lessors, including SMBC Aviation Capital and BOC Aviation, are putting a lot of time and energy into making big data work for their companies.

SMBC Aviation Capital invested heavily in its information technology platform. “We have invested significantly in the last number of years on our information technology platforms,” says Barrett. “A huge amount of data comes with every transaction from the physical aircraft, the transaction, the lease - we have invested in building a successful platform that can help us manage that information in a very effective, efficient way. Both in a defensive way because it provides accuracy of our accounts, accuracy of our data and information to provide to different stakeholders, and also in an offensive way because it enables us to manage our business better - for example for aircraft trading. Being able to produce a complete and accurate

set of documents for foreign investors immediately is really, really important. It saves time, reduces costs, and there are fewer grey areas to negotiate. Going forward, I can see a lot of potential with technology like AI and blockchains.”

“The use of maintenance data to predict when future maintenance requirements - currently being led by GE - has the potential to save the industry a fortune,” says Robert Martin. “But one of the major unsolved issues is who owns the data? The manufacturer? The airline? The aircraft owner? The answer is that all of them have to.”

This problem was highlighted by most industry respondents, and needs an industry wide solution. “The last thing we want is for manufacturers to claim the data and seek to charge the operator or owner to get it back,” adds Martin. “That’s the big unknown that’s going to have to be sorted out in the next three to five years.”

Regional Outlook:





All industry leaders surveyed were asked to rate their optimism levels for certain regional areas of the world (see chart below). Aircraft leasing is a truly global industry, with most firms placing equipment with airlines located around the world albeit at different scales. While lessors tend to be concerned more with weak airlines rather than regions in general, they all have very strong opinions about the stresses showing in particular countries.

For airlines, levels of optimism are very much influenced by their home base and network reach as well as expansion prospects.

The largest aviation banks also operate globally – a prerequisite for this industry but they too are watching for signs of stress in particular countries as they evaluate new deals and seek to minimise geographical exposures by diversifying their portfolios.

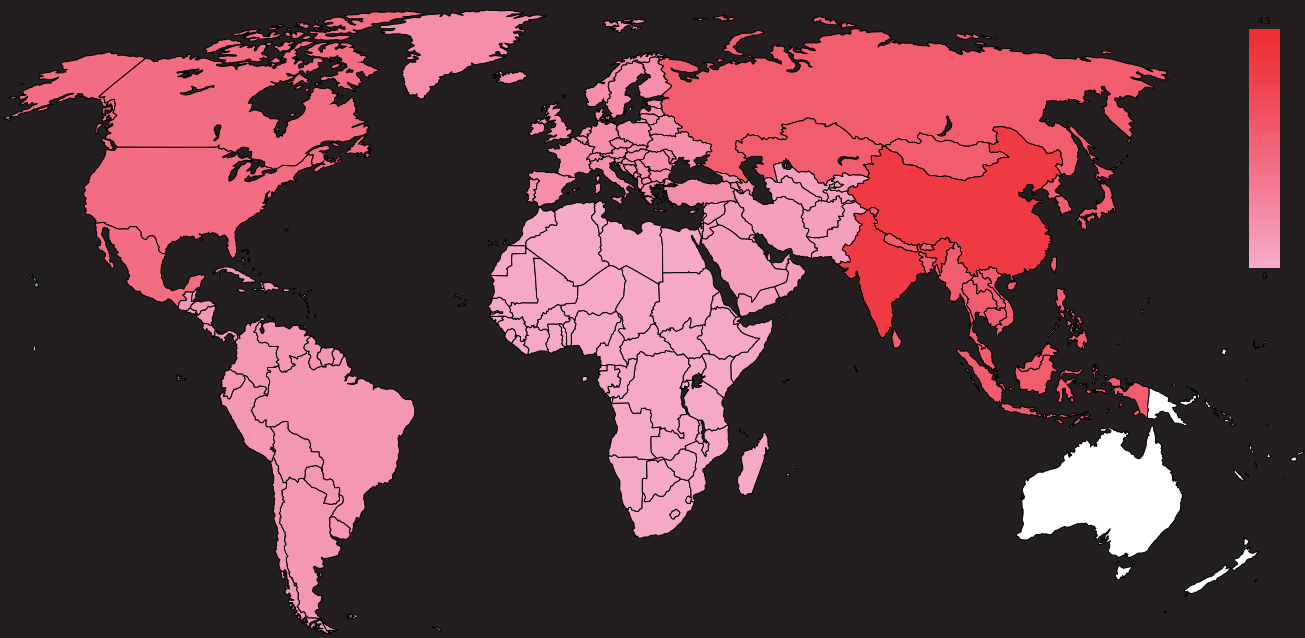
OPTIMISM LEVELS OF REGIONAL GROWTH

	LESSORS	AIRLINES	BANKS
China	4.00	4.29	4.50
India	4.00	4.00	3.80
North America	3.43	3.57	4.00
Europe	3.08	3.17	4.00
Asia-Pacific	3.38	3.00	4.00
Middle East	3.00	3.33	3.67
Latin America	2.58	2.86	3.50
India	1.56	3.20	3.40

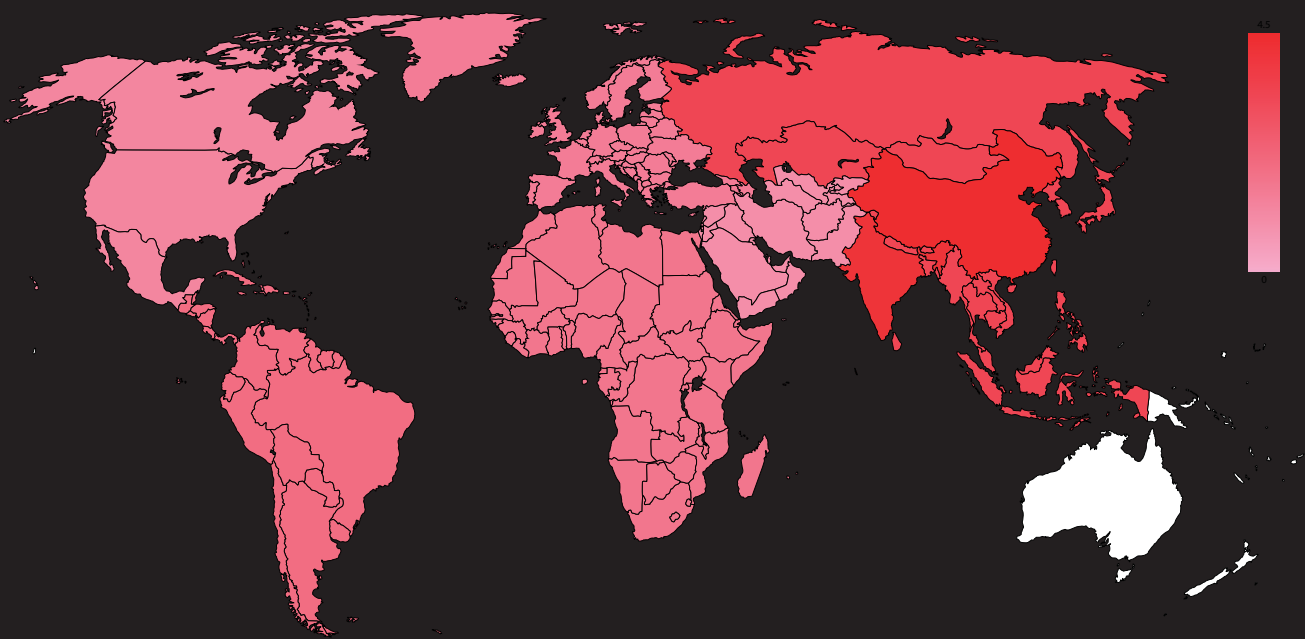
Average 1 (very pessimistic) – 5 (very optimistic)

REGIONAL OUTLOOK

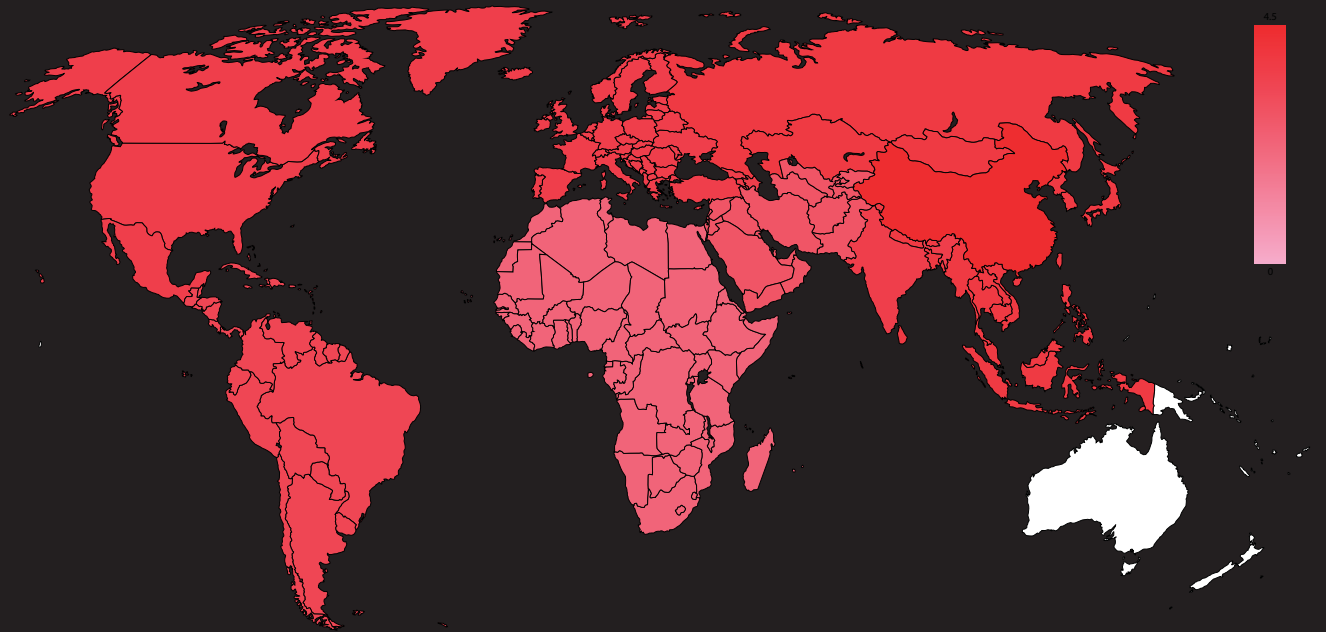
LESSORS



AIRLINES



BANKS



Banks

REGIONAL OPTIMISM LEVELS





CHINA

Aircraft lessors are united in their continued focus on expanding business into China, where the growth of passenger traffic is most pronounced. There are pockets of stress in the country, however, which tend to be isolated rather than a broader regional issue.

China is undergoing a period of economic tightening, which is dampening economic growth, but this is largely viewed as a positive development for the industry because growth brings its own risks. “The very strong economic growth in China may be a trigger for more bubbles particularly in the shadow banking system and may lead to more risk down the line,” says David Power.

Lessors in general are bullish on Asia, with many of the larger firms having significantly expanded their exposure to the region. ALC for example has about 43-44% of its entire fleet in Asia, with half of that placed into China, which Plueger sees continuing for the foreseeable future.

Airlines’ optimism in China is very much dependent on their location and business model, but on a macro-level, they are also very optimistic about the country.

“China continues to be an important

market for us,” says Gerry Laderman, senior vice president of finance & procurement at United Continental Holdings. “There has been a lot of added capacity on the trans-Pacific routes over the last few years but that is beginning to level off, which should allow the market to absorb this capacity better.”

One airline finance manager bemoaned the bureaucracy in China for impeding expansion for some airlines and referred to “speed bumps” such as the dampening economy, but despite this, the long-term growth is clear.

China is Ethiopian Airlines’ largest market, according to Tewolde GebreMariam, group CEO of the African carrier. “We fly to five gateways in China – Beijing, Shanghai, Guangzhou, Chengdu, and Hong Kong, and we are also currently evaluating Shenzhen,” he says. “We are putting so much capacity in China [because] we believe that it is still a growth market. Chinese investment into Africa is massive. China is now in almost every African country investing in infrastructure development, commodities, especially in natural resources, driving up exports and imports generating significant passenger and cargo traffic between Africa and China.”

Financiers too are bullish on China, praising the efficient infrastructure that has been constructed in recent

years and the positive support from the government. “We are very pleased and pleasantly surprised by the steps the Chinese government is taking in furthering aviation,” says Thomas Hollahan, global head of aviation at Citi. “This is one area where Trump and Xi Jinping are happy to engage.”



INDIA

India is poised to become the third-largest civil aviation market by 2020 and the largest by 2030. The Indian Government has developed an aggressive plan to promote the sector, which includes the Civil Aviation Policy introduced in 2016 that reflects an intent for the country to migrate to a more liberal administrative and regulatory regime for the aviation sector. Importantly, the policy relaxes rules for airlines to fly overseas – the 5:20 rule – that previously only allowed domestic carriers to operate international routes after having a fleet of 20 aircraft for overseas flights and operating as a business for five years. The new rule allows all airlines to fly internationally irrespective of years in operation, subject only to the airline deploying (the higher of) 20 aircraft or 20% of its entire seat capacity on domestic operations. Also



in 2016, Indian courts recognised the Cape Town Convention and the new Insolvency and Bankruptcy Code was passed, which makes it easier to recover debts and wind up failing companies.

“India is on the cusp of large international growth,” says Robert Martin. “Air India’s international dominance will change when a number of the newer airlines hit the 5:20 roll limit in 2018 and some stronger carriers move into international operations. That’s the big opportunity.”

These latest developments have lifted optimism levels dramatically, with all sectors referring to opportunities in India. The one shadow threatening to curtail this growth is poor infrastructure and high taxes.



REST OF ASIA

Generally, optimism levels are high for the vast region but there are pockets of volatility that are creating some wariness among lessors. Airlines, however, view South East Asia particularly as the “growth engine of the world”, along with China. Indonesia, Malaysia and the Philippines are high growth areas in terms of passenger numbers and GDP growth, which is encouraging for airlines, but lessors are closely watching

areas of stress.

“Yield compression in Asia is still very strong which leads to concerns over airline profitability,” says Sibylle Paehler. “It’s not so visible now because aircraft financing has become very, very inexpensive but the cost side needs to be monitored to see how each airline is coping.”

The strength of the dollar has caused some issues in developing countries in 2017, which has cooled of late and airlines have been aided by the stable and low oil price. Countries such as Australia, Korea, Southeast Asia, Malaysia, Indonesia and Japan remain in recovery mode with improving economies, which is contributing to the general levels of optimism in the region.

One airline head of treasury in South East Asia commented that the airline is being “actively positioned for large increases in Chinese and (later) Indian routes, firstly by charter operations then converting to scheduled,” which it intends to achieve by increasing utilisation (and overnight flights) rather than fleet numbers.

Shamini Law, chief executive officer and principal shareholder of flyGlobal Charter, a Malaysia-based international ACMI/wet lease operator, believes there are good opportunities in parts of South Asia. “Some countries have private sector opportunities that outsiders

cannot see or cannot access, or they’re very cautious of the political problems they may encounter. Yet they still have compelling business models, fast-growing populations, business growth opportunities, an aircraft shortage, and lack the right expertise to set up an aircraft operator,” she says.

From a financing perspective, as a US-dollar denominated business, the US capital markets dominate but there has been a significant uptick in the amount of Asian investors pouring into aviation transactions in the US and in Asia, both on the debt and the equity side. “Institutional investors in Asia, depending on the region, have started investing,” says Vinodh Srinivasan, managing director, co-head structured credit group, Mizuho Securities USA. “There’s more work that needs to be done to cultivate that further.”



EUROPE

Europe is a mature aviation market, which is considered to be in the early stages of a wave of consolidation that is expected to continue for the near term. Many industry observers saw the recent airline insolvencies as a healthy development: “The problems experienced by some European airlines

is a healthy development because it sorts the wheat from the chaff, which is a sign of the recovery and the strength of the European market,” says SMBC Aviation’s Barrett.

The uncertain impact of Brexit, the continuing sovereign debt issues in Greece and Italy as well as the high-profile airline bankruptcies in 2017 have dented confidence in the region at the macro level. However, the economies in Europe are performing much better than expected and despite some airline-specific operational issues – Ryanair’s pilot issues for example – passenger demand is strong and growing, with record high load factors.

“European carriers are booming,” says Barrington. “My own airline, Finnair, is having an incredible year. We have had to revise our profit forecast upwards three times this year. This success is mainly due to Asian traffic coming into Europe through Helsinki.”

Seeking to capitalise on the boom, Ethiopian is opening up new destinations in Europe – Oslo in April 2017, and it has also launched routes to Geneva and Istanbul. “Europe is also our growth market,” says GebreMariam. “Not as fast growth as Asia but, as a matured market, we see the growth trend continuing.”

There are signs that the Russian market is coming back, according to SMBC Aviation Capital’s Barrett. “Russia had a tough couple of years, but we have some really strong customers there like Aeroflot, S7 and Ural, which have overcome a challenging period in this market.”



NORTH AMERICA

The mature North American market continues to impress observers. The airlines are managing capacity well and despite occasional fare wars, profitability levels continue to rise. United’s Laderman indicates that there has been some pricing pressure from new European low-cost carriers entering the North American market recently. It will be interesting to see if that continues to bite.

For lessors, the US is a stable market



and flat in terms of growth since the major carriers tend to own their fleets. As a result, the North American fleet also tends to be older than European fleets, for example, which provides a natural need for replacement aircraft. US carriers have tremendous access to the debt and equity capital markets, with the EETC market being regularly tapped by the big four carriers to efficiently fund aircraft deliveries.

The changes to the US tax regime has generally been greeted favourably by airlines. There is, however, a lot of complexity in the changes that is still being worked through. The airlines should also benefit if tax reform drives economic growth as US industry traffic typically grows at twice GDP.



SOUTH AMERICA

Confidence in South America is mixed but there is tremendous optimism that the problems are being solved gradually. Confidence in the Brazilian market is particularly strong.

“Airlines in Brazil and Argentina have experienced an awful lot of distress over the last few years,” says Accipiter’s Sheridan. “The Brazilian airlines have taken drastic actions over the last two years and seem to be coming out of that.”

“The Brazilian airlines have taken drastic actions over the last two years and seem to be coming out of that and achieving similar goals with their refinancing efforts recently which is a very positive step. Argentina is starting to come out of its shell a bit more, while the low-cost carriers across the region are opening up.”

Paul Sheridan, CEO, Accipiter





We saw some good news from GOL with their refinancing efforts recently which is a very positive step. Argentina is starting to come out of its shell a bit more, while the low-cost carriers across the region are opening up.”

ALC’s Plueger is equally as bullish about the region as traffic numbers continue to escalate. He too sees the emergence of new entrants – specifically flybondi in Argentina -- as a positive development for the region as a whole.

Although South America presents a high growth prospect, respondents warn that it will not be a smooth ride.



MIDDLE EAST

Although it has long been characterised for its booming business as a major aviation hub, airlines in the Middle East have begun to show signs of stress, which is impacting confidence levels. Some observers shake this off as “noise” or a blip but others are more concerned that this marks the beginning of a significant change in the status quo. Airline consolidation in the region is being hotly debated right now. Emirates is already moving closer to Flydubai but there continues to be those who believe a link-up between Emirates and Etihad

makes economic sense, especially since the latter is feeling the pressure from some ill-advised equity investments – namely Alitalia. Qatar is experiencing political pressures at the moment, which is impacting the airline although, as a oneworld alliance member, it continues to expand equity investments into foreign airline groups, namely IAG and Cathay Pacific, as well as an aborted attempt to purchase shares in American Airlines.

These issues are not impacting asset values, although according to Ruth Kelly, some lessors are concerned about the saturation of the widebody market in the region. This is expected to lead to further deferrals of widebody orders from some or all of the major three Middle Eastern carriers.



AFRICA

Africa is still regarded as a volatile region with only a handful of solid airlines, but there is optimism that the market will improve and develop, albeit at a continuing slow pace.

flyGlobal’s Law believes that the region is still the next big area of opportunity: “For pioneering airline operators we would also include Iran,

Iraq, and Pakistan. But Africa is where the future lies, if you are looking for an interesting, long-term growth story.”

African airlines face many challenges: a lack of attention and vision from government, higher oil prices due to taxation and the high cost of transport which also impacts fares, and a lack of continental aviation policy coordination like a single market.

“Many African governments wrongly believe that aviation is transportation for the rich,” says GebreMariam. “But the reality is very different. Africa is such a vast land mass how else are Africans expected to travel from one country to the other? The reality is that aviation is an essential public service but it is still not seen that way, which means infrastructure has not developed up to international standard simply because it is at the bottom of the priority list. The lack of liberalization compounds the problems. African countries are not working together to open up their air spaces to African carriers but paradoxically African countries are opening their air spaces more to non-African airlines.”

“We’re really missing out on Africa,” agrees Mark Lapidus, CEO of Amedeo. “It would be amazing if African countries found a way of not being nationalistic about it and let travel prosper.”

Airlines:

The airline industry is experiencing an extended period of growth and profitability. Top airline executives share their views of the current market and future strategies.



Airlines are enjoying a period of record profits, with 2017 setting the fourth highest year of profits on record, according to IATA. However intense competition and a rising cost environment is squeezing margins: “The decline in airline margins and ROIC in 2018 is being driven by a rise in breakeven load factors, as unit costs are now rising, offset partly by a rise in achieved load factors, as capacity slows more than demand growth,” says IATA’s latest semi-annual economic forecast published in December 2017. Most analysts predict jet fuel bills to rise by double digits as a percentage of total costs as oil prices continue to rise slowly impacted by OPEC cutbacks. IATA estimates airlines fuel bill to rise to \$156bn, which will represent 19.6% of average operating costs. Despite rising costs, as mentioned above and shown in the chart, IATA has increased its estimates for 2018 industry net profit to \$38.4 billion due to strong demand, increased efficiency and reduced interest payments. Passenger numbers are expected to increase to 4.3 billion in 2018 with passenger traffic, measured in RPKs expected to rise 6.0% and the average load factor pushing up to a record 81.4%.

COSTS, COMPETITION AND CONSOLIDATION

Rising costs and intense competition are the two most common challenges highlighted by airline executives. Airport slot restrictions or the lack thereof is another.

“In October 2016, the FAA removed the slot restrictions at Newark, so unlike LaGuardia and JFK, Newark is no longer slot-restricted, which is a problem for us because during peak times, flights have increased,” says Laderman. “Newark was hit constantly with FAA-imposed delay programs [in Summer 2017]. In some airports, there are limits to growth, and some airports, less so. We work closely with the airport authorities in every hub to maintain a good relationship.”

New entrants are an issue for many of the established players. In 2017, the long-haul, low-cost travel model dominated by Asian carriers – AirAsia X is one good example – was brought to the western

SYSTEM-WIDE GLOBAL COMMERCIAL AIRLINES - NET PROFIT (\$BNS)

	2011	2012	2013	2014	2015	2016	2017E	2018E
Global	8.3	9.2	10.7	13.7	35.9	35.3	34.5	38.4
North America	1.7	2.3	7.4	11.1	21.1	16.5	15.6	16.4
Europe	0.3	0.4	1.0	4.0	6.7	8.8	9.8	11.5
Asia-Pacific	5.0	5.8	2.3	-2.8	9.0	8.1	8.3	9.0
Middle East	1.0	1.0	0.3	1.7	1.9	1.3	0.3	0.6
Latin America	0.2	-0.2	0.2	0.4	-1.7	0.7	0.7	0.9
Africa	0.0	-0.1	-0.5	-0.7	-1.0	-0.1	-0.1	-0.1

SYSTEM-WIDE GLOBAL COMMERCIAL AIRLINES - PASSENGER TRAFFIC (RPFK) % YEAR ON YEAR

	2011	2012	2013	2014	2015	2016	2017E	2018E
Global	6.3	5.3	5.2	5.7	7.3	7.4	7.5	6
North America	2.9	1.0	2.3	2.7	5.3	4.2	4.0	3.5
Europe	8.4	4.6	3.9	5.7	6.0	5.4	8.0	6.0
Asia-Pacific	6.6	6.1	7.2	6.9	10.1	10.9	10.0	7.0
Middle East	10.0	14.7	11.6	12.1	10.4	11.3	6.5	7.0
Latin America	11.3	9.4	6.3	7.0	7.6	4.5	7.5	8.0
Africa	1.6	7.5	4.6	0.3	0.0	9.4	7.0	8.0

SYSTEM-WIDE GLOBAL COMMERCIAL AIRLINES - PASSENGER TRAFFIC (ASK) % YEAR ON YEAR

	2011	2012	2013	2014	2015	2016	2017E	2018E
Global	6.6	4	4.8	5.5	6.7	7.5	6.3	5.7
North America	2.8	0.0	2.0	2.5	5.0	4.6	3.9	3.4
Europe	8.9	2.6	2.7	5.1	4.8	5.7	6.2	5.5
Asia-Pacific	7.0	5.3	7.1	7.4	8.4	9.9	8.3	6.8
Middle East	9.8	12.0	12.3	10.9	12.9	13.1	6.6	4.9
Latin America	9.3	7.3	4.5	4.7	6.9	3.4	5.9	7.5
Africa	3.2	6.3	4.0	2.5	-0.2	8.2	3.3	7.5



Newark Liberty International Airport

world with Norwegian flying to the US for the first time in June, which added pressure on the established transatlantic airlines in the US and Europe.

“AirAsia X picked up where Freddie Laker left off many years ago and now Norwegian is offering long-haul, low-cost services,” says Mark Lapidus, CEO of Amedeo. Lapidus is considering, in addition to being a lessor, obtaining an AOC to use some of its potentially returning A380s in mid-2020s in an airline-for-airlines model providing scheduled lift to more than a single airline on a flight thus alleviating the too big-to-fill issue for the A380s. “There is acknowledgment from most people in the industry that long-haul, low cost is here to stay. It will work. Low-cost, long-haul is an amazing proposition and it is consumerising the business and stimulating significantly more demand.”

For Ethiopian Airlines, the main challenge is from new entrants into the African market, specifically from the Middle East and Asia.

There has been a lot of penetration from the Middle Eastern carriers: Turkish, Emirates, Etihad, Qatar – less from European carriers but I see that in the future. More Chinese carriers coming to Africa... will be a game changer on the continent because their cost-base ... is almost unbeaten. Thus far, the Chinese carriers are very busy in the domestic market, but now we see significant pressure from the government to see the Chinese carriers going out. For the time being they’re busy in Europe and America, but eventually they’ll come to Africa and that will be a game changer.”

Airlines continue to juggle their business models to transition from mainline, full service carriers, to low-cost and ultra-low-cost carriers, while some full service carriers are expanding their product offerings to offer a more hybrid model to cater for the ULCC customer and premium carriers. Ancillary revenues are more essential than ever to continued profitability. Traditionally, full service carriers have had varying success experimenting with changing models.

Changing business models are going to begin to create some areas of stress where carriers may need to reinvent their business models, warns ORIX Aviation’s

David Power. Some examples he gives refer to the number of twin aisle aircraft flying out of China directly to Europe and the US, which means the hub carriers on the East of Asia will need to rethink their strategies because they are being overflown. Further out, he adds, with the arrival of long haul aircraft that can fly directly from Australia to Europe, airlines with hub strategies flying out of those airports sitting between Australia and Europe, will also need to revise their current strategies.

European airlines are grappling with the potential impact of Brexit, with most preparing for a doomsday scenario when UK-owned airlines would automatically lose existing flying rights to Europe, and vice versa for European airlines flying to the UK. Low-cost airlines – namely easyJet and Ryanair – have both set up parallel companies in Europe and the UK, respectively, to ensure they can continue operations from new hubs should the worst happen. The industry is lobbying hard for a more practical approach to transitioning flying rights post-Brexit but for now airlines are preparing for the worst. Other global airlines regard Brexit as a problem solely for the UK and Europe airlines, which may even present some areas of opportunity for airlines from outside those regions.

Most respondents see consolidation in the airline industry continuing but with more emphasis in Europe and South East Asia, with little happening in the Americas.

“Little consolidation is likely in North or South America, simply because so much has happened already,” says one observer.

Many consider the airline bankruptcies in Europe as a positive development, and expect the slow consolidation of airlines in the region to continue, potentially with more insolvencies among financially weak airlines that will lead to more mergers or consolidation.

PREPARING FOR A DOWNCYCLE

Although airlines are enjoying the fruits of an extended period of growth in passenger demand due to the prolonged low-interest rate environment helping economies return to growth, like lessors,

“There is acknowledgment from most people in the industry that long-haul, low cost is here to stay. It will work. Low-cost, long-haul is amazing proposition and it is consumerising the business and stimulating significantly more demand.”

Mark Lapidus, CEO, Amedeo





most airline respondents recognise that a correction should occur at some point and are making appropriate contingency plans.

“No upcycle can last forever,” says Laderman. “We don’t have any more of a crystal ball than anybody else, so we want to make sure we remain flexible. Should areas of weakness emerge, such as generally a deceleration or shrinking of the economy, we have the ability to adjust capacity as necessary.”

Generally, fuel prices rise with economic growth but over the past years, oil prices fell while passenger demand continued to rise giving airlines the ability to invest in growing capacity and networks, adding destinations and planes. The steep rise in competing routes and additional capacity pushed down ticket prices. Now oil is rising, competition remains and fares remain depressed, particularly in the South East Asian market. This situation, says one airline executive in the region, is why the next financial or economic crisis will impact the market hard: “When the downturn comes, airlines will batten down the hatches and return to their core markets. We are still expanding but are cutting back in some areas and being more cautious today. A lot of our competitors are doing the same. The good news is that we don’t see yields going down. For the whole of 2016,

every month yields were lower, and the fuel price every month was higher. For now, fuel prices and yields seem to have stabilised.”

Airlines constantly monitor jet fuel prices and are acutely aware of the upward trajectory of the oil price, but this is not a sign of weakness, rather of economic strength. “If fuel prices are going up because of strong demand for oil products, that means the economy is healthy, which is good for airlines, and ultimately, prices get adjusted for higher fuel. But if spikes are caused by geopolitical activity that also causes travel to come down, you need to move quickly to adjust capacity,” says Laderman.

Falling demand and load factors remain a key judge of airline health, which is why there has been so much concern about the Middle East region, and many airlines are predicting a correction.

“In certain regions – notably the Middle East – we do see a correction coming, generally in the form of a slowdown and then, (in a few years once new aircraft technology kicks in), by means of a structural shift in long-haul operations, particularly on the kangaroo routes,” says one airline chief financial officer.

But where there are areas of weakness, there are also opportunities. Shamini Law, CEO and principal shareholder



of flyGlobal Charter, a Malaysia-based international ACMI/wet lease operator, sees great opportunities in the Middle East, specifically providing additional lift for the growing numbers around the world wanting to complete the Umrah and the Hajj religious pilgrimages.

“The Middle East is the base for the Muslim population, and come any kind of downturn, people can still only go to one location to complete their religious pilgrimage,” she says. “This on its own is huge traffic, but South Asia too has a growing population of Muslim people – and its religious travel market is huge. So, while everybody else is competing on the normal long-haul, premium business class, first class segment the real growth area for passengers is religious travel.”

Ethiopian Airlines has a strong presence in many market segments, including pilgrimages, which GebreMariam describes as a natural hedge in terms of the airline’s global exposure both geographically and by product. “We are not concentrated in only a few market segments,” he says. “We are in business travel, leisure and religious pilgrimages. We are one of the participants in Hajj and Umrah religious traffic, which gives us diversity.”

FINANCING TRENDS

Interest rates have been rising lately, which is being monitored closely as

a trigger for a possible downturn as it could impact sources of funding as well as depress global travel demand. Airlines, such as United, are prepared for further interest rate rises.

“That’s one of the great benefits of pre-funded EETCs,” says Laderman. We closed our most recent couple of EETCs in the fall of 2016 when we hit an all-time low with coupons below 3%. That covered us through the first half of 2017, which constituted the majority of our 2017 deliveries.”

As discussed above, rising interest rates are not yet impacting funding but it is becoming more of a concern than it was in the past as more airlines seek to access financing using the capital markets. For now, however, the bank markets are very healthy and very open for aviation finance. In a bid to diversify away from EETCs, in 2017 United sought financing for all 24 of its E175 deliveries and Laderman was pleasantly surprised to be able to fund all 30 aircraft. “That shows the strength of the bank market,” he says, “We worked with some new banks that we have never worked with before from Asia. I expect that we will continue to use EETCs for most of our new aircraft financing needs, which has been our least expensive source of capital, but we will continue to mix that with bank debt.”

United and other US carriers tend to buy their aircraft and operate them for

“The Middle East is the base for the Muslim population, and come any kind of downturn, people can only go to one location to complete their religious pilgrimage. This on its own is huge traffic, but South Asia too has a growing population of Muslim people – and its religious travel market is huge. So, while everybody else is competing on the normal long-haul, premium business class, first class segment the real growth area for passengers is religious travel.”

Shamini Law, CEO and principal shareholder of flyGlobal Charter



their full useful life and so do not lease many aircraft. Many other airlines tend to rely on the sale-leaseback market to fund their new deliveries, which is so competitive at the moment that most airlines are reporting attractive deals that traditional bank debt or capital markets deals simply cannot beat.

The prevailing notion for airline executives is that the capital market deals are the purview of US carriers, with few deals being closed in the capital markets for non-US airlines over the past few years.

“The fact of the matter is that although people bang on about this at aviation conferences, capital market financing is really a US thing,” says one treasurer of an Asian airline. “The number of deals closed outside of the US can be counted on one hand. We need to see a lot more deals in Europe before we can see any more in Asia.”

Although a few non-US EETCs were closed successfully – Emirates and Doric, British Airways and Virgin Australia – few airlines followed suit. A variety of reasons have been given – few non-US airlines have enough aircraft delivering to justify going to the capital markets, the prohibitive cost, reluctance to seek a corporate credit rating – but one of the most resonating reasons is simply the attractive prices of the ultra-competitive

leasing market.

The dilemmas faced by the export credit agencies in the US and Europe has impacted airline financing, specifically for Ethiopian Airlines, which has relied on ECA support for some time.

“The ECAs will continue to play a dominant role,” says GebreMariam. “Eximbank has been facing challenges from the new administration and the previous administration, we see that in the end this is going to be resolved so the ECAs will continue to be an important facilitator in the financing of the airplanes. But the diversification of financing and the expansion of the leasing industry is a welcome phenomenon for airlines.”

USEFUL ECONOMIC LIFE

Airlines and their customers are becoming accustomed to purchasing new aircraft, even airlines located in jurisdictions that would traditionally be homes for older aircraft – Africa for example. That traditional dynamic has changed significantly in the past decade or more, driven by cheaper aircraft purchase prices, lower funding costs, age restrictions on importing aircraft, as well as the strong leasing market.

“Empirical evidence suggests that more and more airlines (and therefore lessors) are phasing older aircraft out

“The ECAs will continue to play a dominant role. Eximbank has been facing challenges of new administration and the previous administration, we see that in the end this is going to be resolved so the ECAs will continue to be an important facilitator in the financing of the airplanes.”

*Tewolde GebreMariam,
Group CEO, Ethiopian Airlines*





earlier, 20 years may be closer to the average useful life of an aircraft, says one airline CFO. “There also seems to be a greater acceptance to park underperforming new models.”

“Airlines need to hedge fuel price as well as fuel consumption,” says Ethiopian’s GebreMariam. “A new fleet has high cost of ownership but a low cost of operation, while for an aged fleet, the cost of ownership is relatively low, but the cost of operation goes up. Maintaining the right balance is essential but the consumer preference is always for new airplanes.”

He adds that the useful life of aircraft depends on the type of maintenance the aircraft has had, highlighting the fact that advancement of aircraft maintenance technology is helping to expand their useful life beyond the traditional 25 years.

Others are not so convinced. One veteran airline executive comments that most airlines tend to depreciate aircraft over 20 years to 10%. “In the early years that means you’re usually under water on that book value but it sorts itself out in the end, if you actually keep the planes for 20 years, but if not, you have a bit of an issue. The days of running planes for 20 years are numbered. The US had the oldest fleet in the world, but now that they are all profitable again they are fleetings with new equipment.”

Although United has traditionally bought new and retained aircraft, which

means leasing aircraft doesn’t make economic sense, the airline has leased older aircraft, which have the benefit of more relaxed return conditions. Both GebreMariam and Laderman pinpointed return conditions for the reasons they prefer to own aircraft rather than lease aircraft.

“All the new aircraft that we are taking, we expect to keep 25 to 30 years, and leasing just doesn’t make sense,” says Laderman. “Even so, we look at it every year. On the used aircraft side, we are in the middle of a programme to take midlife A319s on a mutually attractive lease that worked out fine. One of the problems of leasing is return conditions. Because we are keeping these aircraft their remaining useful life, the return conditions are much easier to manage when it’s likely the next use of that aircraft will be for parts.”

TECHNOLOGY IMPACT

The advance of technology and the ubiquity of the internet and social media around the world has changed the business environment for airlines, more so than for leasing companies and banks in the aviation community. Mark Lapidus referred to the consumerisation of airlines, which touches on the changing consumer environment as service expectations are heightened, while complaints are easily going viral and impacting airline reputations and ultimately their bottom lines. As a result,

“Most of our frontline employees have handheld devices, but we are working on enhancing that functionality to solve problems more quickly and efficiently.”

*Gerry Laderman,
senior vice president of finance and
procurement, United Airlines*





airlines are exploring how advances in technology can assist from a customer relationship/sales point of view but also help improve operational efficiencies and reduce costs.

Despite significant changes, Laderman says that United is only at the very beginning of being able to exploit technology throughout its business. “All of our frontline employees have handheld devices, but we are working on enhancing that functionality to solve problems more quickly and efficiently.”

In one example, he cites how flight attendants will be able to report a maintenance issue in the cabin in flight and have a technical team ready and waiting to address the issue on landing.

Lapidus expects the industry to be disrupted by new entrants into the space that are capitalising on new technology and big data, much like Airbnb has disrupted the holiday market. “Airlines need to be prepared to become consumer not transportation companies,” he says, warning that if they don’t, companies like Airbnb or Google, will figure out how to connect their consumer knowledge with the physical delivery.”

GebreMariam states that the world is undergoing a fourth industrial revolution and he recognises the need for airlines to evolve and take better advantage of new technologies. “Airlines have to prepare,” he says. “There is more and more customisation occurring in the airline industry, more personalised services –

passengers want to be connected with the airline through their mobile phone at the airport, in the air, which means airlines have to invest heavily in big data.”

THE FUTURE OF THE AVIATION INDUSTRY

The new lease accounting standard – IFRS 16 – has the potential to change the way airlines fund their aircraft since it brings all leased assets onto their balance sheets. But, despite the column inches and white papers dedicated to the potential fallout of the new rules, airline executives believe that the impact will be slight. “Practically, it will have very little impact,” says one airline CFO. “Most airlines and investors already take leased assets into account when analysing credits.”

Another airline treasurer says: “Everyone has already figured this out a long time ago; I think it’s a good thing, it will be very helpful.”

A major worry for many airlines located in South East Asia particularly are concerned more about the health and provision of suitable infrastructure. Even in Europe, IATA maintains that the inefficient airspace management will cost the industry over €3 billion next year, as well as generating unnecessary CO₂ emissions. The US too is plagued by delays caused by its ageing infrastructure, with many power and technology outages being highlighted in the media in recent years.

Airline Wish Lists

Airline executives were asked for one change they would like to see in the industry. Apart from reduced competition, some of the most popular were for a third major large aircraft manufacturer to be introduced to the market, with the view that it would reduce purchase prices of aircraft even more. Unfortunately, the prevailing trend is for greater consolidation of manufacturers, with Airbus purchasing a controlling interest in Bombardier’s C Series and Boeing’s desire to acquire Embraer.

Mark Lapidus echoed the desire of many airlines for greater liberalisation of the global airspace. “Aviation needs to be global with no barriers to entry, with clear bilateral agreements. Airport gate space should become a lot freer and more market driven as opposed to controlled and run by one company.”

For United, the number one change would be to ensure a level-playing field by eradicating government subsidies for airlines.

Law would reduce the number of aircraft in the global market: “I’d like airlines to rethink their crazy aircraft orders,” she says. “It is irresponsible, even with small rises in RPKs how can there be demand for that much capacity? The demand at the moment is being stimulated by low fares. If that changes so will the supply and demand equilibrium.”

Another airline treasurer said that he would eliminate rules that do not allow foreign ownership and bilateral systems based on outdated national security concerns.

Airline Economics

GROWTH FRONTIERS DUBAI 2018

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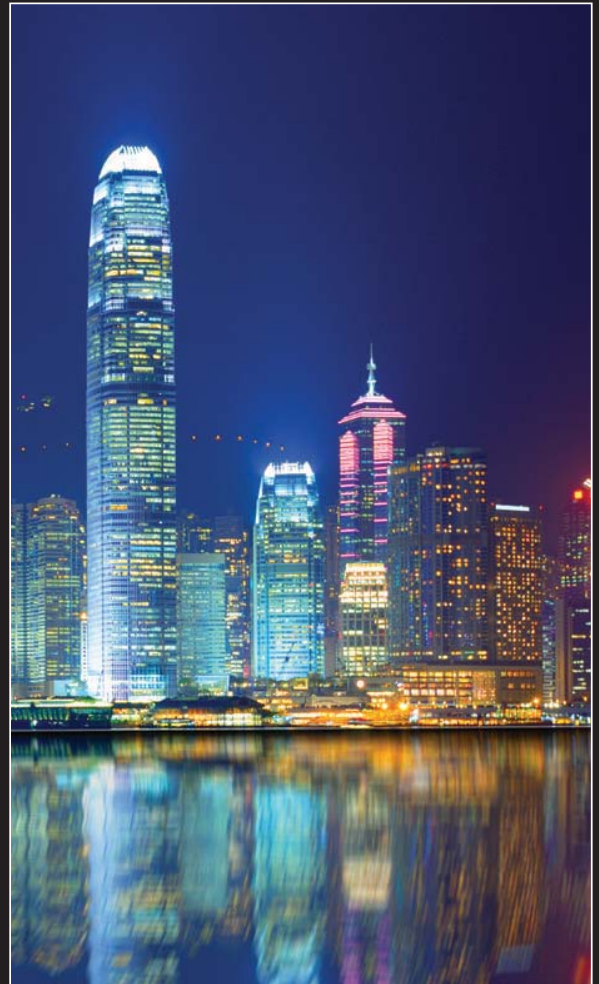
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Financial Institutions:

Financial services firms are very aware of the problems economic downcycles can cause but, for aviation bankers, the aviation industry is more robust than ever before, which is attracting new investors into the commercial and capital markets all seeking aviation assets to help boost yields.



Ten years ago, the global financial crisis hit and the aviation sector was impacted by a lack of access to funds to pay for aircraft and engine deliveries, a spike in fuel costs and falling passenger numbers. During the following year, unable to access the bank market, airlines and aircraft owners resorted to ECA financing and sought new sources of equity investment to keep funding their deliveries.

One of the defining characteristics of the aviation financing market is its ability to continually innovate to find more efficient and suitable funding products and structures to fulfil the demand for ever more sources to fund aircraft deliveries, portfolio purchases and corporate expansion. Despite the economic pressures and indeed because of the ultra-low interest rate environment, which endures today, aviation financiers quickly created innovative ways to tap into new sources of liquidity. This gave renewed prominence to the capital markets and structured products for aviation assets that attracted new investors into the space – particularly for leasing company credits – as they searched for yield and stable returns. Today, the aviation banking market is experiencing other challenges: fierce competition, an abundance of liquidity pushing down margins and loosening covenants as well as regulatory changes that threaten to distort the market significantly. The extended closure of the export credit agencies (ECAs) for Airbus and Boeing aircraft has impacted airlines specifically, which have turned to lessors and banks for assistance.

Despite the current challenges, as the pace of new aircraft deliveries accelerates, banks and the capital markets are more in demand than ever. The aviation financing market remains relatively stable and continues to offer a wide variety of financing options for lessors and airlines. Leasing companies are increasingly using the capital markets to raise unsecured debt, although the commercial bank markets are easy to access and remain competitive and are often less complex and less expensive than more structured debt and equity products. Airlines too are awash with

liquidity and can access affordable bank debt easily and demand favourable terms, which is not great news for banks scrambling for reasonable returns.

“We are optimistic on the sources of financing for borrowers,” says one European banker, “but we are pessimistic on returns given margin/spread compression.” His team is seeking higher returns by focusing on riskier borrowers but ensuring the addition of stronger covenants, as well as offering more bridge loans and other high margin backstops as capital markets take outs, which also has been a popular measure in recent years.

That spirit of innovation has continued in 2017 driven by the export credit vacuum, which accelerated the launch of the first insurance-backed funding products from Marsh’s Aircraft Finance Insurance Consortium (AFIC).

MARKET CORRECTION

Despite the benign environment, some bankers are calling the top of the cycle for aviation financing.

“We are probably at a peak in term of funding liquidity,” says Bertrand Dehouck, managing director – head of aviation EMEA at BNP Paribas. “The question marks are how long we stay at the peak; are we entering an unusually prolonged phase at peak thanks to the massive liquidity brought in by central banks. A credit event could accelerate a retrenchment on the liquidity front. [The current situation] might not have translated fully into a peak of asset values; we anticipate liquidity to tighten before asset values soften.”

Another European banker agrees that the market is facing over-liquidity in debt and equity markets, arguing that this is unsustainable since investors “will be disappointed in that the return on equity they were expecting will unlikely be met”.

Dehouck predicts that the market is nearing a peak in terms of the covenant-light transactions, with excessive structural flexibility to the benefit of borrowers, which has defined many deals of late. “We would anticipate this flexibility and such favourable terms to gradually reduce in a 2019-2020 horizon.”

Arnaud Fiscel, head of transportation

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*Bertrand Dehouck,
managing director – head of aviation
EMEA at BNP Paribas*



at Bank of China in London, sees a natural market correction building. “One can sense some of the ingredients we observed back in late 2006 / early 2007 with excess liquidity, further exacerbated by relatively low fuel price and interest rates,” he says. “The aviation market is undoubtedly growing and offering solid opportunities for investors; one may however question whether the macroeconomic environment can sustain steep, prolonged increases in air traffic, or whether the recently observed capacity boost is momentarily outpacing the actual growth in demand. While we can legitimately remain very optimistic on aviation and its strong long-term prospects, aviation remains a cyclical industry and one can never exclude some short term adjustment.”

Other experienced financiers don’t see a correction on the horizon at all – although such comments are usually tempered by the caveat that most bankers didn’t see the collapse of Bear Sterns on the horizon either. The banking market and the aviation market are in a sustained period of growth and despite interest rates inching up with inflation – which benefits asset-backed financing as values rise – there are no clear signs yet that the situation is changing but the boom in liquidity gives some the sense that a correction must be building. The trick is to monitor the signs and insulate long term financing deals for the worst.

“If people are disciplined in the way they finance the industry, in the way they structure deals for debt and equity investors, and retain a longer-term view rather than trying to churn cash out, this positive cycle could run for a while more,” says Srinivasan.

Many in aviation are keeping a close eye on OEM production rates, which could alter the delicate supply and demand balance and put downward pressure on asset values, but most are confident in the abilities of the OEMs to manage this on a longer-term basis. “The wise folks within the industry in the leasing community and the OEMs are taking a longer-term view and are fairly nimble in trying to control production rates and manage it to a point where it is sustainable over a longer period,” adds Srinivasan.

Major defaults are an obvious trigger

to reducing the overall liquidity levels in the market although the five major airline insolvencies in 2017 has not impacted liquidity levels for the moment, despite many of the aircraft concerned being encumbered in ABS vehicles as servicers worked hard to re-lease those aircraft with seemingly minimal fuss.

For mid-life aircraft investments, one of the first indications of a correction may be seen in the capital markets.

“A big part of the vibrancy in the mid-life and older aircraft market is the health of the capital markets and leasing companies’ ability to sell mid-life and older planes into the ABS market,” says Matt Little, partner and head of business development & capital markets at Castlelake. “Any volatility in the health of the capital markets is a big driver that may lead to a repricing of risk in the mid-life and older aircraft space.”

Financiers as well as airlines also keep a sharp eye on oil prices as potential triggers for a downturn scenario since a significant increase in the jet fuel price could accelerate a drop in market value of older aircraft securing loans.

Rising interest rates could cause pressure on liquidity but many aviation bankers and leasing executives are phlegmatic on this issue. “The US and the world remains in a prolonged low interest rate environment,” says Srinivasan, and I don’t see rates going significantly high or spiking any time soon... [The] prolonged low interest rate environment is part of the reason there is more capital coming into the sector.”

COMPETITION

That excess capital chasing the same assets is what is causing the fiercely competitive financing environment. Cheap money, largely from new investors and capital sources that are willing to forgo the usual basic securities – fair return, covenants – is driving down returns and increasing the risk exposure for inexperienced investors piling into aviation.

“There are banks who are prepared to do bilateral loans to airlines at levels that are too tempting,” says Hollahan. “That’s a threat that our business model has faced, which will only increase as there are more and more banks emerging, particularly in Asia, that want to lend

“The aviation market is undoubtedly growing and offering solid opportunities for investors; one may however question whether the macroeconomic environment can sustain steep, prolonged increases in air traffic, or whether the recently observed capacity boost is momentarily outpacing the actual growth in demand. While we can legitimately remain very optimistic on aviation and its strong long-term prospects, aviation remains a cyclical industry and one can never exclude some short term adjustment.”

*Arnaud Fiscel,
Head of transportation at Bank of China*



money to the airlines at very, very, low returns.”

The allure of the robust aviation market has forced some banks that have not traditionally played in the industry in the past or for a long period of time to build new teams and increase their activities in the sector, putting even more pressure on returns.

Some of the more mature aviation financiers are pulling back from the scramble, in some cases resisting the allure of large deals in order to retain balance sheet and risk-return discipline. Best practices include prudently structuring deals and avoiding too aggressive loan profiles and too high debt balloons (especially for non-recourse loans).

“With a buoyant market and ample liquidity, discipline is key,” says Fiscel. “It is usually wiser to let an opportunity go when some key structural aspects are not met; seasoned longstanding aviation players will know when to stand out”

He adds: “Although the bank is fully dedicated to aviation, transactions must meet certain criteria and remain within some key parameters, such as loan-to-value and amortising profile.”

The Mizhuo team is also retaining a disciplined approach, which can be difficult in the current environment: “We are trying to be smart in a fiercely competitive environment, so we don’t stretch ourselves and do the wrong thing, which can be the catalyst to something big happening,” says Srinivasan. “We still need to be productive and do deals but we are trying to pick the right players and not fall victim to peer pressure of following the herd into a deal that doesn’t look or feel right.”

Some financing structures are becoming ever more complex and are heavily structured – particularly for some widebody deals that attract new investors – which is concerning Fiscel. “New investor pockets are being tapped for more complicated, more innovative structures on less liquid – yet still good – aircraft,” he says. “Although intellectually rewarding, some of the most sophisticated structures are being paired with less sophisticated investor resources, which might present some challenges, were those transactions to unwind early.”

In general, most of the financiers that contributed to this survey do not see the threat of a downturn as a negative for their business, indeed, they see it as an opportunity to serve their clients more effectively.

“As a banker able to offer a wide range of financing and advisory solutions to cope with the cyclical nature of the business, there is no need for the industry to be too stable and financing to become too commoditised,” says one banker. “In the up and down of the cycle in the long run, you will recognise the professional bankers which will be supporting their clients during the difficult times.”

BASEL III/IV

Already under pressure from the fiercely competitive operating environment, European banks have been preparing for the full impact of the implementation of the Basel Committee on Banking Supervision’s Basel III capital requirements reforms including expanded requirements (often referred to as Basel IV), which were finalised on December 7, 2017. Despite lobbying efforts from the industry, notably the Aviation Working Group (AWG), to force an exception for aircraft financing being 100% risk weighted in a bank’s capital requirement calculation, this has not been heeded in the final text.

The anticipated impact of the capital requirements in the aircraft sector is a 3.5x to 6x increase in Tier 1 capital requirements on secured aircraft loans. If implemented, this would require the banking industry to raise \$17bn to \$34bn in new Tier 1 capital to support the existing aircraft loan banking books and sustain the bank market share in new aircraft delivery financing in 2017-2020.

By not recognizing the historically low risk of aircraft collateral, AWG argues that secured aircraft loans are at a drastic risk-return profile disadvantage relative to higher risk unsecured corporate loans and secured loans with other types of collateral that historically realized higher loss given default rates (LGDs). Within the aircraft sector, lower risk aircraft loans are at a disadvantage relative to higher risk loans (e.g. low LTV vs. high LTV loans). The consequences will likely include:

“If people are disciplined in the way they finance the industry, in the way they structure deals for debt and equity investors, and retain a longer-term view rather than trying to churn cash out, this positive cycle could run for a while more,”

*Vinodh Srinivasan, managing director,
co-head structured credit group,
Mizuho Securities USA*





reduced capital availability to secured aircraft lending; a reduction in the size of low-risk aircraft loan portfolios on banking books via possible asset sales; and an overall increase in bank portfolio risk through re-allocating capital away from secured aircraft lending towards riskier unsecured lending and riskier types of collateral. AWG argues that some aircraft financing may shift towards unregulated shadow banking entities, while secured aircraft financing that remains in banks may shift to riskier terms and borrowers to capture higher margins to compensate for increased regulatory capital costs.

The dynamic of the existing commercial bank market will change in the coming years as Basel IV begins to impact European banks, increasing their cost of capital significantly, especially those that are operating with advanced capital models (IRB).

“Basel IV will definitely change our business and will lead to more distribution outside the traditional aviation banks, which will face an increase in capital allocation against long-term secured aircraft loans and more pressure to do cross-selling in capital markets and advisory (fee business),” says one banker. “New debt platforms will attract more and more alternative sources of funds such as pension funds, insurance companies, infrastructure funds and others.”

The Basel Committee is pushing for

European regulators to implement Basel III reforms by January 2022, but the proposals have been in motion for so long now, banks have had a long time to investigate the impact on their business, even if they are not yet manoeuvring to comply.

“One would’ve thought with [Basel III] being imminent many of the European banks would be pulling back in terms of lending but ironically they haven’t,” says Srinivasan. “In fact, they’re still lending significant amounts.” But, he adds that they are continuing with more structured and heavily syndicated deals that have become the norm for commercial banks since the financial crisis as they sought to reduce their balance sheet exposures for long-term debt. During that time many of the active European banks in Germany, the UK and even France, closed their books and some pulled out of aviation finance altogether. Some have slipped back into the market with revitalised strategies to act more as structuring arrangers rather than balance sheet lenders, which will continue after 2022 but perhaps even on a more reduced scale.

While in the long run, US and Asian banks, and others outside of Europe, may benefit from the implementation of Basel III since they can continue to offer their balance sheet for aviation debt, many are united in the opinion that the changes are wrong given the low default rate of this industry.

“Basel IV will definitely change our business and will lead to more distribution outside the traditional aviation banks, which will face an increase in capital allocation against long term secured aircraft loans and more pressure to do cross-selling in capital markets and advisory (fee business)”

Says one European aviation banker



Regulatory change has transformed the banking industry over the past decade and it continues to do so and yet banks and financial institutions have and will find ways to adapt. “Our business is in constant change and requires a regular adaptation and we do not expect this to change,” says Dehouck.

One observer points out the irony that with Basel III in place, “regulated institutions will try to take as much risk as possible as their credit/risk teams permit,” that goes against the spirit with which the rules were introduced in the first place.

After Basel III is in place, the importance of the capital markets will be even further enhanced. This should compel more airlines and leasing companies to seek a corporate credit rating. “The industry would benefit from a larger number of airlines in Asia and the Middle East to be rated in order to offer more opportunities of diversification through the capital markets,” says one banker.

ECONOMIC USEFUL LIFE

Unlike lessors, few banks – other than DVB that funds older aircraft – take residual value risk on aircraft assets as they prefer to take credit risk on the airline or lessor and restrict financing to new aircraft. For secured portfolio financing transactions, the residual value risk is taken by the investors. Nevertheless, most bankers consider

a 25-year depreciation curve for new technology aircraft as acceptable, but for older aircraft, they say, historical depreciation levels probably should be increased.

“Some aircraft are scrapped earlier than 25 years of age because there are not owned by operators but by pure financial investors which see a better exit (ROE) in phasing out the aircraft and parting it out but this does not mean that the said aircraft could not have been operated by an airline for a longer term so we might say there is a distinction to be drawn between “useful life” for an airline and “financial life” for investors.”

Dehouck says: “We continue to believe that there is no material change in the useful life of an aircraft from an operator perspective. But from an investor perspective the conclusion is somewhat inside of that. Because there are more and more financial investors involved in this asset class, the resultant is therefore a perception of a shortening of the life of an aircraft.”

There is evidence that the rating agencies are increasingly taking a view that an aircraft’s useful life is closer to 22 years than 25 when rating secured aircraft transactions. “If you assume the useful life is 25 years,” says Srinivasan, “the debt amortization schedules are being set to low 20s, so there are some measures already in play to address that risk. There are operators out there that are much better at sweating an asset

Dollar dominance

As the Asian banks and investors continue to pile into aviation assets and benefit from the potential vacuum caused by Basel III potentially hobbling some European players, the debate over whether the US dollar will remain as the dominant currency for the aviation market is resurging.

“The most active lenders have historically been Europe-based banks, essentially with large euro deposits,” says Fiscel, “while aviation remains a US dollar industry, with an inherent mismatch between the funding and lending currencies. With the shift of influence towards Asia, the fast-growing regional market and increased appetite from local investors, one could wonder whether the dollar will retain its supremacy in the very long run, or whether we shall expect some progressive rebalancing.

There is a convincing argument for an even greater number of deals to be funded in other currencies, in particular on fully amortising structures without any residual asset risk. As far as Bank of China is concerned, RMB financing have already been implemented for non-PRC players.”



and can extend its useful life but there seems to be more of a conservative view about the future where lenders as well as rating agencies and investors are sort of converging around that 22 year number.”

One of the main drivers in pushing down useful life of aircraft is the loss of the African secondary market, whose airlines have progressively been buying new aircraft with the support of the ECAs, which leaves little demand for 10-15 year aircraft in that region today. However, some flag carriers do tend to operate aircraft for longer than that especially those with strong maintenance, in-house capabilities.”

Michel Dembinski, Head of Aviation in the Structured Finance Office EMEA at MUFG, says that for lessors, the issue is less about useful economic life than how the book value tracks (or not) the trading value of the aircraft. “The 25 years depreciation does not allow for this,” he says, “leading to potential impairments, and hinders trading of aircraft: both have a detrimental effect on the profitability of the lessors.”

The concept of a “single-use aircraft” has been discussed recently, with aircraft purchase prices being so low for some operators that replacement seems a more economical option than a D check but respondents think that this approach is unsustainable, especially since the business models of the OEMs, particularly engine OEMs, are more focused on selling aftersales services

than new aircraft and engines.

In summary, while there can be factors justifying an increase or decrease in the rate of depreciation, most respondents agree that the 25 year depreciation policy for new technology aircraft is reasonable.

TRANSPARENCY AND APPRAISALS

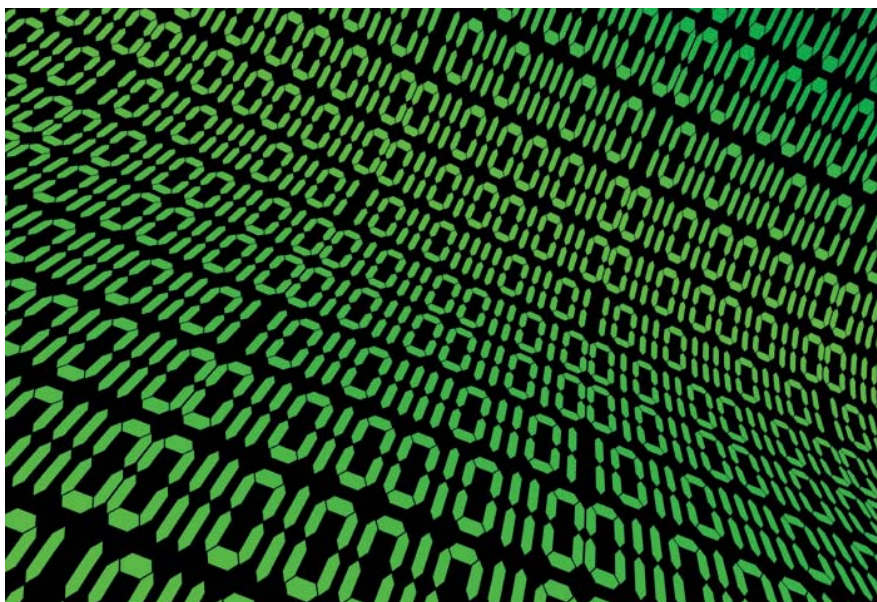
Valuing assets accurately for sale and secured transactions has been, and is, a hotly debated subject. One of the problems is the paucity of publicly available market data for appraisers to access to be able to accurately value aircraft. Survey respondents were asked if they thought greater transparency would be beneficial for the entire industry. Some responded that it would be helpful but that it was unlikely to happen. Others said that it would never happen and would be of limited benefit if it did, calling out the heightened transparency in ship trading which does not reduce volatility and so has little benefit.

“The best proxy for aircraft value is to obtain a precise “Maintenance Adjusted CMV” by two reputable appraiser firms,” said one banker.

Larger lessors benefit from sales data that appraisers will never have, or at least not immediately, but are essential to the smooth running of secured debt transactions, which are rated by the credit rating agencies based on appraised values. “While we recognise

“Aviation needs to be pulled out of the dark ages. Some 90% of new aircraft financing is fairly plain vanilla and should be done online. Aviation bankers should be worried, it’s inevitable.”

Says one European aviation banker



that appraisers have an important role to play in this process, they do as good a job as they can do, given the information that they have, which I don't think is enough. We have to build in buffers, lower them on the values, and use our own judgment, to take into account the fact that they can be wrong a lot," says one US banker.

Respondents generally agree that more transparency on lease rates and sale prices would benefit the market, as well as the appraiser values, but it would be difficult because every lease is different – return conditions, maintenance reserves and security deposits can create or destroy value. If there was more transparency, deeper and more mature capital markets would be created but few believe this would be possible.

TECHNOLOGY IMPACT

Financial institutions are undergoing a period of accelerated change as financial technology (fintech) disruptors encroach on market share in the commercial lending market particularly. Internally, more and more financial processes are being digitalised and automated as banks find ways to become more efficient, regulatory compliant and meet rising customer demands. However, advanced technologies such as distributed ledgers (blockchain), artificial intelligence and machine learning, are yet to impact aviation finance in a meaningful way, according to the survey respondents.

"Technology has a place in everything," says Srinivasan. "It makes processes more efficient, but this is a relationship business, a human business – that touch and feel is required when you are figuring out if this is the right partner to work with... There's only so much you can do with technology."

Although crowd funding has been used for financing small aircraft and by some lessors to raise operating capital (see *Lessor* section), respondents doubt this lending avenue will ever represent a significant share of the annual \$140bn needed to finance the aircraft deliveries of aircraft. "Long term lending still requires judgment from seasoned professionals," says one banker, although he does see some fintech debt platforms being set up that could attract institutional sources, which is funded with lower administrative costs that could consequently decrease the overall cost of lending.

Other bankers are more positive about the developments in financial technology and less positive about the current level of adoption by aviation banks. "Aviation needs to be pulled out of the dark ages," says one banker. "Some 90% of new aircraft financing is fairly plain vanilla and should be done online. Aviation bankers should be worried, it's inevitable." Others see the need for significant continued investment in technology "to industrialise processes that can help to increase the scale of the franchise."

Aviation Financier Wish Lists

Industry leaders in the aviation finance community were asked to highlight the main challenges in the industry and what they would change. All were united on reducing the amount of competition and liquidity levels, as well as eradicating Basel III. Some also focused on fixing major issues in the industry.

ECA-supported financing and fuel hedging

Although the hole created by the lack of ECA financing has been more than made up by capital market revenues for Citi, Thomas Hollahan hopes the market reopens soon as the entire aviation industry would benefit from a robust ECA environment. He would also reverse the trend for airlines not to hedge their fuel requirements anymore.

"We've been a market leader in providing fuel hedging solutions to the airline industry," he says, "So many airlines just don't hedge fuel anymore." As more airlines turn away from hedging, their competitors echo their strategies, which accelerates the decline. Once fuel begins to spike and impact airline revenues again, hedging will likely come back into vogue.

Retaining talent

A common challenge felt by banks, airlines and lessors, is holding onto top talent. Airlines and lessors often poach bankers to help fund their aircraft deliveries in-house, while competitor banks seeking to re-enter the market have poached entire aviation financing teams from established players. This is not a new trend and it will continue but it is certainly one area many see as a major challenge. "Retaining talent on the team is a challenge because the proliferation of financiers into the market," says Srinivasan "Retaining a team of individuals that you've worked with for a long time is much tougher today."

Eliminating airline government ownership

One of Thomas Hollahan's bug bears is the prevailing insistence of various governments on their ownership of national airlines.

"The number one thing I would change would be to eliminate government from ownership of airlines," he says. "It's just a bad idea; it's never worked; it's never a good idea. I advocate free cross-border ownership of airlines. There's just no reason anymore to think that these are strategic assets that need to be owned locally."

Final Thoughts



The mantra of many aviation industry economists over the past few years has been that the current operating environment is “as good as it gets” and there are few signs yet of that changing in the near-term. Despite the arguments over the shape of the cycle, the industry remains a cyclical business that will continue to be driven and impacted by changes in GDP even though its relationship with RPKs has altered slightly, which is making it very difficult for economists to predict the next downturn.

Pressures are building, however, for all three areas of the industry. Interest rates, oil prices and operational costs, such as salaries, are all rising. Increasing competition is impacting airline yields although passenger demand is offsetting that to keep profits up, for now. Liquidity remains but, the recent past has shown, that market shocks can cut off sources of liquidity abruptly.

Airlines are generally better at managing capacity, but competition pressures have fuelled expansion in pockets of the world that could see a correction.

New entrants to the leasing space and the desire for scale to heighten efficiencies and cut costs is driving consolidation in the leasing market but the general sense is that there will likely be more smaller scale deals than

larger scale mergers although there remains the potential for some larger scale transactions, particularly if the market changes.

Awash with liquidity banks are helping renew fleets. New technology aircraft are aiding the sector with airlines hedging their fuel risk with more efficient equipment, although there are some concerns over values being impacted by too many variants and any impact on the useful life of aircraft.

Advances in technology and big data to help drive predictive maintenance and better consumer services is helping airlines and lessors alike to cut costs and attract more customers. Despite being impacted by new technology disruptors in the financial services space, the aviation finance business seems insulated from the worst of this change and lags behind advances that could help to commoditise products, although there are differing opinions on the benefits of such progression.

The robustness of the aviation sector is attracting new investment into the space with aircraft leasing more recognised globally for generating strong and stable returns, attracting more talented individuals into the industry. Airline profitability is healthy thanks to better capacity and cost management and strong demand. The state of the industry is strong and durable and certainly as good as it gets going into 2018.



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