



KEY POLICY ISSUE

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AIRCRAFT LESSOR PROSPECTS AND LEASE VALUATION FOR AIRLINES

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Airlines have begun to see the effects of the financial crisis, albeit indirectly so far. The good news is, airlines can be comforted by the fact that they are cash businesses, not directly impacted by the complex web of derivative securities which will be so painfully unwound over the coming months and years. On the other hand, the fallout from market squeeze has already, and will increasingly, require airlines to carefully anticipate and manage credit capacity.

Current challenges and prospects

Airline executives operating different business models have recently reported increases in borrowing costs across the board. Jean-Cyril Spinetta, president of Air France-KLM said in September that the airline's borrowing costs have increased 2-3% in the past year², while Tim Jeans, managing director of low-cost/charter operator Monarch Airlines cited in August a doubling of spreads over LIBOR to 1.80%, from 0.80-1% in a more normal market³.

The medium term is another question, with the primary stress point being the capacity of operating lessors to finance deliveries over the next few years. Boeing forecasted in March of this year that operating lessors should finance 22% of its 2008 deliveries, down from 34% in 2007⁴. While the substantial drop is expected to be made up by export credit agencies, this still represents a significant portion of the over 1,200 jet aircraft scheduled for delivery⁵ to the world's airlines this year. Going forward, the situation will become even more critical, as airlines continue taking deliveries of the thousands of aircraft ordered over the past three years. This ordering has been driven by the worldwide growth of low-cost operations, the continuing boom in China, India and the Middle East, and the need to acquire more efficient capacity in the wake of rising fuel prices. Assuming the lessors fund 20% of 2009 the nearly 1,400 deliveries planned, the amount required to finance the leased aircraft could amount to well over \$10 billion in 2009 alone.

What is the prospect of operating lessors taking up this financing challenge? The most visible speculation concerns the future of International Lease Finance Corporation (ILFC), in the wake of the near-collapse of its parent company, insurance giant AIG.

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² In Le Nouvel Observateur, 25 September 2008

³ Airline Business, August 2008

⁴ 33rd Annual FAA Aviation Forecast Conference, Washington D.C., March 2008

⁵ Ascend, July 2008

Under the terms of the government bailout, AIG must pay an enormous 8.50% over LIBOR for the \$85 billion two-year bridge loan from the U.S. government. The company's president has told the New York Times that many of its businesses, including International Lease Finance Corporation, have been put up for sale⁶. In the same article, the N.Y. Times also reports that AIG has already drawn down \$61 billion of the government loan, putting even more pressure on the company to find a buyer for ILFC and other "non-core" businesses. The blogosphere is full of speculation regarding potential buyers, with sovereign wealth funds or private equity tipped to be the most likely candidates. Clearly, aircraft financing is going to be a difficult business as the crisis unwinds over the coming years.

While no player in the aviation finance market is immune to the overshooting and whipsaw effects affecting credit markets today, operating lessors have in past downturns been remarkably resilient, remaining viable during the downturns. While 9/11 and its aftermath brought the failures of European airlines companies such as SAir Group (SwissAir's parent) and Sabena and forced the U.S.'s United Airlines into an extraordinary 3-year Chapter 11 bankruptcy, the large leasing companies were able to absorb the shock by keeping aircraft flying, even in the face of huge drops in lease rates during the 2002-2004 period. While it is true that many leasing operations changed hands during the period (most notably Ansett Worldwide, purchased by private equity fund Terra Firma), there were no out and out failures. This fact demonstrates the resilience and fundamental viability of operating lessors that should make ILFC a very attractive purchase for a deep-pocketed investor group. This is particularly true in today's market, where an increasing number of lease financings take the form of sale and leasebacks (SLBs), where the operator signs over the lease at delivery in exchange for a long-term operating lease, assuring the lessors of a steady stream of lease payments over eight to ten years.

Leasing companies tend to be very lean operations, with several key competences not present in most of the world's financial institutions:

- Aviation and aircraft technical expertise allowing careful ordering, stringent maintenance requirements, and rapid turnaround of aircraft coming off lease
- Global reach, allowing the placement of aircraft in growing markets at times when others are in crisis.

The third key "competence" is access to low-cost funds for aircraft acquisition, and this access is the most threatened by the current situation. The large leasing companies are certainly not immune to the reduced availability of debt financing in today's environment, particularly as many have traditionally financed themselves in short-term commercial paper markets. The spectacular fall of AIG will bring dramatic deterioration of ILFC's AA- credit rating and a subsequent increase in borrowing costs, if a rich buyer is not found in short order.

Where does this leave the world's airlines? The operating leasing model involves the lessor accepting the risk of aircraft residual values, a risk which airlines pay for through higher funding costs implicit in the operating lease payments. Leasing has become a strategic source of flexibility to many of the world's major airlines, where a common rule of thumb today is taking delivery of around 1/3 of aircraft capacity under operating leases. By staggering the re-delivery dates of the aircraft, airlines can ensure that they have a certain amount of capacity coming off lease during each year, in the event of a downturn in demand, such as the one expected in Europe and North America today. Given their global market presence, leasing companies should have the ability to shift this capacity to markets such as the Middle East, where demand growth shows little sign of slowing today.

⁶ A.I.G. Uses \$61 Billion of Fed Loan

Lease valuation techniques

The operational flexibility and residual value risk transfer offered by the operating lessors has a cost to airlines, which must and can be properly quantified. There are essentially two methods of assessing this cost available to airline financial managers, both based on the well-known discounted cash-flow (DCF) techniques. The most popular among many academics and financial consultants is Real Options Analysis (ROA), in which the risk is quantified based on a Monte Carlo analysis of the project NPV, and the resulting volatility inserted into a binomial lattice (a sort of probability-weighted tree diagram) to calculate the value of the option to return the aircraft or to re-lease it at various stages in the project's life. This measure has at least two major drawbacks. The first is the reliability of the volatility calculations, which are often based on historical and/or subjective management estimates that may not apply in a new environment such as today's. The second is what I call the "black-box syndrome." Although the Nobel prize-winning calculations underlying the technique have been available since the 70s and are commonly used to price financial options, there is a deep suspicion among airline financial practitioners regarding the relevance of the maths to a real investment project. The perceived exoticism of these calculations will certainly not be very popular in coming years, since complex probabilistic modelling is held to be one of the major causes of the havoc in derivative markets and financial institutions' balance sheets.

A second method (actually a subset of the first) relies on far more widely accepted DCF calculations, using the Net Present Value (NPV) rule for project acceptance. Our recent research with Dr. Peter Morrell of Cranfield University has established that the majority of responding airlines apply the NPV rule or the concomitant Internal Rate of Return (IRR) to value aircraft investments⁷. Further, a glance at annual reports of investors presentations from airlines such as British Airways and Lufthansa have placed valuation concepts such as Cash Value Added at the centre of their financial management.

These methods rely on the calculation of the firm's cost of capital, and most airlines calculate the average expected cost of debt and equity financing, known as the Weighted-Average Cost of Capital or WACC, to value both investments and corporate financial performance. While doubtless useful, the WACC does not allow managers to properly value the cost of the risk transfer inherent in operating leasing. This is because an operating lease is a hybrid of investing and financing.

An operating lease payment has three components:

- The capital cost of the depreciating aircraft during the lease period
- An implicit interest charge for financing the asset
- The cost of the risk transfer (or from the lessor's standpoint, the remuneration of this risk and the company's equity investors).

Companies can get a more clear valuation of the cost of the risk transfer by using a variant of the well-documented Adjusted Present Value concept. Under APV, cash flows of different risk classes are discounted at the discount rates that reflect the risk class of the cash flows. This method has been widely discussed from both the theoretical and practical standpoint in financial textbooks. Our experience suggests that it has yet to be fully understood and adopted in industry practice.

⁷ Aircraft Financial Evaluation- Evidence from the Field, ATRS World Conference, 2005

Implementing the method is straightforward, as summarised in the following table.

Discount rate	Purchase scenario	Operating lease scenario
Cost of debt	Financing cash flows: advances and repayments of interest and principle	Leasing cash flows
Cost of equity	Operating cash flows Purchase and residual value of the aircraft	Operating cash flows

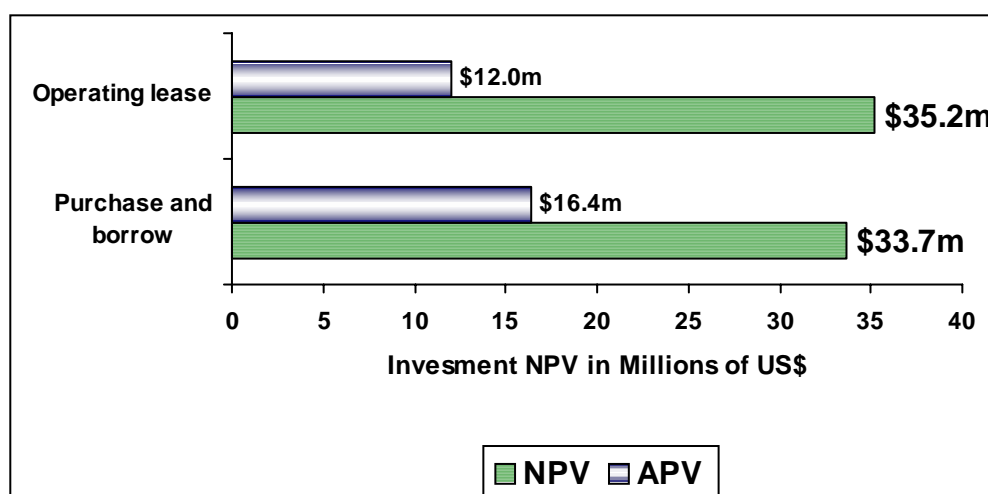
This approach has two major advantages:

- clarifying that the risks of owning & operating aircraft are borne by the equity investors
- directly comparing the financing alternatives, and estimating the cost of the flexibility inherent in leasing

This methodology is a step beyond classic APV, where only the tax deductions on interest payments are discounted at the cost of debt, capturing leverage benefits. We suggest that just as WACC has been thoroughly accepted for both corporate and investment valuation in spite of its theoretical pitfalls and the difficulty in estimating cost of equity, this variant of APV can easily be adopted to compare leasing versus purchasing in an NPV framework.

When it comes time to financing deliveries, aircraft finance specialists recommend that operators discount the term sheets offered by different financiers to determine the best offer. Our approach to investment analysis using APV simply extends this tactical approach to long-term strategic investment analysis.

As the graph below illustrates, the differences in valuation are significant. First, APV results in a lower overall evaluation because the operating cash flows are discounted using the higher equity rate, correctly reflecting the fact that shareholders bear the risks of the business. Second, the purchase scenario APV is significantly higher than the operating lease, reflecting the cost of the residual value risk transfer to the lessor.



In this simple example three aspects of APV become apparent. Under NPV leasing often generates a higher NPV, because under the leasing scenario, there is no initial investment or aircraft residual value at the end of the project: a tempting conclusion, but one not relevant to the essential question, "should the airline acquire and operate the aircraft?" Second, the overall project profitability under APV is lower than under "plain-vanilla" NPV, because the operating and investing cash flows are discounted at the higher cost of equity. As mentioned above, the equity investors do bear the substantial risks, and APV reflects this. Finally and most important, the additional cost of leasing compared to borrowing is clearly identified, that is, the cost of transferring the aircraft value risk is explicit, \$4.4million per aircraft in our example. Incidentally, this benefit to the lessors is even higher than \$4.4m for those who are able to secure financing at lower cost than the airlines. It is precisely this access to funds which will be tested in the aftermath of the current financial crisis.

Conclusion

In the immediate future, many of the world's airlines will be more concerned with the availability than the cost of financing. On the other hand, the benefits of using well-established valuation techniques will show up in the bottom lines of airlines who carefully consider the risks and rewards of aircraft financing alternatives.

The views expressed in this article are the author's and not necessarily those of IATA.