

Leasing Decision

Three methods of Leasing decision (Lessee's point of view)

1. NPV Method
2. IRR Method
3. Williamson Method

NPV Method

Assumption : Loan incl Int will be repaid in the same period as the term of lease

NPV of leasing

1. Calculate Annual Cash outflows i.e. Lease rentals

Calculation of Equal annual Lease rentals = $\frac{\text{Cost of Machine/Asset}}{\text{Sum of PV factors (rate being int rate charged by lessor)}}$

2. Calculate Annual Cash Inflows i.e. tax savings bcoz of lease rentals = Annual lease rent * tax rate
3. Use After tax Cost of debt to discount the above CFs'
4. Findout NPV

Note: If installments are to be paid at the beginning of the year, the year is taken as 0 and 1 is taken as PV factor

NPV of Borrowing

1. Calculate Annual Cash outflows i.e. payment of loan installment
2. Calculate Annual Cash inflows
 - a. Interest incl in the loan * tax rate
 - b. Depn * tax rate
3. Use After tax Cost of debt to discount the above CFs'
4. Findout NPV

$\frac{\text{Cost of Machine/Asset}}{\text{Sum of PV factors (rate being int rate charged by bank)}}$

IRR method

- a. Calculate yearly net CFs under leasin after tax
- b. Calculate yearly CFs after tax assumin asset bought wid own funds (so int component vl not b der, oly depn tax shield vl b der)
- c. Calculate Incremental CFs (a-b)
- d. Based on these CFs calculate IRR
- e Decision : if IRR is less than , Cost of debt(after tax) ---- Accept lease...otherwise borrow

Williamson Method

- . If Financial result + Operating result = +ve
- . If Financial result + Operating result = 0
- . If Financial result + Operating result = -ve

Accept
Indifference
Reject

Financial Result

PV of Loan repayments (incl Int) Less: PV of lease payments

Operating result

Tax saving incase of lease Less: Tax saving in case of purchase

Note : Disc rate is after tax cost of debt

CALCULATION OF LEASE RENT – 4 SITUATIONS

1. BELR (Break even lease rent)

Calculation of lease rent which matches with purchase/loan option :

1. Assume lease rental to be x pa.
2. Calculate PV of annual lease rent after tax = $x(1-t)$ * sum of PVF
3. Calculate PV Of CFAT of Loan option
4. Equate 3 and 4

2. Calculating **equal lease** rent to provide **pre tax return to lessor**:
3. Calculating **unequal lease** rent to provide **pre tax return to lessor**:
4. Calculating lease rent to provide **post tax return to the lessor**

Use IRR method

i.e **Equate NPV = 0**

Disc factor to be pre/post tax returns rate as may be applicable

Before calculating lease rent, we should find whether we have to calculate lease rent from lessee point of view or lessor point of view.

If the question is silent on the point whether we have to calculate pre-tax or post tax lease rent:

- (i) Calculate **pre-tax** lease rent if we have to take the decision from **lessee** point of view (calculate lease rent ignoring tax)
- (ii) Calculate **post-tax** lease rent if we have to take the decision from **lessor** point of view.

LEASE V/S HIRE PURCHASE

1. Calculate Cost of HP using IRR

we need to calculate incremental Cash flows b/w HP & outright purchase

(So tax saving on depn is ignored since it is not incremental - it is available in both options)

1. Estimate Net CFAT of HP i.e. Installments - tax saving on a/c of Int incl in Installment)
2. calculate CFAT in case of outright purchase (der vl b only initial outflow)
3. calculate incremental CFs (1-2)
4. calculate IRR of those CFs .. This is the cost of HP

2. Calculate Cost of Leasing using IRR

we need to calculate incremental Cash flows b/w leasing & outright purchase

(So tax savings on depn is considered since it is incremental - it is available only in outright purchase)

1. Estimate Net CFAT of leasing i.e. Installments - tax saving of Installment)
2. calculate CFAT in case of outright purchase (der vl b initial outflow n tax savings on depn)
3. calculate incremental CFs (1-2)
4. calculate IRR of those CFs .. This is the cost of Leasing

Decision : Select the option with the lower rate

lessor point of view	CIF	Post tax lease rentals and tax savings on depn Cost of Machine
	COF	