

Aviation opportunities in the current market environment: value investments

What are aircraft value investments?

Delivering better client outcomes

With KGAL's 40-year experience in aviation investments, including its two joint ventures with Lufthansa (GOAL and Lufthansa Leasing), we define Aircraft Value investments as investments in aircraft across the investment risk curve that requires active management of the operational, technical and financial risk to de-risk the investment. In contrast we see Core investments as new to young, more standardised aircraft with good airline credit. Value Investments in combination with **operating leasing contracts** can be made **along the whole lifespan of aircraft**, and offer institutional investors the opportunity to **diversify their portfolios** into an uncorrelated asset class with attractive **risk-adjusted net returns of eight to ten percent**.

Chart 1: GOAL's definition of the aircraft lifespan



As shown in the chart above, commercial aircraft are usually operated and depreciated over a cycle of up to 25 years, and can be classified in four main phases: new-to-young aircraft, mid-life aircraft, mature-life aircraft and end-of-life aircraft. Along the life cycle increased levels of expertise and knowledge of the asset manager are required.

New aircraft require less attention during their initial years, compared to older aircraft which are more work intensive and require additional technical care, from both the airline and the asset manager. For example, during the final quarter of the life cycle the asset manager needs to examine the aircraft and its parts even more closely to be able to maximise the value for the investor. The older an aircraft is, the more important the optimisation of the maintenance cycle, e.g. leasing an engine instead of overhauling the existing engines, becomes. Active management of an aircraft portfolio can further optimise the performance and effectively mitigate asset or lessee specific risks.

Value investments: new to young aircraft

An example for Value Investments at this phase of the aircraft life cycle is a niche aircraft that has potential to become more marketable and liquid. **Niche aircraft are characterised by smaller operator bases, lower number of aircraft in operation or new aircraft types**, as opposed to standard aircraft types such as the Airbus A320 or the Boeing 737.

One strategy in this segment is to look for **new to young niche aircraft with a long lease**, i.e. eight years and longer, with the opportunity that the **liquidity of this aircraft increases**. The likelihood of this opportunity can be estimated by the asset manager by the versatility of use on routes that correspond to the airlines' flight route concept, operating costs of the aircraft, future flying behaviour of passengers and the strategies of the airlines themselves.

Value investments: mid life and mature aircraft

In the mid- and mature-life aircraft investment area, i.e. **seven to eighteen-year-old aircraft**, there is **less competition for financing** operating leases.

In this area an attractive investment strategy is to invest in liquid mid-life or mature aircraft with an **average airline in combination with a long lease, or alternatively a short lease with a follow-on lease and / or follow-on sale**. The opportunity for the investor to benefit from value generation would be that the asset manager negotiates a lease extension or forecasts an increase in creditworthiness based on his analysis. The more mature an aircraft is, the more important is the technical and the market knowhow of the asset manager to maximise the returns for the investors.

Value investments: end-of-life aircraft

In the last stage of the lifespan of a commercial aircraft, when the **aircraft is 19 to 24+ years old**, the **airline quality becomes less important** as the **leases are generally shorter** and existing **part-out opportunities arise**. As the aircraft gets to this stage **costs for maintenance and overhauls increase**. Therefore, the **careful technical management** and the **ongoing market screening for remarketing** opportunities by the asset manager are key for the value generation for the investor. As mentioned above the lessee is responsible for the regular aircraft maintenance that is subject to strict regulations issued by aircraft manufacturers and international supervisory authorities and monitored by national aviation authorities. When an aircraft is remarketed, its impeccable technical condition and the corresponding documentation are decisive factors in determining the value of the aircraft.

Outlook on the current opportunity aviation value investments

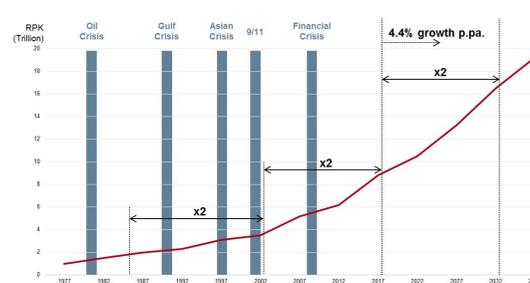
The market for Value Investments that have been described above is expected to grow considerably in the next 20 years. This is mainly due to that the expected growth of the **global annual air traffic** from around 8 trn Revenue Per Kilometer (RPK) in 2017 **by 4.4 % p.a. to nearly 20 trn RPK until 2037**, as illustrated in the next chart¹.

This growth in traffic fuels the demand for aircraft and its financing. Over the next 20 years Airbus forecasts an **increase of the fleet from 21,450 in 2018 to 47,990 in 2037**, of which 10,600 aircraft stay in service and 37,390 aircraft are related to fleet growth and replacements, which translates into an **expected investment volume of USD 5.8 trn²**. Of the 10,600 aircraft that stay in service around 8,700 passenger aircraft are re-marketed and stay in service, which offer opportunities for Value Investments according to KGAL's and GOAL's definition.



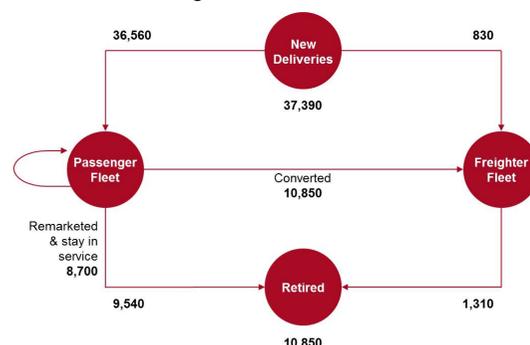
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Chart 2: Global annual air traffic (trillions of RPK)



Source: Airbus GMF 2018, ICAO and KGAL analysis; RPK = Sold revenue passenger kilometers

Chart 3: Aircraft cycle of passenger aircraft above 100 seats and freighter aircraft above 10 tons



Source: Airbus Global Market Forecast 2018

Conclusion

The aviation asset class is **attracting more and more investor's attention**, as current market conditions offer favorable investment opportunities in aircraft over its full lifespan. Investments can be placed at **different risk and return levels that reflect the varying preferences for risks and returns**. The above described Value Investments with a focus on mid-life and mature aircraft combined with a smaller allocation to young and end-of-life aircraft with **downside protection results into net return figures between eight and ten percent**. This qualifies aircraft leasing as an attractive portfolio diversifier with significant diversification benefits.

FOOTNOTE

- 1 Source: Airbus Global Market Forecast 2018 – 2037
- 2 Source: Airbus Global Market Forecast 2018 – 2037

