



Aviation Institutional Investor Survey

2020

In partnership with





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Foreword

Welcome to Ishka's Aviation Institutional Investor Survey 2020.

As I write this foreword the aviation finance and aircraft leasing industry has received unprecedented levels of investment from an increasingly wide range of investors. From family offices, to hedge funds and pensions funds, all of these investors have unique requirements and specific return targets, but most share several common concerns.

Investors face a difficult series of choices when looking at the space – from which assets to invest in, to the inevitable question of who best to partner with. Which fund manager or asset manager, for instance, can offer the best strategic vision, or remarketing muscle to best safeguard returns? Who has enough technical skill to navigate the potential costs associated with maintenance during, or at the end of, an aircraft lease?

Separately, the influx of investors is also changing the nature of the aircraft leasing industry itself. Ishka notes that there are fewer pure balance sheet lessors as most new leasing entities are often asset managers or fund managers. These platforms are often incentivised to trade aircraft assets more frequently. At the same time an extended era of low interest rates coupled with ample liquidity from new players entering the sector is changing how airlines order and fund aircraft. All of these factors are introducing long-term and profound changes to the sector which is likely to impact on the economic life and residual value of assets. These are just some of the things that investors need to be mindful of as they enter the space.

Aviation is a fast-moving sector which frequently dominates the headlines. Investors this year are grappling with the potential consequences of what the coronavirus epidemic means for global traffic and airline performance. Separately the leasing sector is still reeling from the unprecedented grounding of the 737 MAX and how this will impact Boeing's flagship single-aisle aircraft programme. Both of these issues are set to dominate the aircraft leasing discourse for the remainder of the year and will be covered by Ishka through the Ishka Insights -our daily report service.

Lastly, I want to add a thank you on behalf of Ishka to the 75 institutional investors who took time out of their busy schedule to speak to our independent researcher Dr Tom Parkman. Without your support this report would not have been possible.



Editor, Ishka



Executive summary

Perceived market illiquidity is a problem. A lack of transparency in the aviation industry, particularly on pricing in public debt securities, is a source of frustration for investors. Other issues with liquidity in the market include difficulties in where and how to deploy capital. For instance, new narrowbody and widebody aircraft are some of the most fungible and easily tradable assets in the industry, but the market is overcrowded with considerable competition. Conversely, more niche aviation assets, such as engines or turboprops, had less competition but were harder to remarket. Investors also identified that many aircraft assets, particularly niche or older assets, required considerable technical expertise on how to remarket which was hard to access.



Investors have stated a preference for independent asset managers. They also highlighted remarketing expertise as the most important trait when assessing asset managers with the size of the asset manager's team of limited importance. To invest wisely in any asset class, investors need access to detailed and up to date intelligence on all parts of the industry that they are active in. This is particularly important for aviation investors, as it is a complex asset group fraught with many challenges that need to be successfully negotiated. Consequently, asset managers with strong remarketing expertise were perceived to be essential in managing the various key relationships needed within aircraft leasing, to help investors effectively deploy capital, and to provide insights on how best to manage aircraft transitions (particularly for end of life assets).



ESG can no longer be ignored by the aviation industry. With the mounting scientific evidence continuing to highlight the profoundly detrimental effect that global warming is having on the global ecosystem, it is imperative that the aviation industry takes a stand. Despite technological improvements and better fuel efficiency, aviation is perceived by investors as one of the biggest contributors to climate change. The younger generation offer hope for the future, but this report found that unless a standardised approach to measuring ESG markers is implemented across the industry, ESG will continue to be a concept rather than a reality.



The aviation industry has a bright future. On average, investors plan to deploy a total of \$382,000,000 over the next 12 to 18 months, primarily into narrowbody aircraft (new and midlife). According to investors, Asia Pacific offers a number of attractive opportunities, driven in large by a predicted increase in traffic to and from the region, but investment should be done with due care and attention. Many Asian Pacific airlines have close ties with the single Chinese economy, which, while performing strongly, is fallible and susceptible to economic downturn and geopolitical tensions. Moreover, the global impact that the Coronavirus is having on the aviation industry is unprecedented and until it is brought under full control, the true impact to the industry is unknown.



However, there are risks and challenges that must be negotiated. Airline bankruptcies, particularly in Europe and Asia Pacific continue to present an ongoing problem for investors. Bankruptcies are, in part, driven by changes in how consumers use airlines, coupled with several of the government-backed airlines being built on fallible models. A slowing of global GDP could lead to depressed passenger traffic, which, coupled with additional capacity as new aircraft enter the market, could cause problems for airlines (and therefore investors) in the future. Finally, public shaming and negative media coverage of air-related disasters are detrimental to an industry that remains embedded within the global economy.

Coronavirus has had a profoundly damaging effect on the aviation industry. While it is not a direct finding from this research, it would be remiss to ignore the impact that coronavirus, scientifically known as Covid-19, has had on the aviation industry. How deep the economic and social consequences of the coronavirus on the aviation industry will go is difficult to tell, but what is certain, is that in a world so intimately connected by air travel, it is conceivable that the final cost to the aviation industry could be one of the largest ever seen.



Introduction

It is not hyperbole to suggest that the aviation industry has been under an intense media spotlight in recent years. Unforeseen missile attacks on Malaysia Airlines flight MH17 in 2014 and the Iranian Revolutionary Guard attack on a Ukrainian passenger jet in 2019; the grounding of the new Boeing 737 MAX passenger aircraft following two fatal crashes in 2018 and 2019; multiple airline bankruptcies, including Thomas Cook, Flybe, Monarch, Air Berlin, Jet Airways, Iceland's WOW Air, Germania Air and Slovenia's Adria Airways; the Coronavirus and; continually resurfacing pejorative news stories on the industry's contribution to climate change, have painted an unattractive picture of an industry to some investors.

Despite the backdrop of safety concerns, ongoing geopolitical tensions and potential economic downturn, the forecast for aviation investing is encouraging (White and Case, 2020). Air travel volume has more than doubled over the past 15 years in response to the growing global economy, with demand forecast to grow over the coming decades due to the swelling middle classes, increasing consumer spending on services, and evolving airline business models that bring greater value to passengers (Boeing, 2019).

The aviation industry's value to the global economy and workforce is also unequivocal. In 2019, 4.3 billion passengers were carried by airlines (a 6.4% increase from 2017), 58 million tonnes of freight was transported by air (2.4% increase from 2017) and 38 million flights took place (a 3.5% increase from 2017) across 48,500 routes worldwide (2,900 new routes added compared to 2017) (Industry High Level Group, 2019). This equates to approximately \$2.7 trillion of global GDP, and the 65.5 million jobs it creates is comparable to the United Kingdom's economic size and population (Air Transport Action Group, 2018).

From a safety perspective, flying is still the safest way to travel. Between 1959 and 2017, there were 29,298 recorded deaths from 500 global commercial passenger events. However, between 2008 and 2017, there were 2,199 fatalities from 37

events, less than 8% of the overall number. In 2017, for the first time in more than 60 years of commercial aviation, there were no fatalities and even in 2018, 15 fatal airline accidents was the third lowest year ever (Allianz, 2020).

Aviation, therefore, is still an incredibly attractive area for investors. Recent figures support this. Where more traditional forms of fixed income investments have struggled in recent years, primarily because of ultra-low interest rates that are an unwanted legacy of the 2008 financial crash, aviation is an asset that can offer a combination of good risk-adjusted returns and the security of being asset-backed (Bakie, 2019).

Where banks used to account for a large part of aviation financing, Basel IV restrictions on capital requirements (European Banking Authority, 2017), combined with increasingly stringent financial regulations and requirements enforced on EU banks by the Solvency II legislative programme (Ralph, 2016), have made it more difficult for them to fund aviation projects. Export credit too, has decreased nearly fourfold due to ongoing problems with US EXIM and some European export credit agencies (Bakie, 2019). A consequence of this is that capital market financing now accounts for 30% of all aviation financing. To sustain this level of growth in the industry, around \$140 billion of new investment is needed every year (Bakie, 2019); a very attractive environment for investors.

Aim of the research

To date, there is no in-depth primary research on the state of the aviation industry. Moreover, there is a paucity of knowledge on what investors think about key topics that impact the aviation market year-on-year.

The aim of the research is to present airline investor data on the current state of the aviation market in order to identify the latest trends that could impact investors over the coming months and years.

Methodology

This report is based on data collected using a mixed methods design that involved a quantitative and a qualitative component. The quantitative data was collected using an online survey platform (SurveyMonkey) while telephone interviews were used to collect the qualitative data.

The survey

The survey questions were designed exclusively for investors in the aviation industry. The survey questions covered the types of aviation assets that investors are interested in and their associated returns, ESG-related concerns and challenges, and a view on what lies ahead for the industry. No duplicate data is present in this report. Consequently, the data set is evenly distributed across all 75 respondents.

The telephone interviews

To explain the quantitative trends, in-depth, semi-structured phone interviews were conducted with 10 respondents to understand **why** and **how** the patterns occurred.

The topic guide for the interview was based on each individual's survey responses to ensure that the conversation remained focussed. Interviews were conducted between October and December 2019, lasted between 20 minutes and 36 minutes, and were audio recorded for accuracy and further analysis. Any qualitative data used throughout this report has been anonymised with all identifying information removed to protect the anonymity of the interviewee.

Ishka's view

Throughout the survey, Ishka provides its interpretation on some of the key findings. These comments are designed to be thought provoking and offer a more holistic view on the implication of the data for the industry. As one of the leading voices in the aviation space, this will give investors greater insight and understanding of what remains a complex asset class.



Findings

1. Background and demographics
2. Understanding aviation investing
3. Risk, return and ratings
4. The hard numbers
5. ESG: A changing of the guard
6. What lies ahead: The future of aviation

Background and demographics

1. The respondents
2. Understanding the aviation team
3. State of the market

The respondents

A total of 75 investors actively involved in the aviation industry completed the survey, with the majority of respondents operating in companies that are headquartered in the US (37%) or the UK (20%) (figure 1). Nearly half of the sample worked for an investment management company (44%) (figure 2), with a fairly even split of these

investment management companies across Asia-Pacific (APAC) (40%), Europe (50%) and the US (42%) (figure 3). The remaining investors operated across a range of company types from insurance companies (14%) through to pension funds (3%) (figure 2), all of which operated in most regions (figure 3).

Figure 1: Location of company headquarters

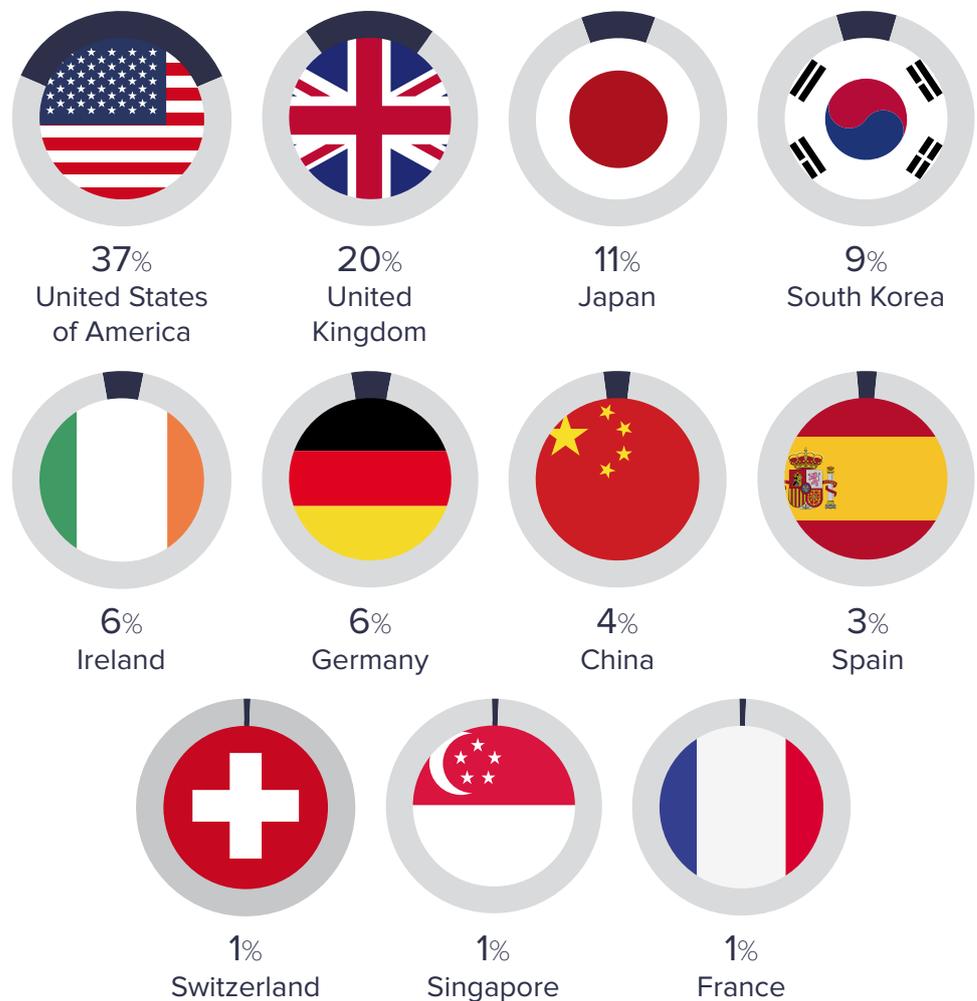


Figure 2: Type of investment company



Figure 3: Investment company type, by region

Company type			
	APAC	EU	US
Investment Manager	40%	50%	42%
Insurance company	11%	19%	12%
Family office	-	15%	15%
Non banking financial institution	11%	8%	4%
Advisory/fund arranger	6%	8%	4%
Bank	6%	-	8%
Pension fund	6%	-	4%
Other	22%	-	12%

Understanding the aviation team

Who?

The Ishka view

There is a continued debate about asset managers as to whether the size of the team has a direct correlation to how successfully they can manage aircraft assets. In Ishka's experience the size of the team matters less than the years of experience and the demonstrable technical skill a team may possess which is invaluable if an aircraft ever needs to be repossessed.

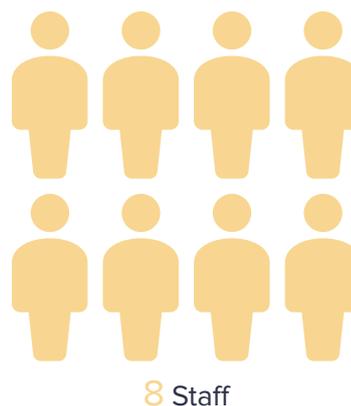
Across the sample, the average size of the aviation investing team was eight employees¹ (full and part time) (figure 4). Compared to other more commonly invested assets, such as real estate or investing in financial products such as bonds and equities, where investment teams tend to be larger, aviation typically has smaller investment teams. One interviewee explained that this is because aviation is a niche asset class that is harder to understand:

"In terms of pure deal investment; it's only three people. I think this is because aviation is a much more niche asset class and one that is typically much more difficult to understand. It puts people off when you see healthy returns in other asset classes like real estate." (Investor #5; Europe)

All of the other interviewees agreed that the complex nature of investing in aviation and understanding where capital can be lost (for example, in end of life) means it is often perceived as being too risky for little reward. However, as one interviewee pointed out, *"if you take the time to understand it [aviation], you can make a lot of money."* (Investor #2; US).

The interview data suggests that this is because the size of the team is almost irrelevant, as long as the necessary expertise exists within the team, *"while we are looking to grow our team, there is no pressing need as we have the experience we need. We need to add quality, not quantity."* (Investor # 7; APAC)

Figure 4: Average size of the aviation team (full time and part time employees)



How?

It is unsurprising that the US dollar heavily dominates the currency used by investors in this report (96%) (figure 5). The major aircraft manufacturers continue to price and sell their aircraft

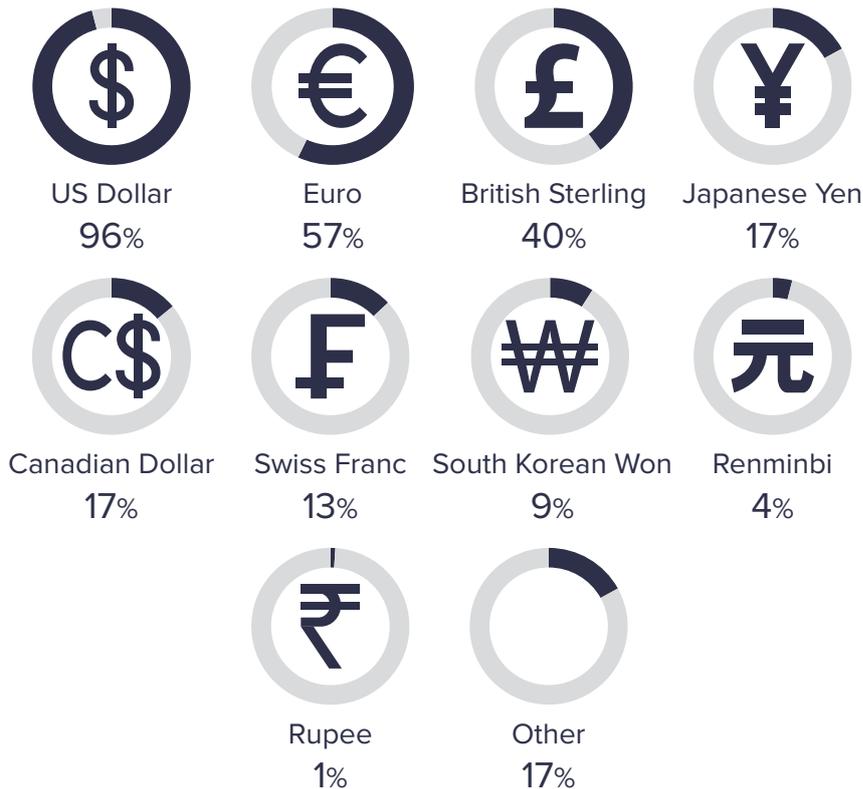
in US dollar. Not only is it the strongest currency worldwide, (as of 2019, the US dollar made up nearly two-thirds of all known central bank foreign exchange reserves), but the relative strength of

¹ Extreme outliers removed from data.

the US economy over the past few years supports its value (International Monetary Fund, 2019). One investor

neatly summed it up, *“I think everyone in every asset group uses the US dollar at some point.”* (Investor #6; US)

Figure 5: Currencies used to invest



What?

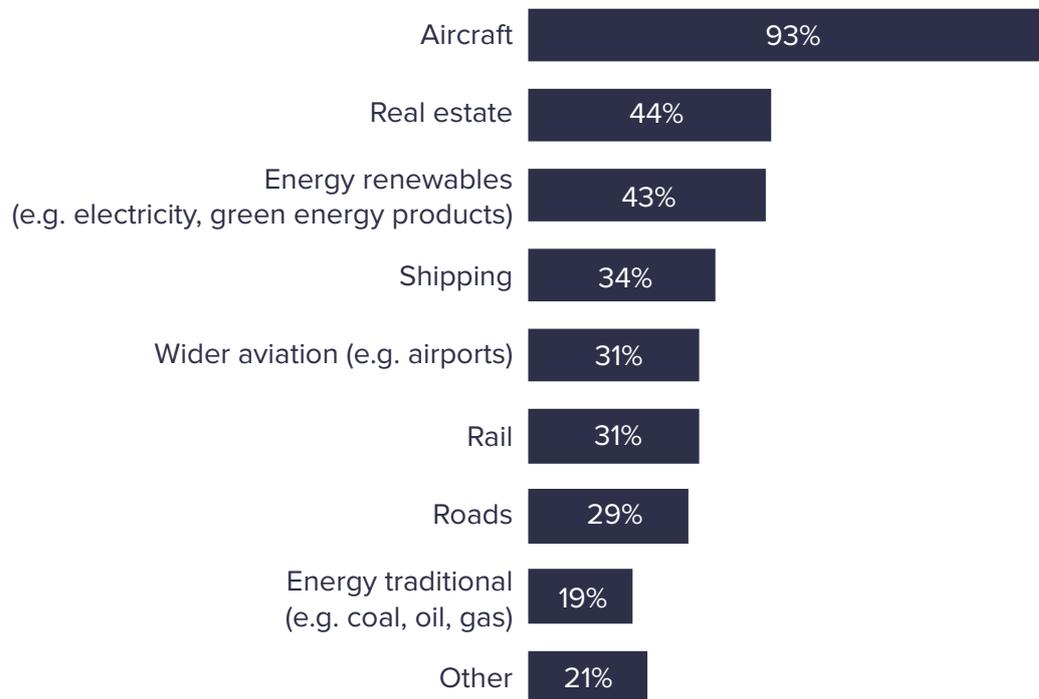
The main aviation asset for survey respondents to invest in was aircraft (93%), with the remaining 7% investing in aviation real estate (figure 6). Other assets that investors were involved in ranged from real estate (44%) and renewable energies (43%) through to rail (31%) and roads (29%). Interestingly, nearly a fifth of the sample actively invest in energy sources from coal, oil and gas (19%).

One interviewee pointed out that having a diverse investment portfolio helps with the cyclical nature of asset

management, and that because aviation is typically a fungible asset, it can be transferred between markets depending on performance:

“Aviation is like real estate and we do [invest in] both. If you’re in one market and it goes down, you’re stuck. It very much goes in cycles... At the moment, we’re very active in aviation because it’s a fungible asset. If Brazil is down, Russia is up. If Russia is down, China’s up. There’s always some place in the world that is not depressed.” (Investor #4; US)

Figure 6: Assets the respondents currently invest in



State of the market

The Ishka view

A common refrain at Ishka conferences has been investors requesting more transparency in the space. Many lessors trade off a knowledge arbitrage that exists because of the limited data on actual lease rates, maintenance contracts and aircraft purchase prices. Ishka believes the sector is slowly becoming more transparent, but full transparency will take years to achieve because many of the largest leasing players are not incentivised to share their numbers beyond a relatively small group of investors who have signed NDAs.

Investors rated the liquidity of the aviation industry as five out of 10 (figure 7). The qualitative data, however, suggest that the aviation market is highly illiquid, stemming primarily from the lack of industry transparency and available data on aviation debt instruments:

“It is illiquid because deals are proprietary. You don’t see where the assets trade. We get some data points but the price at which an aircraft trades at, is muddled by security deposits, proceeds and the credit itself. You can’t get data points on a 5-year-old A320 without the context, maintenance and condition. It makes it tricky to determine what the market value of a particular aircraft type is... There’s a lot of information that you as an investor will not see because a lot of it is being kept private by the lessors. That puts a lot of people off. Why would someone

invest in an asset class with no visibility on lease rates, maintenance fees, cash flows and so on. It doesn’t make sense.” (Investor #2; Europe)

The level of transparency depends on the type of aviation financing structure being used with private loans being less opaque than ABS for instance. In the case of the latter, additional factors such as the presence (or not) of a liquidity facility, credit quality of the airlines leasing the underlying pool of aircraft, and the leasing companies’ ability to service the portfolio need to be considered when making a valuation assessment (Ernst Young, 2017). While there are market observable prices on public debt securities to use as a guide, there remains a wide dispersion of debt pricing relative to risk.

To compound market transparency further, a lack of investor understanding

of how the aviation market works and where the best returns on investment can be made, further complicates an already complicated industry:

“If you go to the big asset managers, for example, Legal and General, Aviva, M&G, and Royal London, and ask, “who is your aviation finance expert?” They will all look blankly at you. If you go to for these same companies and ask, “who’s your real estate expert?” They have got thousands of them... Nobody really treats aviation as an asset class in its own right. It’s an alternative asset

class. It’s a really good diversifier but the reason that nobody understands aviation is because it’s such a technical subject and returns can be made easier in other asset classes.” (Investor #1; US)

This was reported as a real source of investor frustration, with some of the interviewees suggesting that a lack of understanding about how the industry operates makes them think twice about entering the industry as an investor.

Figure 7: Respondents perception of the level of liquidity currently in the aviation space





Understanding aviation investing

1. The importance of re-marketing expertise
2. Who likes what, how old, and for how long?

The importance of re-marketing expertise

Two-thirds of the investors stated that re-marketing expertise is the most important attribute for an aviation asset manager to possess, almost 30% more than the second most favourable attribute, management costs and fees (figure 8). The interview data strongly supports this finding, as re-marketing expertise was repeatedly discussed as being the platform upon which other knowledge is based.

For instance, understanding the intricacies of different aviation financing structures; knowing when and where to deploy capital and how to effectively invest debt; understanding aircraft transitions, particularly end of life, and; being able to identify ‘who needs what’ were all traits associated with re-marketing expertise. One interviewee neatly summed it up:

“I think if you don’t know the market, who’s doing what, where the key relationships are, you will likely fail. This is the core of re-marketing expertise... You need to know the market, how it works, have the experience to identify key relationships and know when and where to invest depending on the assets you are investing in. It really just boils down to that.” (Investor #4; US)

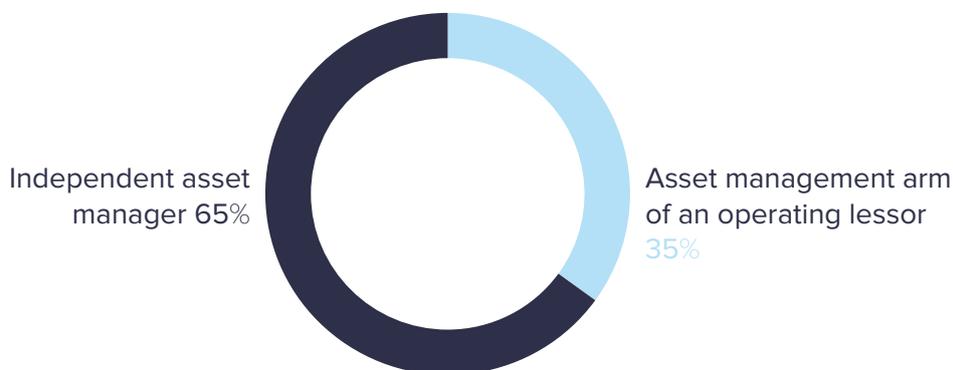
It was pointed out by one investor that in the current market, much of the re-marketing expertise exists primarily with the global commercial aviation financing and leasing companies such as GE Capital Aviation Services (GECAS). Interestingly however, 65% of the investors surveyed stated that they would prefer an independent asset manager as opposed to an asset manager that operates within an asset management arm of a larger lessor (figure 9). The reason for this, one interviewee pointed out, is because independent asset managers have greater flexibility to operate as they see fit:

“I have found some off the run, small, funky companies to invest in that nobody else is following. I am basically trying to find the things that nobody else is doing as you can get much better value in those areas.” (Investor #2; US)

Figure 8: Asset manager attributes



Figure 9: Independent asset manager versus an asset management arm of an operating lessor



Who likes what, how old, and for how long?

Figure 10 presents a detailed breakdown of the type of assets that investors are involved in, the age of the asset, the quality of the lessee and the duration of the remaining lease. Given the fungibility of narrowbody aircraft, it is unsurprising that they are the second most common asset type for investors in this survey. However, turboprops (60%) and engines (50%), both niche asset types for investors, were the first and third most common assets to invest in, respectively, a finding which surprised several of the interviewees:

“Turboprops and engines remain niche products for aviation investors with most of the dollars being directed towards narrowbodies (B737, A320) as the most fungible asset globally. There are companies like TrueNoord Aviation who are very savvy turboprop investors, but the majority of leasing companies are focused on jet narrowbodies in my opinion.” (Investor #7; Europe)

It is important to note that this report **is not stating that turboprops and engines are the most common aviation assets for investors across the industry**, but that this finding is

the result of only surveying a cross section of the overall aviation investor population. However, one investor pointed out that investing in niche aviation assets is sometimes beneficial because there is greater opportunity for substantial return on investment:

“We believe there is a profit that is going up in the initial phase of an engines life. Because it is a more niche product, we don’t feel like we’re competing with other investors... For example, when GE [General Electric] introduced the GE90 for the Boeing 777, it went up in value by 3% to 5% per year. The price of the engine went from \$15 million in 2002 when it was introduced, to \$29 million now. So, every year that went up 3%, which was roughly \$700,000, \$750,000, \$800,000 each year.” (Investor #4; US)

More than 80% of the respondents invested in assets that were either 0-5 years old (early life) (48%) or midlife (33%), primarily because assets within these age brackets (especially narrowbody and widebody aircraft) were described as holding their value well, are assets that are most likely to be reaffirmed, particularly

The Ishka view

It is not surprising that investors are buying young to mid-life aircraft, particularly narrowbodies. This is a reflection of both the current fleets of many of the aircraft lessors, but also these tend to be the leased assets that are most often traded down by lessors and sold to other lessors and investors. The 5 year to 10 year age bracket narrowbodies are particularly prized by ABS portfolios. Many of the larger lessors such as GECAS and AerCap that have significant orderbooks create the opportunities.

under EETC structures, and because the market for early life and midlife assets is more liquid, making them more easily re-marketed. However, these benefits also mean that early life and midlife assets (in particular, narrowbody and widebody aircraft) tend to be overcrowded markets that are susceptible to economic volatility.

Interviewees were keen to point out that brand new assets were typically not of interest due to the high price (for example, one interviewee explained that 20 brand new engines from General Electric will cost around \$500 million) and that end of life assets were fraught with too many challenges that need careful managing:

“There is money to be made in end of life... But that’s where people usually get crushed as there are few people who know how to transition an aircraft at end of life... For those that know how, it is very lucrative, but there are a lot of people who try but don’t know what to do, there is going to be a lot of pain and questions asked when they inevitably lose a lot of money.” (Investor #8; EU)

Looking in more depth at the quality of the lessee ratings, the investors in this report ranked stable BBB+ to BBB- (38%) and adequate BB+ to BB- (32%) as the most preferable. This is understandable given that midlife narrowbody aircraft that are the mainstay of these lessees, were the most popular asset to invest in, an asset type that typically offers a suitable yield and maturity. Interestingly, a combined 30% were prepared to invest in non-investment grade assets if the conditions were right. One interviewee explained why:

“I think if the terms were full cash maintenance payers and it was a

marketable aircraft type with a good lease payment rate on that then we would consider that.” (Investor #3; Europe)

Consequently, despite these assets often having greater operating and financial restrictions applied to them, often with a higher price of debt, they are still of interest to some investors in the aviation market. While it is difficult to know how common this approach to investing might be across the industry, it does suggest that investors are looking for different ways to improve their return on investment.

Figure 11 also shows that the majority of investors (80%) are unable to invest without an investment grade credit rating. Given that investment grade status enables a borrower to have full market access, flexibility and greater ability to negotiate attractive covenants and terms on debt issues, combined with the value of investment grade status to competitors, customers and suppliers (Langhor & Langhor, 2010), it is unsurprising that the credit rating of a deal therefore, often needs to have at least a BB+ to BB- rating.

Finally, investors reported that on average, it was neither important nor unimportant if an issuer they engage with has investment grade status (figure 12). This suggests that investors are prepared to operate with greater financial restrictions and higher pricing, a finding that follows on from Investor #3s view above.

Figure 10: The asset type/deal terms for respondents' risk-return profile

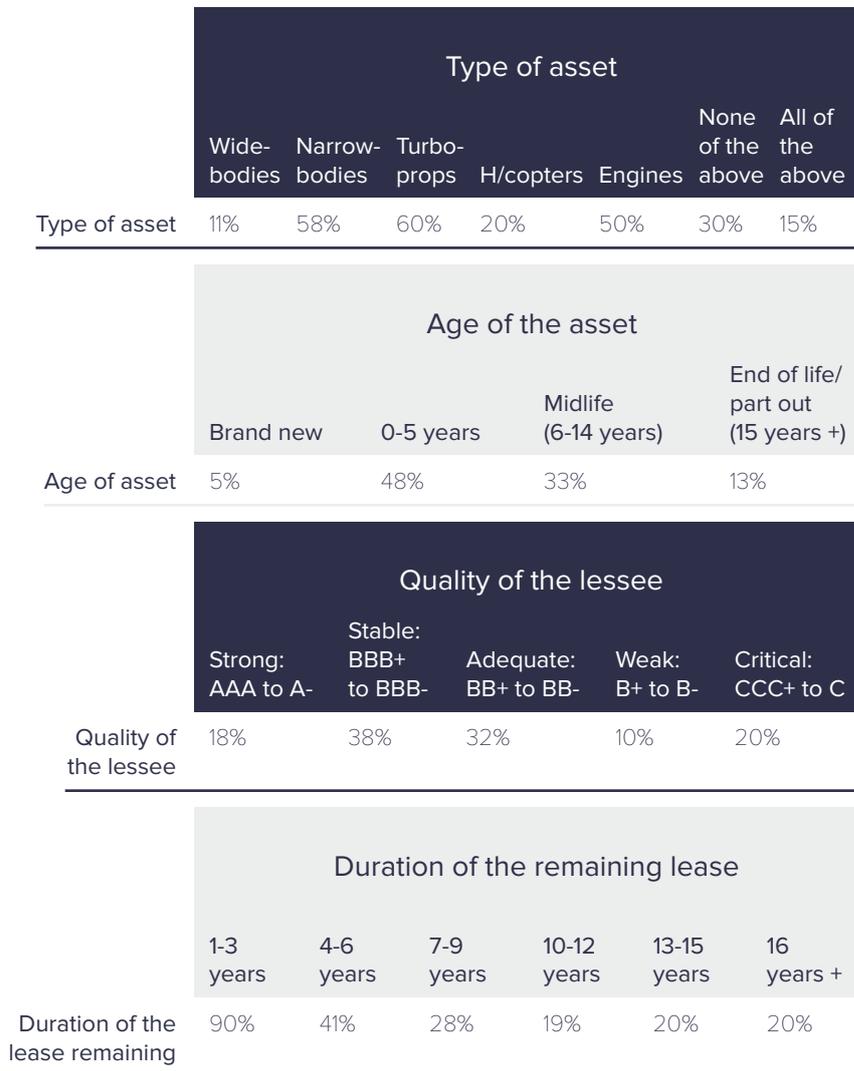


Figure 11: Investors ability to invest without an investment grade credit rating

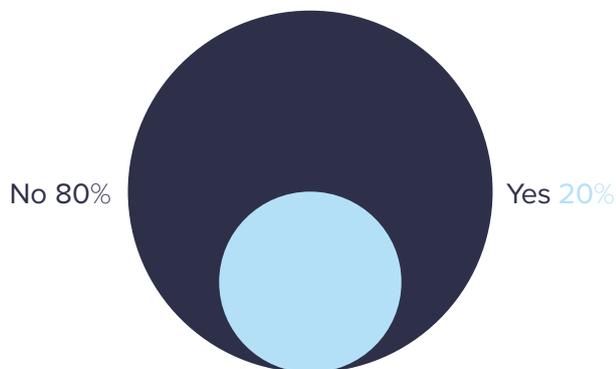


Figure 12: Respondents' perception of the importance of issuers having investment grade status



Risk, return and ratings

1. Preference for a flat yield: Concern for the future?
2. Ambivalent aircraft appraiser values

Preference for flat yield: Concern for the future?

The Ishka view

These findings tally with a recent interest Ishka has seen among European investors for equity investments which offer more yield, and secondly among US institutional investors with an established track record in the sector seeking to boost debt returns through private placements. Private placements are hard to track but Ishka has noted that there has been a slight rise in interest and activity in the last two years as several US insurance firms become more able to source and price private placement opportunities.

Separately, it is no surprise that investors in all regions have exposure to EETCs which often represent an entry point for new debt investors seeking to explore the sector. Limited issuance and returns and the difficulty in securing large allocations within EETCs, particularly for non-US investors, often pushes investors to look for other higher yielding opportunities elsewhere in the sector.

Investors showed a small preference for moderately risky income generating assets with low or no leverage (55%) compared to low risk income generating assets with high leverage (45%) (figure 13). Investors showed a stronger preference for receiving a flat yield on investments in aviation assets (67%) compared to an initially low but growing yield (33%) (figure 14).

A preference for a flat yield suggests that investors are concerned about future macroeconomic performance driven, in part, by an expected decrease in inflation (Gupta & Gupta,

2008). This concern is arguably the result of a fluctuating yield in US bonds over the past few years, where the difference between two and 10 year US bonds in 2018 narrowed to just 37 basis points (Wrigglesworth, 2019), before plummeting to minus five basis points mid-2019 and rallying back to 33 basis points at the end of 2019 (Smith, 2019). Given that an inversion in US bond yield has correctly predicted every US recession of the past 50 years, aviation investors are opting for flat yield to counter a potential downturn on long term bond rates.

Figure 13: Level of risk compared to the amount of leverage

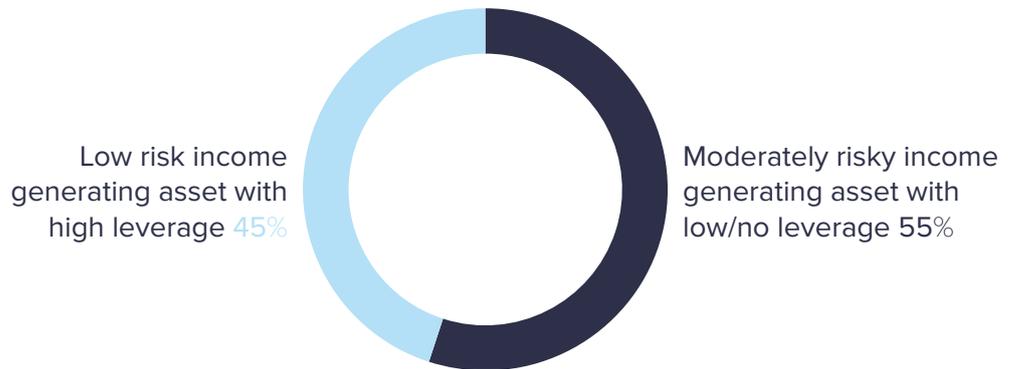
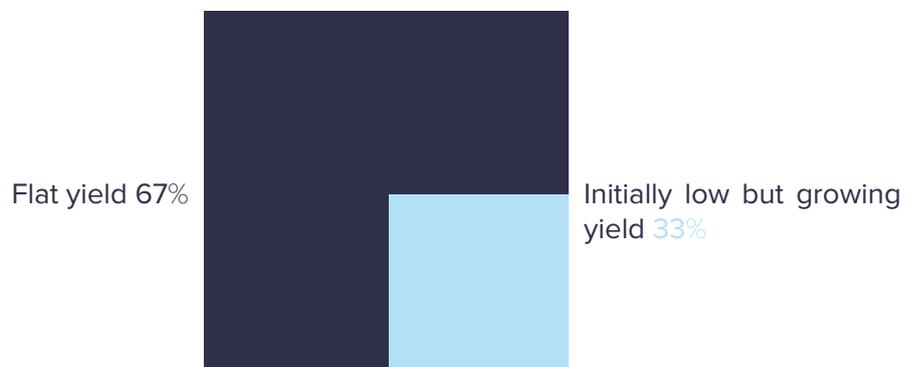


Figure 14: Preference for type of yield in aviation assets



Across the investors surveyed, the average debt to equity return hurdle was 7% and 12% respectively (figure 15). The interviews suggest that the debt to equity return hurdle is calculated by each investor based on a number of factors, such as the amount of debt

they are looking to leverage and the amount of surplus money they have to invest. One interviewee, with a debt to equity return hurdle of 14% and 21% respectively, went into detail about how their company arrived at these figures:

Trader #1; Europe

Trader #1: *So I think to be able to reasonably attract risk capital, even as equity in a loan fund for example, or a lending business, or a bank looking for return on equity, if you can't at least get to double digit return on equity on a levered basis, you probably shouldn't be doing that business. Due to its substantial risk and if the upside isn't getting you to at least to the low teens as a minimum level of equity return, then you're fundamentally mispricing it and getting it wrong. If loss expectations are extremely low, all it will take is one or two big problems to wipe out your equity base.*

For equity, I think that less leverage is better if you own airplanes. When I talk about debt, I am splitting it, so I am talking about first loan senior secured. So very much a debt profile. When I talk about equity, so owning airplanes, not necessarily pure unlevered equity, it can be levered equity - it is loan vs. ownership. If you're buying planes on a speculative basis hoping that it retains value and you don't have a lot of downtime and transitions, that should be activity that is close to 20% return on equity, maybe higher.

It depends on the age of the plane or the risk profile. But if it is on the riskier side, 20% or more is what you need to justify the risks you're taking. I am sure there are people out there with lower hurdles and they have been doing business. But lower hurdles with the same risk doesn't really work in the long term. Ten years from now, if you revisit to see what happened, it might be a different picture.

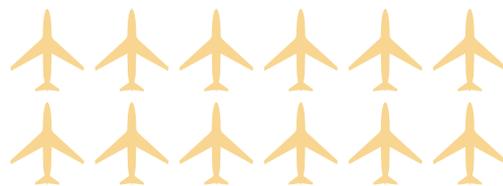
Interviewer: **So why would someone have a lower equity return hurdle?**

Trader #1: *They have tonnes of cash with nowhere to put it. Aviation is a good place to deploy a couple billion dollars and you can do it quickly. When you look at China with their foreign trade, positive cash flows as a country, they have huge amounts of cash to deploy. They can keep it deployed in US dollars which is favourable, so for them it is not just about the straight return... if it was a pure investment there are national policy implications, about diversifying dollar based holdings, deploying capital and most importantly, about expertise in a new industry.*

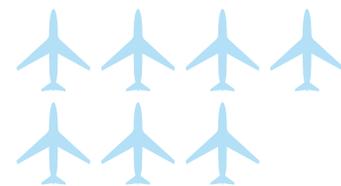
So those 3 factors combined to subsidise the return, some consider it unacceptable, but their criteria are different. They're not wrong, it is just policy.

Ultimately, debt to equity hurdles were discussed in relation to the circumstances and long-term goals of the organisation in question.

Figure 15: Expected average debt and equity return hurdle for aircraft as an asset



Expected average equity return hurdle for the aircraft asset class 12%



Expected average debt return hurdle for the aircraft asset class 7%

Ambivalent aircraft appraiser values

The Ishka view

Investors are increasingly aware of the difference in values offered by aircraft appraisal firms and how lessors use those appraisers to flatter purchase prices when selling aircraft. Different appraisers are used for different functions—whether a firm is buying or selling an aircraft. The volatility understandably causes frustration to investors which seek clarity on values. Ishka has developed its own take on aircraft values through its new Transactions Economics platform which offers real data points on aircraft purchase prices and lease rates.

Investors were ambivalent about the confidence they held in aircraft appraiser values (figure 16), with 70% of the sample opting for either a very conservative (23%) or somewhat conservative (47%) approach when investing in aviation (figure 17). When the interviewees were asked about their views on appraiser ratings, none were complimentary, with one citing that, “*appraisers have lost their minds.*” (Investor #9; US). The fundamental reason for this view is because appraiser values were deemed too speculative and overinflated:

“They give extremely high values that can’t be supported by the cash flows. I look at the value of an asset being the net present value of its cash flows. Someone shows me a midlife A330 and appraisal for \$40 million to \$50 million and I see 20 of them sitting there, stored that can’t be placed,

lease rates that will barely even cover the reconfiguration expense put into it, and a span of lease rates of appraisers where one asset is worth \$25 million and the same worth \$50 million somewhere else.

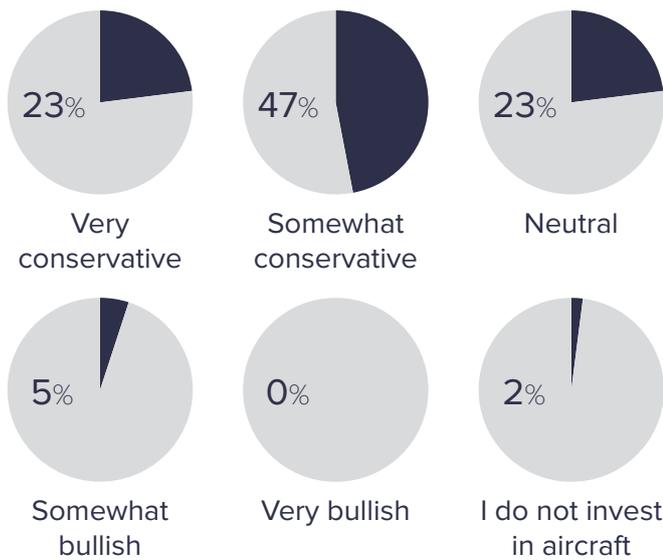
I have lost a lot of confidence. The ones that are going to say, ‘OK this is a problem asset it has a lower value’ are the only ones that have credibility with me... but it is a tough market to be the one to say, ‘there is a problem here.’ You don’t get revenue for that, so it continues to be a problem for appraisers.” (Investor #8; APAC)

This was a common frustration across the interviewees and one that has resulted in many companies employing their own appraiser.

Figure 16: Respondents' confidence in aircraft appraiser values



Figure 17: Respondents' approach to dealing with appraisers





The hard numbers

1. A strong showing by investors
2. Vehicles to invest in

A strong showing by investors

To date, the average total amount invested in aviation by investors **who took part in this survey**, across all institution types, is \$159,000,000 (figure 18), with investment managers committing nearly twice the amount

that insurance companies and pensions funds have done (\$173,000,000 and \$88,000,000 respectively) (figure 19)².

Figure 18: Average amount invested in aviation to date

\$159,000,000

Amount invested in aviation to date

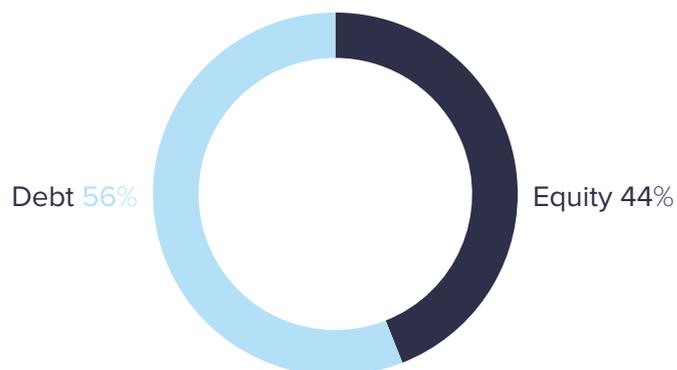
Figure 19: Average investment in aviation to date, by company type

	 Insurance company /pension fund	 Investment manager
Amount invested in aviation to date	\$88,000,000	\$173,000,000

Just over half of the investors used debt (56%) compared to equity (figure 20) with average duration and maturity

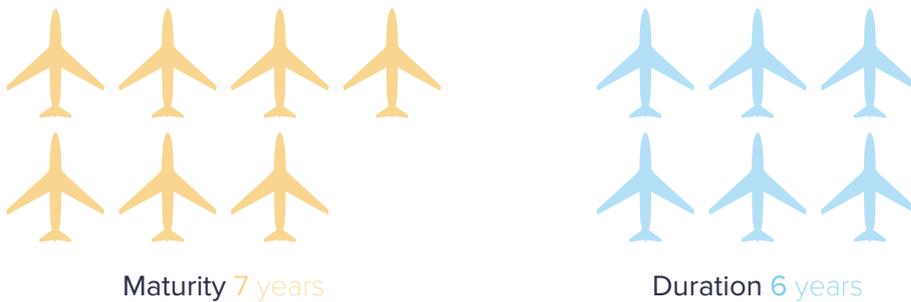
profiles of six years and seven years, respectively (figure 21).

Figure 20: Average debt verses equity ratio for aviation investing



² There is insufficient data available for other types of investment company.

Figure 21: Average maturity and duration profiles for aviation investments



Vehicles to invest in

Exploring the vehicles used to invest in aviation, nearly half the sample used direct equity investment (48%), followed by direct debt investment (38%) and private equity (23%) (figure 22). Breaking this down by region, APAC and European investors (55% and 53% respectively), were more likely to make direct equity investments than US investors (41%), whereas the latter

were more invested in direct debt investments (59%). Nearly one-third of US (32%) and APAC (27%) investors were involved in aviation through private equity compared to just 11% of European investors (figure 23). These vehicles are synonymous with longer term investment strategies and is reflective of the investors in this survey being interested in midlife assets.

Figure 22: Vehicles used to invest to date

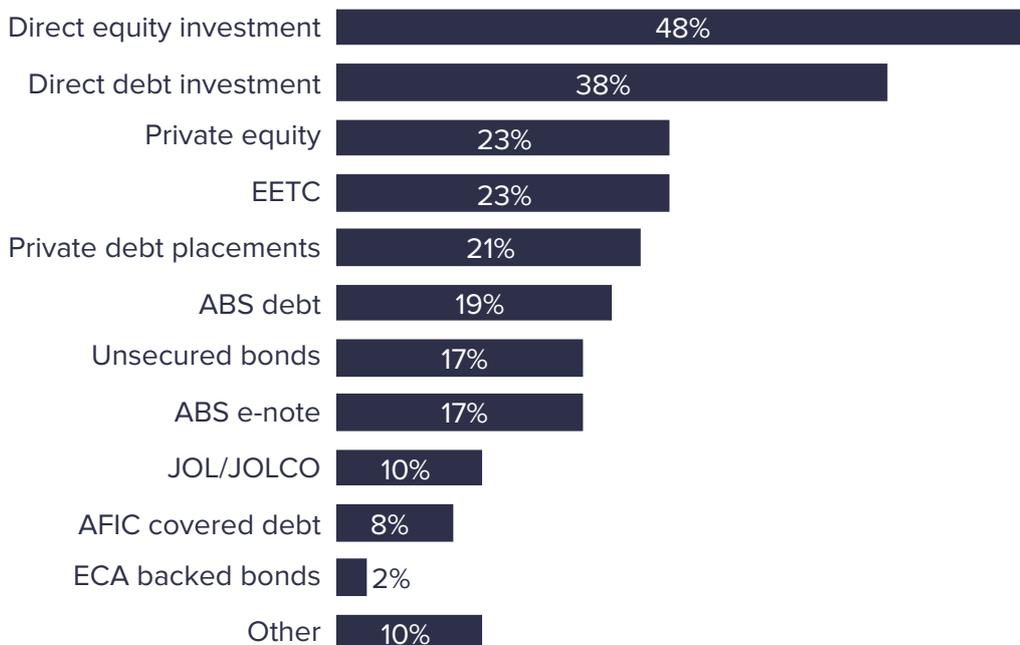


Figure 23: Vehicles used to invest to date, by region

	 APAC	 EU	 US
Direct equity investment	55%	53%	41%
Direct debt investment	37%	16%	59%
Private equity	27%	11%	32%
EETC	27%	11%	32%
Private debt placements	18%	5%	36%
ABS debt	9%	-	41%
Unsecured bonds	18%	5%	27%
ABS e-note	18%	21%	14%
JOL/JOLCO	18%	5%	9%
AFIC covered debt	9%	16%	-
ECA backed bonds	9%	-	-
Other	-	16%	9%

Looking more specifically at asset backed securities (ABS), the most distinguishing factor was aircraft asset mix (67%), followed by credit risk (57%) and LTV (39%) (figure 24). The main benefit of an ABS is that it provides access to a diverse portfolio:

“Our exposure in aviation is lumpy at the moment. What we wanted to do is diversify. And in the easiest and most palatable form of diversification is obviously buying into a portfolio. And ABS portfolios come with ready cooked debt. We like the metal risks, so we’re happy with the equity. And what we’re doing is investing in a number of the new, different ABS issues.” (Investor #3; Europe)

Investors were in strong agreement that lessors having a stake in any ABS deal is beneficial (figure 25), as it ensures that interests are aligned:

“It facilitates the alignment of interests between the investor and the asset manager where you know that if something goes wrong, they will do everything they can to recover the value of the collateral. If they have their money.” (Investor #5; US).

Figure 24: Distinguishing different ABS deals from one another

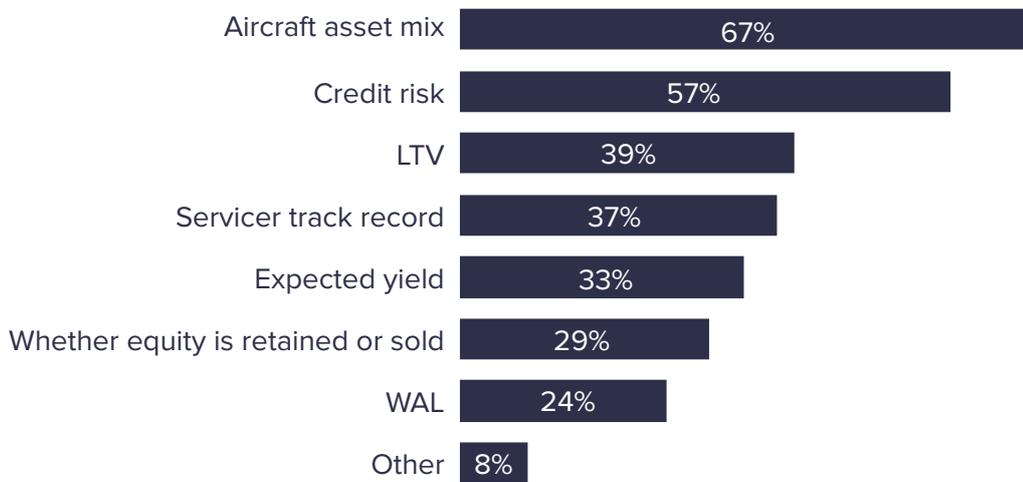


Figure 25: Respondents perception of how important it is for lessors retaining 'skin in the game' when investing in ABS deals



ESG: A changing of the guard

1. ESG: Important? Or hardly important?
2. The problem with measuring ESG

ESG: Important? Or hardly important?

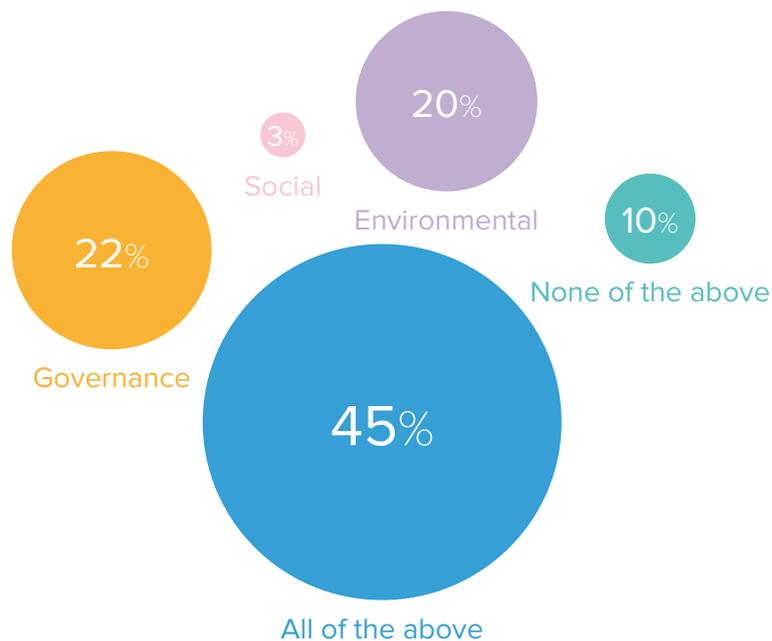
The Ishka view

Unsurprisingly, the E in ESG dominates investor's thoughts on aviation as an ESG asset. Aviation has been a high-profile target for environmentalist this past year, scrutiny that Ishka expects will only intensify in the coming years. With it comes the risk of environmental regulation (such as fuel taxes or frequent flyer levies) that could either hurt asset values for fuel-hungry aircraft or dampen passenger numbers. Ishka believes that this risk is – for the near-term – concentrated in Europe.

Nearly half of the investors surveyed stated that they consider environmental, social and governance issues important (45%), with approximately a fifth of respondents more specifically concerned with

governance (22%) or environmental issues (20%). Very few were concerned with the impact of aviation on society (3%) and 10% explained that ESG is not of interest to them at all (figure 26).

Figure 26: Most important ESG considerations for aviation investing



Despite the pro-ESG stance that investors have taken in this survey, none of the interviewees were optimistic about pro-ESG changes being implemented:

“Aviation in general is very polluting for the environment. It counts for around 2% of the total CO₂ emissions every year just for the fuel burning. If you consider that the fuel burning is happening at high altitude, then you can also reach 5% of total CO₂... The problem is that most people in the industry just don't really care... It is compounded by the fact that ESG is still a relatively new concept to the industry.” (Investor #5; US)

Our data largely support this view, as the investors reported that ESG is only considered six out of 10 important to their current investment strategy (figure 27), a figure that remains fairly consistent when cut by region and company type (figure 28). A similar story is true for the following 12 to 18 months, with ESG having little discernible influence on overall decision making and when cut by region (see figures 29, and 30). Insurance companies, pension funds and investment managers are taking ESG issues more into consideration over the next 12 to 18 months, with all three company types citing it as seven out of 10 important to the investing strategies (figure 30).

Generally, however, the ambivalent stance makes it all the more surprising that nearly 60% of investors reported a mandatory requirement to have an ESG bucket as part of their investment portfolio (figure 31).

Figure 27: Importance of ESG-related issues to a company’s investment strategy



Figure 28: Importance of ESG-related issues to current investment strategies, by company type & region

	 Insurance company /pension fund	 Investment manager	 APAC	 EU	 US
Importance of ESG issues to the company’s investment strategy	6/10	6/10	5/10	7/10	6/10

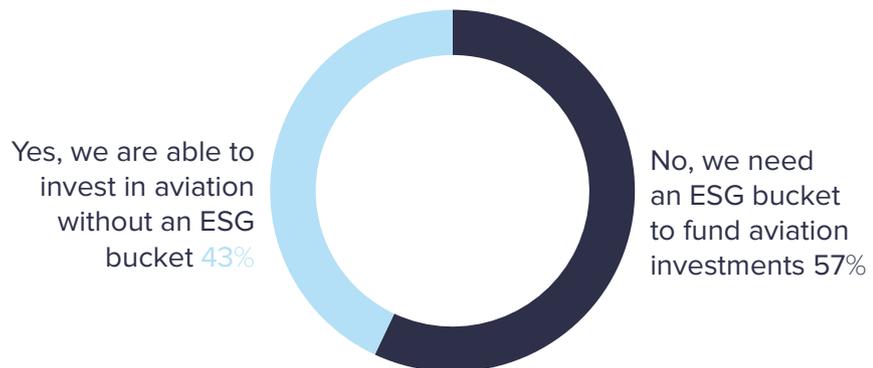
Figure 29: Importance of ESG-related issues to respondents’ company’s investment strategy over the next 12-18 months



Figure 30: Importance of ESG-related issues to investment strategies over the next 12-18 months, by company type & region

	 Insurance company /pension fund	 Investment manager	 APAC	 EU	 US
Importance of ESG to investment strategy over next 12-18 months	7/10	7/10	6/10	7/10	6/10

Figure 31: Proportion of investors with explicit ESG buckets



The interviewees were clear that the primary reason behind why ESG-related issues are having little influence on decision making is because the industry is, “still run by dinosaurs” (Investor #4; Europe). This, however, is changing as the more social and environmentally conscious younger generation are developing a voice; a movement personified by a single Swedish teenager, Greta Thunberg:

“Greta Thunberg is on the front of Time magazine. I mean, it is nuts! You can make fun of it because this is not traditionally how the world works, but she is making a real difference...”

She has spoken at the UN [United Nations]!... Generally, I think there’s a younger generation coming along who work very much like that. And they’re not going to get on an airplane and go places... Environmental awareness will be a major tipping point... I think the younger generation is going to put considerable pressure on the older generation. If they don’t change, the younger generation will eventually be in charge and change the rules.” (Investor #10; US)

This is perhaps the reason behind why ESG is going to have a greater influence over decision making over

the next 12 to 18 months among insurance companies and investment managers (figure 30).

It should be noted that ESG-related issues are having more of an influence on current and future European investor strategies (see figure 28 and 30), a finding driven in large part, by Europe's pro environmental stance.

For instance, Europe is world-leading in enforcing policies and legislation such as the EU Emissions Trading System to reduce greenhouse gases from the power sector, industry and flights. The EU has also implemented strict national targets to reduce emissions, to boost energy efficiency, to research and implement low carbon technologies and to combat deforestation (European Commission, 2020).

While the ESG-tide may be turning slowly in the aviation industry, it is still turning. EasyJet, for example, has become the first airline worldwide to offset all of their carbon emissions by planting trees and avoiding the release of additional CO₂ gas, a move that is expected to cost them £25 million a year (Topham, 2019). Although, several of the interviewees pointed out that this is a small cost compared to the revenue they will generate from increased flight sales resulting from positive publicity, *"this is a very shrewd move from EasyJet. I have no doubt they will post some very impressive financial figures in the coming years."* (Investor #7; US)

The problem with measuring ESG

Two-thirds of the sample stated that measuring the impact of ESG-related investments is the greatest challenge for the aviation industry (figure 32):

"It [ESG] is too hard to measure at the moment so people don't believe it... there's no accepted method to measure ESG... But if you had some standard criteria, for example measuring carbon output, you could theoretically compare... airlines will then want to show off whoever is best." (Investor #6; Europe).

This is not an aviation specific problem. Across a whole plethora of different sectors, principles such as ESG and sustainability are poorly understood, misused and misleading (Rennison, 2019). This is largely because performance metrics for ESG are in their infancy compared with financial statements and that there continues

to exist a dearth of high-quality information on which ESG measures are best practice (Van Steenis, 2019).

However, measuring ESG is not the only problem. There is also an issue with interpretation. Consider the following scenario:

The Ishka view

It is important to separate aviation's environmental impact from aviation's eligibility as an ESG investment. As investors noted, there is no standardised criteria for what counts as an ESG investment. The key sticking point will be whether aviation investments are measured against sector-specific environmental yardsticks or measured against other, necessarily less carbon-intensive industries. It is feasible that some ratings agencies could accept relative fuel efficiency (the most common eco-refrain from airlines and leasing companies) as enough to classify a portfolio of aircraft

as ESG complaint, instead looking at an airline or portfolio's absolute emissions. The EU's upcoming green taxonomy – which aviation will be added to – will tighten regulations over how aviation investments can be marketed as green to European investors.

The interpretation conundrum

Investor A, a highly ESG conscious organisation, makes a substantial investment into the latest, most fuel efficient aircraft, contracted on a long term lease to an airline with a high ESG rating that fully commits to aviation emissions trading, carbon offsetting schemes, has a fuel efficient fleet and is market leading in enacting ESG policies.

On one hand, it could be interpreted that investor A is taking explicit steps to ensure that its investment is ESG friendly. On the other hand, it is widely known that even the latest aircraft, with the most up to date technology, is offering only moderately better fuel efficiency than older model planes and are, therefore, still major contributors to greenhouse gas emissions.

Both interpretations are fair depending on an individual's position on ESG and herein lies the problem. Even if the aviation industry was able to develop a standard way to measure ESG, interpretation then becomes an issue. One investor neatly summed it up with the following scenario:

“What if an airline, with a history of high greenhouse gas emissions, reduces its CO₂ output by 10%? Would the airline be considered ESG conscious?”
(Investor #8; Europe)

Figure 32: Challenges for ESG investing



What lies ahead: the future for aviation

1. Money to be made
2. Risks to the aviation industry

The Ishka view

It is famously hard to predict exogenous shocks to any industry, but the aviation sector is currently undergoing two substantial crises which are unprecedented in their scope and impact. The first is coronavirus, which has halted air traffic in and out of China and Italy. The other is the 737 MAX grounding. The key takeaway from both events is likely to be how quickly the industry bounces back, which will help investors better assess how able aviation can cope with such crises.

Money to be made

Forty one percent of investors in this survey plan to invest equity over the coming years compared to 34% of respondents committed to debt investments and 24% who will use a combination of both (figure 33). Breaking this down by company type, insurance companies and pension funds are almost exclusively going to invest debt (91%), while 50% of investment managers will invest equity (figure 34). One investor explained that in the current climate, equity investing for insurers is risky:

“They [insurance companies] are not eager to put aviation equity to work. The reason being that the returns are

compressed in this space and people are pointing to cracks – it doesn’t seem like good competitive pressure - so they won’t give people aviation equity at compressed returns.” (Investor #2; US)

Data suggest that this is the case as unlevered equity returns for new aircraft is down to approximately 5%, rising to 7% for midlife aircraft and just under 10% for end of life aircraft (Ishka, 2018). The reason for this compressed equity return is because of increased competition for assets in the market (Ishka, 2018).

Figure 33: Allocation of aviation investing in the future (equity, debt or both)

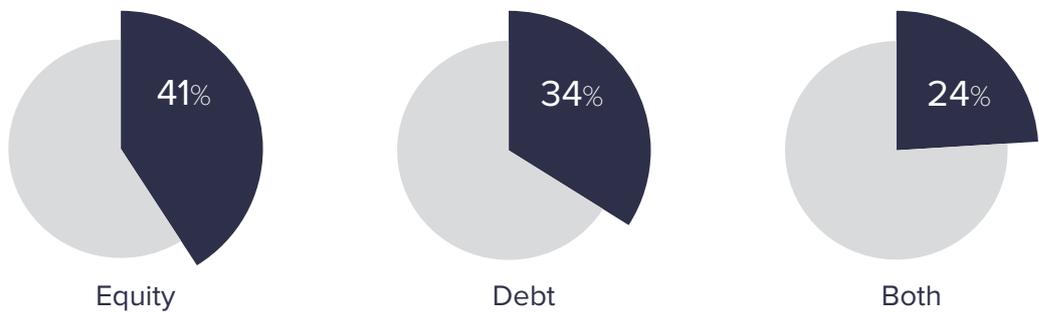


Figure 34: Predicted allocation of aviation investing (debt, equity or both), by company type

	Insurance company /pension fund	Investment manager
Equity	-	50%
Debt	91%	27%
Both	9%	23%

Respondents working for insurance companies and pension funds are anticipated to invest on average \$400,000,000 compared to the \$312,000,000 invested by respondents who work as investment managers over the next few years (figure 35). Asia Pacific is predicted to receive more than half a billion dollars, on average, from investors, more than double the investment into Europe and £100,000,000 more than into the US (figure 35).

A recent report conducted by White and Case also found significant regional variation in investing with more than three quarters of their respondents predicting an increase in investing in Asia Pacific, driven in large part, by the growing number of the middle class people opting for air travel (White and Case, 2020). Moreover, the rapidly increasing number of low budget airlines operating in Asia Pacific is making it easier for people in the region to fly at reasonable prices (Brown, 2010), coupled with financial forecasts predicting the strong economic expansion of Asian economies, led by China (Romei, 2019). How these circumstances will be affected by coronavirus remains to be seen, but initial projections suggest that airlines operating in Asia Pacific will experience a particularly turbulent few months ahead (Hancock & Powley, 2020).

Conversely, Europe, through a combination of economic stagnancy and Brexit, is having a profoundly negative impact on the industry. European travel industry giants, Thomas Cook and Flybe no longer exist, Iceland's WOW Air collapsed, cancelling all of its flights for

passengers, and; Germania Air and Slovenia's Adria Airways both filed for bankruptcy in 2019 (Novak, 2019).

The popular Middle Eastern airlines, Dubai's Emirates, Abu Dhabi's Etihad Airways, and Qatar Airways have all been assailed by economic, business and political crises, driven by a collapse in oil prices and growing tensions in the region (Powley and Kerr, 2017). And the US airline market has been rocked by the recent groundings of the new Boeing 737 MAX aircraft following two fatal crashes that killed a combined 346 people (Josephs, 2020). Regional variation has always been a fundamental part of aviation investing but the current landscape looks to favour investment into Asia Pacific more than ever, notwithstanding the current coronavirus epidemic.

Aircraft (87%) was the main asset type that investors are looking to invest in over the next few years (figure 36), with midlife and new narrowbody aircraft (67% and 50%, respectively) the most likely aviation assets for investors (figure 37). Following on from the current vehicles used to invest in aviation (see figure 23), direct equity investments (53%) and direct debt investments (36%) will continue to be the most common vehicles for aviation investors to invest through (figure 38).

Investors spoke candidly about the potential earnings to be made in the aviation industry over the next few years:

"If someone is really committed to understanding the dynamics of how aviation investing works, and they are interested in really getting to grips with the nuances and intricacies, there is a

lot of money to be made in the coming months and years.” (Investor #7; APAC)

Projections from the industry also suggest that aviation investing is going to increase in the coming years. For example, a global forecast report published by Airbus suggests that by 2039:

- Commercial aviation is set to double in size, a 4.3% growth year-on-year
- There will be a demand for an additional 39,210 passenger and freight aircraft
- More than 14,200 aircraft will be replaced with approximately 38,600 new passenger aircraft and 850 new build freighters

The report also posits that Asia Pacific will account for 42% of all aviation activity, surpassing North America and Europe combined (36%) and that the aviation services industry is forecast to deliver a cumulative \$4.9 trillion over the next 20 years (Airbus, 2019). Aviation investors, therefore, with the capital and expertise to deploy funds wisely, stand to see a very healthy return on investment.

Figure 35: Average investment in aviation over the next 12-18 months, by company type & region

	 Insurance company /pension fund	 Investment manager	
Planned investment in aviation over next 12-18 months	\$400,000,000	\$312,000,000	
	 APAC	 EU	 US
Planned investment in aviation over next 12-18 months	\$560,000,000	\$227,000,000	\$433,000,000

Figure 36: Most likely assets to invest in over the next 12-18 months

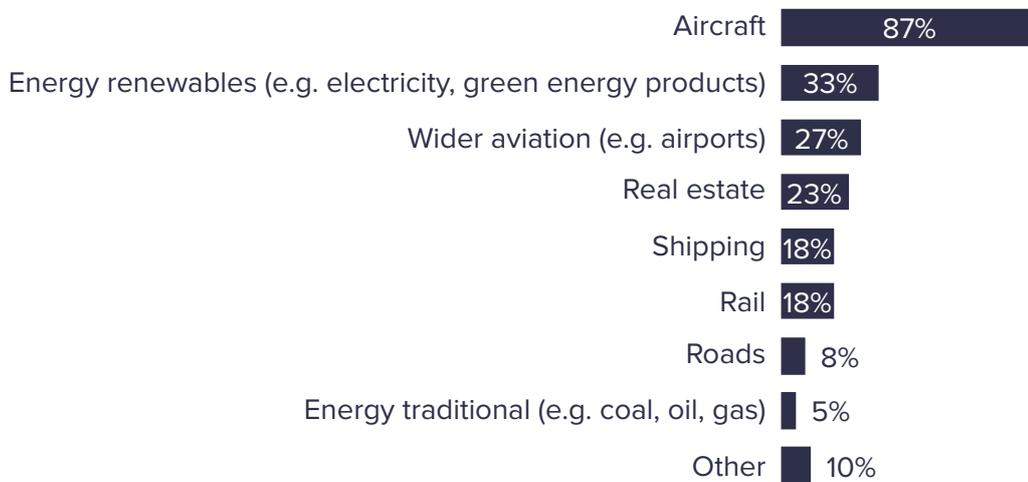


Figure 37: Most likely aviation asset to invest in over the next 12-18 months

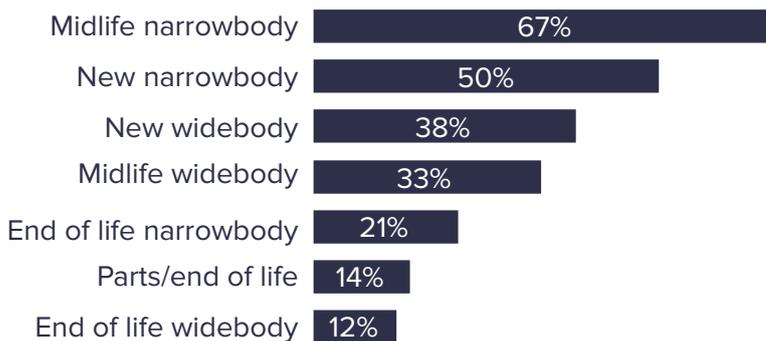
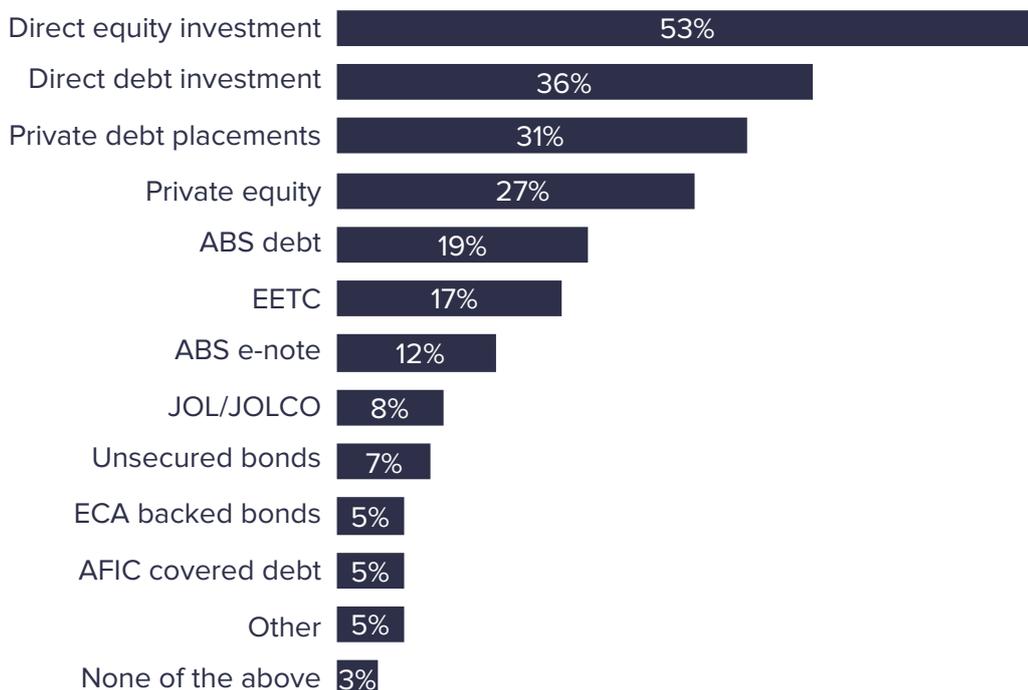


Figure 38: Most likely vehicle to invest in over the next 12-18 months



Risks to the aviation industry

Airline bankruptcies

The Ishka view

One big concern for the sector not highlighted is the strength of the twin-aisle secondary market. Lessors currently face disappointingly low rents for older A330s and 777s that are far below their predicted lease rates. This points to the likelihood of future impairments for many aircraft lessors with exposure to twin aisle aircraft. In addition, investors with exposure to these assets may need specialist asset managers to ensure returns.

Nearly three-quarters of the investors feel that *airline bankruptcies* are the biggest threat to the industry over the next few years (figure 39). Europe in particular, seems to be susceptible to airline bankruptcy for three reasons:

1. Too many EU based airlines

“Europe is seeing a growing number of bankruptcies, primarily because there are too many airlines and the market is too fragmented.” (Investor #1; Europe)

2. Changes in consumer behaviour

“The IT tour business that everyone has enjoyed the last 20 years is getting replaced by people doing it themselves. That is a very European phenomenon. Thomas Cook in particular is just the latest domino to fall as the industry has gone through transition.” (Investor #2; US)

Slow GDP growth

A slowing of global GDP growth was a concern for investors, as they posited that it could lead to a reduction in the volume of people flying, an issue compounded by an overproduction of aircraft entering the market:

“GDP seems to be slowing a bit everywhere. Production rates are built upon very high traffic growth numbers which need good GDP globally to be supported for airline profitability and that is not presently there... I think it will be very ugly for narrowbody planes for quite a while... Production rates are continuing to increase too.”

I know that 500 narrowbodies are about to be released onto the market which raises the question: which 500

3. Vulnerable governments

“The government backed airlines, Alitalia, Air France, they are on the edge. Their models just don’t make sense.” (Investor #5; US)

Investors also expressed concern over airlines in Asia Pacific, principally because so many of them are heavily linked to the Chinese economy. If the region encountered an unexpected economic downturn, combined with the fine margins that many of the airlines operate on, one investor explained, *“there is a real risk that many of the airlines linked to China could go bankrupt if the Chinese economy takes a hit.”*

current airplanes are going to come out of the system? There is just not enough traffic growth to absorb it. If we were doing 7% traffic growth, we could absorb it. But we are not. We are doing maybe 3.5%, possibly 4%.” (Investor #3; Europe)

Flight shaming and negative publicity

Despite just 32% of the sample citing flight shaming in the media (figure 39), it was repeatedly mentioned as a growing problem for the industry across the interviewees. One investor explained the problem:

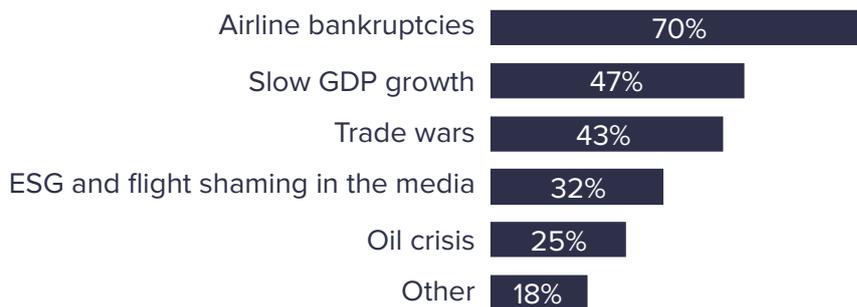
“It is all well and good people complaining about CO₂ emissions and you should get the train, but it is a long way from Stockholm to Faro.” (Investor #5; US)

Similarly, the investor goes on to say that negative press surrounding incidents like Malaysia Airlines Flight

370 going missing, Malaysia Airlines Flight 17 being shot down over Ukraine in 2014 and more recently, the Boeing air disasters 2018/2019 and then the Iranian Revolutionary Guard shooting down a Ukrainian airliner in 2020 are unwarranted, given that some of these incidents were the result of human error. They explain:

“While the aviation industry should be held to account and deliberate wrongs made public, it must not be demonised, as it is still the safest and most reliable form of travel.” (Investor #5; US)

Figure 39: Greatest risks to the aviation industry over the next 12-18 months



Coronavirus: a global pandemic plaguing the aviation industry

Ishka’s global Aviation Institutional Investor Survey 2020 did not ask about the impact of a global viral outbreak on the industry because, quite simply, it was almost inconceivable that such an event could occur on the scale it has done.

While some might point to the impact of the Sars outbreak in 2003, which infected around 8,000 people across 27 countries and claimed 800 lives worldwide, at the time of writing (20th March 2020), coronavirus is both socially and economically far more damaging. To date, the coronavirus

has infected more than 245,000 people worldwide, with more than 10,000 deaths (www.worldometer.info/coronavirus). Economically, it has cost the global corporate travel sector \$1.4 trillion through cancelled events, with several multinational companies such as BP, BMW, Estée Lauder, Nestlé and L’Oreal suspending all international travel for a month. This is compounded by numerous airlines cancelling commercial flights to the worst affected areas including China, Japan, South Korea and Italy; a move that could cost these airlines more than a combined \$30 billion (Hancock & Powley, 2020).

The Ishka view

The coronavirus has been a black swan event for both airlines and lessors. This is an event that simply was not on investors’ radars when this survey was conducted. There is no question that the outbreak is having a paralysing impact on traffic to, and from, countries around the world. Arguably the crisis is still in its early stages. This makes final analysis difficult: is this a

disruptive short-term or a more severe medium-term issue?

Depending on how long the crisis lasts the likelihood is that lessors may need to help some airlines whether the storm through rental holidays. Separately, rumours are circulating that some Chinese airlines may receive state bail outs. In the most positive scenario Ishka predicts that the crisis will have a dampening impact on investor appetite for deals that are underpinned with Asian Pacific lessees probably till until the end of Q2 2020, but this could easily be longer if the crisis persists. The worst-case scenario is that the crisis travels to either Europe and or the Americas - slowing traffic globally.

Perhaps of more concern to aviation investors is the lasting effect that the virus could have on the industry. One aviation commentator notes that 'airlines are more susceptible to panics than many businesses. No matter what, people need groceries... but travel is discretionary... people don't have to fly'

(Sumers, 2020). If, then, the perceived risk of coronavirus remains high for the foreseeable future, the final economic impact to aviation could make it one of the largest disrupters to the industry ever.

Conclusion

The aim of this research was to present a detailed report into the state of the aviation industry from the perspective of institutional investors. Using a mixed methodology that combined 75 individual survey responses from institutional investors with 10 qualitative interviews with active investors in aviation, this report concludes that:

- **The impact of Coronavirus on aviation is arguably the greatest disrupter that the industry has ever seen.** In the financial world, ‘black swan events’ are those that deviate from what is normally expected of a situation, are often impossible to predict, and have severe and long lasting consequences. Coronavirus is a black swan event. With country borders closing, the cessation of air travel, the collapse of airlines and the uncertainty it has created amongst aviation investors, it is fair to say that the final financial and reputational consequences that the Coronavirus has on the aviation industry could be the largest in history.
- **Issues with industry transparency and data on debt instruments are the driving force behind perceived market illiquidity.** Aviation is a niche asset class and one that requires a great deal of expertise and understanding to navigate effectively. While there is some information available on the structure and pricing of deals, this information tends to be too general or has considerable variation to make it useful. While considerable remarketing expertise is rife across the industry, it is difficult for investors to access and take advantage of. Coupled with growing competition, increased liquidity, tighter margins and lower yields, investor frustration is growing and, for some, causing them to look more seriously at other asset classes. Given then anticipated growth of the aviation industry over the next few decades, investors could be moving away from an asset class that could generate very healthy returns on investment.
- **Remarketing expertise is the single most important factor that investors are looking for in asset managers.** Aviation is a difficult asset class to understand primarily because there are so many moving parts. For instance, an investor has to choose the type of asset to invest in, its age, the quality of the lessee and the duration and maturity of the deal. Across these factors lie many pitfalls and challenges which, if not give due care and attention, can result in sizeable losses.
- **Despite the general acceptance that ESG-related issues were a problem for the whole aviation industry, ESG had little impact on investment strategy.** There is a growing pressure within the aviation industry that the younger generation, coupled with flight shaming and negative media coverage, are putting increasing pressure on the industry leaders to take ESG seriously. However, seemingly insurmountable problems with no standard way to measure ESG, compounded by conflicting opinions on how to interpret ESG data, continues to prevent the industry from making wholesale changes that positively attend to climate change. These deep-rooted problems will likely only be addressed if everyone in the industry makes concerted efforts to tackling them.
- **There are a number of risks to the industry that could have serious consequences for investors.** Airline bankruptcies in overcrowded regions such as Europe and Asia Pacific, coupled with changing consumer behaviours and fragile government-backed airlines are three areas of concern that investors must be aware of. Thomas Cook and Flybe’s bankruptcies in the UK are a stark reminder that the tide can change very quickly. A slowing of

global GDP, arguably compounded by geopolitical tensions between the US and China, also pose significant risk for investors, meaning that investors should look for diversity to mitigate against these risks. Engines and turboprops for example, while carrying very expensive upfront costs, are considered more niche asset classes in more liquid markets. Finally, negative media coverage and flight shaming are likely to be detrimental to the industry.

- **The future of the aviation industry looks positive, with growing amounts capital being invested.**

Despite some of the concerns and challenges highlighted by the data, the aviation industry offers a great number of opportunities for investors. Asia Pacific in particular, with its increasing number of middle class families and strong regional economies is a region that offers a wealth of opportunities for investors. However, investors need access to asset managers that have a wealth of experience in the industry.

- **Ishka offers a first-rate platform to address a number of the challenges that investors face.**

Through its conferences, research reports and detailed new stories, Ishka is fast becoming one of the leading voices in the industry. It can offer institutional investors an independent voice on the latest trends in the market, and a platform upon which it can introduce potential investors to the necessary expertise so important to better understanding how the industry operates.

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About Ishka

Ishka delivers data, analytics, advisory services and events to the global aviation finance community. Ishka brings together the talent of some of the industry's leading players to provide a fresh and independent perspective on how investors, financiers, lessors and airlines can make money through the aviation cycle. Our trusted, experienced team has been responsible for supporting thousands of aviation finance transactions around the world. Our services include:

Ishka Insights: daily short-form reports delivering expert assessment on high-impact topics in the aviation finance market.

Airline Credit Profiles: independent view on which airlines remain attractive credits, which airlines are on watch and which are seriously exposed to intensified risks.

Transaction Economics: real pricing and deals data alongside a leading edge approach to aircraft valuations.

Ishka Advisory: expert consultancy services advising leaders of the world's top aviation companies.

Ishka Events: world-class content and networking in fun dynamic environments.

About TXF Research

TXF research makes up one third of TXF Intelligence along with TXF Data and TXF Essentials. TXF Research supplies the most detailed market insights into the export, commodity and trade finance industries. Using an in-depth and robust methodology that combines quantitative trends with thought provoking qualitative insights, TXF Research provides unique and proprietary data and analysis based on primary sources. In addition, TXF Research offers a bespoke research service to paying clients. Working in collaboration, TXF Research collect, collate, analyse and write reports to the focus and scope of the research, with the final product being a thought leadership piece to be used by the client as they choose.

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