CVC MARATHON

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Aviation Finance & Leasing: Dynamics & Opportunities

An assessment of the commercial aircraft leasing market: record demand, a structural supply deficit, the investment characteristics of aircraft on operating leases, and the considerations that matter most for institutional capital.



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Executive Summary

Aviation Finance is a principal subset of Asset-Based Lending and can produce quality, durable cash flows backed by hard, globally utilized assets with long-term secular demand. Commercial aircraft are mission-critical to the airlines that operate them, standardized across hundreds of operators on every continent and governed by an international legal framework for creditors' rights that most other asset classes lack. Those properties, combined with a supply of new aircraft that is constrained for years ahead and demand that has grown faster than the global economy for five decades, are what make aircraft on operating leases a valuable component of an institutional portfolio: contracted income, collateral that holds its value, remedies that have been tested and returns that have shown limited correlation with traditional credit and equity markets.

Outcomes depend on buying the right aircraft at the right point in its life, on underwriting the lessee's credit and the structure of the lease as rigorously as the airframe, on technical judgment about engines and maintenance condition that increasingly determines value, and on access to long-term, non-recourse financing. Assessment requires consideration of asset condition, lessee credit, lease terms, financing and liquidity. This paper examines how those factors interact and the limitations of contractual, legal and insurance protections.

This paper describes the characteristics commonly cited for aircraft leasing, the market dynamics that affect it, the structures through which it is financed and, in a dedicated section, the risks that must be managed.

Market conditions have changed materially since late 2022. Global passenger traffic set successive records in 2023, 2024 and 2025, load factors reached an all-time high of 83.6%, and the airline industry earned an estimated $45 billion in 2025. Airbus and Boeing delivered fewer aircraft in 2025 (793 and 600, respectively) than in 2018 (800 and 806), while their combined backlog grew beyond 16,000 aircraft, more than ten years of production. Mid-life aircraft values rose to record levels, lease extensions became the default outcome at expiry, and the aircraft asset-backed securities ("ABS") market reopened and set a new issuance record in 2026.

The principal observations are summarized below and developed throughout the paper:

- **There is a structural supply deficit of aircraft, with only two mainline manufacturers and waiting lists of seven years or more.** OEM production remains below 2018 levels nine years later. Boeing is only now transitioning the 737 program from 42 to 47 aircraft per month, the 777X will not deliver before 2027, Airbus is working through fuselage and engine constraints toward a 2026 delivery target of roughly 870 aircraft, and new orders placed today for the most popular narrowbodies receive delivery slots in the early-to-mid 2030s. Half of the roughly 44,000 aircraft Boeing projects will be delivered over the next twenty years will replace older equipment. Every year of shortfall extends the economic life, lease rates and residual values of the in-service fleet.
- **Demand is growing faster than the global economy, and it is growing everywhere.** Air travel has grown at approximately 1.5 times global GDP for five decades, a relationship that re-established itself in 2024 and 2025, and both manufacturers expect passenger traffic to roughly double by 2045. The growth is global rather than regional. Premium and long-haul demand lead in North America and Europe; India and Southeast Asia are adding first-time flyers at double-digit rates; the Gulf carriers continue to build long-haul capacity, and Saudi Arabia is creating a new aviation market; and Latin America has emerged from a restructuring cycle with stronger carriers. Longer-range narrowbodies such as the A321XLR connect secondary cities directly, and governments continue to liberalize their markets. Every increment of that demand lands on a supply chain that is already more than a decade behind.
- **Engines are highly valuable and in demand.** Three manufacturers, GE Aerospace, Pratt & Whitney and Rolls-Royce, produce the engines for the global mainline fleet, and engines account for more than half of a new aircraft's value. Durability programs on the newest engine types, limited shop capacity, OEM order books for new spare engines that extend beyond three years, and record demand for flying have made serviceable engines the scarcest asset in commercial aviation: engine values and lease rates are at or near record levels, young aircraft are being acquired for their engines, and the maintenance status of an asset increasingly determines its price. Engine condition and maintenance status have become increasingly important factors in aircraft underwriting.
- **Lease rates are steady and durable because supply is constrained.** With airlines unable to obtain new aircraft on any reasonable timeline, lease extensions have become the norm, re-leasing demand for current generation narrowbodies is broad, and market lease rates, having risen sharply in 2023 and 2024, have settled at levels well

above pre-pandemic norms while aircraft values have continued to rise. The result is a lease-rate environment that supports contracted returns and leaves the owner of a shorter-lease, mid-life aircraft positioned to re-price to market within a few years.

- **Underwriting the obligor and the contract matters as much as underwriting the aircraft.** Aircraft on operating leases are senior-secured, first-lien positions, but outcomes depend on the credit quality of the lessee and the terms of the lease: hell-or-high-water payment obligations, security deposits, maintenance reserves and return conditions. A full credit underwriting of each airline is as important as the technical assessment of each airframe. In the comparatively rare event of an airline insolvency, a perfected interest in the aircraft, supported by the Cape Town Convention, now ratified by more than 80 countries, and by Section 1110 of the U.S. Bankruptcy Code, allows the owner to repossess, deregister and remarket the aircraft, and because liquid aircraft are in short supply, transitions between lessees have been orderly.
- **Capital markets are deep, discerning and open.** Aircraft ABS issuance recovered to roughly $10 billion in 2025 and surpassed that full-year total by July 2026. Investment-grade lessors fund themselves in the unsecured bond market at spreads of roughly 65 to 200 basis points over Treasuries, the EETC market remains open to sub-investment-grade airlines at roughly 90 to 180 basis points, and banks, private credit and Japanese tax equity compete to finance aircraft. Non-recourse financing remains available, with pricing that increasingly differentiates by sponsor, collateral and lessee quality.
- **Higher base rates and inflation are constructive for the asset class.** With central banks having lifted policy rates and long-term yields well above the levels of the last decade, aircraft lease yields have risen with them, and investors are being paid more for the same first-lien position. Inflation in OEM list prices, maintenance costs and replacement values flows through to market lease rates and residual values, which is particularly constructive for mid-life aircraft: an asset bought at a discount to a rising replacement cost, on a lease that re-prices to market within a few years, captures that inflation rather than being exposed to it. Whether rates settle higher or lower from here, the combination of contracted cash yield and re-leasing optionality is what distinguishes the mid-life segment.

The paper follows those conclusions. It sets out the investment characteristics of aircraft on operating leases; the market dynamics of demand, supply and engines; the macroeconomic backdrop; the aircraft lifecycle; the leasing industry and its capital markets; the universe of aircraft, freighters and engines; lease structures and tax considerations; and, in a dedicated section toward the end, the risks an investor must underwrite, including geopolitical and energy shocks, airline credit, jurisdiction and engine durability. It closes with our outlook for the asset class.



Source: IATA, Airbus, Boeing, Forecast International, Cirium, CAPA, Airfinance Global, Bloomberg, Airbus Global Market Forecast 2026–2045, Boeing Commercial Market Outlook 2026–2045, CVC Marathon. RPK growth and load factor are full-year 2025; backlog as of July 31, 2026; ABS issuance is 2026 year-to-date; operating-lease share is by aircraft count.

Investment Characteristics of Aircraft on Operating Leases

Aircraft leasing has historically offered contracted cash flows and return drivers that differ from those of traditional fixed income sectors, alongside risks specific to the asset class, including residual value, lessee credit, technical and remarketing risk. Aircraft leases are typically structured as triple-net operating leases and represent senior-secured, first-lien positions in mission-critical assets that airlines rely upon for their daily operations. Because the industry is inherently global, with a single aircraft type operated by dozens of airlines on five continents, the strategy also offers geographic and counterparty diversification that is broader than in many asset-based credit strategies. The 2022 to 2026 period, which included two exogenous shocks, tested each of these characteristics. We set out below the five most commonly cited for the asset class and how each performed.

Pillar	What it means	Market Observations: 2022–2026
Contractual rental obligations	Fixed monthly U.S. dollar rent and maintenance reserves subject to annual escalation under hell-or-high-water leases	Pandemic-era rent deferrals were largely repaid by 2022, and mid-life leases were extended at record rates rather than returned
Asset values	Liquid aircraft types, constrained OEM supply and demand growing faster than GDP	Mid-life narrowbody values have set successive records since 2024 and continue to trade at all-time highs while lease rates normalize; widebody and freighter values and lease rates are still rising
Creditor remedies	First-lien security, Cape Town Convention, Section 1110, insurance and the mobility of the asset	Orderly repossessions from Spirit, Go First and others; $1bn+ English court judgment in favor of lessors on Russian losses; India's 2025 Cape Town Act
Financing Availability	Deep, competitive non-recourse debt markets: banks, ABS, private credit, Japanese Operating Lease with Call Option ("JOLCO")	Aircraft ABS issuance ~$10bn in 2025 and a record in 2026
Yield relative to aviation credit	Unlevered yields several hundred basis points above comparable aviation credit	Unlevered mid-life lease yields of ~9–11% versus EETC Class A at G-spreads ranging from 90–180 basis points and ABS Class A at G-spreads ranging from 140–160 basis points.

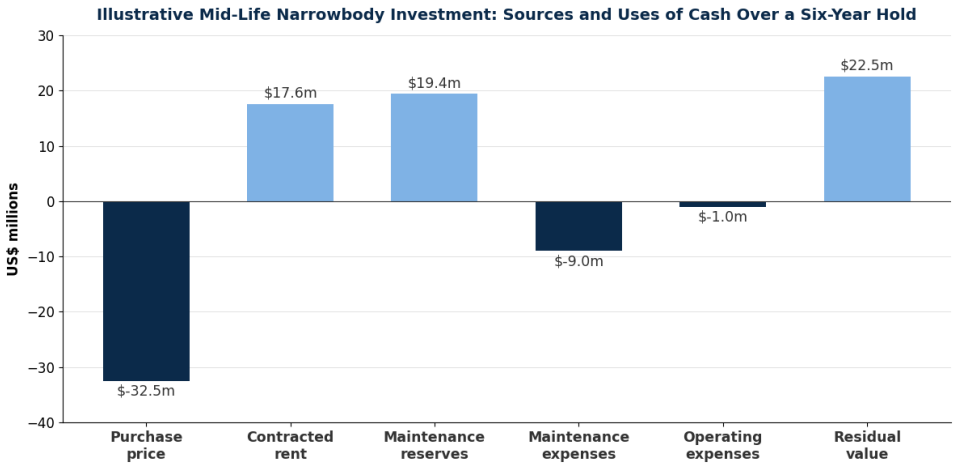
Source: CVC Marathon; AerCap 2Q 2026 results; IBA; KBRA; Wilmington Trust; Herbert Smith Freehills Kramer.

Contractual Rental Obligations

Aircraft leases are long-term contracts. Leases on new aircraft typically run 8 to 12 years; leases on mid-life aircraft typically run 4 to 7 years and are increasingly extended at expiry rather than returned. Rentals are fixed, denominated in U.S. dollars and paid monthly in advance. In addition to rent, most leases to non-investment-grade lessees require the payment of maintenance reserves, calculated on actual utilization in flight hours and cycles, which accrue toward the cost of the next heavy airframe check, engine performance restoration, landing gear overhaul and life-limited parts replacement. Security deposits of one to three months' rent, in cash or by letter of credit, are held against default. Lessees also bear all maintenance, insurance and tax obligations under the triple-net structure.

These leases are "hell-or-high-water" obligations: the lessee must pay unconditionally for the full term regardless of the aircraft's condition, its own financial circumstances or events outside its control. The pandemic tested that principle more severely than any prior event, and the outcome is instructive. Lessors granted rent deferrals, not forgiveness, in 2020; deferred rent was overwhelmingly repaid by 2022; and lessees that could not perform returned their aircraft, which were re-leased into a market short of equipment. The 2026 fuel shock produced no comparable wave of deferral requests from creditworthy lessees, because airline balance sheets entering 2026 were far stronger than those entering 2020 and because aircraft relinquished by a defaulting lessee are placed with another operator within weeks in a market short of equipment.

The chart below illustrates the economics of a hypothetical mid-life narrowbody investment: an approximately eight-year-old A320-200 acquired for $32.5 million, on a six-year lease at $245,000 per month with maintenance reserves of roughly $270,000 per month, sold at 14 years of age for $22.5 million after reinvesting $9 million in heavy maintenance, principally engine shop visits. Contracted rent alone returns more than half of the purchase price over the lease; reserves fund the maintenance that preserves the asset's value, with any excess retained at expiry; and the residual, which represents roughly 38% of total inflows, is the only element dependent on the market at exit. The illustrative unlevered IRR is approximately 10%, with every cash flow other than the residual contracted at closing.



Source: CVC Marathon. Illustrative only; assumptions are hypothetical and do not represent any actual or proposed investment. Not a guarantee of future performance.

Asset Values with Long-Term Secular Tailwinds

Commercial aircraft benefit from several long-term dynamics that have supported lease rates and market values over multiple decades, and that remain in place today, although they do not prevent periodic declines in values and lease rates.

Liquidity of the Asset

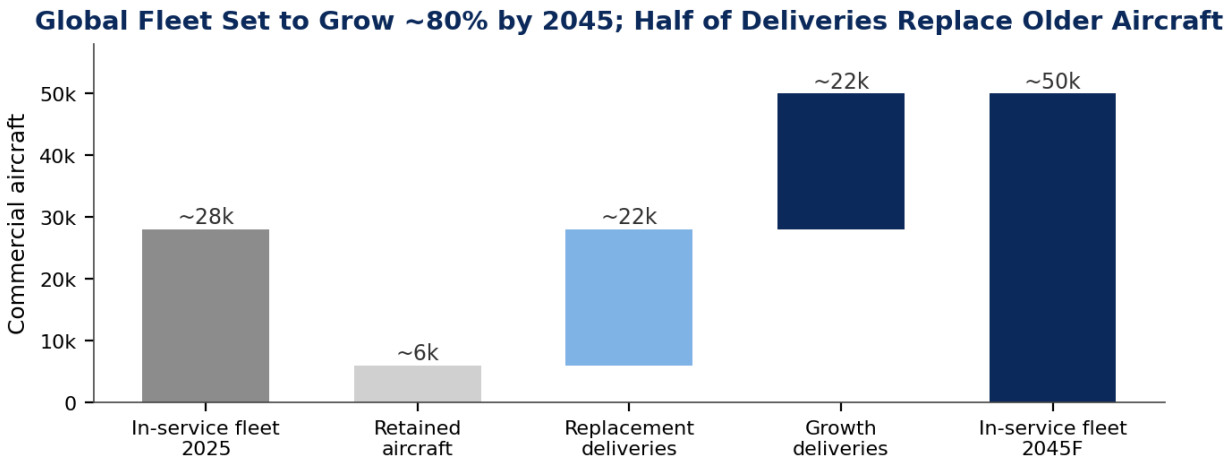
The A320 family and 737 family together account for more than 60% of the global passenger jet fleet and are operated by several hundred airlines. The A320neo family alone had been delivered to more than 150 operators by 2026, and the previous-generation A320ceo and 737NG, of which roughly 8,100 and 7,100 were built respectively, have operator bases numbering in the hundreds. An aircraft that comes off lease from one operator can be placed with another in a different region with modest reconfiguration, which is a principal reason narrowbody values have historically tended to recover from downturns, although the timing and extent of recovery have varied by type and cycle.

Constrained Supply

The process of designing, certifying and producing a new aircraft type is so long and so capital intensive that OEMs undertake it once or twice a decade, and the process of ramping production is itself constrained by a supply chain of thousands of vendors, many of which are single-sourced. The 2020–2026 period demonstrated the asymmetry of this constraint: production can collapse quickly, as it did in 2020 and again after the January 2024 MAX incident, but it can only recover slowly. The result, discussed in the Market Dynamics section, is a combined backlog exceeding ten years of output, a delivery shortfall of several thousand aircraft relative to pre-pandemic plans, and no clean-sheet replacement program expected before the 2030s. Supply discipline of this kind is a direct support for the residual values of aircraft already in service.

Demand Growing Faster than GDP

Air travel has grown at approximately 1.5 times global GDP for five decades, a relationship that re-established itself in 2024 and 2025 after the pandemic interruption. The main drivers remain the expansion of the global middle class, particularly in India, Southeast Asia, Latin America and Africa, the decentralization of networks toward secondary cities enabled by longer-range narrowbodies such as the A321XLR, and continued market liberalization. Airbus's 2026 Global Market Forecast anticipates that the number of smaller cities with air service will grow substantially faster than megacities over the next twenty years; Boeing's 2026 Commercial Market Outlook projects the global fleet growing by roughly 80% to more than 50,000 aircraft by 2045. Short-term shocks, including regional conflicts and high fuel prices, have historically displaced demand in time rather than destroying it.



Source: Boeing Commercial Market Outlook 2026-2045 (July 2026): ~44,000 new deliveries, fleet >50,000 by 2045. Airbus GMF 2026-2045 projects 42,060 new aircraft. Figures rounded/approximate.

Value Performance through the Cycle

Mid-life narrowbody market values rose sharply through 2023 and 2024 as the supply shortage bit, with mid-life A320 family values registering annual gains exceeding 20% in some cases, and have held those gains through 2025 and 2026 while market lease rates have settled below their mid-2025 peaks at levels well above pre-pandemic norms. IBA's July 2026 review of 94 aircraft types concluded that values across both current- and previous-generation narrowbody fleets remain well supported by engine demand and component scarcity and that new-generation widebodies continue to record positive value momentum. The settling of lease rates from an extraordinary peak toward sustainable levels, while values hold, is the pattern one would expect in a supply-constrained market, and we address its implications for underwriting in the Macro section.

Creditor Remedies, Including Global Enforceability of Property Rights

When evaluating an aircraft investment, it is important to understand not only the physical aircraft but also the credit quality of the lessee and the structure of the contract. A full underwriting of the obligor, its balance sheet, liquidity, network, cost position and hedging, and of the lease itself, its payment obligations, deposits, reserves, return conditions and remedies, is as central to the outcome as the technical assessment of the airframe and engines. The protections below work best for an investor who has done that underwriting and who owns a liquid aircraft.

Several structural characteristics can mitigate, but not eliminate losses, for aircraft investors under downside scenarios. First, as noted above, the majority of aircraft types are liquid and have wide operator bases, so an aircraft recovered from a non-performing lessee can be re-leased or sold. Second, the lessor owns the asset and, in a lessee insolvency, generally has the right to recover it rather than holding an unsecured claim, although any financing secured on the aircraft ranks ahead of the lessor's equity. Third, the asset is mobile and can be flown out of a jurisdiction once deregistered. Fourth, two legal frameworks, the Cape Town Convention and Section 1110 of the U.S. Bankruptcy Code, provide creditors with time-limited remedies that are not available for many other asset classes, although enforcement outcomes vary by jurisdiction.

The Cape Town Convention on International Interests in Mobile Equipment and its Aircraft Protocol, signed in 2001 and in force since 2006, create an international registry of interests in aircraft objects and give creditors the right to repossess, deregister and export aircraft on default or insolvency, typically within a waiting period of 30 to 60 days, backed by an Irrevocable Deregistration and Export Request Authorization ("IDERA") granted by the airline at lease inception. The Convention now has more than 80 contracting states, including the United States, the European Union, India, China, the UAE, Brazil, Mexico and Indonesia.

Section 1110 of the U.S. Bankruptcy Code similarly requires a Chapter 11 airline, within 60 days of filing, either to cure defaults and assume its aircraft leases or to surrender the equipment, exempting aircraft from the automatic stay that governs other assets. Recent airline insolvencies, including the 2026 wind-down of a large U.S. ultra-low-cost carrier whose leased A320 family aircraft were returned to lessors and placed with other operators within weeks, illustrate both the remedy and the market context. The same pattern has held across lessee insolvencies more

broadly: lessors that took redelivery of aircraft were able to remarket them to other airlines with relative ease, given the strong demand for current-generation narrowbodies and the persistent shortage of new deliveries. In these cases, recoveries depended significantly on the liquidity of the aircraft, as well as on transition costs, maintenance condition and the time required to remarket them.

Finally, the Russian litigation has clarified the insurance layer of protection. The June 2025 English judgment confirmed that lessors' contingent war-risk policies respond to governmental expropriation of the kind Russia effected in 2022, that sanctions do not bar payment, and that lessors may recover interest and costs. Combined with cash settlements from Russian lessees and insurers, the largest lessors have recovered well over half of the value written off in 2022 on aircraft that were never physically returned. Insurance is not a substitute for lessee and jurisdictional discipline, and recoveries remain subject to appeal, coverage terms and insurer solvency; we return to the Russian experience in the Risks section.

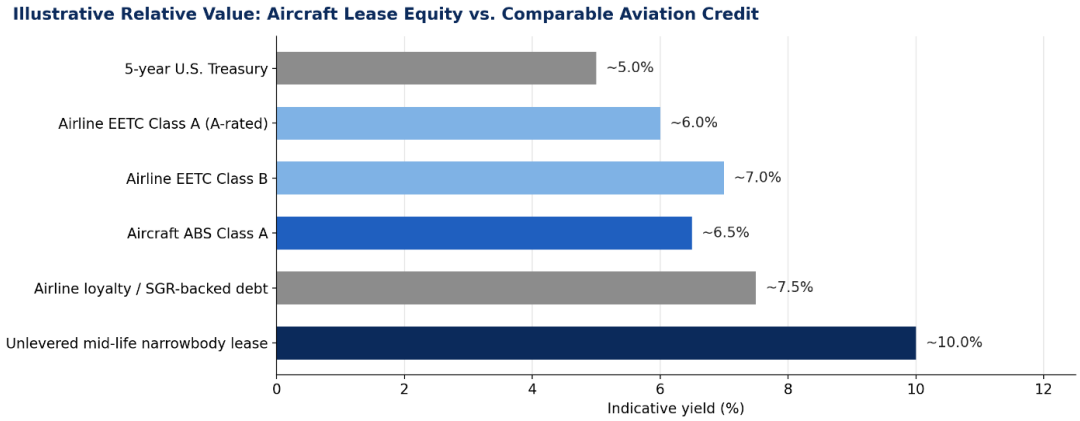
Availability of Financing

Historically there have been numerous sources of financing for commercial aircraft, and the depth of that market has increased since 2022. Commercial banks in Europe, Asia, the Middle East and the United States continue to provide secured debt at 60% to 75% loan-to-value on new and mid-life aircraft, and bank liquidity improved materially through 2025 as the pandemic-era retrenchment reversed. Export credit agencies support new deliveries. Japanese operating lease structures (JOL and JOLCO) remain a reliable source of competitively priced capital for new aircraft on lease to top-tier airlines. Private credit funds have become active lenders against mid-life portfolios and warehouse facilities. And the investment-grade lessors fund themselves in the unsecured bond market at relatively tight levels: AerCap's average cost of debt was 4.2% in the second quarter of 2026, with $43 billion of debt outstanding against $18 billion of equity.

The most significant development has been the reopening of the aircraft ABS market, which we discuss in detail in a dedicated section. After issuance collapsed to roughly $1.5 billion in 2022 and $1 billion in 2023, the market rebuilt to roughly $4.5 billion in 2024 and approximately $10 billion in 2025, when senior spreads tightened to 140–160 basis points over swaps. By July 2026, issuance for the year had already surpassed the 2025 total, and market participants expected $10 to $15 billion for the full year.

Relative Yield Premiums

Capital allocators can potentially earn a higher yield from a well-structured operating lease to a high-quality airline obligor than from aircraft ABS or airline secured bonds, while owning the asset outright rather than a tranche of debt secured on it. Comparable securities to aircraft lease investments include enhanced equipment trust certificates ("EETCs"), aircraft ABS debt and airline secured bonds backed by loyalty programs and slots, gates and routes ("SGR"). All share the same underlying collateral or cash flows but sit in different parts of the capital structure. As of September 2026, American Airlines' 2026-1 and 2026-2 EETCs issued in April and August 2026 traded at 110 basis point G-spreads for the A-rated Class As and 180 basis point G-spreads for its Class Bs; aircraft ABS Class A notes have priced in at spreads of 140 – 160 basis points; and airline loyalty- and SGR-backed debt trades in the 100 – 350 basis point G-spreads depending on issuer. By comparison, mid-life narrowbodies on operating lease have typically been underwritten to unlevered yields in the high single digits to low double digits. The higher yield reflects risks that debt investors do not bear, including residual-value, remarketing, maintenance and lessee-default risk, and the lower liquidity of a whole-asset position.



Yields shown as 5-year U.S. Treasury (5.0%) plus indicative spread, rounded to illustrative levels. EETCs: American Airlines 2026-1 / 2026-2 G-spreads of ~110 bp (Class A) and ~180 bp (Class B). Aircraft ABS Class A: 140–160 bp. Loyalty / SGR-backed debt: 100–350 bp depending on issuer. Lease yield: 350–500 bp over EETC Class A.
Source: Bloomberg, company filings, KBRA, FRED; CVC Marathon estimates as of September 2026. Illustrative only; not a guarantee of future results.

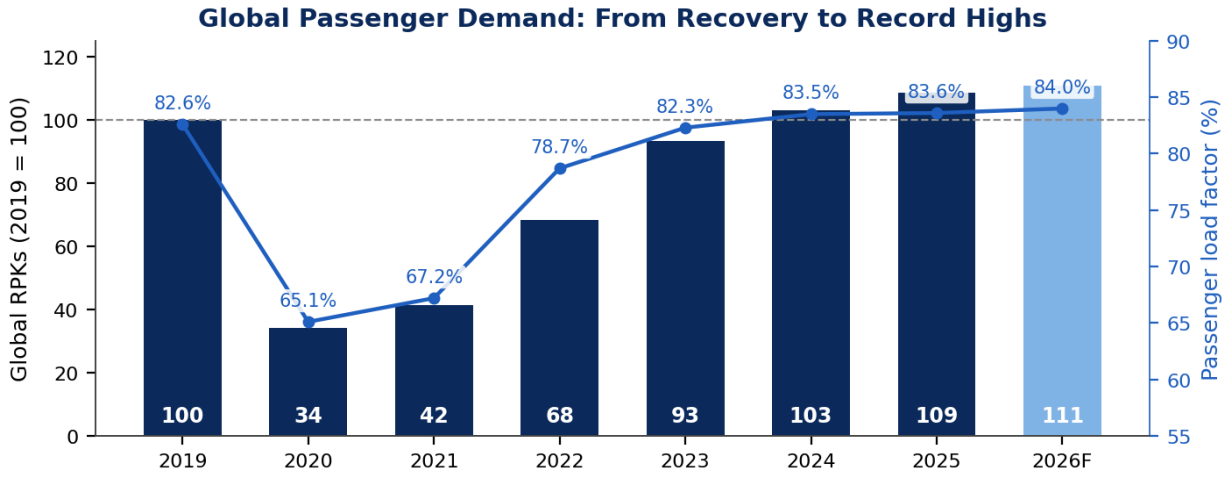
Source: Bloomberg, company filings, KBRA, FRED, CVC Marathon estimates as of September 2026. Provided for illustrative purposes only. This illustrative summary does not indicate or guarantee future performance or activity for any program and should not be relied on for such or related purposes. There is no guarantee that similar investment opportunities will be available in the future. Please see the Disclosures for important information.

Market Dynamics: Demand, Supply and Engines

The case for aircraft on operating leases rests on three structural dynamics: demand that has returned to its long-run growth trend and set records, a supply of new aircraft that remains constrained for years ahead, and an engine market that has become the dominant driver of value across the fleet. This section sets out each in turn, together with the state of airline profitability and the global landscape for aviation investment.

Global Travel: From Recovery to Record

Global air travel has fully recovered from the pandemic and has moved on to a new cycle of growth. Passenger traffic surpassed its 2019 level in 2024 and set successive records in 2024 and 2025; global revenue passenger kilometers ("RPKs") grew 5.3% in 2025, a rate IATA characterized as a return to the industry's historical growth pattern. International traffic, which lagged domestic flying for most of the pandemic, grew 7.1% in 2025 and now leads the expansion, with Asia-Pacific carriers recording double-digit international growth. Passenger load factors reached a full-year record of 83.6% in 2025, a statistic that says as much about constrained aircraft supply as it does about demand: airlines are filling every seat they can source.



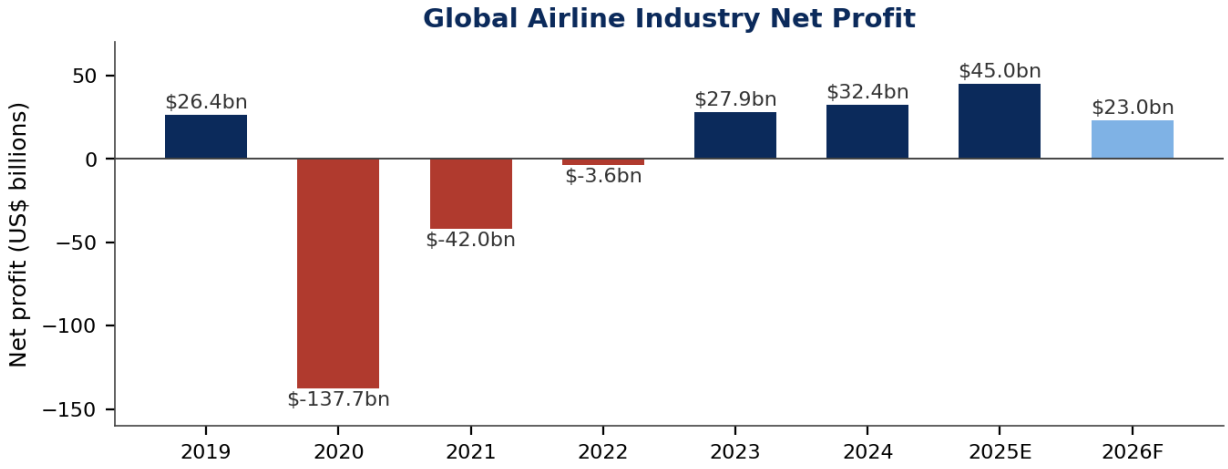
Source: IATA (annual RPK growth; 2026F per IATA June 2026 outlook). RPK index compiled by CVC Marathon.

The composition of demand has also normalized. The pandemic-era debate about whether video conferencing had permanently impaired business travel has largely been settled in favor of travel; premium cabins have been the strongest-performing segment for the U.S. network carriers, and corporate travel volumes converged with pre-pandemic trends during 2024. Leisure demand, which led the recovery, has remained resilient despite materially higher fares, and the emerging-market middle class continues to expand the base of first-time flyers, particularly in India, where domestic traffic has grown at double-digit rates, and across Southeast Asia and Latin America.

The 2026 energy shock, discussed in the Risks section, slowed traffic growth: IATA expects full-year RPK growth of roughly 2% in 2026, with passenger numbers edging up to just above 5.1 billion, after capacity to and from the Middle East fell sharply in the spring. Load factors are nonetheless expected to set a new record of 84% in 2026, because capacity withdrawn from the Gulf hubs has largely been redeployed rather than parked and because the global fleet remains too small for the demand placed upon it. The structural picture, captured in Boeing's and Airbus's 20-year forecasts published in July 2026, is unchanged: both manufacturers expect passenger traffic to roughly double by 2045 and project demand for approximately 42,000 to 44,000 new aircraft over that period.

Airline Profitability

The airline industry entered 2026 in the strongest financial position in its history. IATA's June 2026 estimate puts 2025 net profit at $45 billion on revenue of just over $1 trillion, with a net margin of roughly 4.2%. Airlines used the 2023–2025 window to repay pandemic-era borrowings, retire government support, re-build cash balances and, in the case of the U.S. majors, return to investment-grade-like leverage metrics. The restructured carriers of 2020–2022 (LATAM, Avianca, Aeroméxico, SAS, Philippine Airlines) emerged with lower cost bases and more flexible fleets, and the Latin American restructuring wave concluded with GOL's emergence from Chapter 11 in 2025 and Azul's in February 2026.



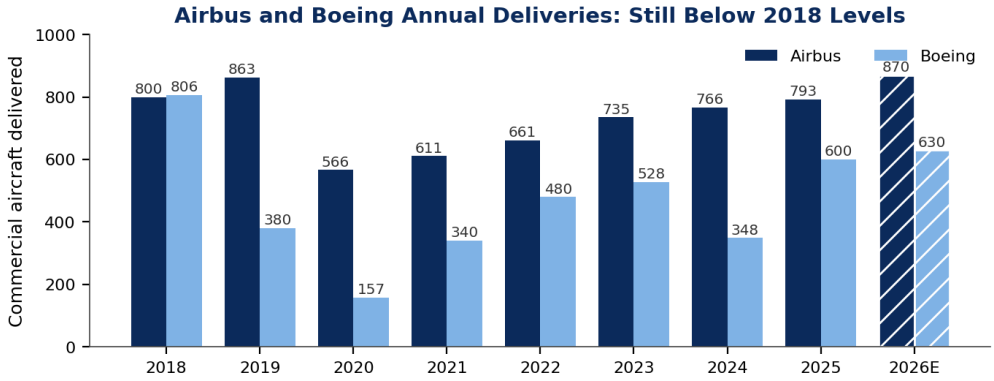
Source: IATA. 2025 estimate and 2026 forecast per IATA June 2026 outlook (2026 forecast halved from $45bn following the Iran conflict and jet fuel spike).

Higher fuel prices in 2026 have reduced near-term industry profitability without reversing the structural improvement: IATA's June 2026 outlook forecast net profit of roughly $23 billion for the year, compared with a pre-shock expectation of a record $41 billion, as the industry fuel bill rose toward 31% of operating costs. Revenues are nonetheless projected to grow by roughly 9.5% as airlines raise fares and add surcharges, and the industry remains profitable in aggregate through a shock larger than that of 2022. The details of the shock and its uneven effects are set out in the Risks section.

Importantly, the industry's response has been disciplined. Hedging covered roughly a third of expected consumption at the outset of the shock; carriers have passed costs through via fare increases and ancillary fees while trimming unprofitable capacity; and the strongest balance sheets in the industry's history have given most airlines the liquidity to absorb a difficult year. For aircraft owners, the distribution of airline profitability matters more than the aggregate. Airline cycles have been a constant of the industry for four decades; what determines a lessor's outcome is the liquidity of its equipment, the enforceability of its remedies and the discipline of its lessee selection.

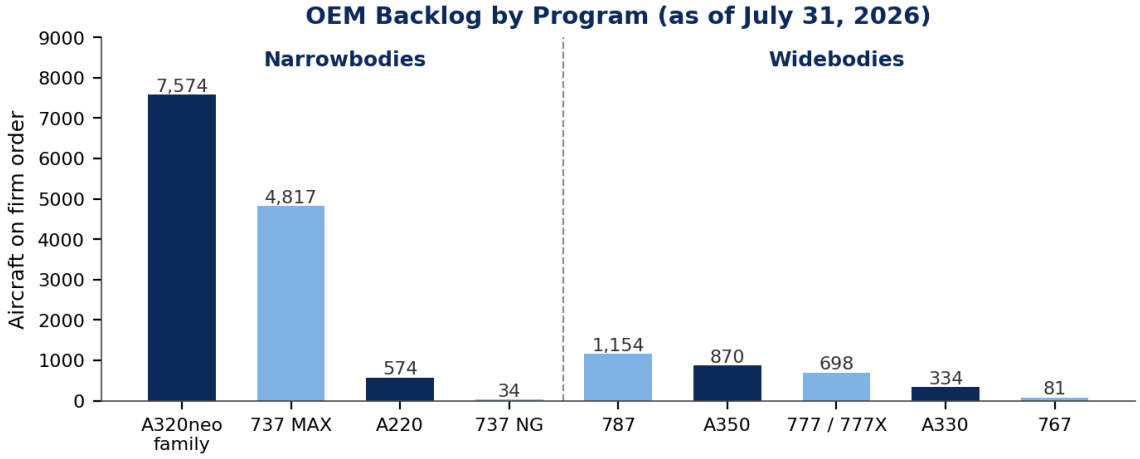
OEM Developments: A Structural Supply Shortage

The OEMs have not caught up with demand. In 2022 the consensus expected Airbus and Boeing to return to pre-COVID production by 2023 and to set new records thereafter. Instead, Airbus delivered 735 aircraft in 2023, 766 in 2024 and 793 in 2025, each year below its 2019 output of 863, while Boeing, buffeted by the January 2024 Alaska Airlines door-plug accident, an FAA-imposed production cap of 38 aircraft per month, a 53-day machinist strike in late 2024 and recurring quality escapes, delivered just 348 aircraft in 2024 and 600 in 2025. Across the two manufacturers, cumulative deliveries since 2020 have fallen several thousand aircraft short of pre-pandemic production plans, compounding the roughly 4,400-aircraft narrowbody shortfall versus pre-MAX-grounding expectations that we highlighted in 2022.



Source: Airbus, Boeing, Forecast International. 2026E: Airbus company target (~870); Boeing CVC Marathon estimate based on YTD run-rate (367 through July 2026).

Production is improving, but slowly and from a low base. Boeing stabilized the 737 program at 38 per month in 2025, received FAA concurrence to move to 42 in late 2025, began the transition to 47 per month in the first half of 2026 and started low-rate production on a fourth 737 line in July 2026, which must be production-certified before first delivery. The 787 program is targeting eight per month after a difficult first half of 2026. The 737-7 and 737-10, with roughly 40 completed aircraft in inventory, still await certification of the engine anti-ice solution, which Boeing expects in 2026. The 777-9, more than seven years late, is now expected to deliver in 2027, with the 777-8 Freighter approximately two years thereafter; Boeing recorded a $4.9 billion reach-forward loss on the program in 2025 and identified an engine durability issue during inspections. Airbus delivered 418 aircraft in the first seven months of 2026 against a full-year target of roughly 870, a goal that once again depends on the manufacturer's characteristic fourth-quarter surge, and A330neo and A350 output remains well below plan.



Source: Airbus, Boeing, Forecast International. Airbus total backlog 9,352 (~10.7 years of production); Boeing 6,784 (~10.1 years). Airbus = navy, Boeing = light blue.

Against that output, demand for new aircraft has never been stronger. Airbus booked 1,000 gross orders in 2025 and 1,090 in the first seven months of 2026, including a surge at the Farnborough Air Show; Boeing booked more than 480 gross orders through July 2026 after its strongest order year in a decade in 2025. The combined backlog of

16,136 aircraft at July 31, 2026, represents more than a decade of production at current rates, and new orders placed today for the A321neo or 737-10 receive delivery slots in the early-to-mid 2030s. AerCap, the world's largest lessor, placed an order in July 2026 for 15 Boeing 787s with deliveries scheduled between 2030 and 2033. The practical consequence is that airlines cannot grow, or in many cases even replace retirements, through new deliveries alone. They are extending leases on existing aircraft, deferring retirements, acquiring mid-life aircraft in the secondary market and, increasingly, leasing spare engines to keep fleets flying.

We also note that the OEM duopoly remains intact for practical purposes. COMAC's C919 is in limited service in China and is not certified in the United States or Europe; Embraer's E2 family has won orders but competes at the small end of the narrowbody market. Critically, neither Airbus nor Boeing has launched a clean-sheet replacement for the A320neo or 737 MAX, and neither is expected to do so this decade. The current-generation narrowbodies are therefore likely to remain the industry's workhorses into the 2040s, and the previous-generation A320ceo and 737NG, of which more than 15,000 were built, are expected to continue to be flown, extended, converted and parted out for years longer than the industry assumed in 2019.



Source: Airbus SE

Engines: In Demand and Supply Constrained

If the airframe shortage is the headline, engines are the story beneath it. Three manufacturers produce the engines for the global mainline fleet: GE Aerospace, whose CFM56 and LEAP engines power the 737 and much of the A320 family; Pratt & Whitney, whose V2500 (through the IAE consortium) and geared turbofan ("GTF") power the balance of the A320 family and the A220; and Rolls-Royce, whose Trent engines power the A350, most of the A330 fleet and part of the 787 fleet. Engines represent more than half of the value of a new aircraft, and a far larger share of the value of a mid-life one, because the airframe depreciates while a freshly overhauled engine with full life-limited parts is worth close to its new price. The maintenance status of its engines is a primary determinant of the value of any aircraft. OEM order books for new spare engines extend beyond three years, such that incremental capacity cannot be procured within any reasonable underwriting horizon. The result is that spare engines are the scarcest asset in the industry.

The consequences for asset values have been significant. A pair of serviceable GTF engines commanded lease rates well in excess of $400,000 per month at the peak, more than the lease rate of the aircraft they power. CFM56-5B and -7B engines, which power the previous-generation fleet, have seen values rise for eighteen consecutive months before plateauing in 2026, and widebody engines such as the GE90-115B and Trent 700 continue to appreciate as the 777X and A350 delays extend the lives of the 777-300ER and A330ceo fleets. Teardowns of new technology narrowbodies younger than six years old have been occurring as owners harvest engines and life-limited parts. We examine the implications for engine leasing in a dedicated section below. Aircraft are increasingly valued as the sum of their engines and components, making maintenance status and remaining green time more significant factors in asset valuation and risk assessment.

A Global Investment Landscape

Aircraft leasing is a global business, and the opportunity set is global. North America remains the deepest market for aircraft-backed capital, with the EETC and ABS markets, the largest airlines and a bankruptcy regime that protects aircraft creditors. Europe is home to the leasing industry itself, centered on Ireland, and to the largest low-cost carriers and most liquid secondary market for mid-life narrowbodies. Asia is the fastest-growing source of demand, with India and Southeast Asia adding first-time flyers at double-digit rates, Chinese and Japanese lessors and banks among the largest sources of capital, and Air India and IndiGo holding two of the largest orderbooks in the world. The Middle East and North Africa combine the Gulf network carriers and their widebody fleets with the rapid build-out of Saudi Arabian aviation, and Latin America has emerged from a decade of restructuring with stronger carriers. Because a single aircraft type is operated by hundreds of airlines across all of these regions, an investor can diversify by geography and counterparty while holding a standardized, liquid asset.

The demand underpinning that landscape is durable. Air travel has grown at approximately 1.5 times global GDP for five decades, through oil shocks, recessions, terrorism and a pandemic, and the relationship re-established itself in 2024 and 2025 as traffic returned to trend. The drivers are structural: the expansion of the middle class in emerging markets, the decentralization of networks toward secondary cities enabled by longer-range narrowbodies, and continued liberalization of air service agreements. Both manufacturers expect traffic to roughly double by 2045. Short-term shocks have historically displaced demand in time rather than destroying it, and the long-run trend has reasserted itself after each.

Aircraft leasing has now been tested by two exogenous shocks within four years of each other, and through both, aircraft have held their values, lessors have continued to collect rents and recover equipment, and the investment-grade lessors have continued to fund themselves in the public bond markets at modest spreads. AerCap, as the industry bellwether, reported a 16% return on equity in the second quarter of 2026, sold $1.4 billion of assets at a 20% unlevered gain-on-sale margin, or 1.7 times book value on an equity basis, and raised its full-year guidance in late July 2026. Avolon reported first-quarter net income up 32%.

In our view, several forces are likely to shape returns over the next five years, although each is subject to uncertainty. On the supply side, the OEM shortfall is unlikely to be closed in the near term: aircraft not built between 2020 and 2026 cannot be built retroactively, and the practical ceiling on production rates means the gap closes only slowly, if at all, before 2030. Engine durability programs have compounded this by removing a meaningful share of the newest fleet from service and by diverting MRO capacity from the previous generation. On the demand side, traffic growth has returned to its long-run trend of roughly 1.5 times global GDP, emerging-market middle classes continue to expand, and the industry's preference for leasing over owning, now covering more than half of the global fleet, continues to deepen as capital-constrained airlines prioritize liquidity. Higher interest rates have raised the yield that aircraft must earn, and periodic airline distress remains a recurring feature of the industry; with liquid equipment and enforceable remedies it has historically created acquisition opportunities for disciplined lessors. We address both in the Macro and Risks sections.

Macro Considerations

Several macroeconomic variables affect airline profitability, aircraft lease rates and aircraft values. Below is a summary of the indicators most relevant to commercial aviation, how each has evolved since 2022 and, because this paper is intended to remain relevant beyond the current cycle and how an investor should think about each whichever way it moves from here.

Inflation and Interest Rates

Higher base rates are, on balance, constructive for the asset class. The Federal Reserve and other central banks lifted policy rates well above the levels of the last decade, and long-term yields have followed; aircraft lease yields have risen with them, so an investor is paid more for the same first-lien position in the same asset than at any point since the financial crisis. Higher benchmark yields do require aircraft to generate higher returns to maintain an acceptable spread, which puts downward pressure on the prices of aircraft on long fixed-rate leases and raises the cost of the debt that lessors and airlines use, but those effects fall hardest on new aircraft on twelve-year rentals and least on mid-life aircraft whose leases re-price within a few years.

Inflation reinforces the point. Aircraft are real assets priced in nominal dollars, and inflation in OEM list prices, in maintenance costs and in replacement values flows through to market lease rates and residual values, as it did between 2023 and 2025. Replacement values are rising: new-aircraft prices escalate with OEM cost inflation, a new narrowbody cannot be delivered for years, and the cost of the engine shop visits and heavy checks that restore a used aircraft has risen sharply. For the owner of a mid-life aircraft bought at a discount to that rising replacement cost, inflation is a tailwind: each lease expiry re-prices the asset to a higher market rent, and the residual is anchored by a replacement cost that is moving up rather than down. For aircraft that are off lease or have short remaining terms, the expectation of higher future rentals provides an immediate boost to market value. Whether rates and inflation settle higher or lower from here, that asymmetry between a four-to-six-year mid-life lease and a twelve-year lease on a new delivery is a durable feature of the asset class.

Higher financing costs also raise barriers to entry. Newer lessors and highly levered platforms dependent on floating-rate warehouse debt have found their economics squeezed, while established investors with long-dated fixed-rate liabilities, ABS take-outs and conservative leverage have gained share. The gap between the two widens whenever credit spreads move, as they did in 2026, and as investors become more selective about sponsor quality in the securitization market.

Fuel

Fuel is the second-largest and most volatile airline operating cost, and periodic fuel shocks are a feature of the industry rather than an aberration: 2008, 2022 and 2026 each saw jet fuel prices spike well above the levels at which airline fleet plans were written. Over the last decade, generally low fuel prices made it profitable for airlines to operate older fleets; at elevated prices the calculus changes. New-technology narrowbodies burn 15 to 20% less fuel per seat than their predecessors, which at $4 per gallon is worth several hundred thousand dollars per aircraft per year, a sum comparable to the lease-rate premium between the two generations. High fuel prices therefore intensify demand for A320neo and 737 MAX aircraft and widen their lease-rate premium over the A320ceo and 737NG, as 2026 demonstrated.

Two mitigants are important for owners of previous-generation aircraft. First, the fuel-burn penalty of a 737-800 or A320-200 is modest relative to that of the aircraft they replaced, and both remain economically viable for most airlines at fuel prices well above recent averages, particularly on shorter segments. Second, and decisively, the airline that would prefer to replace an older aircraft with a new one cannot obtain the new one. With new deliveries constrained and backlogs extending into the 2030s, the marginal airline has no alternative to extending or re-leasing current-generation equipment, which is why lease extension rates for 737-800s and A320ceos remain near record levels. Fuel prices determine which aircraft an airline would like to fly; the supply shortage determines which aircraft it does fly.

Labor and Operational Constraints

The acute pilot and ground-staff shortages that constrained airlines as traffic rebounded from the pandemic have largely resolved, though at a cost: U.S. pilot contracts negotiated in 2023–2024 delivered cumulative wage increases of 35–45%, and labor is now the industry's largest expense. The operational constraint has migrated from the flight deck to the hangar. The global maintenance, repair and overhaul ("MRO") industry lacks the skilled technicians, shop capacity and parts supply to service a fleet that is older and more heavily utilized than planned, while simultaneously absorbing accelerated GTF and LEAP shop visits. Engine shop-visit turnaround times of 250 to 360 days, versus 60 to 90 days historically, have become the pacing item for fleet availability. Air traffic control capacity, particularly in Europe and the northeastern United States, and the rerouting required by closed airspace over the Gulf, Russia and Ukraine, add further friction. For lessors, these constraints translate directly into higher maintenance reserve rates, longer transition times between lessees and a premium for aircraft and engines with strong maintenance status and remaining greentime.

Currency, Trade and Tariffs

Aircraft leases are almost universally denominated in U.S. dollars, so the dollar's path matters for non-U.S. lessees whose revenues are earned in local currency. The dollar's depreciation during 2025 provided meaningful relief to European, Latin American and Asian carriers and contributed to IATA's initially optimistic 2026 outlook; renewed dollar strength in 2026 partly reversed that benefit. The dollar's path bears watching for emerging-market lessees in either

direction, and leases to airlines with dollar-linked or hedged revenue bases carry less currency risk. Trade policy has, to date, largely spared commercial aviation: aircraft, engines and parts were carved out of the principal 2025 U.S. tariff frameworks, including the U.S.–EU agreement, and Boeing deliveries to Chinese airlines resumed in 2025 after a brief suspension. The removal of de minimis tariff exemptions on low-value e-commerce parcels in 2025 reshaped, but did not reduce, air cargo flows. We regard trade policy as a source of volatility rather than a structural headwind, but one that argues for geographic diversification of lessees.

Implications for Underwriting

We draw four conclusions. First, underwriting should assume a cost of capital well above that of 2021 and should not rely on the peak lease rates of 2024 to 2025 persisting; assumptions that lease rates settle toward long-run averages are more prudent than extrapolation of recent peaks, and an investment that works on those assumptions will work better if rates fall. Second, the inflation protection embedded in shorter mid-life leases and in maintenance reserves that escalate annually is worth more in a higher-inflation regime, not less. Third, counterparty selection and jurisdictional diversification matter more when fuel is expensive than when it is cheap, because the weakest airlines are tested first. Fourth, the technical dimension of underwriting, specifically the maintenance status, engine green time and parts value of each asset, has become as important as the credit dimension.



Source: The Boeing Company

Aircraft Leasing Lifecycles

Commercial aircraft follow a similar lifecycle from delivery to retirement, and the investment characteristics of an aircraft change materially at each stage. An aircraft's economic useful life has historically been assumed to be 25 to 30 years, limited by the increasing frequency and cost of maintenance, particularly engine overhauls, and by the fuel-efficiency advantage of each successive generation of equipment. The supply shortage of the last five years has extended that useful life in practice: 737-800s and A320ceos that would have been retired at 22 to 25 years under pre-pandemic fleet plans are being extended, converted to freighters or harvested for engines, and the average age of the global fleet has risen to its highest level in two decades.

New Aircraft (0–7 Years)

New aircraft are ordered several years in advance by a limited number of large lessors and, less commonly, by airlines themselves. Orderbook wait times now extend to the early-to-mid 2030s for in-demand narrowbodies, and lessors with delivery positions in 2027–2029 hold a scarce asset in their own right. Leases on new aircraft are typically agreed one to three years before delivery for terms of around twelve years, to the world's largest and most creditworthy airlines, and the universe of lessors competing for these placements is dominated by investment-grade platforms funded in the unsecured bond market. Returns are correspondingly low: unlevered yields in the mid-single digits are typical, and the investor bears a single, distant residual value assumption on an aircraft whose future lease rate is unknown. New aircraft are therefore generally a lower-yielding segment, suited principally to investors with the lowest cost of capital.

Mid-Life Aircraft (8–20 Years)

As aircraft come within two to four years of their initial lease expiry, the initial lessors will often look to sell them, together with the attached leases, to the next owners. This timing allows the large lessors to maintain young average fleet ages, a key consideration for their credit ratings, while providing the next owner with time to negotiate an extension or source a new lessee. Aircraft are highly liquid at the end of a first lease, and the universe of buyers is large and varied. Subsequent lease terms typically range from four to six years and are often timed to coincide with heavy airframe maintenance events. Aircraft generally have the widest range of possible operators during these mid-life leases, as they are young enough to attract high-quality credits yet priced at a significant discount to new aircraft.

The mid-life segment has been transformed by the supply shortage. Lease extensions, historically perhaps half of all expiries, have become the norm: airlines unable to obtain replacement aircraft have extended A320ceos and 737NGs for three to six years at or above prior rentals, keeping transitions low and restricting the supply of aircraft available for re-lease. Mid-life values rose to records in 2024 and 2025 and have held in 2026 while lease rates have settled, and the growing value of engines and components means that a mid-life aircraft's residual is increasingly supported by its parts value as well as by its re-lease prospects.

End-of-Life Aircraft (20+ Years) and Part-Out

Once an aircraft reaches twenty years of age, it is typically considered end-of-life on an economic basis. Many premier airlines prefer not to operate older aircraft, and the universe of potential operators narrows to startups, budget carriers and emerging-market airlines whose credit quality may be weaker. Engines require more frequent maintenance as they age and maintenance forecasts carry larger margins of error, making older aircraft higher-touch assets that demand more time and technical resources to manage. The natural corollary is that older aircraft carry higher return profiles.

Many aircraft types are benefitting from a second wind, with older assets carrying unusually high value due to their potential to be converted into freighters or to have their engines leased on a standalone basis. Both strategies are described in dedicated sections below. The final monetization strategy is part-out: most aircraft and engine types have robust after-life markets, and the scarcity of serviceable material in 2025–2026 has made the part-out market highly active across virtually all in-demand aircraft types. The universe of participants able to own and monetize part-out equipment is nonetheless limited, as it is the most labor-intensive and technically demanding activity in commercial aviation.

	New	Mid-life	End of life	Parts suppliers
Age	0–7 years	8–20 years	20+ years	New & used parts
Purchase	Directly from OEM, from airlines or in the secondary market	On lease from lessors, airlines and financial institutions	Third-generation aircraft leasing or engine leasing ahead of part-out	Commercial finance companies or private equity capital
Key considerations	Largest fleet type; 30-year view on useful life; first leases of 10–12 years; residual values assume extension or re-lease; delivery slots scarce to the 2030s	Mid-life fleet growing faster than new aircraft; residual values based on demand and liquidity of type; extension rates near record; engine status increasingly drives value	Heavy metal and technical expertise required; higher risk of engine maintenance during the lease; residual volatility; typically weaker lessee credits; freighter and engine optionality	Complex inventory management and warehouse infrastructure; thin margins driven by high material and low labor costs; serviceable material scarce in 2025–2026
Indicative financing margin	75–150 bps	150–250 bps	250–400 bps	Negotiable

Source: CVC Marathon. Indicative return and financing ranges as of September 2026 reflect the higher benchmark rate environment and are estimates only; actual results will vary. Not a guarantee of future performance.

Many investors focus on liquid aircraft types in the earlier part of the mid-life window, operated by strong credits. These aircraft are young enough to command interest from a wide variety of high-quality counterparties, yet they are priced at significant discounts to new aircraft even after adjusting for embedded maintenance condition and

depreciation. In the current environment, engine type and maintenance status are particularly relevant: an A320ceo or 737NG with strong greentime has been among the more liquid and readily financeable assets in the current market.

Developments in the Capital Markets

The capital markets that support aviation have evolved from the pandemic-era emergency financings of 2020 to 2022 into a deep, diversified and discerning source of funding for airlines and lessors alike. Three developments stand out: the strengthening of airline balance sheets and their return to efficient secured issuance; the record reopening of the aircraft ABS market; and the migration of lessor equity into private hands.

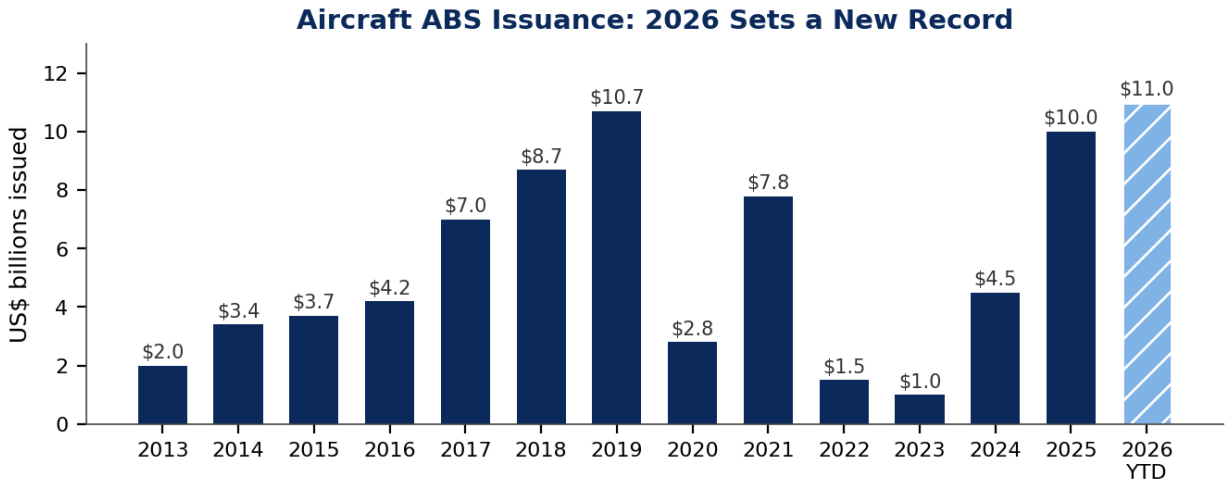
Airline Financing: Strong Balance Sheets and Open Markets

Between 2020 and 2022 the world's airlines raised well over $200 billion of capital, much of it secured against loyalty programs, slots, gates and routes, as well as conventional aircraft-backed debt. The 2023–2025 profit cycle allowed the U.S. majors to repay the most expensive of those instruments: American refinanced and began amortizing its $10 billion AAdvantage financing, United retired its MileagePlus notes, and Delta regained an investment-grade rating. Issuance has since returned to the EETC market, the industry's most efficient form of aircraft-backed debt. American Airlines issued approximately $1.1 billion of 2025-1 EETCs in November 2025 with coupons of 4.90% Class A and 5.65% Class B. It followed with $1.14 billion of 2026-1 EETCs in April 2026 at 5.25% and 5.75%, and $567 million of EETCs in August 2026 issued at 5.46% to 6.04%, in each case securing single-A ratings on senior tranches despite a B-category corporate rating. The 2026 fuel shock widened spreads modestly, but the market remained open to well-collateralized issuers throughout, which is the test that matters for an aircraft investor.

Sale-and-leaseback activity remains a central channel through which airline-ordered aircraft migrate to lessor balance sheets. Lessors account for roughly a quarter of OEM orders directly but own more than half of the fleet; a large driver of this difference is sale-and-leaseback activity, and the premium that airlines can command for scarce delivery positions has made the channel especially active in 2025–2026. Airline equities and unsecured bonds remain more volatile than aircraft-backed debt, as the market reaction to the 2026 energy shock showed; the stability of secured aircraft financing through that period is one of the clearest demonstrations of the asset class's standing.

The Aircraft ABS Market: Functioning Well

The aircraft ABS market post COVID has recovered and is functioning well as lessors with seasoned portfolios and conservative leverage returned and accelerated through 2025 to approximately $10 billion of issuance across lease, loan and engine securitizations. Senior spreads for lease securitizations tightened from 150–170 basis points over swaps early in 2025 to 140–160 basis points by year-end, and loan securitizations tightened to 125 – 130 basis points. By late July 2026, issuance for the year had already surpassed the 2025 total, and market participants expect this momentum to continue into 2027.



Source: Bloomberg, KBRA, Airfinance Global, GlobalCapital; CVC Marathon estimates. 2022-2024 approximate. 2026 YTD through September surpassed the full-year 2025 total by July (Airfinance, July 23, 2026).

The structures returning to market differ in important ways from those of 2017–2019. Advance rates are lower, typically 65–72% on the senior class and 73–78% through the subordinated class, versus 80–85% pre-pandemic. Portfolios are younger and more heavily weighted toward narrowbodies and toward lessees in North America, Europe and countries with strong government backing. Sponsors generally retain the equity rather than selling E-notes to passive investors. And the structures incorporate the lessons of the pandemic: DSCR and utilization triggers, cash traps, higher reserve accounts and more granular reporting. Investor demand has broadened accordingly, with insurance companies and asset managers that stepped back in 2020 returning in size, and the 2026 energy shock produced spread volatility rather than a closure. We discuss the structural evolution of the product in the following section.

Lessor Funding and Private Capital

Investment-grade lessors continue to fund themselves principally in the unsecured bond market, where AerCap, Air Lease (now Sumisho), Avolon, BOC Aviation, SMBC Aviation Capital and DAE issued tens of billions of dollars across 2024–2026 at spreads that have tightened with each year of demonstrated resilience. AerCap's average cost of debt of 4.2% in the second quarter of 2026, against a portfolio lease yield in the low double digits, illustrates the funding advantage that scale and ratings confer. Beneath the investment-grade tier, warehouse facilities from commercial banks, private credit term loans and secured portfolio financings fund the mid-life and private-lessor segment at margins of 140 to 190 basis points, with the ABS market providing the long-term take-out. Japanese operating leases with call options continue to finance new deliveries to top-tier airlines, and the tax equity market has been reinvigorated in the United States by the permanent restoration of 100% bonus depreciation in July 2025, discussed in the Tax section below. Multiple channels can provide flexibility, although availability may tighten concurrently during stress and debt introduces leverage and refinancing risks.

Aircraft ABS Financing

The aircraft asset-backed securitization product has evolved significantly since the global financial crisis as a result of greater transparency and uniformity in financing structures, persistent and growing demand for aircraft-related investments and a historically large aircraft leasing market. We set out below its history, current structure and outlook.

Aircraft ABS History: From 1.0 to 4.0

The concept of financing aircraft portfolios via securitization dates to the late 1990s. The first iteration of deals (Aircraft ABS 1.0) was collateralized by older aircraft with significant widebody exposure, over-levered structures and little flexibility to manage stress; the September 11 attacks exposed those flaws and most of those deals suffered extensive losses on mezzanine and subordinate tranches. The second generation (Aircraft ABS 2.0), issued between 2001 and 2008, incorporated structural and portfolio improvements still seen today but relied on monoline insurance, and the

collapse of that market in the financial crisis caused significant stress. The third generation (Aircraft ABS 3.0), which began in 2013, added DSCR tests, higher reserve accounts, stronger asset and lessee credit quality and more robust reporting, and issuance grew to a peak of roughly $10.7 billion across 18 transactions in 2019.

The pandemic was the first true test of the 3.0 structures. Rent collections fell 40–60% in 2020, up to 80% of outstanding deals breached their 1.15x DSCR triggers and entered rapid amortization, loan-to-value ratios on current market values rose by 15–30%, and rating agencies downgraded most transactions by several notches. Class A notes fell from par to the mid-$70s in March 2020 before recovering substantially through 2021; Class C notes remained depressed for years. Crucially, however, the senior classes performed as designed: excess cash was redirected to senior principal and, according to market performance reviews by Kroll Bond Rating Agency (“KBRA”) and Fitch Ratings, no Class A note of the 3.0 generation has suffered a principal loss, and, as travel recovered and aircraft values rose from 2023 onward, collections and DSCRs recovered across most portfolios. The deals that recovered most slowly were those with concentrations in weaker lessees in Latin America and Asia and in mid-life widebodies, a lesson that has shaped the composition of every post-pandemic transaction.

The post-pandemic generation, which we refer to as Aircraft ABS 4.0, incorporates those lessons: younger portfolios weighted toward current-technology narrowbodies, longer weighted-average remaining lease terms of eight to ten years in many cases, improved lessee credit profiles, lower advance rates, sponsor-retained equity, and more conservative amortization. The 2021 reopening ($7.8 billion across 13 deals) was interrupted by the Russian invasion and the 2022 rate shock; the 2024 to 2026 reopening has so far remained resilient through a far larger geopolitical event, which is why we regard it as a new generation rather than a refinement.

Aircraft ABS Today

Aircraft ABS are created by securitizing aircraft and their leases into a special-purpose vehicle, typically an Irish or Cayman holding company with a Delaware co-issuer, which issues rated notes supported by lease cash flows and secured on the aircraft. Transactions are arranged by leasing companies and aircraft investment funds as a way of financing acquired portfolios, managing concentration limits or, through sale of the equity, monetizing a portfolio without a trade sale. The offered tranches are typically rated A, BBB and, where offered, BB, and pay fixed-rate coupons; the Class A note typically carries a loan-to-value in the 65–72% range on maintenance-adjusted base value as provided by three appraisers, with total leverage through the Class B of 73–78%. Notes amortize on a 12- to 14-year straight-line schedule with an anticipated repayment date of around seven years, and structures include DSCR and utilization triggers, cash traps, maintenance and security deposit reserves and liquidity facilities. Servicers and sub-servicers, which manage the leases and remarketing, are a critical credit consideration;

There are several types of aircraft ABS: commercial aircraft lease, engine, aircraft loan, business jet and freighter or propeller transactions. A typical commercial aircraft deal is backed by 15 to 30 predominantly narrowbody Airbus and Boeing aircraft leased to a diversified pool of lessees. Engine ABS, collateralized by pools of spare engines and their leases, has grown rapidly in 2024-2026 as engine scarcity has provided greater visibility into future cash flows and strengthened market demand for the underlying assets. Aircraft loan ABS has emerged as one of the fastest-growing segments of the market. These transactions are backed by pools of senior secured loans on aircraft and engines rather than by the aircraft themselves, so noteholders benefit from the borrower's equity cushion beneath each loan. The investor base has broadened to include insurance companies, pension funds and asset managers seeking long-duration, amortizing, investment-grade exposure to a real asset class with demonstrated resilience.

Outlook

The aircraft ABS market has demonstrated its resilience and viability through two exogenous shocks and is viewed by issuers and investors alike as a core, permanent financing tool for aircraft portfolios. Despite higher benchmark rates, issuance in 2026 has set a record, and the pipeline of warehoused portfolios awaiting take-out remains deep. We expect three developments over the next several years: continued growth in engine securitizations as spare engine portfolios scale; the return of a broader market for subordinated and equity notes as investors gain comfort with post-pandemic performance, which would further widen the gap between the capital markets and trade-sale exits; and continued tiering of execution by sponsor quality, with pricing differentiated by issuer track record, retained equity, servicer strength and underwriting.

Universe of Aircraft Investments

Commercial aircraft can be categorized into four broad groups depending on their size and intended usage: widebodies, with two aisles, used predominantly on long-haul international routes; narrowbodies, with a single aisle, used on short- and medium-haul routes; regional jets of fewer than 100 seats; and turboprops. The aircraft investment universe is overwhelmingly centered on narrowbodies and widebodies, given their global operator bases and relative liquidity. In-demand regional aircraft values have risen materially since late 2023 as a result of the same supply constraints affecting the mainline fleet.

As of mid-2026 there were approximately 28,000 commercial jet and turboprop aircraft in service and in storage worldwide. Narrowbodies account for roughly 60% of the passenger fleet by count and a higher share of value, and both OEMs' 20-year forecasts project that share rising above 70% by 2045. Production of mainline aircraft remains a duopoly between Airbus and Boeing, each of which focuses on a limited number of programs at any time. The table below summarizes the principal current- and new-technology programs.

Program	Type	In service / built (approx.)	Backlog (Jul-2026)	Production	Typical seats
A320ceo family	Narrowbody	~8,100 built	n/a	1988–2021	150 (A320)
737 NG	Narrowbody	~7,100 built	n/a	1997–2020	162 (737-800)
A320neo family	Narrowbody	~4,700 delivered	7,574	2016–present	150–200
737 MAX	Narrowbody	~2,400 delivered	4,817	2017–present	162–190
A220	Narrowbody	~540 delivered	574	2016–present	100–150
787	Widebody	~1,300 delivered	1,154	2011–present	240–330
A350	Widebody	~700 delivered	870	2015–present	300–410
A330ceo / A330neo	Widebody	~1,460 / ~200	334	1994– / 2018–present	220–300
777-300ER / 777X	Widebody	~840 / nil	698 (incl. 777X and 777F)	2004– / 777-9 from 2027	350–420

Source: Airbus, Boeing, Forecast International, Cirium, CVC Marathon. In-service and delivered figures are approximate as of mid-2026; backlog as of July 31, 2026.

Narrowbody Programs

Airbus's A320neo family has replaced the A320ceo, the most successful commercial aircraft program in history with approximately 8,100 units delivered between 1988 and 2021, on the production line. The neo family has itself become the dominant narrowbody of the current generation: more than 4,500 have been delivered to well over 150 operators, and the backlog of 7,574 at July 2026 is dominated by the A321neo, which accounts for roughly 70% of orders and who's long-range XLR variant entered service in late 2024. The A320neo is offered with the CFM LEAP-1A and the Pratt & Whitney PW1100G; valuation and lease rates differ between the two engine options, and investors must underwrite the engine selection explicitly. Airbus is targeting a production rate of 75 A320 family aircraft per month in 2027, a target that has slipped repeatedly. The A220, acquired from Bombardier in 2018, has been well received for its economics.

Boeing's 737 MAX family has replaced the 737 NG, the highest-selling aircraft family of all time, with approximately 7,100 built between 1997 and 2020. After the 2019–2020 grounding and the January 2024 door-plug accident, the program has stabilized: more than 2,300 MAX aircraft are in service, deliveries have run at or near 38–42 per month through 2026, and the transition to 47 per month is underway with a fourth production line in low-rate production. The

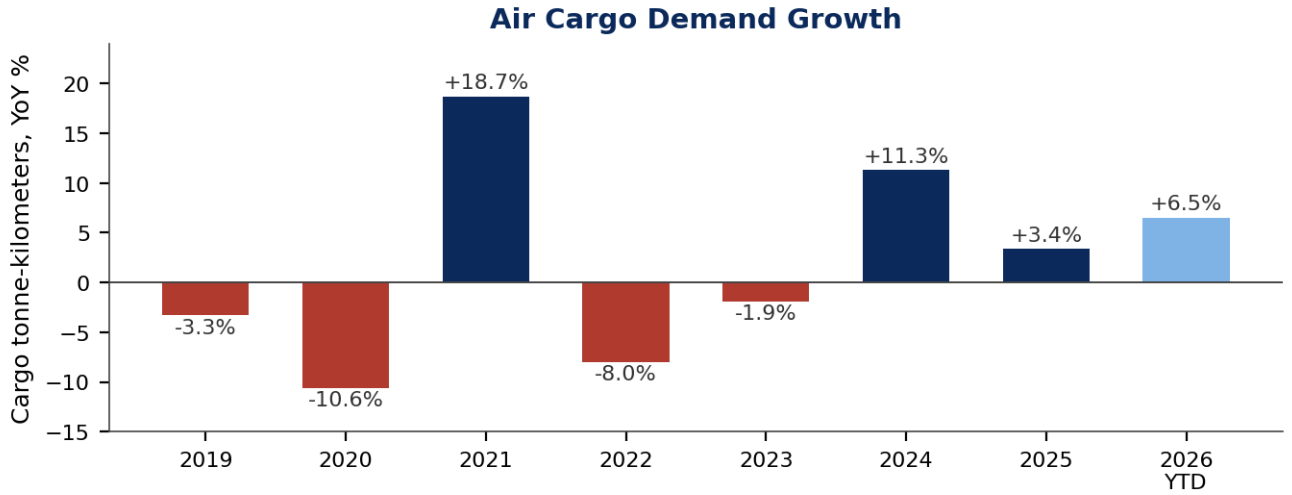
737-8 is the workhorse variant; the larger 737-10, with more than 1,400 firm orders, and the smaller 737-7 await final certification, with roughly 40 completed aircraft in inventory. Both the MAX and the neo are expected to remain in production, without a clean-sheet successor, into the late 2030s, which anchors their residual values and those of their predecessors.

Widebody Programs

The widebody market has reversed the position it occupied in 2022. Long-haul international traffic has fully recovered and now leads growth; new widebody deliveries have been constrained by 787 production issues, A350 supply-chain shortfalls, 777X certification delays and engine durability problems on the Trent 1000; and as a result the in-service fleets of 777-300ERs, A330ceos and early 787s are being extended and are appreciating on a constant-age basis. 777-300ER lease rates have risen consistently on a constant-age basis, and GE90-115B and Trent 700 engines are among the strongest performing assets in the industry. Airbus booked 193 A350 orders in 2025 and has a widebody backlog of 1,204 aircraft; Boeing's 787 backlog stands at 1,154. The 777-9 is expected to deliver in 2027 after a seven-year delay, with the 777-8 Freighter approximately two years later and the 777-8 passenger variant not before 2030. Widebody operator bases are narrower and reconfiguration costs higher than for narrowbodies, which increases remarketing risk, although the current supply picture has supported values for mid-life widebodies on lease to strong flag carriers.

Freighter Market

Dedicated freighter aircraft have become a critical part of global trade. Air cargo carried a record volume in 2025, with cargo tonne-kilometers ("CTKs") up 3.4% year-on-year, as global e-commerce strength drove volumes even as trading relationships with the United States faced rising tariffs, the removal of de minimis exemptions and continuing policy uncertainty. Demand has strengthened further in 2026: CTKs grew 5.6% in January, 11.2% in February, 6.0% in May, 8.5% in June and 3.9% in July, with capacity growing far more slowly and cargo load factors rising accordingly. Yields remain roughly 30% above pre-pandemic levels, and spot rates in June 2026 were 43% higher than a year earlier.



Source: IATA. 2025 was a record year for CTKs (+3.4%). 2026 YTD (Jan-Jul) approximate; freighter CTKs grew 13.9% YoY in July 2026 while belly-hold capacity contracted 7.0%.

The 2026 disruption to passenger networks, counterintuitively, strengthened the position of dedicated freighters. Roughly 56% of global cargo capacity is carried in the bellies of passenger aircraft, and the grounding and rerouting of Gulf-hub widebody capacity in March and April, together with the general slowdown in passenger capacity growth, removed belly capacity from the market: belly-hold CTKs fell 7.0% year-on-year in July 2026 while freighter CTKs rose 13.9%, the strongest growth in more than five years. Dedicated freighters gained market share as shippers sought the reliability and routing flexibility that passenger networks could not provide. The structural drivers of air cargo demand remain in place: e-commerce, now reshaped by de minimis changes but not reduced; supply-chain

regionalization, which lengthens and multiplies air freight lanes; and the time-sensitive, high-value goods, from semiconductors for AI infrastructure to pharmaceuticals, that increasingly travel by air.

Fleet, Conversions and Values

Boeing's World Air Cargo Forecast projects the global freighter fleet growing from roughly 2,300 aircraft to approximately 3,900 by 2043, with roughly two-thirds of the additions coming from passenger-to-freighter ("P2F") conversions rather than new-build freighters. New production freighters are themselves constrained: the 777F line is winding down, the 777-8F will not deliver before approximately 2029, and the A350F has slipped to 2027. Conversion feedstock has therefore become a central determinant of freighter supply, and the same scarcity that has lifted passenger values has lifted feedstock prices for the 737-800, A321-200, A330-300 and 777-300ER. Appraiser values for converted 737-800 and A321 freighters have continued to increase alongside passenger variants, highlighting the enduring value of engines and components even on a fleet whose average age exceeds 26 years.

For an investor, the freighter market can offer yield levels that are typically higher than those available in mainline passenger leasing, reflecting the narrower operator base, the conversion capital and slot risk, and the heavier technical management burden; it also tends to provide a distinct demand driver that has historically shown lower correlation to passenger traffic, as 2020 and 2026 both demonstrated. For owners of mid-life narrowbodies, particularly 737-800s and A321-200s with strong maintenance status, conversion demand can provide an additional exit route, although conversion slots, costs and the narrower cargo operator base add risk.

Engine Leasing Market

The engine leasing market has grown from a niche into a large and active segment of the aircraft investment universe. Airlines and lessors lease engines for two reasons: to avoid capital-intensive shop visits, which can cost $10 million or more for an overhaul on a current technology narrowbody engine, and to minimize maintenance-induced downtime, since a shop visit that took 90 to 120 days before the pandemic now can take 250 to 360 days, inclusive of time awaiting shop visit induction due to limited MRO slot availability. The world's largest airlines maintain spare engine pools to protect their schedules; most others rely on engine lessors. Typical lease terms range from six months to three years, lease rates are fixed monthly amounts plus utilization-based payments, and leases are triple-net, senior secured and first lien, as with aircraft.

The segment has been transformed by a widening gap between engine supply and engine demand. On the supply side, order books for new spare engines across all three major OEMs—Pratt & Whitney, a Raytheon company, GE Aviation, and Rolls Royce—extend beyond three years, production is absorbed almost entirely by airframe deliveries, and MRO capacity has not kept pace with the volume of engines requiring overhaul. On the demand side, record traffic, a larger and more heavily utilized fleet and airlines operating previous-generation aircraft longer than planned have increased the number of engines needed on wing and in spare pools. The result is that serviceable engines are scarce, lease rates and values for both new-technology and mature engines are durable, and lessors have found it economical to part out young airframes to lease their engines. With the global fleet continuing to grow, demand for engine leasing continues to rise faster than the supply available to meet it.

Engine	Application	Market indicator (2026)
PW1100G (GTF) 	A320neo family	Strong demand; spare availability limited
LEAP-1A / -1B 	A320neo / 737 MAX	Strong demand; spare availability limited
CFM56-5B / -7B 	A320ceo / 737 NG	Lease rates for CFM56-7B up ~40% since 2021; values continuing to set successive all-time highs
V2500-A5 	A320ceo	Values softening from all-time highs but still up >25% since 2021
GE90-115B 	777-300ER	777X delays extend 777-300ER lives; few engines reach aftermarket
Trent 700 	A330ceo	Some of the sharpest value increases of any engine type

Source: IBA Engine Value and Lease Rate Updates (H1 and H2 2026), IBA Market Value update (July 2026), industry reports, CVC Marathon.

Owning and leasing engines requires a high degree of technical knowledge, which creates a natural barrier to entry and is the reason dedicated engine lessors, many of which also provide MRO services and trade parts, dominate the segment. The long-standing strategy of monetizing the engines of an older aircraft on a standalone basis has become mainstream; the newer strategy of acquiring pools of new-technology spare engines to lease to airlines and support OEM programs has attracted significant institutional capital, and engine securitizations have become a meaningful share of aviation ABS issuance. Engine status is a central technical variable in aircraft underwriting.

Operating Lease Structures

Operating leases are typically subject to triple-net terms, whereby the lessee is responsible for maintenance, insurance and taxes. The lessee must make unconditional lease payments over the entirety of the lease term, regardless of circumstances affecting the aircraft or the lessee, and leases are normally paid monthly in advance in fixed U.S. dollar amounts. The key characteristics of a modern operating lease are summarized below, together with the provisions that have gained importance in recent years.

Feature	Standard terms	Developments since 2022
Term and rent	4–12 years; fixed monthly U.S. dollar rent paid in advance; lessor passes debt service to its lenders	Shorter extension terms (2–6 years) at or above prior rentals have become the norm for current-generation narrowbodies
Hell-or-high-water	Unconditional payment obligation; no set-off	Tested through the pandemic (deferrals repaid) and the 2026 fuel shock
Security deposits	1–3 months' rent in cash or letter of credit; often waived for investment-grade lessees	Higher deposits and LC requirements for weaker credits

Feature	Standard terms	Developments since 2022
Maintenance reserves	Monthly utilization-based payments toward heavy checks, engine restorations and LLPs, landing gear, and auxiliary power units, escalating annually; or end-of-lease compensation for strong credits	Reserve rates have risen with MRO cost inflation; engine LLP and performance-restoration reserves receive heightened scrutiny
Return conditions	Specified minimum airframe and engine condition at redelivery	Close scrutiny is required to protect residual values, given high engine greentime values and extended economic useful lives of in-demand aircraft and engine types
Insurance	Hull all-risk, hull war-risk and liability coverage with lessor as additional insured and loss payee; lessor contingent and possessed cover	Russian judgment confirmed war-risk response; insurers have tightened cancellation and geographic exclusion terms for conflict regions in 2026
Registration and remedies	Cape Town registration where available; IDERA; deregistration powers of attorney; Section 1110 in the U.S.	India's 2025 Act; more than 80 Cape Town contracting states; remedies exercised in Spirit, GOL, Azul and airBaltic cases
Sanctions and jurisdiction	Sanctions compliance, airspace and lessee-jurisdiction covenants	Expanded sanctions clauses and concentration limits following Russia; heightened monitoring of Gulf operating environment

Source: CVC Marathon. Nothing herein constitutes tax, legal or accounting advice.

Security Deposits

In the event that a lessee defaults, the lessor may apply cash security deposits or draw on letters of credit to mitigate losses related to the remarketing of the aircraft. Deposits are typically paid before delivery and amount to one to three months of rent; investment-grade lessees are often granted the right to avoid paying deposits.

Maintenance Obligations

Under operating leases, airlines are responsible for performing scheduled maintenance, including the work necessary upon redelivery to satisfy specified return conditions. Lease agreements almost universally require the lessee to compensate the lessor for the aircraft's utilization, either through i) monthly maintenance reserves calculated on flight hours and cycles, which the lessor holds and releases upon completion of the relevant maintenance event, or ii) end-of-lease compensation payments from the most creditworthy lessees. Maintenance compensation payments are defined in the lease and typically escalate annually; with MRO costs having risen sharply since 2022, reserve adequacy and the treatment of engine life-limited parts have become central negotiating points. Depending on lease terms, any excess reserve balance at lease expiry may be retained by the lessor, although reserves may also need to fund maintenance shortfalls or lessee reimbursement claims.

Leasing versus Owning Aircraft

The trend among airlines toward leasing an increasing share of their fleets has continued. Leasing preserves airline capital and balance-sheet flexibility, transfers residual-value risk to the lessor and, critically in the current environment, provides access to aircraft that airlines cannot otherwise obtain, since lessors hold a large share of the near-term delivery positions at both OEMs. More than half of the global commercial fleet by count is now on operating lease, 53% to 58% depending on the source and definition, and the share by value is higher. Lessors' share of orders, at roughly a quarter, remains well below their share of the fleet; the difference is sale-and-leaseback, through which airline-ordered aircraft migrate to lessor ownership at delivery. Periods that place a premium on airline liquidity, as the pandemic did and as 2026 has done again, have historically reinforced the trend.

Tax and Depreciation

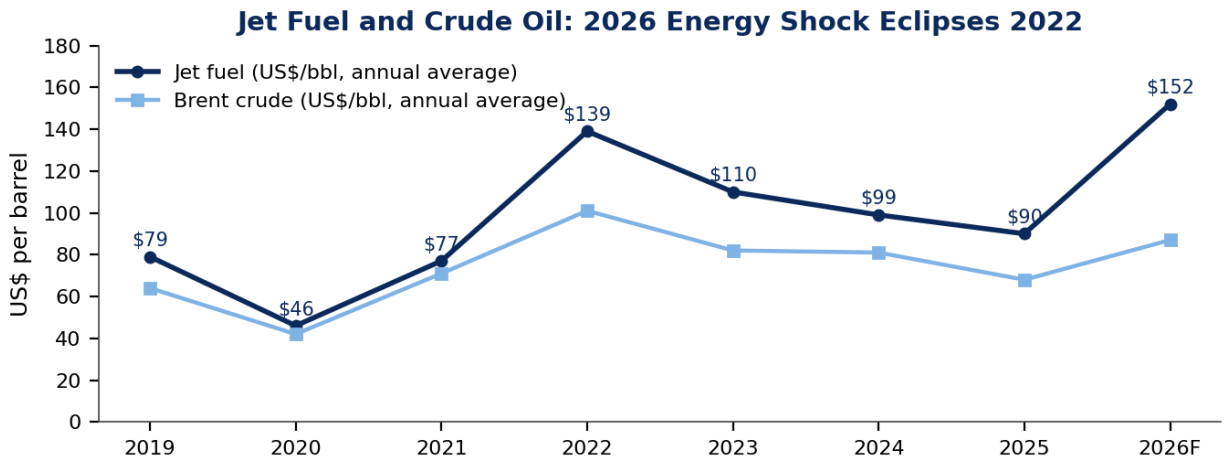
Aircraft on operating leases have long attracted tax-sensitive investors because stable asset values and predictable cash yields can be paired with accelerated depreciation, so that rental income is largely or entirely sheltered in the early years of ownership. The treatment varies materially by jurisdiction, and the choice of owner, lessor and lessee jurisdictions is a core element of transaction structuring. In the United States, the One Big Beautiful Bill Act of July 2025 permanently restored 100% first-year bonus depreciation under Section 168(k) for new and used aircraft and engines acquired and placed in service after January 19, 2025, so a U.S. taxpayer can expense the full cost of a qualifying aircraft in the year it enters service, subject to limits on predominantly foreign use, tax-exempt use and related-party acquisitions; the change has reinvigorated U.S. tax equity in aircraft financings. Japan remains the deepest source of tax-driven aircraft equity globally: Japanese operating leases, with and without call options (JOL and JOLCO), allow corporate investors to take accelerated depreciation against operating income in exchange for a low-to-mid-single-digit return, and the market finances both new deliveries to top-tier airlines and used aircraft. Ireland is the center of the leasing industry by virtue of its 12.5% corporate tax rate, its Section 110 securitization regime, an extensive double-tax treaty network that minimizes lessee withholding taxes and a deep pool of aviation expertise; the OECD's 15% Pillar Two minimum tax, effective in most major jurisdictions from 2024, has prompted structural adjustments without displacing it. Singapore, Hong Kong, the Gulf jurisdictions and India's GIFT City offer competing incentive regimes, and most European and Asian jurisdictions provide depreciation schedules for aircraft of between seven and twenty years. Investors should consult their own tax advisors; nothing in this section constitutes tax advice.

Risks and Considerations

Every asset class carries risks, and the ones specific to aircraft are well understood: they recur in every cycle, they are documented in forty years of lease, insolvency and insurance history, and most of them can be mitigated through asset selection, lessee underwriting, structure and diversification. We have grouped them here so that an investor can weigh them together rather than meet them piecemeal through the paper. Each has been tested recently, and in each case the structural protections of the asset class have performed; none of that removes the need to underwrite them explicitly, and the conditions described in this paper, including elevated lease rates, record values and open capital markets, may not persist.

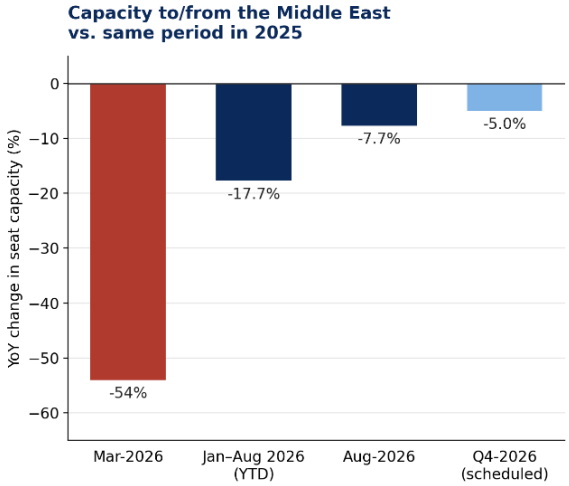
Geopolitical and Energy Shocks: The 2026 Middle East Conflict

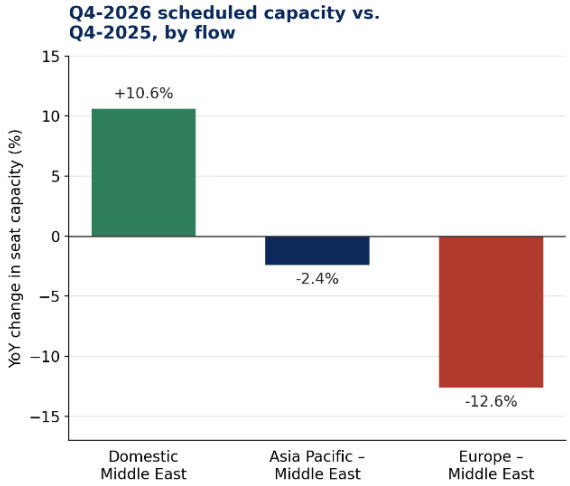
In early 2026, the Middle East conflict led to the effective closure of the Strait of Hormuz, through which roughly 20% of the world's seaborne oil and a disproportionate share of its refined jet fuel exports flowed. Brent crude, which had averaged $68 per barrel in 2025, rose 64% in March to peak near $126; U.S. jet fuel more than doubled from roughly $2.50 to $4.88 per gallon, equivalent to more than $200 per barrel, by early April. The International Energy Agency coordinated the release of 400 million barrels of strategic reserves, the largest in its history. A ten-day ceasefire in April and Iran's announcement that the Strait had reopened produced a brief retracement, but hostilities resumed in July, the United States imposed a naval blockade, and attacks on shipping escalated in September into what traders now call the tanker war. The U.S. Energy Information Administration did not expect Middle East production to return to pre-conflict levels until 2027, and negotiations mediated by Qatar and others were continuing as this paper went to print. Whatever the path of the conflict from here, 2026 has provided a second full-scale test of the asset class within four years.



Source: IATA (jet fuel; 2026F = IATA June 2026 forecast average), EIA / Bloomberg (Brent; 2026F = EIA forecast average of ~87). Brentsettledat 104 on September 25, 2026.

The impact on aviation has been concentrated in three channels. First, fuel: the industry's fuel bill is forecast to rise by roughly $100 billion in 2026, and because Europe and South Asia depend heavily on Gulf-refined jet fuel, those regions experienced physical shortages as well as price shocks. Second, airspace and hub disruption: Gulf airspace closures and rerouting severed, for a period, the Middle East hubs that handled approximately one-third of all passengers travelling to or from Asia-Pacific in 2025. Capacity to and from the region fell 54% year-on-year in March 2026, was 17.7% lower over the first eight months of the year and was scheduled to recover to within roughly 5% of 2025 levels by the fourth quarter, with traffic diverted in the interim toward Singapore, Hong Kong and direct Asia–Europe and Asia–North America routings. Third, demand: fares rose 5 to 10% and surcharges returned, European tour operators reported customers booking later and in smaller numbers, and three-quarters of European travel-market participants surveyed in September 2026 reported reduced demand linked to the crisis. IATA's 2026 profit forecast was cut from a record $41 billion to $23 billion, and Middle East carriers were expected to post an aggregate loss for the year.





Source: IBA Insight (September 25, 2026), based on published airline schedules.

For aircraft lessors and financiers, the effects have been more nuanced, and in several respects favorable. Demand for fuel-efficient new-technology aircraft has intensified, widening the lease-rate premium of the A320neo and 737 MAX over their predecessors. The region's airlines, which account for roughly 13% of global cargo and 9 to 10% of passenger traffic, have maintained lease payments, and the Gulf carriers' sovereign backing has functioned as designed. The conflict has, however, re-emphasized a category of risk that the Russian seizures first brought to the fore: the possibility of aircraft being damaged, grounded or trapped by hostilities in a region that hosts some of the world's largest widebody fleets. War-risk insurance premia for the region rose sharply, insurers invoked seven-day

cancellation and geographic-exclusion rights, and lessors re-examined concentration limits, insurance provisions and repossession logistics for Gulf lessees. The practical response is the same one the Russian experience taught: diversify by jurisdiction, cap single-country exposure, insist on robust insurance provisions and maintain repossession logistics before they are needed.

Airline Credit and Restructuring

Airline insolvency is a visible risk in the asset class and, for a disciplined lessor, a manageable one. The post-pandemic period has been shaped by consolidation among surviving carriers and restructuring of those that could not adapt, and the 2026 fuel shock separated the structurally sound from the structurally impaired with unusual speed. Well-capitalized network carriers and disciplined low-cost carriers absorbed the shock through hedging, fare increases and capacity restraint; carriers with weak balance sheets and models dependent on cheap fuel and high utilization did not. In the United States, the ultra-low-cost model has been under pressure throughout the period: Spirit Airlines, after two Chapter 11 reorganizations, ceased operations in May 2026 and moved to a Chapter 7 liquidation, the largest U.S. airline shutdown since the 1990s, while Frontier, Allegiant and Sun Country reshaped their networks and products and Alaska completed its acquisition of Hawaiian. In Europe, consolidation continued around Lufthansa, Air France-KLM and IAG while Iceland's PLAY ceased operations in 2025 and Latvia's airBaltic filed for Chapter 11 in September 2026 with the support of its government shareholder. Latin America's restructuring cycle concluded with GOL and Azul emerging from Chapter 11 and consolidating around two groups, and in Asia-Pacific Korean Air completed its acquisition of Asiana, Thai Airways exited rehabilitation and India's Go First was liquidated after lessors recovered their aircraft.

The lesson of these cases is consistent with four decades of airline history: a reorganization can repair a balance sheet but cannot repair unit economics, and the weakest operators are tested first in every fuel or demand shock. It is also worth noting that a bankruptcy filing is rarely a cessation of operations: in most cases the airline continues to fly, and because aircraft are essential to that operation, it typically elects to assume its leases on current-generation equipment and remains current on rent throughout the proceeding. For aircraft owners, what determined the outcome in each case was the liquidity of the equipment, the enforceability of remedies and the discipline of lessee selection. Where the aircraft were current generation narrowbodies, lessors took redelivery and placed them with other operators within weeks; where the aircraft were older widebodies or regional types, transitions took longer and cost more. Underwriting should therefore assume that one or more lessees in any diversified portfolio will encounter distress over a holding period, size concentration limits accordingly, and price transition time, maintenance condition at return and remarketing cost into the expected return.

Carrier	Region	Event	Date	Outcome / relevance for lessors
Spirit Airlines	U.S.	Chapter 11 (x2), then cessation and Chapter 7	Nov-2024 / Aug-2025 / May-2026	Largest U.S. shutdown since the 1990s; A320 family fleet returned to lessors and remarketed into a short market
GOL	Brazil	Chapter 11	Jan-2024 to 2025	Emerged under Abra Group control with $1.9bn exit financing; leases restructured consensually
Azul	Brazil	Chapter 11 (pre-arranged)	May-2025 to Feb-2026	Emerged in nine months; AerCap, United and American supported; lease costs cut ~one-third

Carrier	Region	Event	Date	Outcome / relevance for lessors
airBaltic	Latvia	Chapter 11	Sep-2026	Fleet resizing (A220 engine shortages); government shareholder support
PLAY Airlines	Iceland	Ceased operations	Sep-2025	Low-cost long-haul model; narrowbodies rapidly re-leased
Go First	India	Insolvency; liquidation	May-2023 to 2025	Lessor recovery delayed by IBC moratorium; prompted India's 2025 Cape Town Act
Korean Air / Asiana	Korea	Acquisition completed	Dec-2024	Creates a top-10 global carrier; fleet rationalization
Alaska / Hawaiian	U.S.	Acquisition completed	Sep-2024	Fifth U.S. network carrier; widebody fleet integration
Lufthansa / ITA	Europe	41% stake completed	Jan-2025	Further European consolidation; fleet renewal with A350s and A321neos
Air France-KLM / SAS	Europe	Majority control agreed	Jul-2025	Scandinavian consolidation following SAS Chapter 11 (2022–2024)

Source: Company announcements, court filings, IBA, Ishka, CVC Marathon.

The Gulf carriers, which entered 2026 at record profitability, were the principal near-term casualties of the conflict; Emirates, Qatar Airways and Etihad suspended or rerouted large portions of their networks in the spring of 2026, and their sovereign ownership and liquidity ensured continued performance under leases and financings while capacity was rebuilt. The longer-term question, which IBA framed in September 2026, is whether the Gulf hubs fully recapture the Asia to Europe connecting traffic that migrated to Singapore, Hong Kong and direct routings during the disruption.

Jurisdiction and Expropriation: The Russian Experience

The 2022 seizure of aircraft in Russia remains the clearest illustration of jurisdictional risk in the asset class. Of the roughly 520 aircraft, worth more than $10 billion, that Western lessors had on lease to Russian airlines when the invasion began, approximately 78 were recovered outside Russia in 2022. The remainder were effectively nationalized when Russian Government Resolutions 311 and 312 banned the export of aircraft on March 10, 2022, and most continue to fly domestically in Russia, maintained with cannibalized and non-OEM parts. Lessors wrote the aircraft down to zero in 2022, with AerCap alone recording a $2.7 billion charge.

Many lessors lost aircraft outright and had to pursue settlements and insurance claims over several years; the recovery process has been more successful than the market expected in 2022, and it has materially strengthened the legal foundations of the asset class. Between 2023 and 2026 Russian airlines and their state-backed insurers paid cash settlements to lessors in exchange for title to the aircraft, as a path to continued operation and eventual re-registration; AerCap collected approximately $1.3 billion in six such settlements during 2023 and continued to record smaller recoveries in 2026. In June 2025, following a fifty-day trial, the English Commercial Court ruled in Russian Aircraft Lessor Policy Claims [2025] EWHC 1430 (Comm) that the aircraft were lost on March 10, 2022, that the loss fell within the lessors' contingent war-risk cover, and that neither U.S. nor EU sanctions prevented insurers from indemnifying lessors. AerCap, as lead claimant, was awarded $1.035 billion plus more than $240 million of interest

and 65% of its costs from its war-risk insurers. War-risk insurers have been granted permission to appeal certain findings to the Court of Appeal in 2026, and the lessors' separate claims under the airlines' operator policies are scheduled for trial in October 2026.

Three lessons follow. First, the total-loss event of 2022, which many commentators viewed as existential for the asset class, resulted in cumulative recoveries that, for the largest lessors, exceeded half of the written-down values once settlements and insurance judgments are combined, in an asset class where the equipment itself was never physically recovered. Second, the layering of lessor contingent and possessed policies over operator policies, each with war-risk coverage, worked substantially as intended once tested in court, although recoveries remain subject to appeal, coverage terms and insurer solvency. Third, jurisdictional diversification and concentration limits are not abstractions: the lessors with the largest Russian losses were those with the largest exposure to a single jurisdiction, while lessors whose concentration limits excluded that exposure were never dependent on the insurance process at all. Single-country exposure limits, sanctions and airspace covenants, and rehearsed repossession logistics are the direct expression of that lesson, and they apply with equal force to any region in which aircraft could be damaged, grounded or trapped by hostilities.

Engine Durability and MRO Capacity

The scarcity that has lifted engine values also carries risk for owners who do not underwrite it. Accelerated inspection and shop-visit programs on new-generation narrowbody engines have removed hundreds of engines from wing for 250 to 360 days, inclusive of time awaiting shop-visit induction, and idled several hundred A320neo family aircraft at the peak. CFM International's LEAP engines, which power the 737 MAX and roughly 60% of A320neo family aircraft, faced time-on-wing shortfalls in hot and harsh environments; durability improvements have been production standard since mid-2025 and are being retrofitted through MRO shops. The consequences for an investor are specific: a neo or MAX with a GTF or early-build LEAP must be underwritten on its engine type and maintenance status rather than its airframe age; lease rates and values differ materially between engine options on the same airframe; maintenance reserves must be set against MRO costs that have risen sharply; and transition times between lessees are longer when a shop visit is required. As engines account for a growing share of aircraft value, technical assessment of engine condition and maintenance has become a more significant part of aviation credit analysis.

Interest Rates, Financing and Lease-Rate Cycles

Aircraft are financed assets, and the cost and availability of debt move with the cycle. Higher base rates raise the yield an aircraft must earn, compress the value of long fixed-rate leases and squeeze platforms that rely on floating-rate warehouse debt; credit spreads widen in periods of stress, as they did in 2026, and the ABS market, while it has stayed open through two shocks, prices sponsor quality more sharply in difficult markets. Lease rates are cyclical as well as structural: having risen more than 20% a year in 2023 and 2024 in response to the supply shortage, market lease rates for mid-life narrowbodies settled roughly 10 to 13% below their mid-2025 peaks over the following year even as values held. An investment underwritten to peak rents, peak values or the cheapest financing of the cycle will disappoint; one underwritten to normalized rents, conservative residuals and a cost of capital that may stay elevated is better positioned to perform through the cycle and may benefit if conditions improve. Where an investor holds floating-rate debt, interest-rate hedging and fixed-rate ABS take-outs are the standard mitigants.

Other Considerations

In summary, aviation investments involve significant risks, including airline credit and insolvency risk; residual-value and remarketing risk, including the risk that an aircraft is off lease for an extended period; technical and maintenance risk, including engine durability issues and maintenance costs that exceed reserves; geopolitical, sanctions and repossession risk, as illustrated by the loss of aircraft in Russia in 2022; insurance coverage and insurer-solvency risk; interest-rate, refinancing and leverage risk; foreign-currency risk for lessees earning revenues in currencies other than the U.S. dollar; concentration risk by lessee, jurisdiction or aircraft type; illiquidity of whole-aircraft and subordinated positions; and changes in regulatory, environmental and tax law. Many of the conditions described in this paper, including elevated lease rates, record values and open capital markets, may not persist, and the mitigants described above reduce rather than eliminate these risks.

Then and Now: What Has Changed Since Q4 2022

The table below juxtaposes the metrics that framed our Q4 2022 paper with their current values. Three themes stand out. Demand recovered fully and went on to set records. Supply did not normalize; the deficit widened. And the geopolitical shock that defined 2022 was replaced by one that was, for airline operating economics, larger, and through which the asset class again performed.

Metric	Q4 2022 (prior paper)	Q4 2026 (this paper)
Global passengers carried	~3.3 billion (2022); U.S. TSA throughput ~90% of 2019	~5.0 billion (2025); IATA forecasts ~5.1 billion in 2026; load factors at record 83.6–84%
Airline industry net profit	2022 estimate: –$3.6 billion (loss)	2025 estimate: +$45 billion; 2026 forecast: +$23 billion (reduced by the 2026 fuel shock)
Jet fuel price	~$130/bbl cyclical high; airlines profitable up to ~$130	2025 average ~$90/bbl; 2026 forecast average $152/bbl; peaks above $200/bbl in April 2026
Fed funds / 5-year U.S. Treasury	3.00–3.25% / ~2.90%	3.75–4.00% (hiked September 16, 2026) / 4.98%; 10-year at 5.24%
Airbus / Boeing backlog	~7,000 / ~5,200 aircraft	9,352 / 6,784 aircraft (July 2026); ~10.7 / ~10.1 years of production
Airbus / Boeing deliveries	661 / 480 (2022)	793 / 600 (2025); Airbus targets ~870 in 2026; Boeing 737 moving from 42 to 47 per month
New A320neo market lease rate	~$320–340k per month	At or above $400k per month (down from a 2025 peak)
12-year-old 737-800 market lease rate	~$180–200k per month	$228k per month (July 2026), down from a $255k peak in July 2025
Aircraft ABS issuance	~$1.5 billion	~$10 billion (2025); 2026 YTD exceeded 2025's full year by July
Share of global fleet on operating lease	~50% by count	~53–58% by count depending on definition (Cirium / IATA / CAPA)
Landmark lessor transaction	AerCap acquires GECAS (€25bn, 2021)	Air Lease taken private as Sumisho Air Lease ($28.2bn EV, April 2026)
Defining geopolitical shock	Russian invasion of Ukraine; 400+ aircraft stranded	U.S.–Israel war on Iran; Strait of Hormuz closed since February 28, 2026

Source: IATA, Airbus, Boeing, Forecast International, Federal Reserve, IBA, Bloomberg, KBRA, Cirium, CAPA, company announcements, CVC Marathon.

Sustainability and Regulatory Considerations

Aviation accounts for roughly 2–2.5% of global energy-related carbon dioxide emissions while supporting approximately 3.5% of global GDP and a far larger share of trade in high-value goods. The industry has committed to net-zero emissions by 2050 and has improved fuel efficiency per revenue passenger kilometer by more than 50% since 1990, at a rate of roughly 2% per year. For aircraft investors, decarbonization is both a regulatory cost to be managed and a structural driver of demand for the newest, most efficient equipment and the retirement, and part-out value, of the oldest.

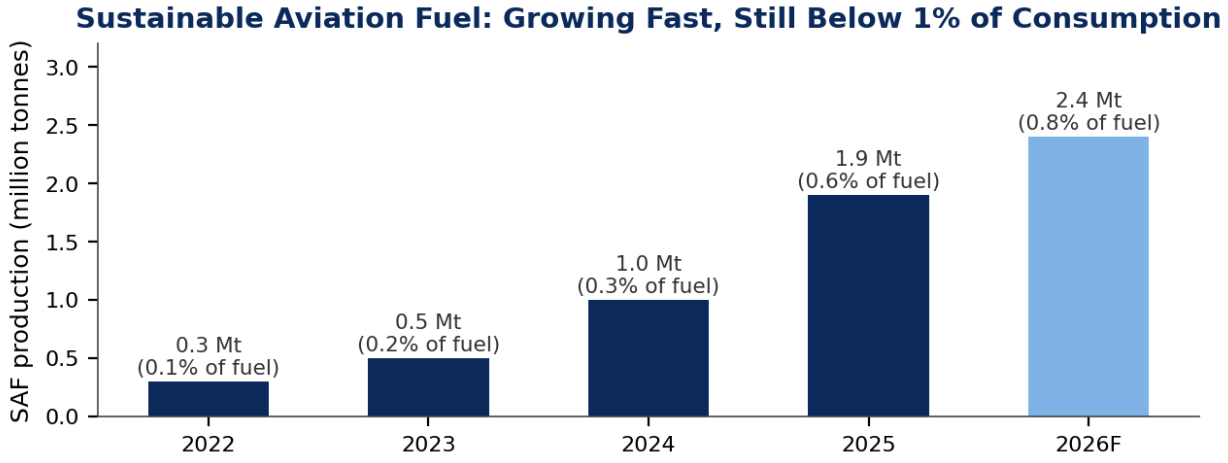
Fleet Renewal Remains the Primary Lever

Each generation of aircraft and engine technology has delivered fuel-burn improvements of 15–20%, and the current new-technology narrowbodies and widebodies are the industry's principal near-term emissions tool. Boeing projects that half of the roughly 44,000 aircraft delivered over the next twenty years will replace older equipment, and periods of high fuel prices, such as 2026, sharply increase the economic incentive to do so. The constraint, as throughout this

paper, is supply: airlines cannot replace aircraft that OEMs cannot deliver and that engine manufacturers cannot keep on wing. Lessors, which hold a substantial share of new-technology delivery positions and own more than half of the global fleet, are the principal intermediaries through which fleet renewal is financed, and lessor fleet-emissions intensity metrics have become a standard element of institutional investor due diligence and of the sustainability-linked financings several lessors have issued.

Sustainable Aviation Fuel

Sustainable aviation fuel ("SAF"), produced from waste oils, agricultural and forestry residues, municipal waste and, eventually, captured carbon and renewable hydrogen, is compatible with existing engines in blends of up to 50% and is the industry's principal pathway to net zero. Production is growing quickly but from a tiny base: IATA estimates output of 1.0 million tonnes in 2024, 1.9 million tonnes in 2025 (0.6% of jet fuel consumption) and 2.4 million tonnes in 2026 (0.8%), at a cost premium of two to five times conventional jet fuel that added roughly $2.9 billion to the industry's 2025 fuel bill. Mandates are now in force: the EU's ReFuelEU Aviation regulation requires a 2% SAF share at EU airports from 2025, rising to 6% in 2030 and 70% in 2050, and the United Kingdom requires 2% in 2025, 10% in 2030 and 22% in 2040. IATA has been sharply critical of mandate design, noting that compliance fees have roughly doubled the cost of SAF in Europe and that many airlines' commitments to 10% SAF by 2030 cannot be met from available supply. Separately, the first phase of ICAO's CORSIA offsetting scheme runs from 2024 to 2026, with the second, mandatory phase beginning in 2027.



Source: IATA (December 2025 and June 2026 estimates).

Hydrogen, Electric and New Propulsion

Longer-dated technologies remain in their infancy. Airbus announced in 2025 that its hydrogen-powered ZEROe program would be delayed by five to ten years beyond its original 2035 target, reflecting the challenges of storing a fuel that occupies four times the volume of Jet A and the absence of airport hydrogen infrastructure. Electric and hybrid-electric aircraft are constrained by battery energy density to fewer than 19 seats and short ranges; electric vertical take-off and landing ("eVTOL") aircraft have progressed toward certification and early commercial service in the Gulf and the United States but address a market segment distinct from commercial air transport. None of these technologies are expected to affect the demand for, or residual values of, current-generation mainline aircraft during the investment horizon of a typical aviation fund.

Implications for Investors

Aviation investors commonly consider sustainability in underwriting in three ways: by evaluating the fuel efficiency of aircraft within each generation and portfolio emissions intensity; by assessing the regulatory cost exposure of lessees, particularly in Europe, where SAF mandates and the EU Emissions Trading System impose direct costs; and by recognizing the part-out and freighter-conversion value that regulation and fuel costs create for older aircraft as airlines accelerate retirements where replacement aircraft are available. We view the energy transition as a multi-decade process in which the current generation of narrowbodies will remain the backbone of the global fleet, and in

which the capital required to renew fleets, estimated by IATA at several trillion dollars through 2050, will increasingly be supplied by lessors and institutional investors.

Conclusion

Global demand for commercial aircraft exceeds the industry's capacity to produce them, and that imbalance is expected to persist for a number of years. Passenger traffic has returned to a growth path of roughly 1.5 times global GDP, a relationship that has held for five decades, and both manufacturers project a further doubling of traffic by 2045. Against that demand, the two mainline airframe manufacturers carry backlogs exceeding ten years of production, no clean-sheet replacement program is in prospect, and engine production remains constrained. Each year of that imbalance extends the economic life, lease rates and residual values of the in-service fleet. Lessors now own more than half of the global fleet and are the principal channel through which airlines access equipment, and the legal, insurance and capital-market frameworks that protect aircraft owners have been tested in English courts, Indian legislation, U.S. bankruptcy proceedings and a record year of securitization and have performed.

Properties commonly cited for aviation finance include contracted, dollar-denominated cash flows; a liquid, mobile, first-lien asset whose replacement cost is rising; remedies that have been enforced across borders; and yields that have moved up with base rates while the collateral has held its value. The asset class also carries risks that are real and recurring, including lessee credit, residual value, jurisdiction, engine condition and the airline cycle itself. Managing them typically involves buying the right aircraft at the right point in its life, underwriting the airline and the lease as carefully as the airframe, bringing technical judgment to engines and maintenance condition, diversifying by lessee and jurisdiction, and financing conservatively through long-term, non-recourse structures.

We believe the structural conditions supporting aviation finance are likely to persist. Scarcity at the asset level should continue to support values and re-leasing; airline cycles are likely to continue to produce motivated sellers and entry points for patient buyers; higher base rates are expected to support aircraft yields relative to comparable credit; and the continued institutionalization of the asset class should deepen the markets in which aircraft are bought, sold and financed. The gap between the aircraft the world needs and the aircraft it can build is wide and persistent, and in our view is the foundation of a durable opportunity in asset-based finance.

About CVC Marathon Aviation Finance

CVC Marathon is a global credit manager investing across Asset-Based Lending, Direct Lending, Opportunistic Credit and Public Credit. Founded in 1998 as Marathon Asset Management by Bruce Richards and Louis Hanover, the firm was acquired by CVC Capital Partners on July 1, 2026, and rebranded CVC Marathon. The combined business manages approximately €74 billion of Credit AUM, uniting Marathon's U.S. asset-based, real estate, opportunistic and public credit franchises with CVC's European liquid credit and direct lending businesses, within a firm managing approximately €232 billion of AUM across private equity, secondaries, credit and infrastructure as of July 1, 2026.

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