With the success of regional jets, financing techniques for regional aircraft have been elevated from manufacturer-supported leases to more sophisticated methods. This has helped competition in the market and provides more choice for airlines.

Maturity for regional aircraft financing techniques

During the 1980s and 1990s heavy over-production of regional aircraft produced a market in which prices were cut-throat and manufacturers were forced into providing financing support. With regional jets now selling better than turboprops, manufacturers are not so desperate for sales and so do not provide the same level of financing.

The result is that more financial institutions are involved in regional aircraft, which should encourage lease rates to conform to market forces. Financing techniques have evolved and provide airlines with a variety of more sophisticated options.

The number of airlines increased in the 1980s, but they were financially weak and unable to purchase new aircraft on the strength of their own credit. The regional manufacturers were badly affected. Having launched a whole series of competing products for the new post deregulation operators they had to get involved in the sales financing to help sell them. Examples were Shorts, British Aerospace (BAe), Saab and Fokker.

Shorts

Shorts Brothers in Northern Ireland was one of the first to participate. It developed a system of selling aircraft to various financial institutions and leasing them back via special purpose companies for an onward lease to the end user.

This technique was undoubtedly responsible for Shorts' success in placing a large number of aircraft into the US market. But then operators began to fail, aircraft were returned and Shorts incurred substantial losses.

BAe

The amount of off-balance sheet losses incurred by Shorts were negligible compared to obligations that (BAe) built on its commercial aircraft activities.

BAe became involved in the operating lease business to encourage sales. It supported airlines that would otherwise have had unacceptable credits. The result was a large number of aircraft returns from failed carriers.

BAe leased aircraft to end users. This allowed BAe to offer operating leases to its customers while be able to record a cash sale.

For the US market BAe offered operating leases through its subsidiary company Jet Acceptance Corporation (JACO). This typically involved BAe entering into long-term head leases with US lessors (tax-based leveraged leases) and then sub-leasing the aircraft.

Saab

Saab had 400 of the 522 Saab 340 and 2000 aircraft manufactured on recourse to its balance sheet. Like BAe, the majority of Saab aircraft were on long-term lease structures, the manufacturer providing a guarantee for the lease income.

Saab began placing aircraft on short-term operating leases direct from the production line. American Eagle took delivery of 115 Saab 340Bs. Saab had 25 of these aircraft on three-year operating leases, giving the airline an option to return them.

Fokker

Fokker had volume sales to American, Swissair and USAir. Production rates were increased to meet the demands. Once these orders were fulfilled, Fokker found itself with a large number of aircraft to place in a market with limited demand.

Fokker began financing aircraft directly off the production line. Just prior to its collapse 65 aircraft were sold to a specially formed finance vehicle; debis AirFinance, which remains the largest lessor of Fokker aircraft.

21st century

The success of the regional jet has brought with it a return to asset-based financing. There appears to be no shortage of banks and other organisations willing to finance it.

Market conditions have improved since the early 1990s. Among the airlines, consolidation and stronger ties, if not direct ownership, with the mainline carriers, have improved balance sheets and made them more attractive to investors. The number of manufacturers is three or four major players.

New techniques have evolved to aid financing. Embraer has benefitted from PROEX and Bombardier from various schemes provided by the Canadian government, while all manufacturers have generally taken advantage of residual value guarantees, first deficiency loss guarantees and export credit guarantees.

Regional aircraft manufacturers are still involved in financing, but have reduced their involvement as regional jets

British Aerospace was one manufacturer to become involved in supporting customer financing and leasing. Recent success of regional jets has increased confidence in financing regional aircraft.

have become more successful. Later deliveries of regional jets have avoided manufacturer assistance and involved and operating, finance and leveraged leases.

Bombardier

One of the less publicised aspects of the recent World Trade Organisation (WTO) investigations into subsidies at both Bombardier and Embraer was reference to Bombardier's sales financing techniques.

Two of the seven claims made by Brazil against Canada were upheld. These related to development funding provided by Technology Partnerships Canada to the Canadian regional aircraft industry and the particular method of financing employed in the sale of six Dash 8-300 aircraft.

One Bombardier finance vehicle to become public knowledge is Canadian Regional Aircraft Finance Transaction No1 (CRAFT). This was launched in April 1998 with a portfolio of 26 aircraft. It is a special purpose company formed to finance Bombardier aircraft on both operating and finance leases.

CRAFT essentially packages leases from a variety of end users, diversifying the risk to debt holders. The effect is a lower financing cost than would be possible if the deals were financed separately.

All substantial US fleet operators have used leveraged lease facilities to finance their Canadair RJ acquisitions. Comair and Midway have also used debt financing to a lesser extent. Even Air Canada acquired 24 of its 26 aircraft in this way.

Bombardier arranged financing for the first 20 aircraft, and the operator had the right to return them after seven years.

The change in Comair's financing technique from manufacturer-assisted to leverage leases and debt, highlights the increased acceptance of the RJ by financing institutions.

Subsequent aircraft were acquired in equal proportion between debt financing and leveraged operating leases. All recent deliveries were financed through 16.5 year operating leases.

BAe Systems

It is not surprising that BAe no longer plays such an active role in the financing of its sole remaining product line: the Avro RJ. Only 31 of the 154 ordered to date have been on recourse to the manufacturer.

Lufthansa's aircraft were taken under three-year operating leases, but were later placed on long-term financings. Cityflyer Express used operating leases from the manufacturer for its first five aircraft, but the last two have been acquired through an independent operating lease.

BAE has based its sales strategy on obtaining outright sales. Blue chip customers have been supported with alternative assistance, in particular Residual value guarantees (RVGs).

RVGs

All manufacturers use RVGs to some extent. They are a significant improvement over lease financing.

"The US is the largest market for regional jets and the airlines look for the lowest monthly lease rentals," says Joe Laakso, vice president of global sales finance at Fairchild Aerospace. "RVGs are one method financiers have to make lease rentals small, and most financiers insist on their use".

Lease financing requires monthly payments to amortise debt so that at the end of the term a debt balloon is left to be paid. This is serviced by the re-sale of the aircraft. The size of the debt balloon is carefully chosen so that the debt provided is not exposed to risk by the re-sale value being estimated too high.

The debt balloon after 16.5 years may be in the order of 20% of the original purchase price, since debt providers have judged residual values (RVs) of regional aircraft to be relatively poor and unreliable.

This balloon size then determines the monthly debt payments made by the lessee. The smaller the balloon the larger the payments.

"The manufacturer effectively guarantees the residual value of the aircraft at the end of the lease, which raises the debt balloon," says Laakso. "This might be 30-35% compared to normal balloon of 20%. The manufacturer takes the risk with the top 10-15% of the debt balloon.

"The larger debt balloon reduces lease payments that have to be made by the lessee. If the re-sale value is short of the RVG, say 28%, the manufacturer then pays the debt provider the difference of 7% [35% minus 28%]," says Laakso.

The RVG reduces the manufacturer's exposure, because it has alternative ways of financing aircraft for poor credit airlines. RVGs also meet the financier's need for determining future value.

As lessors become more confident about the residual values of regional jets, there may be less need for RVGs.

1st loss deficiency guarantee

"This is a technique for weaker regional airlines," explains Laakso. "It is a pure credit guarantee, where the manufacturer guarantees the financier 10% of the aircraft purchase price. If the lessee defaults, the manufacturer remarkets the aircraft, and if the re-sale value is too low, the manufacturer makes up the difference between value and outstanding debt of up to 10%.

"Financial institutions also usually insist on help to remarket aircraft that have been leased to weaker credit airlines and RVGs are provided," continues Laakso.

Export Credit Guarantees

Options not generally available to airline operators in the developed world are Export Credit Guarantees. These fundamentally guarantee that all outstanding debt will be repaid on default by an airline. The airline buyer can also borrow at a fixed interest rate.

Export Credit Guarantees normally only cover exports to developing non-OECD countries. The 15 EU nations and Australia, Canada, Czech Republic, Hungary, Iceland, Japan, Korea, Mexico, New Zealand, Norway, Poland, Switzerland, Turkey and USA, are excluded. However, BAe was recently able to tap into Export Credit Guarantee support for the sales to Aegean Airlines.

Embraer and PROEX

Programa de Financiamento as Exportacoes (PROEX) has become synonymous with the success of the ERJ-145.

PROEX is not a method of financing, but simply a series of payments from the Brazilian Government to help offset high domestic interest rates. The maximum term for PROEX was 10 years and was used for a financed portion of up to 85% of acquisition cost.

The success of PROEX brought about an expansion in its terms, so that it could be offered for a maximum of 15 years and, it is rumoured, for 100% of the acquisition cost. PROEX can also be used to finance spares and ground support equipment.

Canada's argument to the WTO was that the PROEX subsidises the interest rate payable by reducing it by 3.8% below the rate freely negotiated in the international market, and that these reductions have nothing to do with high domestic interest rates.

The WTO agreed, pointing out that "there is no requirement to demonstrate in a particular case that a 3.8% point interest rate reduction is not necessary to compensate for the lender's higher cost of funds". Despite the WTO ruling that PROEX was an illegal subsidy, Mesa claims to be receiving PROEX support for its recently ordered aircraft.

Assuming a typical set of conditions for the acquisition of an ERJ-145:

- Acquisition price $17 million
- Debt portion 85%
- Lease term 15 years
- Cost of funds 7.5%/annum

Cost of internal funds, at a rate of 15%, for a straight cash purchase are $235,000 a month *(see top table, this page).*

Under the terms of a typical finance lease, the monthly lease rate would be in the order of $128,000 per month *(see top table, this page)*. This assumes the financier takes a conservative view of the life of the aircraft and a residual value after 15 years of 10%. Internal cost of funds for the 15% equity is $35,000 per month. This takes total monthly cost to $163,000.

COMPARISON OF FINANCING TERMS AND MONTHLY PAYMENTS FOR AIRCRAFT FINANCED WITH THE AID OF PROEX

	Cash purchase	Debt with no Proex & RVG	Debt with Proex, no RVG	Debt with Proex & RVG	Operating lease
Purchase price	$17 m	$17 m	$17 m	$17 m	n/a
Purchase price (Proex)	$17 m	$17 m	$15 m	$15 m	$510,000
Residual value assumed	n/a	10%	25%	25%	n/a
Monthly lease rate	n/a	$128,000	$110,000	$102,000	$170,000
Internal cost of equity	$235,000	$35,000	$35,000	$35,000	n/a
Total monthly cost	$235,000	$163,000	$145,000	$137,000	$170,000

COMPARISON OF FINANCING TECHNIQUES & COSTS FOR A $20 MILLION CRJ

	Cash purchase	Debt finance	Leveraged lease	Operating lease
Typical term	n/a	15 years	15 years	3-7 years
Deposit on order	$2 m	$2 m	$2 m	$600,000
Progress payment	$1 m	$1 m	$1 m	n/a
Payment on delivery	$17 m	$1 m	$1 m	$200,000
Ownership at end of lease	Operator	Operator	Lessor	Lessor
Monthly lease rate		$142,000	$158,000	$200,000
Internal cost of funds	$276,000	$41,000		
Total monthly cost	$276,000	$183,000	$158,000	$200,000

Adding in the effect of the PROEX would reduce the lease rate for the 85% debt portion to $110,000. Internal cost of funds for the 15% equity still adds $35,000 per month *(see top table, this page)*. This takes total monthly cost to $145,000.

This can be improved further if the manufacturer wishes to offer an RVG. An RVG of 25% of purchase price at 15 years would drop the lease payment to $102,000 per month. Equity funding is still $35,000 a month, but total cost is $137,000. By comparison, an operating lease has a monthly rate of $170,000. The lowest monthly finance cost is achieved with PROEX and RVG – at $137,000 a month. This is equal to a lease rate factor of 0.085% of aircraft price.

One of the weaknesses of the PROEX scheme, since it may be cancelled, is that the operator receives payments over the lease term. Changes in financial conditions make long-term planning difficult for any organisation, since there is a perceived risk with Brazil and the possibility that monthly benefits may stop. Many beneficiaries prefer to receive the benefit up front as a lump sum.

Financing options

The options available for today's regional airlines to acquire aircraft have not changed, but their increased financial strength has changed the balance. New jet aircraft in particular are less reliant on manufacturer support.

Options available to airlines are:

- Working capital/cash purchase
- Finance leases/debt financing
- ECGs
- Leveraged leases
- Operating leases

Cash purchase, operating lease, debt lease and leveraged lease are compared for the acquisition of a $20 million CRJ *(see lower table, this page).*

Cash purchase

The easiest way to acquire an aircraft is simply to buy it outright. Few regional airlines have the cash resources.

Financing techniques that have become more available to regional airlines include Export Credit Guarantees, Residual Value Guarantees, 1st Loss Efficiency Guarantees and operating and leveraged leases.

The advantage of cash purchasing is that monthly outgoings will be zero. However, the capital requirement is large and deposits and progress payments require capital well before the aircraft is delivered.

Cash could be usefully employed in other parts of the business. Airlines would target a return on investment of 15%. The monthly 'cost' of internal funding is equivalent to $276,000 per month for a CRJ acquired for $20 million *(see lower table, page 41)*.

Operating leasing

With simple cash purchase an unlikely option, operators are drawn to the various leasing options available. Fundamentally leasing can be divided into two main types: the operating lease and the finance lease.

The operating lease effectively rents the aircraft for a pre-determined period.

An operating lease usually generates a lease rate factor of about 1.0-1.15% per month of the aircraft purchase cost. This will be $200,000-230,000 per month for a CRJ with a cost of $20 million.

In September 1998, Fairchild Aerospace and Newcourt Capital announced the establishment of the Millennium Leasing Company to provide operating leases for Fairchild customers.

"Airlines will pay higher lease rentals if they can walk away after five to seven years," says Laakso. "There are a few regional aircraft leasing companies and they tend to have high lease rates. Millennium is 49% owned by Fairchild. It builds a portfolio of about 40 leases and then securitises the portfolio".

Finance leasing

An operator wishing to own aircraft has the option of raising debt from a bank. Borrowing debt will only require a 15% equity investment, but this equity portion still has an internal 'cost' of 15%. For a $20 million CRJ, the equity has a monthly charge of $41,000. The remaining 85%/$17 million of debt is assumed to be financed at an interest rate of 7.5%, with a monthly charge of $142,000. The result is a total monthly cost of $183,000 *(see lower table, page 41)*.

There may be tax-related benefits of ownership to an operator. Tax benefits of ownership vary by country. Fundamentally, tax depreciation is claimed against the owner's or lessor's profit and reduces its tax liability. This benefit is only useful if the owner/lessor generates sufficient profits to fully exploit the tax depreciation. Regional airlines do not have tax capacity for aircraft ownership. They therefore select operating or finance leases.

A finance lease leaves the ownership of the aircraft with the lessor. At the end of the lease aircraft ownership is passed to the lessee.

Finance leases range from a simple secured debt loan to complex tax and leveraged leases. The lowest rates come with the more complex arrangements.

Tax-based financial leases are generally on the decline. Their advantage has been that tax benefits are passed onto the lessee in the form of lower rentals. They have the disadvantage of being inflexible and long term in nature. The major exception to this is in the USA, where this method of financing is used for many of the large regional jet orders.

Airlines sometimes use the services of a company with large cash reserves and tax capacity for tax leases. These can be private investors, or lessors. Recently companies such as Walt Disney Company have become involved in aircraft financing.

The tax lease will then be leveraged because the lessor will invest a portion of equity and debt will be raised to fund the remainder. The leveraged lease has three participants, the lessee, the lessor (equity participant) and a long-term lender (debt provider).

The lessor will typically provide 15% of equity and will claim the tax benefits on 100% of the aircraft purchase price. The lessor could then pass these benefits to the lessee through lower lease payments.

The alternative method of taking advantage of tax benefits is for the lessor to use the tax benefits in a different way. Lessors are often prepared to accept low or zero returns on their equity investments, in return for benefitting from using aircraft ownership as a tax shelter. The interest rate on the equity portion is assumed to be zero *(see lower table, page 41)* for this example of acquiring a CRJ at $20 million. This leaves a monthly cost of $142,000 to finance the debt portion. This is the most cost-effective option, in this example.

Summary

For US regionals that place large orders for regional jets, financing is likely to be obtained though either US leveraged leases or by debt financing. The best of Europe's regional airlines will be able to attract debt financing for their regional jet acquisitions.

Operators not capable of attracting such financing will find it hard to join the jet club. These operators will have to continue to rely on the large number of used turboprops that will be available on operating leases from either the manufacturers or the smaller independent lessors.

This lack of ability to finance new regional jet orders may lead to the rise of a new wave of regional airlines. These operators could take aircraft on operating lease at bargain basement rates. AC