

The appetite for sale & leaseback transactions has been as high as ever over the past two years, with airlines eager to raise liquidity and lessors keen to buy when aircraft values are depressed. Despite limited credit and high cost of debt, both parties can benefit from positive cashflows.

The economics of sale & leaseback transactions

Aircraft and engine sale & leasebacks (SLB) enable airlines to release equity, generate some positive cashflow, and maintain the use of a fleet. Lessors, which bear the risk of owning the aircraft, can still generate a positive cashflow if transactions are structured correctly.

Rationale

SLB transactions are attractive to airlines because the sale of the aircraft releases equity, which raises cash and improves the airlines' liquidity by removing debt from their balance sheets.

As an aircraft ages it becomes harder to remarket and sell, and its residual value deteriorates, so the later it is sold, the greater the risk of a poor resale value.

For an airline that may not be ready to phase out a fleet type, but wants to limit the risk of disposing of it, SLB will generate funds, and pass the risk of marketing and selling the aircraft to the lessor, while allowing the airline to carry on operating it for several more years. An added benefit is that if the type's market values fall while it is being leased back, the airline has gained on the sale value.

The airline also factors in the cash outflow of lease rentals over the transaction term, but overall will usually generate a positive cashflow. Aircraft of all ages are considered for SLB.

New aircraft

With aircraft orders placed several years before delivery, an airline's fleet plans or finances may well change during the order period. Airlines may then try to defer delivery or sell order positions.

If an airline needs the aircraft, it has to consider financing options, such as SLB. Craig Papayanis, Managing Director

for BCI Aircraft Leasing, comments that by raising debt to finance the aircraft, airlines weaken their balance sheets. "By using SLB, the airline avoids debt, and although it will still have to pay lease rentals, these do not appear as a liability on the balance sheet," says Papayanis.

"Typically, new aircraft will have a lease term of five to 10 years," says Dick Forsberg, head of strategy at Avolon. "A third of SLB aircraft transactions have their lease extended when the term ends. A third pass to another operator, while the final third are sold mid-term, within three to four years, with a lease attached, and the original lessor possibly gaining management fees from the new owner."

Young aircraft

SLB for young aircraft is similar to that of new aircraft. The operator may have had a very good price from the manufacturer. "A few years after the aircraft has entered service the airline will have some of the debt," says Papayanis. "By taking out an SLB when the aircraft is a few years old, an airline can save cash because the resulting lease rentals will be less than the original debt payments." An airline benefits by clearing the debt from its books when it sells the aircraft, which it continues using, and by raising cash to purchase additional aircraft. By selling the aircraft after only a few years, an airline will gain a larger percentage of its initial value in resale, than if they waited for five or more years, after which an aircraft will need a C check and its value will be further reduced. Singapore Airlines uses SLBs to raise capital and reduce costs, as well as to give itself the freedom to phase out aircraft when they need to. All its aircraft will have been sold by 12 years of age, with all leases up to the same point," says Papayanis.

Used aircraft

Airlines prefer not to own used aircraft in the years prior to retirement. These tend to be older than 12 years.

Air France uses SLBs for its 747s that are 12 or more years old, so it passes the problem of remarketing them when they are old on to the lessors that bought the aircraft and leased them back.

Many old types such as MD-80s and 737 Classics are fully depreciated or fully financed, so have zero financing cost for the airlines. An SLB will therefore generate some positive cashflow from a fully depreciated asset.

Technological advances and design developments also mean that there is little point in major passenger airlines owning an aircraft beyond a certain age. "A lessor may agree to a short stub lease on an SLB for a few years for an older aircraft, as long as the airline agrees to lease the same number of the lessor's new aircraft that are on order," says Forsberg. Few lessors, and their backers, are willing to finance older aircraft due to the smaller returns, however. SLBs for aircraft of 15 years or more currently tend to be pure cash transactions, because of the lack of appetite for financing old equipment.

"An SLB on an aircraft at the tail end of its lifemarket may, after a stub lease, continue onto a short lease with a small basic airline," continues Forsberg. "The owner will pick off the juicy bits for salvage, especially the engines, and sell." These end-of-life aircraft purchasers tend to be specialists in their field.

Lessors

Lessors are attracted to SLB by the prospect of a strong return on an equity investment. SLB tends to be used by airlines with strong finances and credit

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5-YEAR SALE & LEASEBACK TRANSACTION WITH 25% EQUITY FOR 737-800

Debt balloon	\$10m/25% balloon			\$12m/30% balloon			\$15m/37.5% balloon		
Original cost of A/C-\$	40,000,000			40,000,000			40,000,000		
Residual value after 5 years-\$	35,000,000			35,000,000			35,000,000		
Equity-\$	10,000,000			10,000,000			10,000,000		
Debt-\$	30,000,000			30,000,000			30,000,000		
Debt balloon-\$	10,000,000			12,000,000			15,000,000		
Cost of debt	5%			5%			5%		
Monthly debt payment-\$	417,352			388,065			344,135		
x60 months-\$	25,041,144			23,283,918			20,648,076		
RV minus balloon-\$	25,000,000			23,000,000			20,000,000		
Lease rentals -	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth
monthly rental-\$	360,000	400,000	480,000	360,000	400,000	480,000	360,000	400,000	480,000
x 60 months-\$	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000
Net lease rentals-\$	-3,441,144	-1,041,144	3,758,856	-1,683,918	716,082	5,516,082	951,924	3,351,924	8,151,924
(rental minus debt payments)									
RV upside-\$	15,000,000			13,000,000			10,000,000		
(RV minus balloon minus equity)									
Net cash flow-\$	11,558,856	13,958,856	18,758,856	11,316,082	13,716,082	18,516,082	10,951,924	13,351,924	18,151,924

5-YEAR SALE & LEASEBACK TRANSACTION WITH 30% EQUITY FOR 737-800

Debt balloon	\$10m/25% balloon			\$12m/30% balloon			\$15m/37.5% balloon		
Original cost of A/C-\$	40,000,000			40,000,000			40,000,000		
Residual value after 5 years-\$	35,000,000			35,000,000			35,000,000		
Equity-\$	12,000,000			12,000,000			12,000,000		
Debt-\$	28,000,000			28,000,000			28,000,000		
Debt balloon size-\$	10,000,000			12,000,000			15,000,000		
Cost of debt	5%			5%			5%		
Monthly debt payment-\$	379,767			350,479			306,549		
x60 months-\$	22,785,990			21,028,764			18,392,928		
RV minus balloon-\$	25,000,000			23,000,000			20,000,000		
Lease rentals -	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth
monthly rental-\$	360,000	400,000	480,000	360,000	400,000	480,000	360,000	400,000	480,000
x 60 months-\$	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000
Net lease rentals-\$	-1,185,990	1,214,010	6,014,010	571,236	2,971,236	7,771,236	3,207,072	5,607,072	10,407,072
(rental minus debt payments)									
RV upside-\$	13,000,000			11,000,000			8,000,000		
(RV minus balloon minus equity)									
Net cash flow-\$	11,814,010	14,214,010	19,014,010	11,571,236	13,971,236	18,771,236	11,207,072	13,607,072	18,407,072

ratings, which make them relatively safe, as they are most likely to pay the rentals.

“A lessor has a guaranteed stream of lease rentals for three to 10 years,” says Papayanis. “Less than two years is not considered. SLB is popular on new and younger aircraft, because a longer lease term is likely. An aircraft of 12 or more years is unlikely to generate more than five to eight years of rentals, with a minimal sale value or lease rental likely at the end of the first lease term.”

When a lease term ends there are three main options: the airline may

choose to extend the lease, and refinance the aircraft; the lessor could lease the aircraft to another operator; or the lessor could sell the aircraft. Furthermore, whether the lessor continues leasing the aircraft or sells it, neither figure achieved will be as high as the original rates. So, rentals and market values will decline dramatically as the aircraft ages. The lessor will take these, and other, factors into account when calculating whether the investment is a risk worth taking.

The lessor can also sell the aircraft halfway through the lease term with a

lease attached. “This is popular since the lessor can sell the aircraft for a profit, without having to factor in time on the ground for overhaul and remarketing at the end of the lease,” says Papayanis. “Some lessors rely on buying aircraft with a good lease in place, because they have difficulty finding lessees.”

Market

SLB tends to be more popular in times of recession, but this has not been the case during the current downturn.

In previous recessions, debt and aircraft financing was still available for most transactions. Recent banking problems have reduced available financing, which costs more. Major banks are also not as willing to finance aircraft. If a lessor needs to charge higher lease rentals, because of higher debt costs, than an airline is willing to pay, an airline is likely to reject SLB. Equally, if the airline has an inflated idea of an aircraft's value, the lessor will walk away unless a high rent can be charged in return.

"TAP Portugal is interested in SLB, but if financing from lessors is too costly, it will borrow directly from the banks, which are more willing to lend to airlines than lessors anyway," says Forsberg. "So lessors are finding it harder to access reasonably priced finance. At least half of lessors are not into SLBs, as their parent banks are not yet ready to replace the liquidity of the previously large banks that backed the lease companies." Credit is currently more likely to come from an export credit agency than aviation credit.

Financial aspects

"If a lessor buys an aircraft at \$10 million and leases it for five years, it needs to ensure a profit when it sells it," says Papayanis. "So if it rents the aircraft for \$100,000 per month, at a 1% lease rate factor, it would generate \$1.2 million per year and \$6 million over the full term in rentals. The lessor's cashflow is down by \$4 million, before considering their

financing costs, so they have to aim for a resale value of at least the combined amount of these two elements.

"The major risk for the bank, and the lessor, is whether the aircraft will be worth as much as planned at the end of the lease term," says Papayanis. "The lessor needs to get the highest rent possible, without charging too much, in order to make debt repayments. Lease rates and rentals have increased because of the cost of debt and the possible weakness of future aircraft values. This has put some airlines off SLB. A few years ago 30-40% of aircraft were going through SLB, but now this is only 2%." Papayanis estimates that 20% of the global fleet has gone through SLB transactions over the past five years.

Forsberg says that financial risk has stopped banks being as active as they could be, limiting a lessor's ability to offer SLB. This should improve over the next year as aviation is traditionally low risk.

A lessor will put in some equity when buying an aircraft, and finance the rest with debt. New aircraft are likely to be financed with 65-75% debt, while SLB transactions are generally completed with 60-85% of debt in the current market. Forsberg explains that the ideal split is 85% debt and 15% equity for new aircraft. The cost of debt in the current market is expected to be 5%, while equity investors can require a return of up to 20% per year.

Because of the relatively short lease terms and the residual value prospects of

new and young aircraft, lessors are able to negotiate balloons as part of their debt terms. This reduces the monthly debt servicing payments, with the balloon being paid off at the end of the term from the sale proceeds of the aircraft. The larger the balloon, the lower the monthly debt repayments, but the higher the resale value must be to pay off the debt balloon. A high balloon is therefore more risky.

At a resale value of \$7.5 million for Papayanis's example of an aircraft bought for \$10 million with an equity investment of 30% (\$3 million), the lessor is unlikely to make any profit. This is because of the monthly repayments for the debt, which does not have a balloon facility.

If a 30% balloon is arranged for 30% of the original value, which in this example would be \$3 million, the lessor has to pay off \$4 million of debt, while interest accrues on the entire \$7 million at the start of the term, and is accruing on \$3 million at the end of the term.

"Although 30-35% balloons are the most likely, 40% is not unreasonable and while 50% has been asked for, no lessor has yet had agreement from a financial institution," says Forsberg. "Loan terms are likely to be eight years in the current environment, but lessors will push for 50% balloons on a six-year lease and loan term, in the expectation that the market will be good in six years' time."

The lease and rental terms will be the same as the debt term. The lease rate factor depends on the aircraft's age and the rental term. "New aircraft up to three



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Equity-\$	15,000,000			15,000,000			15,000,000		
Debt-\$	25,000,000			25,000,000			25,000,000		
Debt balloon size-\$	10,000,000			12,000,000			15,000,000		
Cost of debt	5%			5%			5%		
Monthly debt payment-\$	323,388			294,101			250,170		
x60 months-\$	19,403,262			17,646,036			15,010,200		
RV minus balloon-\$	25,000,000			23,000,000			20,000,000		
Lease rentals -	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth	@ 0.9%/mth	@ 1.0%/mth	@ 1.2%/mth
Monthly rental-\$	360,000	400,000	480,000	360,000	400,000	480,000	360,000	400,000	480,000
x 60 months-\$	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000	21,600,000	24,000,000	28,800,000
Net lease rentals-\$ (rental minus debt payments)	2,196,738	4,596,738	9,396,738	3,953,964	6,353,964	11,153,964	6,589,800	8,989,800	13,789,800
RV upside-\$ (RV minus balloon minus equity)	10,000,000			8,000,000			5,000,000		
Net cash flow-\$	12,196,738	14,596,738	19,396,738	11,953,964	14,353,964	19,153,964	11,589,800	13,989,800	18,789,800

years old are offered with a 0.85-0.9% monthly lease rate factor," says Forsberg. "With SLB, what you pay for an aircraft drives the rental you need to charge. If an aircraft is worth \$40 million, but you buy it for \$38 million, you can charge a lower rental, so that the return on the transaction is the same at the end. It depends on what profit an airline is willing to make immediately or later on, with buying and selling costs weighed up against lease rentals."

The purchase price will depend on the maintenance condition and status of the aircraft if it is already in operation, and on the airline's willingness to drop the price in return for lower rental charges.

"You never get a perfect aircraft back," warns Forsberg "so airlines will pay to return leased aircraft to their prior maintenance condition."

Calculations table

The economics of SLB transactions are shown using a young 737-800, with a current market value of \$38-43 million.

The residual value could be \$30-35 million after five to eight years. An average term of five years and a residual value of \$35 million has been used here. A cost of debt of 5% is used, as well as lease rate factors of 0.9%, 1% and 1.2% to show their effect on a lessor's profit.

To further analyse the profitability of the transaction, debt balloons varying from 10% to 37.5% have been used. Ideally, a lessor would prefer to only invest 15% in equity, but current levels are higher. If an equity portion of 25% were used, the debt would be \$30

million; 75% of the original cost. The effect of three different balloon sizes, and therefore lease rentals, is illustrated (see tables, page 4 and this page).

The transaction has also been analysed with three levels of equity invested (see tables, page 4 and this page). The first is 25%. When the equity is raised to 30%, the debt drops to \$28 million. With equity of 37.5%, the debt portion falls to \$25 million.

The tables all show the net cash flow that the lessor could expect at the end of a five-year term. Excluded are any additional maintenance or refit costs that may be incurred at the end of the lease term for remarketing purposes.

If the equity has been invested by a private equity firm rather than the lessor, the former will expect a 20% annual return on their investment, but this has not been factored into the calculations.

The trade between balloon size and debt repayments means that the cashflow generated by the transactions is similar. Large balloons, however, reduce the resale margin after the debt balloon and refunding of the equity are deducted. High debt balloons are inherently risky because of unforeseen external effects on the industry and aircraft values. The similar levels of cashflow for different equity levels and debt balloons mean the returns for equity investors are higher for a lower portion of equity invested.

Future

"For SLB to succeed, debt has to be available for lessors. It really does depend on how aggressive the banks continue to

be. As the banks recover, so will the cost of debt and SLB will look even more favourable," says Papayanis.

Forsberg agrees and adds that with emerging economies, such as India and China doing well, the global economic situation should not slow too much and there is less risk of a double-dip recession. Airlines are therefore likely to be ramping up their plans and expecting recovery in the next year. Replacement aircraft have already been ordered. The banks' appetite will return from mid-2011 as balance sheets clean up. With a desire to rebuild and invest comes a willingness to take more aircraft leasing and financing risks.

With weak passenger demand, airlines are taking out their less efficient aircraft, so there will be a number of older aircraft on the market. It also means a number of airlines will be interested in SLB transactions. They can then use the older aircraft until a replacement arrives.

Forsberg explains that 2008-2010 was the best time to make deals, with 2018 likely to be the start of the next down cycle. "If you do an eight-year deal in 2011, you will be selling at the wrong time of the cycle," warns Forsberg. "Economic cycles can change an aircraft's value by as much as +10% and -15%. Ideally you would buy during an economic downturn and sell at the high point of the cycle. It is likely that 2013-2015 will be the next high point, with +10% premiums likely on values." **AC**

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