Transportation Assets

Interview preparation summary · RE track

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INT.RT.1.a · Aviation, Shipping and Rail

Underwrite an aircraft or engine lease using the lease rate factor, lessee credit, residual value and the cost of repossession, and explain what drives a lessor's return.

An aircraft lessor buys an aircraft or engine, rents it to an airline for a fixed term and recovers the rest of its money when the asset is re-leased or sold. The lease rate factor is the monthly rent divided by the aircraft's value, and multiplying it by twelve gives a cash yield that is easy to compare across assets. That yield is not the return, because part of every rental is capital coming back as the aircraft ages, so the question is how much value is left at lease end. Residual value rests on appraised values, which come from independent appraisers, on the age and type of the aircraft, and on how many airlines can use it. Narrowbodies serve a deep pool of operators and are quicker to re-lease or sell than widebodies, which carry longer downtime and larger transition costs. Lessee credit decides whether the rent is collected, and a weaker airline is usually offset by a higher rent, a security deposit or a letter of credit. If an airline defaults, the lessor must deregister and export the aircraft, so the legal system matters: the Cape Town Convention and local insolvency law shape how fast a lessor can recover it. Engines and maintenance reserves add a second layer, since the lessor may fund or collect overhauls. The usual mistake is to read a nine per cent rent yield as a nine per cent return.

WORKED EXAMPLE: LEASE RATE FACTOR FOR A CORVID AIRCRAFT LEASING NARROWBODY

Corvid Aircraft Leasing, an invented lessor, can buy a narrowbody appraised at 40m and lease it for 8 years at 0.30m a month. The appraisal at lease end is expected to be 22m, but could be 20% lower. What is the lease rate factor, the cash yield, and the net gain over the lease? Convention: dollars, rent paid evenly, unlevered, ignore discounting, maintenance and tax.

Answer: The lease rate factor is 0.75% a month, a 9.0% cash yield; after 18m of depreciation the net gain is 10.8m (3.4% a year), and a 20% lower residual cuts it to 6.4m.

> **Interview tip:** Say: the 0.75% factor is a 9% cash yield, but 5.6 points of that is the aircraft depreciating, so the real return is about 3.4% a year, and a residual 20% lower takes the gain down by two fifths, so the residual is what I would underwrite hardest.

INT.RT.1.b · Aviation, Shipping and Rail

Assess a vessel investment by charter type, day rate and cash breakeven, and weigh newbuild against secondhand while allowing for supply, scrapping and decarbonisation rules.

A shipowner earns a day rate that depends on how the vessel is chartered. In a spot or voyage charter the owner is paid per voyage and pays fuel and port costs, so earnings follow the freight market and include days spent waiting or sailing empty. In a time charter the charterer hires the vessel for a period at a daily rate and pays fuel, while the owner keeps crewing and running the ship. In a bareboat charter the charterer crews and operates the vessel for a lower rate, so it behaves like a lease. Owners compare charter types using time charter equivalent earnings, which strip out voyage costs. The core test is cash breakeven: operating costs plus interest and scheduled repayments, divided by days in the year. Tankers, dry bulk carriers and container ships have different cycles, which are set by cargo demand against fleet growth, and a high rate prompts orders that arrive two or three years later and weaken the market. A secondhand vessel is available at once at a lower price but is older and less efficient, while a newbuild takes a yard slot, costs more and may be eligible for export credit finance. Scrapping removes old ships and supports the market, and the more the fleet ages, the more scrapping offsets supply. The International Maritime Organization's efficiency and carbon intensity rules can force slower speeds, retrofits or earlier retirement of less efficient ships, which affects both earnings and value. The usual mistake is to underwrite today's spot rate for the whole hold.

WORKED EXAMPLE: CASH BREAKEVEN FOR THE MARLIN DAWN

The Marlin Dawn is an invented product tanker with operating costs of 7,600 a day, 20m of debt at 7% interest and 1.0m of scheduled repayments a year. A one-year time charter pays 22,000 a day for 350 days. Spot trading is expected to earn a time charter equivalent of 26,000 for 330 earning days, or 15,000 in a weak market. What is the cash breakeven, and which fixing do you prefer? Convention: 365-day year, dollars, ignore tax and drydocking.

Answer: Breakeven is about 14,175 a day (15,679 per earning day); the margin is plus 2.53m on the charter, plus 3.41m on spot at 26,000 and minus 0.22m on spot at 15,000.

> **Interview tip:** Say: it needs about 14,200 a day to cover costs and debt, the charter gives 2.5m of cushion, and spot only beats it by 0.9m in a good market while losing money in a weak one, so I would use the charter to cover debt service and keep the rest of the fleet spot.

INT.RT.1.c · Aviation, Shipping and Rail

Analyse railcar, container and chassis leasing on utilisation, lease rate, fleet age and renewal risk, and explain how supply discipline shapes returns.

Fleet lessors of railcars, containers and chassis earn rent on many identical units, so returns are a statistical matter of utilisation, lease rate and the cost of the fleet. Utilisation is the share of units on lease and earning rent, and because storage, maintenance and positioning costs fall on idle units, a few points of utilisation move profit by more. Lease rate is the monthly rent per unit, and it resets as leases expire, so the renewal rate against the expiring rate is a leading indicator: when renewals come in lower, fleet income falls gradually as the portfolio reprices. Fleet age matters because it sets the remaining useful life, the maintenance and regulatory retirement ahead, and the residual or scrap value, and a young fleet has more years of rent left to earn. Container leasing splits into long-term leases that fix rent for years and master leases that let a shipping line pick up and return boxes at agreed depots for a higher fee. Railcars depend on the commodity carried, such as grain, chemicals or coal, and on whether regulation forces older tank cars out. Supply discipline decides the cycle: when manufacturers and lessors order heavily at the top, new units arrive as demand softens and drag down utilisation and rates for the whole fleet. The usual mistake is to underwrite current utilisation and rates as permanent.

WORKED EXAMPLE: UTILISATION AND RENEWAL RATES AT HARTLEY RAIL

Hartley Rail, an invented lessor, owns 2,000 tank cars that cost 95,000 each. They lease at 900 a month with 92% utilisation, and holding and running costs are 100 per car a month on every car, leased or idle. In a downturn utilisation falls to 85% and the 25% of the fleet that renews does so at a rate 10% lower. What is the net cash yield on cost before and after? Convention: dollars, annual figures, ignore tax and financing.

Answer: Net cash yield on cost falls from 9.2% (17.47m) to 8.2% (15.50m) when utilisation drops to 85% and a quarter of the fleet renews 10% lower, a fall of 11.3% in income.

> **Interview tip:** Say: 9.2% on cost becomes 8.2%, but that is an 11% cut in income because the running costs do not fall with utilisation, and a quarter of the fleet still has to reprice, so I would underwrite the downside and not the base case.

INT.RT.2.a · Concessions, Financing and Returns

Evaluate a toll road, port or airport concession on traffic risk, regulation and concession term, and test debt cover against a fall in volumes.

Transport infrastructure is often held under a concession, in which a grantor lets an operator collect revenue for a fixed term before the asset reverts to the state. Toll roads earn on traffic times toll, and the risks are traffic forecasting, the cap on toll increases and the political appetite to allow them. Airports and ports earn from aeronautical charges, rents and commercial income, and the regulatory framework decides how much of that is set by a regulator, often as an allowed return on a regulated asset base, and how much is free to rise. Ports and terminals also depend on a few shipping lines or cargo owners, and on competing ports nearby. Because a concession is a wasting asset, value is the present value of cash flows over the remaining term, and it declines as the term runs down unless the grantor extends it. Lenders size debt on the debt service cover ratio, which is cash flow available for debt service divided by debt service. The lock-up and default tests on that ratio mean a modest fall in traffic can stop distributions long before it threatens a default. Operating costs are largely fixed, so a given percentage fall in volume produces a larger fall in cover. The usual mistake is to trust a traffic forecast made by the sponsor without a downside case.

WORKED EXAMPLE: DEBT COVER ON THE ESKER TOLL ROAD

The Esker Toll Road is an invented concession with revenue of 120m, operating costs of 30m and debt service of 60m a year. The loan has a distribution lock-up at a cover ratio of 1.15 and a default at 1.00. Costs are fixed. How much can traffic fall before each test is hit? Convention: dollars, annual figures, toll rates unchanged.

Answer: Cover is 1.50 at base, 1.20 after a 15% fall and 1.10 after a 20% fall; the lock-up bites at a 17.5% fall in traffic and the default point is a 25.0% fall.

> **Interview tip:** Say: cover is 1.5 times today, but because costs are fixed a 17.5% fall in traffic locks up distributions and 25% reaches default, so I would ask how that compares with the worst fall in traffic the road has seen.

INT.RT.2.b · Concessions, Financing and Returns

Structure the financing of a transport asset with sale-and-leaseback, loan-to-value, export credit support and amortisation, and judge the refinancing risk at the balloon.

Transport assets are financed against the asset and its lease. In a sale-and-leaseback an airline or shipping company sells an aircraft or vessel to an investor and leases it back, which releases cash and moves the residual risk to the investor, who prices the lease off the asset's value and the operator's credit. Lenders size the loan as a share of the asset's appraised value, the loan-to-value ratio, and test the rent against debt service. Many loans amortise only partly, leaving a balloon at the end of the lease or loan that must be repaid from the sale or refinancing of the asset, so the loan-to-value at the balloon, set against a realistic residual value, is the figure to watch. For new aircraft and ships, export credit agencies guarantee or lend against an export purchase, which can give longer tenors and finer margins than commercial banks, with conditions on the asset and the buyer's country. Leverage turns a high yield on cost into a strong cash yield on equity when the asset is performing, and it magnifies the loss when residual value falls. The usual mistake is to quote the cash-on-cash yield without looking at amortisation, the balloon and how much equity is left at exit.

WORKED EXAMPLE: FINANCING AN AIRCRAFT SALE-AND-LEASEBACK FOR EMBER AIRWAYS

Ember Airways, an invented airline, sells an aircraft worth 60m to a fund, which leases it back for 10 years at 0.48m a month. The fund borrows 65% at 6%, amortising on a straight line to a balloon of 12m at the end of year 10. The aircraft is expected to be worth 40% of its value at lease end, or 30% in a weak market. What is the year-one cover, the cash yield on equity, and the balloon loan-to-value? Convention: dollars, ignore fees and tax.

Answer: Year-one cover is 1.14 and cash to equity is 0.72m (3.4%); the balloon is 50% of value at a 40% residual and 66.7% at 30%.

> **Interview tip:** Say: the 9.6% rent yield turns into a 3.4% cash yield on equity once principal is paid, so the return depends on the residual, and a balloon that grows from 50% to 67% of value in a weak market is where the refinancing risk sits.

INT.RT.2.c · Concessions, Financing and Returns

Underwrite the return on a transport investment by comparing cash-on-cash yield with IRR across residual outcomes, and plan the exit route and its timing in the cycle.

A leased transport asset pays out steadily and is then sold, so the return has two parts and cash-on-cash yield shows only the first. Cash-on-cash divides one year's cash to equity by the equity invested, and it looks high when the lease rent is high and the asset is leveraged. IRR includes the sale value at exit, and the multiple of money shows how much cash comes back in total. A high cash yield on an asset that loses most of its value can have a low IRR, so the residual is the figure to stress, along with the lease term, rent and re-lease risk. Underwrite the residual from the asset's age, appraised value, comparable sales and the supply of competing units, and test a low case. Cycles in aircraft, shipping and containers mean the same asset can sell for much more at a peak than a trough, so a fund with a fixed term needs flexibility on when it sells. Exit routes include selling the asset or portfolio to another lessor, an infrastructure or credit investor or an airline, selling the whole platform, or running a portfolio down. An exit buyer prices off the same yield and residual, so a platform's valuation depends on lease length, tenant quality and fleet age. The usual mistake is to promise the cash yield and forget that capital has to come back.

WORKED EXAMPLE: CASH YIELD AGAINST IRR ON THE WREN CARGO AIRCRAFT

A fund buys an invented freighter aircraft for 25m with 10m of equity and 15m of interest-only debt at 6.5%. The lease pays 3.0m a year for five years, then the aircraft is sold and the debt repaid. The sale price could be 18m, 14m or 22m. What are the cash-on-cash yield, the IRR and the multiple of money in each case? Convention: dollars, annual cash flows at year end, ignore tax and fees.

Answer: Cash-on-cash is 20.3% in every case; the IRR is about 8.4% at an 18m sale, minus 3.2% at 14m and 15.9% at 22m (1.31x, 0.91x and 1.71x).

Interview tip: Say: the 20% cash yield is the same in all three cases, but the return runs from minus 3% to 16% depending on the sale price, because the asset loses value and leverage passes that straight to equity, so I would underwrite the residual first.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.