

Sale & leaseback transactions have evolved to cater for a broader range of aircraft ages and types, and lessees. High returns can be made, but lessors have to select types, assess risks and determine purchase prices carefully. The parameters & returns of transactions are analysed.

The risk & rewards of sale & leaseback

Sale and leaseback transactions are becoming a more commonly and widely used financing technique to aid flexibility in fleet planning. They have traditionally been used by airlines for small numbers of older aircraft in the few years before disposal. The circumstances and age of aircraft they are used for are changing to include older types which have had their lives extended, and younger types recently introduced into fleets.

Basis of transactions

A sale and leaseback involves a lessor buying aircraft from an airline and leasing the aircraft back to the airline for a period of 3-10 years.

The basic advantage for the airline is that it is able to release equity it has in the aircraft, and pass on the risk of there being lower than expected residual value when it retires the aircraft to the lessor.

Release of equity is a prime incentive. "Many airlines have a lot of aircraft equity on their balance sheets and can get this cash out of their fleets. One example where this is particularly helpful is when an airline is being privatised," explains Dick Forsberg, director of business solutions at IAMG.

A lessor gains by making profits on both lease rentals and residual value at the end of the term.

Airlines can exploit several advantages from sale and leaseback transactions, which they often use a few years prior to the planned retirement of a portion of a fleet. Fleets of several airlines are often retired at similar times, and this may lead to a glut a type. Alitalia, for

example, has recently completed sale and leasebacks for about 20 of its MD-80s. These are scheduled to be retired around the same time that the first of 290 MD-80s are expected to leave American's fleet.

A market glut will depress aircraft values, and an airline will incur losses if aircraft are sold at rates lower than the depreciated level on their balance sheets. The earliest aircraft retired, or sold to lessors, usually achieve the highest re-sale values.

Re-sale values are also dependent on secondary market prospects. The largest markets are passenger-to-freighter conversion and use by secondary passenger airlines. Aircraft compete with types of similar size for these markets. The number of potential aircraft usually exceeds probable demand.

The best types and earliest ones retired by major carriers therefore achieve the highest re-sale values. Sale and leasebacks therefore allow carriers to sell their aircraft several years before planned retirement, and so get a good residual value, while continuing operation.

Release of equity in an aircraft will be either by selling the aircraft at airline book value or at current market value. Lessors pay values close to current market values, but to get better returns lessors attempt to get deals at the lowest possible rates. Most aircraft hold their values well up to an age of about 15 years. This underlines the advantage of early retirement.

There are, of course, exceptions. One prime example is the 747-300, which has recently been involved in transactions in the region of \$15 million. This is low for an age of 15 years.

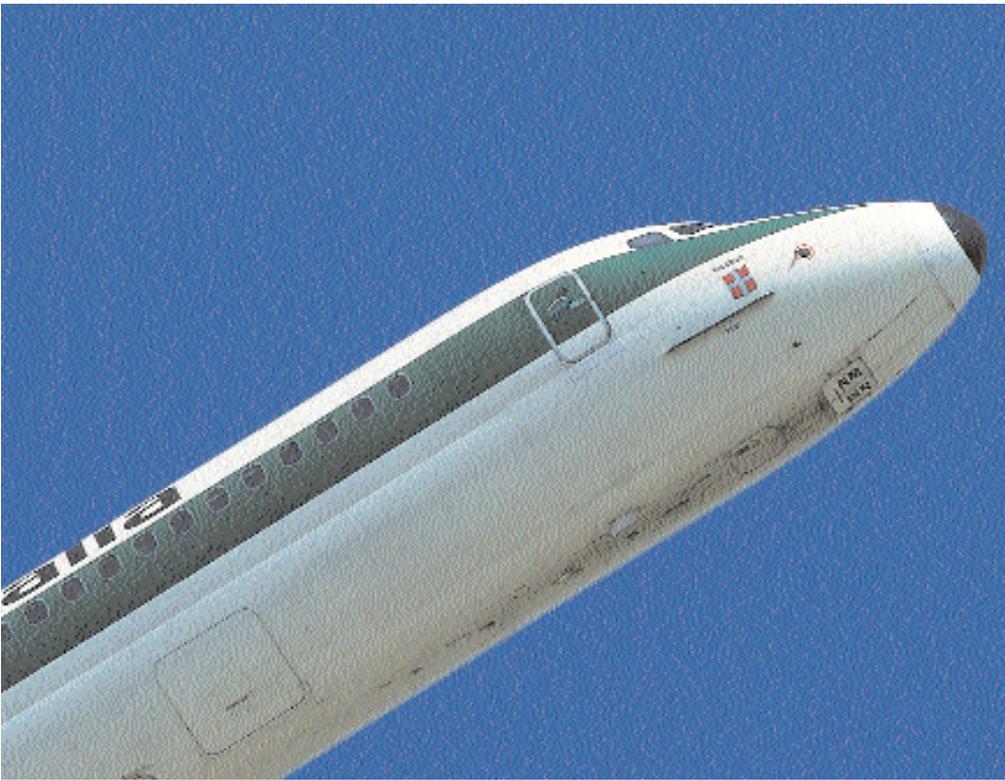
"Besides releasing equity, the aircraft's finance charge will be lowered from the original depreciation rate to a newly agreed lease rate," says Forsberg. "The impact of involving several aircraft in a sale and leaseback transaction will be to lower the airline's cost base, boosting operating profits".

Sale and leaseback has now evolved from being a tool for older aircraft to something that can be utilised by airlines with younger fleets. Airlines have to pay deposits for new aircraft orders, and may want to release this. This is possible through a sale and leaseback transaction. "This has been happening with several carriers in recent years taking delivery of A320s, 737s and 757s," says Robert Brown, executive vice president of Pegasus. "Carriers include China Southern, Air Europe, TWA, and The Taca Group. A sale and leaseback transaction gives the airline the best advance rate possible for the aircraft. It also makes fleet planning more flexible, since the carrier is often free to return the aircraft early during the lease term. This is a useful option to have in the event of a downturn. Finance leases are cheaper than sale and leasebacks or operating leases, but are only available to top-tier credit airlines and not a possibility for other carriers".

Lessor's perspective

The lessor or buyer of aircraft in the transaction takes a view of risk versus reward. The rewards come from profit from lease rentals and potential upside from residual values.

Lessors are not forced to sell aircraft at the end of a lease. They can re-finance



and re-lease for another term. This is useful during a downturn, and lessors can wait for aircraft values to improve.

Lessors buy aircraft at current market values, or values which reflect current trading conditions and transactions. These compare with base value, which is the long-term theoretical value of an aircraft considering its remaining life and profit generating capacity. A glut of aircraft, low volume of transactions or economic downturn will push current market values below base values.

The lease rentals a lessor receives depend on aircraft availability, market forces, and aircraft age and type. Financial gains depend on lease rentals and residual value performance, which in turn depend on the aircraft type and lessee. There are risks with both the aircraft and lessee. A low risk lessee and aircraft will make the transaction secure, but provide low returns.

Lessee risk is the probability of a lessee defaulting on the lease, returning the aircraft and forcing the lessor to re-lease the aircraft. This will inevitably lead to loss of lease rentals for some months. It can also cause many other difficulties, since the maintenance condition of the defaulted aircraft might be poor, and the lessor may incur the cost of making the aircraft serviceable. A high-risk lessee will have to pay a higher monthly lease rate factor than a low-risk lessee to cover this eventuality, thus increasing potential upside for the lessor. Some lessees are even forced to pay several months' lease rentals upfront as a deposit before taking delivery of an aircraft.

Asset or aircraft type risk is the possibility that residual or current market

value will be less for the type in question than forecast made at the start of the transaction. Lessors stand to lose a substantial portion of their potential profits if this occurs, so will investigate the possibility of re-leasing until a time when values might improve. Nevertheless, residual value risk is significant. An aircraft which is generally regarded as having a lower risk profile will be more expensive for the lessor to buy and finance, but will be more easily re-marketed. More risky types can be acquired and financed more cheaply, but can result in losses. Rewards can be high, but losses can also be harshly felt.

Residual value risk of most aircraft types is predictable. MD-11s and 767s are safe bets. Few MD-11s remain for freight conversion and demand for the rest will be strong. The 767 should also make a good freight aircraft, but will also have a strong secondary market because of its size and range capability.

The MD-80 and 747-200 are examples of aircraft that are likely to have weaker re-sale values.

Lessors will only buy aircraft with poor residual value prospects at low market values, reducing risk and improving the chances of making a reasonable return.

Another risk is the aircraft's return maintenance condition. "Who pays and is responsible for maintenance should be agreed very precisely. Lessors can often find themselves with a large maintenance reserve shortfall, which they have to pay from their own funds, at the end of a lease if return conditions are not spelled out accurately at the start of the transaction," says Forsberg.

The benefits of sale and leaseback transactions for airlines is passing risk of poor residual value to lessors, achieving higher resale value than is probable with later retirement and the release of equity in aircraft.

Sale & leaseback structure

These risks and rewards have to be considered in relation to how a lessor structures a deal. Lessors will finance most deals with a combination of equity and debt. Equity portions will vary from 10-20%, but are usually at least 15%. Equity is provided by the lessor.

The remaining portion is provided as debt by banks. Banks consider the lessee's credit risk and aircraft type when assessing how much debt to provide. Often debt providers want to minimise the debt portion, while lessors want to invest less equity.

High debt portions will be advanced to a lessor for a young aircraft with a low re-sale value risk and a strong lessee. "Debt portions can be as high as 85%," says Neil Whitehouse, president of Ariel Aviation. "They will be lower, down to about 50%, for older and higher risk aircraft". Higher debt reduces lessor's equity and risk.

Debt terms are usually equal in length to the lease. Lease rentals for a medium age aircraft would not be large enough in many cases, however, to cover both debt repayments and leave free cash as a return for the lessor over a 3-7 year lease term. Lessors then have to negotiate a debt balloon payable at the end of the lease. The balloon reduces debt repayments during the term, and is repaid by the resale of the aircraft at the end of the lease.

In cashflow terms, after debt repayments have been deducted from lease rentals, the lessors' overheads also have to be deducted. This leaves a margin of free cash for the lessor, and is one source of profit.

The second profit source is the potential upside from residual value after the debt balloon has been paid.

A debt balloon is generally in the region of 60% of the future appraised value for aircraft with expected strong residual value. The actual level a bank will allow will depend on perceived residual value risk. A type, such as an MD-80, with a higher residual value risk is likely to only get a debt balloon of 50%. "The size of balloon in relation to debt portion is considered against aircraft age and its remaining life at the end of the lease," says Whitehouse. "Old aircraft with just a few years remaining life and a

Older types with limited secondary market prospects carry higher risk. Lessors will only consider participating in a transaction if they can get the returns on equity they require, and for these aircraft this will mean lower purchase prices and higher lease rate factors are necessary.

high chance of there being no operational life, and so zero residual value after the lease, will get no debt balloon. Overall, the debt provider has to be satisfied that its risk is well covered in the worst case scenario". Some salvage value may be possible from cannibalising an old aircraft.

Debt is usually charged at a rate of 1-2% over Libor, but will vary according to lessee and aircraft age. "Higher risk aircraft will be financed at 10-11% interest," estimates Whitehouse. "It will be in the region of 8-9% for younger types and reasonable credit risk lessees".

The debt advanced and balloon permitted influences the lessor's returns. A higher debt balloon will reduce debt repayments. A small or zero debt balloon, given for old aircraft with poor re-sale value expectations, will have high debt repayments, as well as lease rates. Profits from lease rentals and residual value therefore have an inverse relationship.

Lease rentals and residual value generate the lessor's margin on equity invested. Lessors therefore benefit from a larger difference in lease rentals and debt repayments, as well as re-sale value and debt balloons.

Lessors will evaluate potential returns on each each transaction, and compare these with returns possible by investing the equity in the aircraft in alternative ways. Commercial funds yield 8% per annum or 0.67% per month with no risk. Monthly interest will compound, and so actually be equal to 8.3% per annum.

Lessors therefore aim to make at least a 15% annual return on equity invested on transactions involving low risk lessees and aircraft. "Lessors will accept returns in the region of 20-25% with mid-level risk aircraft," says Whitehouse. "A high yield of up to 30% will be targeted for higher risk aircraft and lessees. An older aircraft will need a higher level of equity invested and so will have a lower rate of return on this equity".

Another potential upside for lessors is that some charge lessees maintenance reserves. Lessors are then responsible for ensuring all necessary maintenance is performed, and may not have to refund reserves not used.

Lease rates

Monthly lease rate factors as a percentage of aircraft value rise with age, but also lessee credit risk. New aircraft



financed with finance leases for major US and European carriers can have lease rate factors in the region of 1.0% or even less.

Lease rate factors for older aircraft on operating leases are higher. Aircraft in the 12-16 year range which are still operated by major carriers, such as the MD-80, will have lease rate factors in the 1.2-1.4% region for a five-year term. This level of lease rate factor is high enough for a lessor to repay debt with a balloon. Aircraft of this age will still have another 10 years of life remaining after a five year lease. The debt required to acquire a used MD-80 would not have to be fully repaid during the first lease of five years, because of the debt balloon. A re-sale value high enough to repay a debt balloon would prevent the need for higher lease rate factor. The aircraft could then be sold or re-financed and re-leased.

Older types with shorter remaining lives and time to amortise all debt, poorer residual value prospects and greater risk would need a higher lease rate factor for a lessor to consider a transaction. This is partially because a smaller or no debt balloon would be provided. "Older types can have lease rate factors in the region of 1.8-2.5%. For example, an aircraft acquired for \$3 million would have a lease rate as high as \$75,000," says Brown. "This compares to \$51,000 per month to amortise 80% of \$3 million as debt over five years at an interest rate of 10%. This leaves a return of \$24,000 per month. Although the transaction is unlikely to yield any residual value upside, this is a higher return rate than a typical 1.2% lease rate factor on a \$15-20 million aircraft".

Economics & profits

Lessors are interested in lease transactions from two points. The first of these is cashflow generated from the lease rentals and re-sale upside. The second is rate of return on their equity invested.

Different rates of return and cashflow are generated for different aircraft types. These can be illustrated using examples of several aircraft types.

The most common types involved in sale and leaseback transactions for aircraft being retired from major carriers at an age of 12-17 years are MD-80s, 737-300s, DC-10-30s, 767-200s and A300-600Rs.

Each of these have different risk levels. The 737-300, 767-200 and A300-600R have lower residual value risk. The 767 and A300-600R are both likely to be converted to freighters in large numbers, creating strong demand for them in another five years.

Assessing possible returns on sale and leaseback transactions for these five types has assumed a debt interest rate of 10%, debt advance of 70% or 80% of current market value and a conservative level of residual value performance (see table, page 10). Probable purchase prices at current market values or book values and lease rates have also been used.

The MD-80 has a weaker residual value and lease rate prospects, and so a higher cost of debt, lower debt advance rate and balloon and lower re-sale value (see table, page 10).

The DC-10-30 is a strong performer as a freighter, although its range makes it suitable for medium-range north-south

FINANCIAL PARAMETERS AND RETURNS OF SALE & LEASEBACK TRANSACTIONS

Aircraft type	MD-82	737-300	DC-10-30	767-200ER	A300-600R
Year of build	1984	1988	1979	1985	1989
Purchase price (\$ million)	11.1	14.5	10.0	20.0	21.5
Debt advance rate (%)	70	80	70	80	80
Equity invested (\$ million)	3.33	2.90	3.00	4.00	4.30
Debt balloon (\$ million, %)	4.50 (60)	6.60 (60)	4.26 (60)	9.72 (60)	10.71 (60)
Debt interest	11	9	10	9	9
Lease & debt term (months)	60	60	60	60	60
Debt repayment (\$/month)	112,348	153,292	93,717	203,262	215,047
Lease rate (\$/month)	145,000	185,000	140,000	245,000	270,000
Lessor overhead (\$/month)	3,000	3,000	3,000	3,000	3,000
Lease rate free cash (\$/month)	29,652	28,708	43,283	38,738	51,953
Resale (\$ million)	7.50	11.00	7.10	16.20	17.85
Resale - debt balloon (\$ million)	3.00	4.40	2.84	6.48	7.14
Annual % return rate	9.5	19.8	14.3	20.8	24.2
Cashflow (\$ million)	1.45	3.22	2.44	4.80	5.96

operations rather than trans-Oceanic networks, and there are a large number of them available. The average age is also about 20 years. This will mean tougher debt terms, but also higher lease rate factors (see table, page 10).

The cashflow generated by a transaction is the resale plus free cash from each month's lease rental minus the equity invested and debt balloon. As a ratio of equity invested, the net cashflow is more than 100% for the 737-300, 767-200ER and A300-600R. The DC-10 and MD-82 have a ratio of 81% and 43% (see table, this page). This difference is

explained by the weaker resale value of the MD-82 and DC-10-30. Cashflow from a transaction is highly dependent on resale value.

The importance of resale value is also reflected in the annual percentage return on equity, which is weakest for the MD-82 and DC-10-30. Return on equity can be as high as 30% per annum at a compounded rate for the best transactions.

The 767-200ER and A300-600R have the least risk and generate returns of 20.8% and 24.2% with conservative estimates of resale value.

Rates of return for the MD-82 and DC-10-30 are probably not enough to be acceptable for lessors. Transactions would only generate high enough rates of return if purchase prices and resale values were lower. Purchase and resale values of \$9.0 million and \$6.5 million for the MD-82 would generate an annual return of 26.4% if the same debt financing parameters and lease rate could be obtained.

The DC-10-30 could generate twice the rate of return if lower purchase prices and resale values of \$8.5 million and \$6.0 million were possible.

Whitehouse explains that lessors examine all factors when assessing the merits of a transaction. "All the elements will be considered and a lessor will work the parameters back to determine probable rate of return on a deal. A lessor often defines an acceptable rate of return, and knowing debt terms and lease rate, and estimating resale value will calculate the highest purchase price it is prepared to pay for the aircraft".

Old & new

Sale and leaseback transactions have now evolved into including older and younger aircraft.

Deals with young aircraft are usually securitised in a portfolio, where a group of aircraft are financed with several debt sources to spread risk. Analysis of possible returns for young aircraft structured on a similar basis shows high returns can be made.

Lease rate factors for new aircraft will be about 1.0-1.1%, which compares to 0.8-0.9% for finance leases. An A320 and 757 bought at \$44 and \$53 million current market value are likely to get 85% debt financing at 9% interest and an 80% debt balloon. A lease term of 10 years and resale values of \$31.2 million for the A320 and \$38 million for the 757 will generate annual compound return rates of about 23% for both, which is high considering the low risk of the aircraft.

Specialist lessors get involved in older aircraft. These will be types with short remaining lives. For risk to be low lease rate factors would have to be in the 2.0-2.5% region and debt financing would need to be fully paid off in a term less than the lease term "When we buy older types we try to buy aircraft which have some 'green time' remaining," says Brown. "We can get an aircraft at a low market value, modify it to extend life and broaden its market appeal, charge a relatively high lease rate, pay off all financing in half its remaining life. Lease rentals after debt has been repaid is pure profit. These transactions are higher risk and require more management, but have higher rewards".

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