
Aviation Finance Outlook 2021

Aircraft values will reflect airlines' brutal reassessment of the number and type of aircraft they need, leading to smaller fleets largely made up of more fuel-efficient narrowbody aircraft as older, widebody models are retired.

Aviation Finance, Scope Ratings GmbH, 31 March 2021



Executive summary

Aircraft values in 2021 will reflect airlines' brutal reassessment of the number and type of aircraft they need, leading to smaller fleets increasingly made up of more fuel-efficient, narrowbody aircraft as older, widebody models are retired.

The severe crisis engulfing the aviation sector, as the coronavirus pandemic has reduced air travel to a minimum, sent aircraft valuations plummeting last year. Some older, less-efficient widebody models such as Airbus's A340, A380 and Boeing's B747 may never fly again, with the same fate possibly in store for some B777-200/300 and A330 aircraft. However, the pandemic has led to strong demand for air freight.

Assuming the economic recovery gains pace as the authorities lift travel restrictions amid the roll-out of Covid-19 vaccines, new-technology, narrowbody and widebody aircraft will regain some of their lost value.

The main trends we expect for 2021 are:

- Freight aircraft will depreciate the slowest, set to be the winning segment in 2021 as it was last year.
- New-technology narrowbody planes and the two new-technology Boeing and Airbus widebody models - the B787 and A350 - will recover some of their lost value as passenger traffic recovers. New-technology models are central to airlines' plans for a leaner, smaller, and more environmentally friendly fleets in the future. However, we expect to see recovery in values of new technology narrowbody aircraft such as the A320neo before the B787 and A350.
- Airlines will phase out old technology widebody aircraft such as the A340, A380, B747 as well as some B777-200/300 and A330s. For some of these models, such as the A340 and A380, parting out the aircraft might be the only way to recover value.
- The context here is the likely slow recovery of the long-haul market, suggesting that many older widebody aircraft have had their last flight. A few will continue in operation with existing or future niche operators. Parting out the other planes will result in losses for investors in subordinated tranches.
- For investors transacting in 2021, we highlight the importance of considering the aircraft model in any transaction. Transactions involving old-technology aircraft models will have a substantially higher credit risk compared with transactions with new-technology aircraft. The collateral value of new-technology aircraft partially shields investors in the case of a repossession and remarketing event.
- We believe aircraft values were inflated before the Covid-19 crisis. The crisis has brought aircraft values down, with investors properly differentiating between models. Even though aircraft market values are no longer inflated, it is essential that investors stress test them before entering new transactions. The crisis is not over. Aircraft values could drop further if the economic recovery is slower than expected.

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Key trends for 2021

Aircraft valuations will continue to diverge this year, determined by the fuel consumption and configuration of the aircraft models in question, amid the lingering impact of the pandemic on air transport and the wider economy.

The value of new-technology narrow-body aircraft will recover gradually, setting the main trend for the aviation finance sector in 2021.

In contrast, low demand for long-haul travel and the segment's slow return to revenue growth will ensure that airlines will take many long-distance, old-technology, widebody aircraft out of service the coming years.

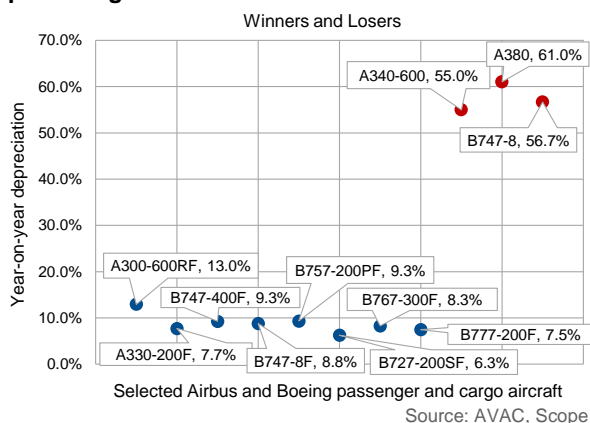
The valuation of some old-technology, narrowbody models might still stabilise as demand emerges from existing and future niche carriers and smaller emerging-market airlines. Newly founded Norwegian airline Flyer is an example of small carrier what will be a source of residual demand for older narrowbody aircraft such as the B737-800. We don't expect such demand to be enough to shift overall market trends. Aircraft such as the B787-800 and A320-200 will be available at much lower prices in the coming years. The depreciation of old narrowbody aircraft will slow as the industry recovers, but values will not return to pre-crisis levels.

Aircraft values fell heavily across the board last year as the Covid-19 crisis took hold - except for one aircraft category. The cargo sector had an exceptional year with an expected yield of 30%, according to IATA. One consequence was the slow depreciation of freight aircraft in 2020.

The winners and losers of this crisis

Please note that the following analysis refers to naked aircraft values (i.e. aircraft not on lease). We always perform our analysis on naked aircraft as we aim to estimate its collateral value after a lessee default. All data presented below is provided by The Aircraft Value Analysis Company (AVAC) if not otherwise stated.

Figure 1: Aircraft values: the biggest and smallest percentage declines in 2020 vs 2019



The year-on-year average depreciation across all aircraft models, vintages and engine options was 31.9% in 2020, a much more severe drop than in previous crises. The equivalent decline during the global financial crisis (GFC) was 23% while average valuations fell 18% in 2001 after the 11 September terrorist attacks. The pandemic is responsible for the worst crisis in commercial aviation in the 30-year data sample we have analysed.

As with every crisis, there are winners and losers. Cargo aircraft are clearly the winning aviation-finance segment during the Covid-19 crisis (see **Figure 1**). The annual depreciation of the freight aircraft listed has been similar to or slightly below the annual depreciation we would expect in a benign market environment. The losers in this crisis have, unsurprisingly, been widebody aircraft. The three models whose values have fallen the most are the A340, A380 and B747.

Cargo: a rare bright spot for aviation

We expect freight aircraft to continue their outperformance in 2021. Freight aircraft values distinguished themselves when analysing 2020 value data. They had the lowest value decline during the crisis. The reason for this is that the Covid-19 crisis had a positive impact on airfreight compared to passenger traffic. Goods could travel even if passengers could not.

We found that freight aircraft such as the B747-8F, B777-200F and A330-200F had the lowest year-on-year depreciation. The same is true for other freight aircraft, including converted freighters. Many of them depreciated in line with annual depreciation in benign market environments (more information on the aircraft value analysis can be found in the below section *Rationality prevails – a different crisis, a different story*).

The cargo sector had an exceptional year compared with other aircraft types. The expected yield for 2020 is 30% globally according to IATA (see **Figure 2**). IATA expects seasonally adjusted industry-wide cargo tonne-kilometres (CTKs) to return to 2019 monthly levels in March and April 2021. Our aircraft value analysis also points to the strength of the cargo market in the middle of the crisis. Unfortunately, the strong cargo market was not enough to offset the adverse impact of the pandemic on the passenger market.

Figure 2: IATA's air transport key performance indicators 2015-21F

System-wide global commercial airlines	2015	2016	2017	2018	2019	2020E	2021F
Revenues, USD billion	721	709	755	812	838	328	459
% change	-6.1	-1.6	6.5	7.6	3.2	-60.9	39.9
Passenger, USD billion	545	545	584	610	612	191	287
Cargo, USD billion	83.8	80.8	95.9	111.3	102.4	117.7	139.8
Traffic volumes							
Passenger growth, rpk %	7.4	7.4	8.1	7.4	4.2	-66.3	50.4
Scheduled passenger numbers, million	3,569	3,817	4,095	4,378	4,543	1,795	2,808
Cargo growth, ftk + mtk, %	2.3	3.6	9.7	3.4	-3.2	-11.5	13.1
Freight tonnes, millions	54.8	57.0	61.5	63.3	61.3	54.2	61.2
World economic growth, %	3.1	2.7	3.4	3.2	2.5	-4.2	4.9
Passenger yield, %	-10.3	-7.0	-0.9	-2.2	-3	-8	0.0
Cargo yield %	-11.9	-6.9	8.1	12.3	-5	30.0	5.0

Source: © International Air Transport Association, 2019. Industry Statistics Fact Sheet, November 2020. All Rights Reserved. Available on IATA Economics page.

Widebodies: time to say goodbye to older models

Many older widebody models will have had their last flight, having been grounded as the Covid-19 crisis struck a year ago. The drastic decline in these aircraft's valuations underscores this reality. Old-technology widebody aircraft values were hardest hit last year, with an average decline of 43.9% in 2020 (standard deviation of 10.4%).

Airbus's A340 and A380 are two widebody models whose future looks in doubt. The A340 survived longer in airlines' fleets than previously expected, mainly due to low oil prices during the pre-crisis years. However, the Covid-19 pandemic seems to have been the straw that broke the camel's back. Lufthansa's CEO Carsten Spohr has said that the airline has parked all of its A340s and that Lufthansa has no intention of putting them back into the air.

For the A380 - more popular with passengers than airlines - this crisis has added insult to injury. The model had lost a great deal of value before the crisis due to the lack of a secondary market. The pandemic resulted in another roughly 60% decline in value. For valuing A380s coming off their first lease, the part-out value is the only realistic assumption in today's market, assuming a 12-year old aircraft.

Narrowbody planes: aircraft model holds key to valuation

Grounded aircraft and the collapse in air traffic last year also had a severe impact on narrowbody aircraft valuations. They fell 27.6% on average (standard deviation of 3.5%).

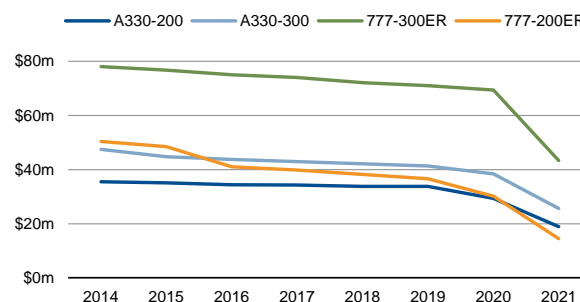
Old-technology narrowbody aircraft will recover some of their value after this crisis due in part to pockets of demand from smaller and emerging-market carriers.

Valuations of new-technology narrowbody aircraft will see the steepest and quickest recovery though it will take time before values return to pre-crisis levels.

Future demand: widebody vs narrowbody

Widebody aircraft values have been hardest hit during this crisis. Our analysis shows an average value drop of 43.9%. This average is however heavily influenced by the large hit taken by the old-technology A380s, A340s and B747s. These findings are based on our analysis of AVAC's market values and are further supported by the aircraft appraiser Oriel's base values revisions (see Figure 3).

Figure 3: Oriel base value revisions, 10-year-old aircraft



Source: Oriel VIP report 29

Oriel depreciated the base value of 10-year old A330-200, A330-300, B777-300ER and B777-200ER by 36%, 33%, 38% and 52% respectively from 2020 to 2021, findings which are in line with our own analysis.

The A350 and B787 are exceptions to this trend, having depreciated in line with new-technology narrowbody aircraft. This is a credit positive for investors invested in B787 or A350 transactions.

The relatively modest depreciation of the widebody B787s in line with narrowbody aircraft since the pandemic reflects the aircraft's loss in value before the crisis. At issue were the numerous teething problems encountered by the Boeing aircraft, particularly regarding its engines, hence the marking down of the model's values before 2020. Today, investors see value in the new technology features of the plane with which Boeing has pioneered carbon-fibre fuselage technology and other innovations.

The valuation of Airbus's A350, the Franco-German plane maker's long-haul narrowbody answer to the B787, has held up relatively well too, reflecting its appeal as a fuel-efficient long-distance aircraft.

Aircraft lessors: fund-raising surge

Aircraft lessors raised USD 14.9bn in January of 2021. We expect them to take a bigger role in aircraft transactions in 2021. The requirement of full recourse against lessors as an extra credit enhancement will be particularly vital for airlines with a weak credit profile seeking to finance new aircraft deliveries.

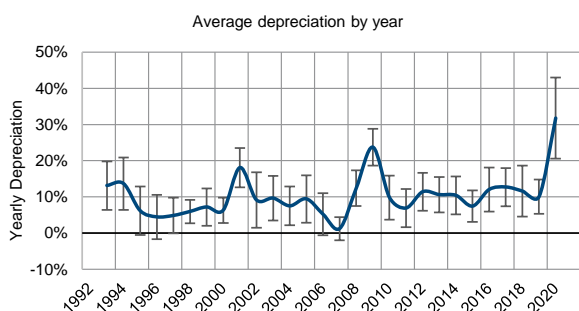
Full recourse from aircraft lessors is in most cases credit positive in a transaction. This was demonstrated in 2020, when the involvement of lessors substantially decreased default risk in many transactions.

Rationality prevails - a different crisis, a different story

During the global financial crisis, aircraft values fell equally sharply across models, aircraft vintages and bodies. The Covid-19 crisis is different. Investors have discriminated more sensibly between different types of aircraft - a much more rational market reaction.

The 31.9% average drop in aircraft values in 2020 is by far the worst decline in the history of modern aviation. However, from an aviation finance perspective, it is interesting to compare the 11.5% standard deviation of the drop in values last year with a standard deviation of 5.1% in the 23% fall in valuations during the global financial crisis. The difference in the standard deviations of the two crises reflects a more appropriate market reaction from the industry to the coronavirus shock than during the financial shock of 2008-09. **Figure 4** shows the year-on-year value depreciation across the industry from 1992 until 2020. The vertical lines represent the standard deviation for each year.

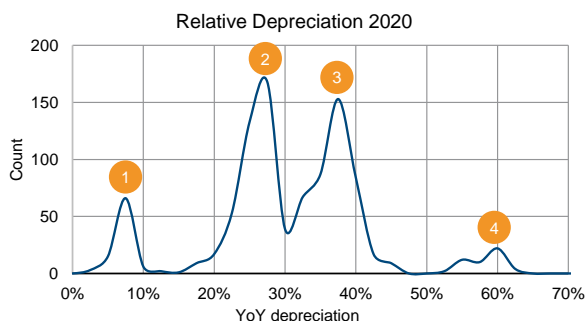
Figure 4: Aircraft value depreciation 1992-2020



Source: AVAC, Scope

We have identified four different clusters of value depreciation, depending on the aircraft model (see **Figure 5**), in analysing all aircraft models currently in the market.

Figure 5: Aircraft values relative depreciation 2020



Source: AVAC, Scope Ratings

The first cluster represents aircraft types whose values were least impacted from the Covid-19 crisis, with average year-on-year depreciation of 8.5%. Aircraft models in this cluster are freight aircraft, including converted freighter aircraft - though some freight aircraft saw greater depreciation and are represented in cluster three. The level of depreciation of this first cluster is in line with depreciation in a benign market environment.

The second cluster contains all Airbus narrowbody aircraft except for a few older generation models such as older A321s. It also contains all the newest Boeing narrowbodies as well as the A350 and the B787. Aircraft in this cluster declined in value by an average 26.6% in 2020 from the year before.

Aircraft valuations in the third cluster fell on average by 37.7%. This cluster contains the majority of regional aircraft models on the market, as well as all widebodies except the A350, the B787, the A340, the A380, and B747s.

Clusters two and three together contain the majority of aircraft sampled and have the strongest influence on the total dataset's average value depreciation of 31.9%.

The fourth cluster represent aircraft models with average year-on-year depreciation of 59.54% in 2020. Only three aircraft models are in this cluster, namely the A340, the A380 and the B747.

Our findings are also supported by other appraisers such as Ishka when looking just at 15-year old aircraft (see **Figure 6**). Our analysis suggest that the age of the aircraft is statistically insignificant in this crisis as it was in previous downturns.

Figure 6: Ishka; current market value (CMV) change for 15-year-old passenger aircraft

15-year old aircraft			
Aircraft model	CMV 1-Jan-20 (USDm)	CMV 1-Jan-21 (USDm)	% change
A320-200	13.00	10.35	20%
A321-200	18.90	13.80	27%
A330-200	24.20	16.00	34%
A380	51.00	36.00	29%
B737-700	12.00	8.30	31%
B737-800	15.50	11.30	27%
B767-300ER	16.50	12.00	27%
B777-200ER	24.50	14.00	43%
B777-300ER	46.00	23.50	49%
Dash 8-Q400	6.90	4.50	35%
CRJ900	7.20	5.00	31%
E190LR	9.10	5.70	37%

Source: Ishka Ltd.

Alternative financing set to increase

We expect alternative financing to gain in popularity in 2021 and 2022. We expect aircraft financing options such as the Aircraft Finance Insurance Consortium (AFIC) and export finance will support airlines in the short to medium term. These financing options were underutilised before the crisis and will help to diversify the sources of financing available to the market.

We also expect the aviation-finance sector to adapt to the post-pandemic needs of cash-strapped airlines through redesigning current financing options or introducing innovative new ones. The sharp declines in credit quality and higher funding costs have made access to capital markets difficult or impossible for many airlines. Banks will be reluctant to provide loans to airlines with such weak balance sheets. Governments and regulators have already provided many airlines with considerable support (loan guarantees, employee support through furlough schemes, relaxed "use it or lose it" landing-slot rules)

and may be reluctant to go further, resulting in airlines having to turn to alternative sources of funding.

You can find Scope's dedicated aircraft non-payment insurance methodology which is applied to analyse financing products such as AFIC [here](#).

Aviation finance: is it still a market vulnerable to external shocks?

In our Aviation Finance Outlook 2019, we highlighted the vulnerability of the market to external shocks. Historical market value data showed that approximately two years before a crisis the market started to act irrationally when valuing aircraft models. Inflated aircraft values left the aviation market vulnerable to external shocks.

We found that market players tend to become less discriminating in valuing different aircraft models approximately two years before a crisis. During the phases leading up to previous crises, new technology and old technology aircraft followed similar depreciation patterns with little differentiation between market values compared with the years before. For instance, there was little differentiation between how the market valued a 2018-vintage A320ceo and a A320neo – a more fuel-efficient, revamped version of the original model.

The current crisis has demonstrated that investors have become more discriminating. Not only have the new-technology aircraft seen lower declines in value than old-technology aircraft, but we also expect the recovery to be quicker for the new-technology aircraft – in particular the narrowbodies.

If the recovery from this crisis is anything like past crises, new-technology aircraft will recover more rapidly than old-technology jets in the years following the crisis.

We expect modest value recovery for old technology narrowbody aircraft, and very little to no recovery for old technology widebodies. Regional aircraft models, especially the turboprop ATR, might benefit from being relatively fuel-efficient as we see a growing interest in

green financing. However, we believe this will stabilise market values rather than result in a strong recovery.

Contrary to previous crises, we expect to see more aircraft models exiting the market definitively. These aircraft models are the A340s and A380s. We consider the B747 will continue to be operated by some airlines that already have them in their fleet, but we expect much lower demand in the secondary market, especially for older jumbo jets. This might result in some still relatively young B747s being parted out in the coming years.

We expect there to be demand in the secondary market for old technology narrowbody aircraft at discounted prices compared with residual value expectations before this crisis.

Green financing, smaller fleet sizes and a slow recovery of the long-haul market will dictate aviation-finance trends in the next couple of years as these factors reduce demand for widebody aircraft and old-technology narrowbody and regional aircraft.

Despite the unprecedented challenges triggered by the Covid-19 crisis, the pandemic also offers opportunities for a fresh start in the aviation industry, which might result in a more efficient and environmentally friendly aviation market. The crisis also highlights the importance of differentiating between aircraft models and taking aircraft-specific features into consideration when valuing the aircraft in question.

Note on the data used in the report

The conclusions drawn in this paper are based on datapoints from AVAC, Oriel, Ishka, and our own transaction data, and rely on certain assumptions because the Covid-19 crisis is far from over. The datapoints available to us are limited in some cases due to a lower-than-usual number of traded aircraft values.

Annex II: Related research

“European Airlines Outlook” published Jan 2021 available here: [scoperatings.com](https://www.scoperatings.com)

“European airlines: brace for more turbulence – what’s next after demand shock, bailouts?”, published Sept 2020 available here: [scoperatings.com](https://www.scoperatings.com)

“The importance of the LTV in aviation finance – how to account for the correct value”, published Sept 2018 available here: [scoperatings.com](https://www.scoperatings.com)

“Aviation Finance Outlook 2019: Lack of discrimination hints at hard landing to come”, published Dec 2018 available here: [scoperatings.com](https://www.scoperatings.com)

“A new rating approach – knowing your aircraft is the secret to risk assessment in aviation finance”, published Aug 2018, available here: [scoperatings.com](https://www.scoperatings.com)

“Understanding the Aircraft NPI methodology: An application study”, published 4 Feb 2020 available here: [scoperatings.com](https://www.scoperatings.com)

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