## Aviation finance Fasten your seatbelts



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### Foreword



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Aviation financing is a hot topic and likely to remain so over the coming years, as the demand for financing deliveries of new aircraft peaks at a time when long term financing becomes unattractive for some of the incumbent banks.

On the one hand, record order books of aircraft manufacturers reflect a period of strong orders buoyed by both new aircraft types and strong demand in the emerging markets. On the other, there are a number of headwinds in the aircraft finance market which may make these orders more difficult to finance, and potentially, more expensive. The ongoing global economic uncertainty, the European Sovereign debt crisis, the recent downgrading of several European banks and increased difficulty of accessing US dollar funding has raised funding pressure. A number of predominantly European banks who have historically played a key role are retracting from the market. This is causing tensions in the funding market, which have been heightened by the ongoing bank deleveraging process, which in part reflects the impact of new regulations such as Basel III.

Conversely, in tough economic times and a low interest rate environment attractive yields are harder to find. Investors are looking for hard assets with good returns.

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As a result we expect attractive opportunities to emerge in the aviation financing sector for investors looking to deploy large amounts of capital efficiently.

Already we have seen new investment flowing into this sector as funds backed by the governments of China, Singapore and UAE have made sizeable investments in this space. Other institutional investors such as sovereign wealth funds, insurance companies, pension funds and certain private equity funds could also be interested in investing in aircraft assets. We expect acceleration in the ongoing shift of financing from the traditional aviation banks in the West to new players from the East.

This report is based on a number of interviews with key personnel in this market including CEO/CFOs of leading leasing businesses, airlines, European banks and other financial institutions in Asia, ME and Europe to understand and analyse the latest trends in the market. We hope this research will better inform the investor community. Despite the challenges, aircraft financing is an opportunity for new entrants to earn attractive yields, provided the asset type and the timing is right!

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### At a glance

The industry has seen record aircraft orders driven by the operational needs of airlines. Finding funds for these orders will be a challenge

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Current orders for new aircraft are at unprecedented levels, driven by the replacement of ageing fleets in North America, demand for fuel efficient aircraft and market growth in the emerging markets.

Though airlines are currently facing a number of headwinds, orders are expected to be fulfilled. Historically, an airline's financial performance has not had a significant impact on their ability to secure and finance new aircraft deliveries. Although airlines can either defer or cancel orders, there is an operational requirement to re-fleet the global aircraft pool with more efficient aircraft. Finance is likely to be available for the new aircraft as new investors from the East flock to the sector, replacing the traditional banks from the West but...

Aircraft deliveries over the next threefive years will need to be financed at a time when liquidity is scarcer and risk is being repriced. The key challenge for airlines, who have record orders in place, will be to find financing at a competitive rate in an exceptionally tough economic environment.

Based on our interviews, we believe that financing is likely to be found but potentially, at a higher price. This is already attracting new investors particularly from the Far East, with a number of banks from Japan and China snapping up aviation assets. We expect this trend to accelerate.

But, more of this will need to happen and airlines and lessors will need to be more inventive and work harder to find additional sources of funding and potentially develop new products.

There have been recent attempts for example the Doric II (UK-listed) Emirates financing vehicle and German bond backed by an aircraft mortgage (a new product first used by Nord LB in July 2012). ...financing will be expensive as regulatory changes and economic conditions make capital scarcer. It remains to be seen who will pay for the incremental costs. Some question marks remain around financing of second-hand fleets as their values and rentals soften In the current economic environment of low interest rates and economic uncertainty, the aviation sector could offer an attractive alternative to new investors

Although it already costs more to arrange financing within the aviation industry compared to a few years ago, we expect the cost of financing could increase further as regulatory changes take shape in particular Basel III and the implementation of the new Aircraft Sector Understanding (ASU) from 2013.

What's more, as the challenges that the banking industry faces, and in particular the European banks who traditionally have been dominant in this space, continue to play out, we expect to see some banks retreating from this market which will intensify the competition to obtain aircraft financing and the cost of financing will likely further increase.

Time will tell what if any impact the higher cost of financing will have on the cost of travel.

As airlines take delivery of new aircraft, owners must be found for second-hand aircraft. In the past, airlines from developing economies have taken these, which has created a natural flow of ownership. This is changing as new and smaller airlines place orders for new aircraft direct with manufacturers, often taking advantage of Export Credit Agency (ECA) finance. This, together with concerns of oversupply of some aircraft types, particularly narrow body, could put aircraft values and lease rates under pressure.

These factors could have a significant impact on the demand for the secondhand fleet going forward. If values of aircraft are driven down, this could raise questions around financing these older aircraft, even if there is a willing customer, as the risk of financing such aircraft increases. Aviation finance could provide an attractive opportunity to deploy large amounts of capital efficiently in 'hard assets'.

This sector is particularly attractive at a time when investor confidence in stocks and other financial assets is lower. An interesting barometer of demand for investing in aircraft financing is that investor demand for investing in the Japanese Operating Lease (JOL) market is at a near time high.

New investors are already entering this space, but the general consensus among the experts interviewed by PwC is that more needs to be done to ensure better understanding of the sector by investor groups.



# The opportunity to invest



## Aviation financing offers potential investors absolute returns backed by hard assets...

*Industry view:* 'We expect Japanese banks to be active in this market'

Garry Burke, Global Head Structured Finance, Standard Chartered Bank The ongoing shift from the traditional aviation banks in Europe to newer players from the East and North America will continue over the next few years

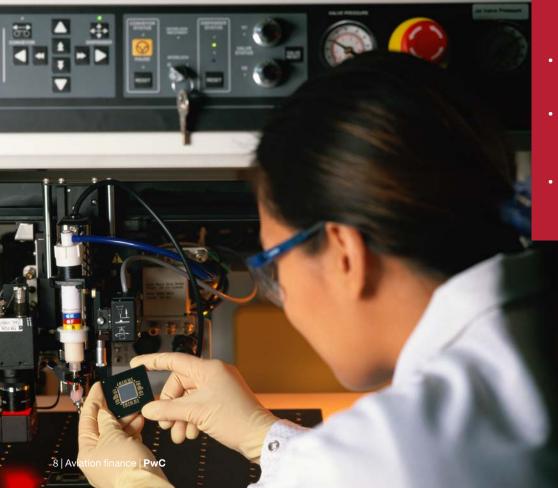
The next few years will be crucial for aviation financing as new aircraft deliveries peak at a time when many of the traditional commercial banks remain under pressure.

New investors are already entering this space as aviation finance is an asset class which can offer attractive returns which are secured against an underlying asset. The general consensus amongst the experts we interviewed was that the industry needs to do more to ensure that potential investors understand it better.

All key players such as airlines, banks, leasing companies will have to work harder to attract new investors to the sector and create innovative products which can broaden the investor pool.

## Why invest in aviation financing?

- Deploys large amounts of capital efficiently.
- Relatively predictable returns although residual values, especially for older aircraft, can be volatile.
- Aircraft the underlying asset is truly global in its recognition and usage.
- Investment typically secured by a 'hard asset', supported by International regulations such as the Cape Town Treaty.
- Highly mobile asset helps with reclaiming and redeploying the asset in case of a default.



## ...and is already attracting the attention of various investors

*Industry view:* 'I would expect that the rising cost of capital from traditional lenders will open opportunities for new sources of capital in the aviation finance market'

Ricky Thirion, Vice President and Group Treasurer, Etihad Airways Aviation financing sector exhibits the sort of characteristics that would attract institutional investors such as sovereign wealth funds, insurance companies, pension funds and certain private equity funds

### Sovereign Wealth Funds (SWF)

We have already seen a number of SWF-backed funds such as China, Singapore and UAE investing in this asset class.

This is unsurprising given their access to US dollar funding, longer term investment horizon and appetite for deploying larger amounts of capital efficiently.

With the potential for developing new structures, we expect further involvement of SWFs going forward.

### Financial Investors/ Private Equity

At first glance, aviation financing may not be an obvious investment for PE.

But, we have already seen a number of financial investors backing leasing businesses with recent ventures e.g. Cinven, CVC, GIC and Oak Hill's investment in Avolon, Carlyle's investment in RPK, Cerberus Capital's investment in AerCap, Oaktree's investment in Jackson Square Aviation (now exited) and Terra Firma's investment in AWAS.

We expect to see further deal activity in this space.

### Far Eastern Banks

Banks from the Far East have been at the forefront of some of the larger deals, for example, the acquisition of RBS Aviation by Japanese Bank Sumitomo Mitsui, the sale of DVB's 60% share in TES to Development Bank of Japan and Mitsubishi Corporation and the recent acquisition of Jackson Square Aviation also by a Mitsubishi Corporation entity.

Some Chinese banks may also be keen to expand into the sector e.g. press reports suggest CDB was the under bidder for RBS Aviation.

We believe the recent trend of a shift in aviation assets from European banks to the banks in Asia is likely to continue.



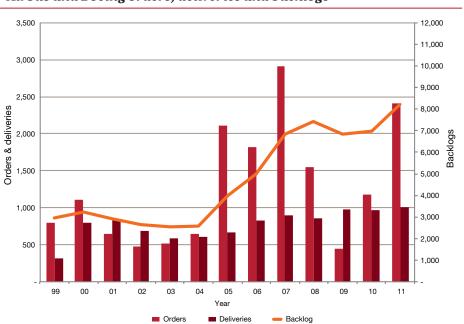
# Record aircraft backlogs

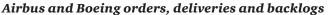


## Aircraft orders are at record levels which could open up attractive investment opportunities for investors

Aviation is a cyclical business and has witnessed a number of peaks and troughs during its history. Inspite of this, current orders for new aircraft are at unprecedented levels

Similar to other capital heavy industries, commercial aerospace is cyclical with the industry historically suffering from over ordering of new aircraft in the 'good times' which are sometimes then delivered in the 'bad times'. The rise in demand for travel and the associated orders for new aircraft have resulted in current order backlogs at unprecedented levels (At July 2012, outstanding orders backlog was c.8500, which represents seven-eight years of production at current production rates). This record backlog has built up steadily over the last five-seven years reflecting significant order volumes pre the 2008/09 recession followed by a relatively quieter period in 2009-10. There has been a return to high order volumes in 2011 which has continued into 2012.





Source: Boeing and Airbus websites, PwC analysis

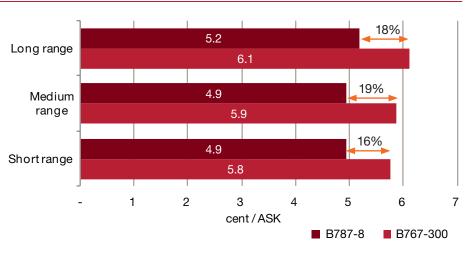
## The desire to reduce operating costs particularly fuel, which now represents a third of operating costs for most airlines...

Although there is an element of speculative orders, on balance we believe there are genuine operational and business reasons for the current mega orders from emerging markets

A number of factors have contributed to this 'abnormal' peak:

- A continued focus by airlines on driving down operational costs in an era where the cost of a barrel of fuel in excess of \$100 is the 'new normal' and with fuel now representing a third of total operating costs. This has driven the demand for new technology aircraft with innovative improved composites and more fuel efficient engines.
  - Manufacturers' estimates suggest significant savings, for example, according to Boeing, a B787 saves c.16%-19% operating costs (on a per available seat kilometre basis) over a B767.

- This has been a key driver of aircraft orders in 2011 and 2012 following the launch of the A320 NEO and 737 MAX short haul aircraft.
- New technology aircraft with lower carbon emissions also help airlines with their broader environmental objectives and better place them for a future when global carbon pricing is fully implemented.

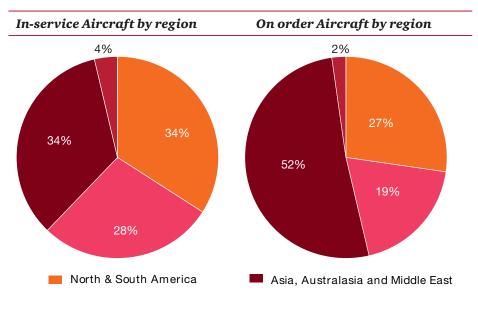


#### 787 vs 767 Cash operating costs per Available Seat Kilometer (ASK)

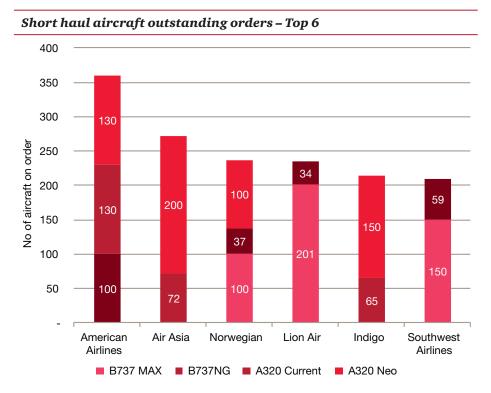
Source: Boeing

Assumes fuel price of \$125 per barrel (2009 USD)

## ...and geographical expansion have been the key drivers of new orders. But there is also an element of speculative orders



Source: Flightglobal



Source: Boeing, Airbus and American Airlines websites

- The strong **economic growth in emerging markets** over the last decade has increased the appetite for air travel in these populous regions (China, India, Brazil) particularly within the emerging middle classes.
- The **replication of successful Low Cost Carrier (LCC) models,** which has driven exponential demand for air travel and aircraft in emerging regions and made flying affordable for their increasingly prosperous populations.
- **Re-fleeting of US Airlines** as they look to replace over 2,000 aging MD 80s and 737s.
- **Competition** amongst airlines to offer the best and newest technology (e.g. B787 and A380 flying experience) to their discerning customers. This is especially true of airlines operating in highly contested routes and markets (e.g. Japanese and the Middle Eastern markets).
- Airlines in developing countries are increasingly taking delivery of brand new aircraft (e.g. RwandAir which operates a new 737NG and has B787s on order directly with the manufacturer). Historically, such airlines took deliveries of second-hand aircraft from more established players which created a natural waterfall for aircraft.

Although there are genuine business and operational factors that have fuelled the current demand, orders have also benefited from what some in the industry describe as longer term, more **'speculative' mega orders** for the short haul type, predominantly from lower cost operators. Over the last couple of years just six airlines have accounted for over 1,500 short haul aircraft orders.

## Historically, airlines have continued to be able to find finance and take deliveries of new aircraft even when profitability has been challenging

Despite a tough decade, airlines have taken steady delivery of new aircraft over the last ten years and have always managed to find funding for their orders

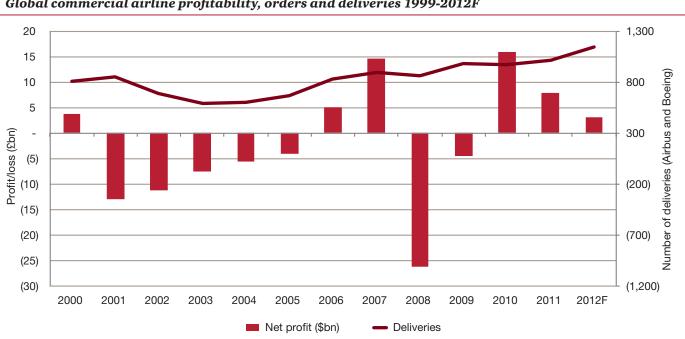
The last decade has been a tough one for the airline industry in general. Although there have been some winners, globally airlines have incurred significant losses.

A number of unusual external events are partly to blame e.g. 9/11, SARS and swine flu outbreaks and volcanic eruptions. However, the underlying story of the last ten years has been excess capacity, intense competition and rise of the low cost carriers which have all contributed to lower returns. The financial performance has also been adversely impacted by the economic downturn, increases in regulatory costs and fuel price volatility.

As a result of the above, many airlines have lost equity and now have weakened balance sheets. Now, airlines arguably have the lowest margins in their value chain.

It is against this backdrop that the record backlog of orders for new aircraft should be considered, in conjunction with the need to finance them.

While airlines can either defer or cancel orders, both being options used in the industry historically, there is an operational requirement to re-fleet the global aircraft pool with more efficient aircraft. Historically, an airline's financial performance has not had a significant impact on their ability to secure and finance new aircraft deliveries.

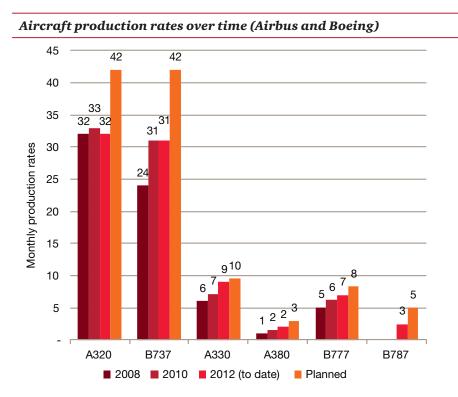


Global commercial airline profitability, orders and deliveries 1999-2012F

Source: Boeing, Airbus and American Airlines websites

### **OEM's are ramping up production to meet demand**

OEMs will need to closely monitor and manage their supply chain to ensure orders are delivered on time and, more importantly, their new aircraft programmes remain on track



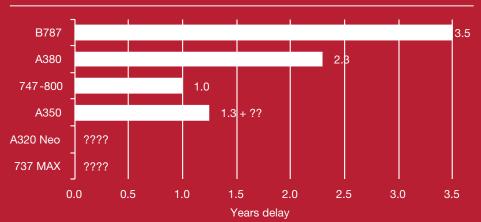
On the back of unprecedented orders, the Original Engagement Manufacturers (OEM) have built up record order backlogs. At present, these backlogs stand at over 7/8 years of production. To address these backlogs OEMs have ramped up **production volumes** for existing technology aircraft and are likely to increase it again over the medium term.

The ramp up of production could, as it has in the past, put **pressure on the supply chain**, leaving programmes vulnerable to supply chain delays and failures. To address this risk, OEMs are consolidating and encouraging consolidation of their suppliers. At present, Boeing and Airbus are reliant on over 1,500 direct suppliers spread across various geographies.

In the short term, OEM's have reported, due to supply chain problems, the ramp up in production rates is likely to be lower than that announced previously.

Source: Boeing and Airbus websites and PwC analysis

Length of delay from initial estimated service date to actual scheduled service date



New aircraft variants have a history of delays in production (Boeing's first 787 was three years late in delivery) and teething troubles as the first fleet emerges for example the recent issues with cracks on the wings of the A380.

These programme delays and issues create challenges for aircraft owners and operators who are seeking to replace ageing airframes as soon as possible. In a number of cases, they either cancel orders all together or default to existing, rather than new technology aircraft to plug their delivery schedule gaps.

Source: Boeing and Airbus websites and PwC analysis

### With growing demand for new aircraft the 'waterfall market' for second hand aircraft is dwindling which is impacting aircraft residual values, age and lease rentals

The challenge for existing and new investors is to understand the impact the record orders and production rates could have on residual value trends

Although a healthy order book provides opportunities to new and existing investors and bodes well for the manufacturers, the challenge for both is that this record level of demand for future aircraft types (which apart for the A380 and B787, have not yet come to the market in any scale) will have implications for the **residual pricing** of current technology aircraft, both those currently in service and those yet to be delivered.

In addition, mid life aircraft, historically, had a natural flow to new and smaller airlines around the world after the first few years with top tier carriers. This is changing, with ECA financing, new and smaller airlines are now often taking deliveries of brand new aircraft. The impact of this is reduced demand for mid life aircraft and there is a view amongst some industry experts that there is oversupply of certain narrow body aircraft.

#### Part out market

- Aircraft have historically been retired after 25 years in service after which they are taken to 'jet cemeteries' to be parted out for resale of working parts and recycling of other parts.
- There has been a recent trend of parting out younger aircraft. This is again largely due to the 'supply and demand' dynamics as availability of middle aged aircraft has increased.
- Although this may worry investors, it could also provide opportunities for investors to pick up mid-life to older aircraft, run down the lease rental and then part out the aircraft to realise reasonable returns.

As a result of the above, we are seeing a trend towards a **shortening in the average life** of an aircraft from the traditionally accepted 25 years, with residual value of 15%.

We have already seen some of the larger aircraft owners taking write downs on asset values of aircraft (ILFC's \$1.5bn write-down in Q4 2011 for example).

This raises a number of questions:

- How will residual values trend over the next few years?
- Will further increase in production volumes of existing technology aircraft, particularly for short haul aircraft, exacerbate these trends?

Some experts we interviewed had strong views about aircraft values and potential net book value problems for existing owners, while others were more optimistic. It remains to be seen how this will unfold in the future.

Another trend is for younger aircraft to be **parted out** and sold for spares as this provides greater value than as an aircraft in operation.

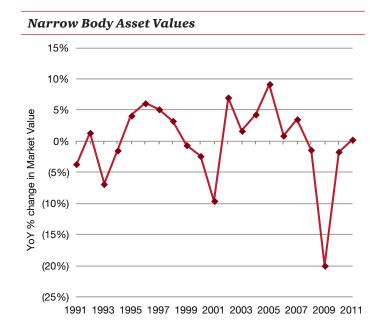


## The narrow body fleet is more vulnerable to the unfavourable trends in residual values...

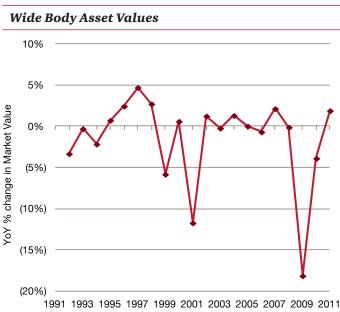
Aircraft orders placed in 2007–10 are starting to deliver in 2012, which are potentially in excess of current demand and are causing softer lease rates for mid life aircraft, in particular for narrow body models

### Aircraft values and Aircraft age

There is consensus amongst the experts we interviewed that the economic life of aircraft is shortening due to the current 'supply and demand' dynamics and that the standard 25 years is no longer valid. This has implications for residual values and returns. A key question for potential investors, with the launch of 'new technology' aircraft later this decade, is whether this trend is likely to continue or even accelerate? Given uncertainty regarding aircraft age and residual values and the potential for a new generation of aircraft (press reports suggest NASA and other key players in the sector are working on the next generation of passenger jets) coming into service in 20–25 years time, it is now even more important to be at the front end of deliveries in order to generate good returns. This, though, comes with potentially higher risk of initial 'teething' problems experienced with most new models.



Narrow body = MD83, 737-300, A320-200, 737-700



Source: Morgan Stanley Research, Aircraft Value Analysis Company

#### Wide Body= 767-200/300, 747-400, 777-200, A330-300 A340-300

### ... and has experienced softer lease rentals

**Industry view:** 'The reality is there are too many narrow bodies in the market hence lease rates are soft'

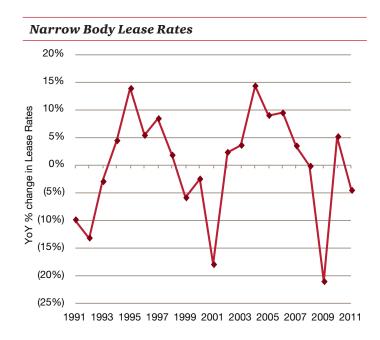
Managing Director, major leasing business

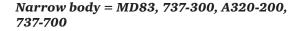
#### Lease rates

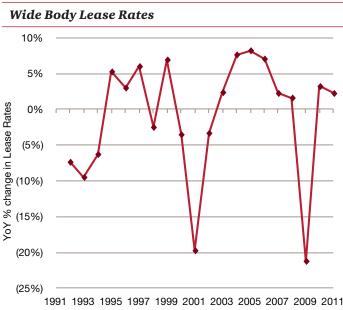
After a bounce back in 2010, lease rates have been under pressure in 2011/12. The problem is more pronounced for narrow body where market consensus is that due to the current over supply, lease rates are below market expectations.

Part of the issue can be traced to large orders from lessees placed between 2007–2010, which are starting to be delivered in 2012 and could potentially be in excess of requirements. This is exacerbated by Boeing and Airbus ramping up production of 737NGs and A320s. The issue of softening lease rates is more pronounced for mid-life aircraft as newer aircraft are preferred by airlines.

This trend is impacting standard aircraft age and residual value assumptions and is resulting in younger aircraft being parted out.







Source: Morgan Stanley Research, Aircraft Value Analysis Company

Wide Body= 767-200/300, 747-400, 777-200, A330-300 A340-300



# **Financing trends**



## Airlines are having to work harder and longer to arrange funding for new aircraft orders

**Industry view:** 'Aircraft financing is extremely difficult... banks are being very selective in their lending'

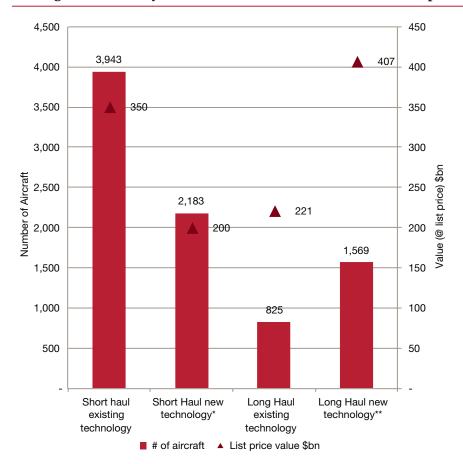
Ulf Gedamke, Air Berlin

The key challenge for airlines, who have record orders in place, will be to find financing at competitive rates in an exceptionally tough economic environment

With increasing pressure on cash flows due to high fuel prices and relatively thin capital structures, many airlines are bracing themselves for the challenge of finding finance for aircraft on order.

An estimate at list price of the value of the July 2012 backlog is in the region of **\$1.2 trillion**. Although significant discounts to lists are standard within the industry, the real cost is still likely to be in the order of\$700bn.

Boeing and Airbus July 2012 order book is worth \$1.2 trillion at list prices



Source: July 2012 order book per Boeing and Airbus websites, PwC analysis

#### \*737 MAX/A320 NEO

\*\* 787/747-800/A380/A350

With the overall supply of financing reduced, airlines need to continually review their fleet management policy and actively manage their future financing. They will need to be mindful that they have to compete in the global market place for funds and their competitors will not be the usual airlines that they compete with on a route basis.

Our expert interviews reveal that airlines are already having to work a lot harder and start much earlier to arrange funding. To find funding of this magnitude over the next few years against the backdrop of liquidity drying up will remain a key challenge. We expect new structures to continue to come to the market as airlines innovate to mitigate a financial 'crunch'.

## Potential mitigations for airlines

- Sale-and-leaseback alternatives for a given period may enable bridging of any current financing shortfalls. It can free up capital and also takes away the commitment of future PDP payments.
- Airlines with substantial local currency income should consider financing in local currencies which reduces refinancing costs for local or regional banks.

## Availability of long term liquidity is reduced, risk is being repriced, and further regulatory changes are being implemented

**Industry view:** 'A number of banks are trying to sell substantial portfolios of aircraft financing – up to \$6bn at a time to improve their capital positions'

Frank Wulf, MD Aviation Finance, DVB Bank

Generally, in tough economic times, liquidity becomes more scarce and hence, financing an aircraft gets tougher. Despite those challenges, historically the industry has found new solutions and aircraft have always been financed.

Post the 2008–09 global financial crisis, when bank financing was more scarce, the Export Credit Agency (ECA) guaranteed financing stepped up and was seen as a saviour. With ECA guarantees, banks were seen to be more willing to provide debt and, with reduced risk, were able to price more competitively. The ongoing global economic uncertainty, the European Sovereign debt crisis, and the challenges faced by European banks in accessing US dollar funding and improving their capital positions has raised funding pressure. European banks have played a key role in the past but many are now looking to reduce their exposure to this sector.

Public debt and capital markets have become more challenging as investors look to safer havens such as government bonds. But, we are seeing new more sophisticated capital market products backed by ECA/US-ExIm which are attracting more interest, for example the recent Emirates, ACG and Ryan Air issued bonds backed by ExIm. Leasing companies over the years have steadily built up a significant market presence and now have >30% market share. They have not only financed new deliveries but have increased their market share through purchase and lease-back transactions. Leasing companies are currently preferred by investors, lenders and airlines due to their better risk and reward offering.

Cash and equity financing by airlines has not been as popular in the recent past. The primary reason for this is the necessity for airlines to have reasonable cash buffers to cover normal operations and be able to deal with unusual situations (e.g. volcanic eruptions, earthquakes, SARS) which put significant strain on the business.

Japanese Operating Leases are a steady and attractive source of financing, for example Lufthansa and Air France A380s were financed through JOLs in Q2 2012.

#### Basel III

The Basel accords are the global regulatory framework which aims for more resilient banks and banking systems through harmonised capital adequacy requirements. The new Basel III changes will be enforced gradually from 2013.

In brief, under Basel III the 'adjusted leverage ratio' sets a limit independent of the quality of the assets and the new 'net stable funding ratio' requires funding to match lending maturities. Both will impact future loan conditions for long term borrowing including for aviation finance.

For airlines, the effect of Basel III could translate into higher loan pricing as banks pass on higher liquidity costs. It is hard to quantify its specific impact precisely as lending rates are an interplay of bank risk costs, liquidity costs, access to currencies.

As a result, airlines may have to cope with increased loan pricing and a more challenging funding environment.

## ECAs, historically a backstop, have now become a default source of finance. This is set to change...

Historically, the Export Credit Agencies of the key airframe and engine manufacturing countries, such as the US, UK, Germany, France, Canada and Brazil, have recognised the importance of aircraft manufacturing to the national economies so supported the export of their aircraft by offering guarantees to cover the losses of commercial banks that were lending to relatively risky airlines.

While traditionally, this type of guarantee-based funding has been used as a backup source, over the last four years ECA backed funding has become the funding source of choice and has been used by airlines with stronger credits (for example Emirates, Etihad, Ryanair, and various Chinese carriers). The key point about this source of funding is that commercial banks still provide the required funding (although this is changing), ECAs provide guarantees to make good any specific losses incurred by the funding bank in case of default. As a consequence, the credit risk for banks is not the airline anymore but the sovereign risk of the ECA given the collateral.

The cost of financing through ECAbacked guarantees has historically been lower than commercially available bank debt. But, with the implementation of the New Aircraft Sector Understanding, the cost will increase from 2013 as premiums are more aligned with market ratios.

#### The key agencies involved with aircraft financing are:

#### Export-Import Bank of the United States (ExIm)

The bank assists in financing the export of US goods and services to international markets, filling the financing gaps that the private sector is unwilling to accept. ExIm is different from the other ECAs as it can provide funding if required.

#### Export Credits Guarantee Department (UK)

UK Export Finance is a government department that provides government assistance to UK exporters and investors, principally in the form of insurance policies and guarantees on bank loans.

#### Federal Export Credit Guarantees (Germany)

Euler Hermes helps to promote German exports by offering guarantees that protect German companies in the event of non-payment by foreign debtors. The German export credit scheme is managed on behalf of the Federal Government by Euler Hermes and PwC Germany.

#### Compagnie Française d'Assurance pour le Commerce Extérieur (Coface)

The Coface Group is a trade risk and credit insurance expert, offering credit insurance to companies, regardless of their size, sector or country.

#### **Export Development Canada**

Canada's Export Credit Agency is self-financed and works to support and develop Canada's export trade by helping Canadian companies respond to international business opportunities.

#### Brazil Development Bank

The BNDES is a Brazilian federal company aiming to provide long-term financing to Brazilian companies of all sizes. Its key goals are the strengthening of capital structures of private companies as well as the development of capital markets.

Source: Agency websites

### ...as the New Aircraft Sector Understanding comes into force from 2013, which is likely to increase the cost of ECA backed borrowing

**Industry view:** 'With a market-reflective pricing this (new ASU) will shift the focus of ECA financing to its genuine raison d'être – availability, not affordability, of funding'

> Stephan Cors, Head of Aviation Risk, PwC Germany

Export Credit Agencies (ECAs) have played a crucial role over the last four years by stepping in when liquidity dried up in 2008 and are very likely to continue playing an important role. However, due to the new ASU the cost of such financing is set to increase, adding to the challenge for the airlines

#### New Aircraft Sector

**Understanding (ASU)** which governs the rules of ECA financing, will come into force in 2013, and is likely to result in a considerable increase in premiums. The New ASU is actually already in effect but will have more impact from Jan 2013 when the current two year transition period ends.

#### ECA financing cost increases

#### (12 year repayment term, asset-backed)

	OLD ASU			
Entity rating	Per annums spread (bps)	Up front %	Per annums spread (bps)	Up front %
AAA – BBB-	n/a	4.0%	142	8.01%
BB+-B-	n/a	4.75-6.25%	189-271	10.73-15.58%
CCC – C	n/a	7.5%	303-310	17.50-17.92%

New ASU for aircraft sales contracts agreed post 2010 and/or deliveries post 2012

Source: OECD and PwC analysis

#### **Challenges to ECA financing**

The role of ECAs has been under the spotlight in recent years because the 'home airlines' are barred from utilising this type of financing (there are some limited exceptions e.g. at present AF KLM, Lufthansa and BA each have the option to finance two A380s supported by ECAs).

The issue is that airlines from around the world, some of which are highly profitable, have benefited from using ECAs as a reliable and relatively cheaper source of borrowing, which some argue gives them an unfair advantage.

The situation has been particularly severe in the US where the Air Transport Association of America representing a number of key 'home operators', recently sued the Ex-Im bank for providing a financing solution to Air India for its 787 deliveries which they argue will provide an uneven playing field to a direct competitor.

## As traditional sources of funding tighten...

As risk is repriced, the competition to obtain financing for aircraft may intensify and the cost of financing may go up. We believe that the industry as a whole will be able to attract funding but the new sources of finance will need to be tapped into

As aircraft deliveries peak over the next few years, at a time when long term US dollar financing becomes scarcer for the major European banks, there are significant challenges for the industry as a whole to find finance for the new deliveries. All the major players in the industry including manufacturers, financiers, airlines and lessors will need to work harder to attract new investors to the industry. We are already seeing some creative financing solutions being introduced for example, the issued Nord LB Aircraft Mortgage covered bond and Doric Nimrod Alpha issuance of Enhanced Equipment Trust Certificate (EETC) to finance A380s for Emirates. Developing an EETC type product for European airlines would help enlarge the pool of funds and bridge some of the funding gap.

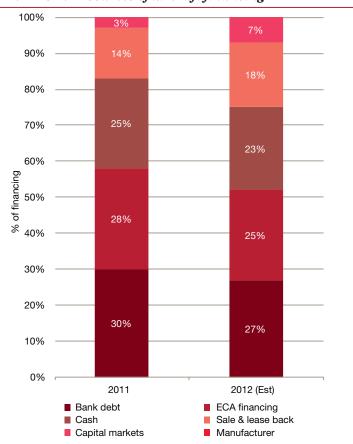
More of this will need to happen and, to attract new investors, may require development of new products which are acceptable to them. We explored earlier in this publication what types of investor may be attracted to the sector. In terms of financing we expect to see the following trends:

**Non-European banks** with access to US dollars will strengthen their market share.

Several European banks have had recent rating downgrades due to their exposure to the ongoing European debt crisis and they have started withdrawing from balance sheet heavy investments such as aircraft and shipping finance.

We expect Non-European banks with better access to US dollars to step in and already we have seen a flurry of activity involving the banks from the Far East. For example, Sumitomo Mitsui Bank's acquisition of RBS Aviation, Mitsubishi Corporation and Development Bank of Japan's investment in TES and the well documented interest of ICBC in the sector.

Banks from emerging markets other than China are showing interest but are not competitive yet due to higher refinancing costs and regulatory or fiscal restrictions to offer long term financing with fixed interest rates.



Source: Boeing and Airbus, PwC analysis

#### 2011 vs 2012 sources of aircraft financing

## ...the industry will need to tap into new and alternative sources of financing

*Industry view:* 'The capital markets outside the US need to be harnessed to play a bigger role in aviation finance'

Ricky Thirion, Vice President and Group Treasurer, Etihad Airways

#### ECA financing will play a pivotal

**role** in global aircraft transactions despite the change in the ASU which will increase the cost of borrowing.

Since ECAs are still ultimately accessing the same funding pool as the airlines themselves, they may be requested to adjust their instruments to new funding sources. Some existing ECA guarantee products are already quite sophisticated particularly in the US e.g. recent ExIm backed bond issues such as the recent Emirates and ACG bond issues.

European counterpart agencies are likely to follow, with the ECA backed AerCap bond at the end of 2010 being the only official ECA support for a debt capital markets deal so far.

#### Increased use of capital markets

particularly for the non-US airlines. These funding sources will become more important but will only really be accessible to those operators with the better credit ratings.

Historically, the US airlines have been able to use this source of financing as the US Bankruptcy Code provided a clear legal framework, for investors and financiers, for repossession in case of default.

The Cape Town Treaty aims to provide similar protection to investors, but, it remains untested to date. Despite the fact that, the need for increased transparency has made capital markets less attractive for airlines, we expect airlines to adapt and prepare for more activity in the capital markets. Aircraft lessors will become even more important as they attract new investors particularly from the Far East.

We also expect the current trend of sale and lease-back by airlines to continue as airlines free up much needed liquidity for operational needs in a tough economic environment.

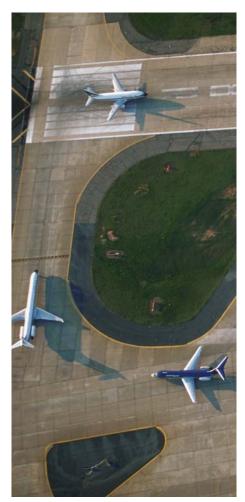
The expected increase in the cost of ECA backed financing and with many banks now offering much lower LTV ratios, we are also likely to see an increase in the demand for operating leases.

While lack of bank credit would also affect lessors, they are typically in a better position to access alternative sources of funding. We have looked at the role of lessors in more detail in a later section.

*Manufacturers' financing* may play a bigger role in the future to fill the gap as has been the case during previous downturns. We expect manufacturer's share of funding to increase going forward as demonstrated by the recent American Airlines Boeing order which includes the provision of \$13 billion of committed financing from the manufacturers through lease transactions.

**Other sources of financing:** A380 operators have been successful in using the attractiveness of the aircraft to access private investors through **KG (Kommanditgesellschaft) funds.** KG funds are a specialist corporate form of partnership used to finance large aircraft. However, recent regulation is likely to make these unattractive as the additional compliance costs will make these less profitable.

Given the attractiveness of the asset other specialist funds may come into play to tap into institutional demand. One such example is the **Doric Nimrod Asset** funds which have raised capital on the London Stock Exchange to be used solely to finance a number of A380s for Emirates.



# Scarce funding will also make financing more expensive

**Industry view:** 'New deals will have to get returns with lower leverage as the cost of funding goes up from LIBOR +1.5%-2.25% to LIBOR +3.2%-5%'

Donal Boylan, CEO Hong Kong Aviation Capital

## Cost of financing and loan to value (LTV)

The cost of long-term borrowing has increased in recent months due to regulatory changes and economic uncertainties. Another trend experienced by the industry is the decrease in LTV ratios. While it was possible to leverage assets up to 85%+ in the past, recent deals have been as low as 65% on certain narrow body assets which affects both funding scarcity and concern over residual value. There is consensus amongst the experts we interviewed that, given the scarcity of bank funds and regulatory changes, the cost of financing is set to increase further and LTV ratios may come under further pressure.

This has obvious implications for the industry as a whole. Airlines will need to be prepared for increased costs for new fleet acquisitions or even situations of costs increasing for existing financings.

Airlines may seek to pass through part or all of the increase which in the current fragile market could impact volumes.



# Aircraft leasing

### Lessors are to play a key role in the future as they are better placed to attract new investment

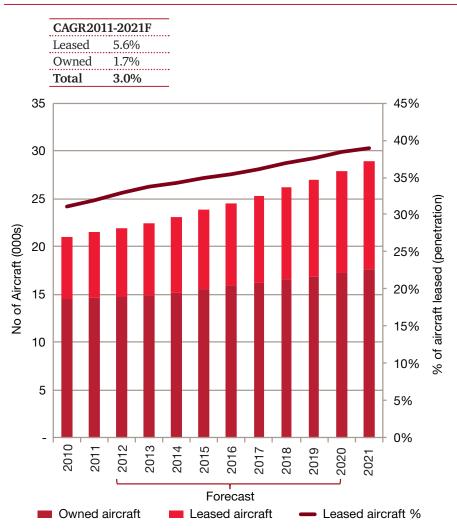
**Industry view:** 'Banks are more interested in financing leasing activities'

Ulf Gedamke, Air Berlin

Leasing companies are set to play a key role in financing aircraft deliveries in the future as they are better placed to attract new investment. As a result, leased aircraft will grow at a higher rate than owned aircraft

As the demand for financing deliveries of new aircraft peaks at a time when long term financing becomes less attractive for the incumbent banks, we expect new investors to step in.

#### Global fleet forecast and leasing penetration



Source: Vision Gain 2011

Leasing is now a preferred choice for most airlines these days, which is in sharp contrast to their preference of owning aircraft outright a couple of decades ago. There are clear operational benefits such as flexibility and access to delivery slots and also significant cash flow advantages.

As a result of the above shift in behaviour, leasing's market share has increased from around 12% of the global fleet in 1990 to around 32% today. The penetration of leasing companies is likely to increase further as airlines look to fill the funding gap left by banks and investors. Some market forecasts suggest a share of around 40% by 2020.

Already, there has been a flurry of activity in this space with a number of new leasing companies backed by a variety of investors entering the sector and building up portfolios relatively quickly.

But, as with other businesses in the market, we expect leasing companies to have to work harder to find financing for their aircraft. They will also be impacted by any increase in the cost of financing, although they may benefit from investment grade ratings which allow them to better access capital markets.

We also expect a continuation of the trend of sale and lease back arrangements by airlines to leasing companies, as the airlines look to free up liquidity.

Many leasing companies have strong balance sheets that will provide them with the capacity to execute these transactions.

## With increased demand for leased aircraft, the case for investment is strengthened



## What makes leasing attractive for airlines?

- Flexible fleet portfolio and risk mitigation.
- Access to attractive delivery slots, given many production slots are sold out for a number of years, airlines seeking fleet growth could access lessor slots.
- Availability of capital as lessors with their investment grade rating and better risk profile can access more and relatively cheaper capital.
- Can avoid pre-delivery payments (PDPs) which decreases liquidity for several years without increasing revenue.
- **Residual value risk** rests with the lessor.
- Utilisation of **freed-up liquidity** to finance growth or for day-to-day operations.

### Challenges facing the leasing business?

Record orders and financing	As with other players in the sector, leasing businesses also face challenges to finance aircraft with record backlogs and liquidity drying up, albeit the magnitude of challenge is less compared to airlines.
Leasing rates have softened	Over the last year (more pronounced in short haul aircraft) and there are signs in the market that they may soften further in the near future especially for single aisle aircraft.
Aircraft values	Particularly for the mid-age aircraft are under pressure and are likely to come under further pressure as new orders are delivered. This has an implication for the assumed aircraft age, a key assumption which determines depreciation, lease factors and returns.
As more new technology	Aircraft such B787s and A380s come into market and A320 NEOs and B737MAX are launched later in the decade, lessors with older aircraft technology on their books may find less demand for their aircraft.
Changes in regulatory environment	In particular import restrictions being placed by a number of developing countries which historically served as a natural second-hand market for mid-aged aircraft could also make certain aircraft less attractive.

## Behind the 'Big Two' aircraft lessors, the market is supplemented by fast growing new entrants

The aircraft leasing market is dominated by two very large US entities, GECAS and ILFC. Beyond this, the Top 10 is increasingly being challenged by fast growing new entrants.

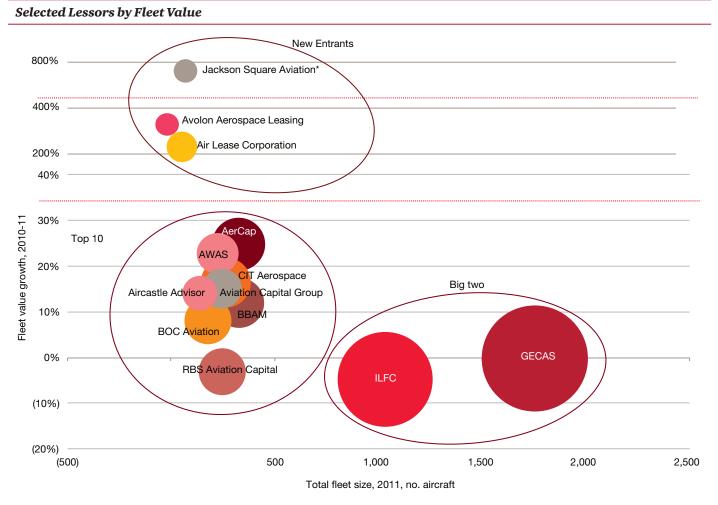
The 'Big two', GECAS and ILFC, dominate the market in terms of both fleet size and value. Both have fleets larger than Delta Air Lines, the world's largest airline by number of aircraft.

They also dominate the order backlog, with 190 and 228 aircrafts on order respectively, as of July 2012. Along with other lessors based in the US, they are better placed than other territories with their ability to raise USD financing, and have made active use of capital markets e.g. ILFC's recent issuance of \$750m unsecured debt and closure of a senior secured loan of \$900m early last year.

Both lessors have raised capital by selling aircraft portfolios in the past for example ILFC's sale of 53 aircraft to Macquarie and AWAS's purchase of a GECAS portfolio.

Outside of the big 2, a number of newer players (e.g. HKAC, Avolon, Jackson Square etc.) have entered the market with funding from a variety of sources from sovereign wealth to capital markets and private equity. The new entrants have quickly built up portfolios through acquisition of existing companies, purchase and lease back transactions and acquisition of portfolios from competitors.

We expect to see more deal activity in the medium term.



Source: Flight Global

\* Acquired by Mitsubishi Corporation in October 2012



# There has been a flurry of deal activity involving lessors...

	Lessor GECAS	Fleet \$bn/ units		Key backers	Recent activity*	
1		34.6	1,755	General Electric	Sold aircraft portfolios to CDB, Avolon and AWAS in the last two years	
2	ILFC	27.8	1,031	AIG	Recent reports suggest, (pending government approvals) AIG is to sell 80% stake to a Chinese consortium (valuing ILFC at c.\$5bn)	
3	AerCap	8.4	326	NYSE listed, backed by Cerberus Capital	Press reports suggest AerCap is considering strategic options. Sold a \$1bn aircraft portfolio to Guggenheim in 2012	
4	BBAM	7.8	327	BBAM Mgmt and FLY Leasing	Onex acquired a 50% stake in BBAM in 2012	
5	CIT Aerospace	7.5	263	CIT Group, United States	Acquired aircraft loan portfolios from airlines and an unnamed European bank in 2012	
6	BOC Aviation	6.7	179	Bank of China	Raising unsecured debt to build up portfolio through sale and leaseback with airlines and selected orders	
7	RBS Aviation Capital	6.7	246	Sumitomo Corporation, Japan	Recently acquired by Sumitomo Corporation and merged with their existing leasing business	
8	AWAS	5.2	224	Terra Firma, CPPIB and others	Terra Firma reported to be considering IPO. Purchased 12 aircraft from GECAS	
9	Aviation Capital	4.8	245	Pacific Life Insurance, USA	No comments	
10	Aircastle Advisor	3.7	140	NYSE listed, Fortress backed	No comments	
11	Macquarie Air Finance	3.6	156	Macquarie Group, Australia	Reported to have been interested in RBS aviation Bought aircraft portfolio from AIG in 2010 and sold aircraft engine portfolio to Engine Lease Corporation	
12	Air Lease Corporation	3.5	97	NYSE listed, backed by PE houses and banks	Built up portfolio through sale and lease back and acquisition of new and used aircraft. Have large orders for new aircraft in place	
13	Doric Asset Finance	3.0	27		Focussing on A380s via LSE listed investment companies	
14	China Development Bank Leasing	2.9	70	China Dev. Bank, HNA Group, Xi'an Aircraft Industry Group	Acquired 32 aircraft portfolio from GECAS in December 2011.	

Source: Flightglobal and press articles

\* as reported in the press

## ...we expect this to continue and should provide opportunities to existing and new investors

15	Lessor Sumisho Aircraft Asset Management	Fleet \$bn/ units		Key backers	Recent activity*	
		2.9	89	Sumitomo Corporation, Japan	Acquired RBS aviation in 2012. Acquires aircraft from investors who may be looking to realise investment	
16	MC Aviation	2.8	87	Mitsubishi Corporation, Japan	Parent company acquired Jackson Square in October 2012	
17	ICBC Leasing	2.6	63	Industrial and Commercial Bank of China	Built up portfolio through sale and lease back and acquisition of new and used aircraft. Have large orders for new aircraft in place	
18	Pembroke Group	2.5	75	Standard Chartered	Acquiring aircraft from airlines in purchase and leaseback transactions	
19	Boeing Capital	2.4	242	Boeing Company	Boeing's reported strategy is to reduce customer financing exposure	
20	FLY Leasing	2.2	109	-	No comments	
21	Jackson Square	2.2	46	Oaktree Capital Management	Sold to Mitsubishi Corporation in October 2012	
22	HK Aviation Capital	2.2	68	HNA Grp, Bravia Capital HK	HKAC acquired Allco's aviation assets in 2011	
23	Avolon Aerospace Leasing	2.1	52	Cinven, CVC, Oak Hill and GIC (Singapore SWF)	Rumours of business going public, meanwhile raised capital and debt to source aircraft deliveries. Bought GECAS portfolio (c\$350m)	
24	Amentum Capital	2.1	44	HSH Nordbank Group	Press reports suggest HSH were looking to sell Amentum Capital back in 2010/11	
25	DAE Capital	2.1	47	Dubai Aerospace Enterprise	Some of the large orders placed in 2007 were cancelled in 2010/2011	
26	ALAFCO	1.9	60	Kuwait Finance House and Kuwait Airways	Provider of innovative Sharia-based commercial aircraft leasing products. Have placed large aircraft orders with OEMs over the last two/three years	
27	Guggenheim Aviation Partners	1.8	51	Part of Guggenheim Capital, USA	Acquired an AerCap subsidiary with aircraft portfolio worth \$1bn in November 2012.	
28	ORIX Aviation	1.4	88	Tokyo based Orix	Looking to increase assets and customer base. Reports indicate talks on going with a number of B787 customers	
29	SkyWorks	1.2	98	Portfolio mgmt. Company	No comments	
30	Lease Corp. International	1.1	13	Libra Group	First international lessor to commit to the Bombardier C series	



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For more information about any of the issues raised in this report, please contact any one of those listed below or your usual PwC contact: The main areas of our services include:

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- debt advisory;
- deal structuring, drawing on accounting, regulation and tax requirements;
- business and asset valuations and fairness opinions;
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- lead advisory corporate finance.



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