TOPIC Cost of Debt (Kd)

* NP = Issue − Floatation Cost (Issue Cost)

IRREDEEMABLE

(To be Paid at winding up)

* Not Allowed In India

$$\frac{I(1-t)}{NP} \times 100$$

eg:-1 ⇒ $\frac{5L(1-0.30)}{50L} \times 100$

Kd = 7%

eg:-2 = $\frac{5L(1-0.30)}{49L} \times 100$

Kd = 7.14%

I = Interest Amount, t = tax Rate

NP = Net Proceed = "Actual money Rec. by Co. through debt."

RV = Redemption Value → Repay Value

n = No. of Year

eg:- 1. 10% Debt of ₹ 50L issued, tax 30%. Find Kd

eg:-2 What if in eg:1 issue cost @2%. [Floatation Cost]

↳ NP = 50L − 2% = 49L

* "Fc/Ic increases the cost of Capital"

eg:-3. What if in eg:2 Red. Value is 60L and tenure of loan is 5 years, Kd?

Int. = 50L × 10% = 5,00,000

REEDEMABLE

"To be Repaid after fix time"

$$\frac{I(1-t) + \frac{RV - NP}{n}}{\frac{RV + NP}{2}} \times 100$$

eg:-3 ⇒ $\frac{5L(1-0.30) + \frac{60L - 49L}{5}}{\frac{60L + 49L}{2}} \times 100$

Kd = 10.46%

TOPIC Cost of Pref. share ⇒ Kp

⇒ only change two things in Kd

⇒ Replace I with D (Dividend Amount)

⇒ ignore Tax

IRREEDEMABLE

$$\frac{D}{NP} \times 100$$

① ⇒ $\frac{96000}{80L} \times 100$

Kp ⇒ 12·1·

② ⇒ $\frac{96000}{77,69,000} \times 100$

Kp = 12.37

eg:-1 12·1· PSC of ₹ 80L, Tax 20·1· Find Kp

80L × 12·1· = 9,60,000

eg:-2 What if in eg 1 issue cost @ 3·1·; Kp?

* NP = 80,00,000 − 3·1· = 77,60,000

* I·cost will Increase Kp"

eg:-3 What if in eg:2 Rv is 100L and tenure is 4 years find Kp.

n

REEDEMABLE

$$\frac{D + \frac{Rv - NP}{n}}{\frac{Rv + NP}{2}} \times 100$$

eg:-③

$$\frac{9.60 + \frac{100L - 77.60}{4}}{\frac{100L + 77.60}{2}} \times 100$$

⇒ $\frac{15.2}{88.8} \times 100 = \frac{17.12·1·}{Kp}$

TOPIC Total Cost of Capital / Overall Cost of Capital
Weighted Average Cost of Capital (WACC) K_o

$$K_o = \frac{(K_d \times W_d) + (K_p \times W_p) + (K_e \times W_e)}{W_d + W_p + W_e} \times 100$$

① $K_o \Rightarrow \frac{(12\cdot1\% \times 50L) + (15\cdot1\% \times 30L) + (20\% \times 120L)}{50L + 30L + 120L} \times 100$

$K_o = 17\cdot25\%$

② $K_o = \frac{(12\cdot1\% \times 0\cdot25) + (15\cdot1\% \times 0\cdot15) + (20\% \times 0\cdot60)}{0\cdot25 + 0\cdot15 + 0\cdot60} \times 100$

$K_o = 17\cdot25\%$

⇒ Consider Amounts as weight

eg:-

Element	Cost	Value
Debt K_d	$12\cdot1\% \times W_d$	50L
PSC K_p	$15\cdot1\% \times W_p$	30L
Equity K_e	$20\cdot1\% \times W_e$	120L

eg:-

Element	Cost	Value %
Debt	12·1%	25·1%
PSC	15·1%	15·1%
Equity	20·1%	60·1%
		100

TOPIC

⇒ Floatation cost ⇒ "it increase the cost" ⇒ Also called issue cost"

↳ Revised $K_o = \frac{K_o}{1 - FC}$

eg:- if $K_o = 20\%$ and issue cost is 2%. Find Revised K_o

$\Rightarrow \frac{20}{1 - 0.02} = \frac{20}{0.98} = 20.41\%$

(5) ⇒ Bond Yield Method of Ke Computation ⇒ Bond Yield + equity Risk Premium

Ke

eg:- if Bond Yield is 12% and equity Risk Premium is 4%. find Ke

$K_e = 12\% + 4\% = 16\%$

TOPIC

FLOATATION COST AND THE COST OF CAPITAL

Revised WACC = WACC/(1-floatation cost)

TOPIC

Bond Yield plus Risk Premium approach

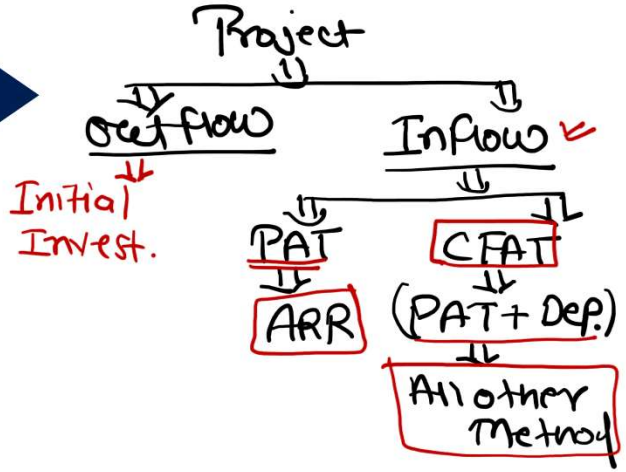
- Under this approach, an equity risk premium is added to the yield on long term bonds of the firm.
- While the yield on long term bonds of the firm are known in the market, decision on equity risk premium is a matter of individual investor perception.

Illustration

If the yield on long term bonds of the firm is 12% p.a. and the equity risk premium is 4%, what will be the required rate of return on firm's equity capital?

The required rate = 12 + 4 =16

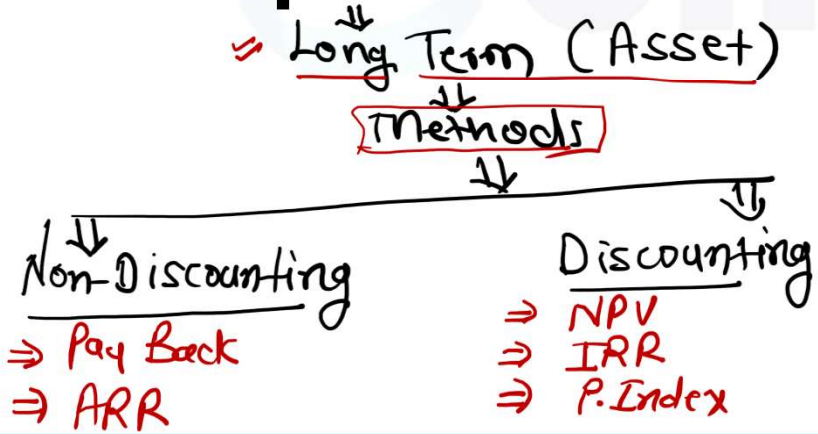
TOPIC



Unit 7

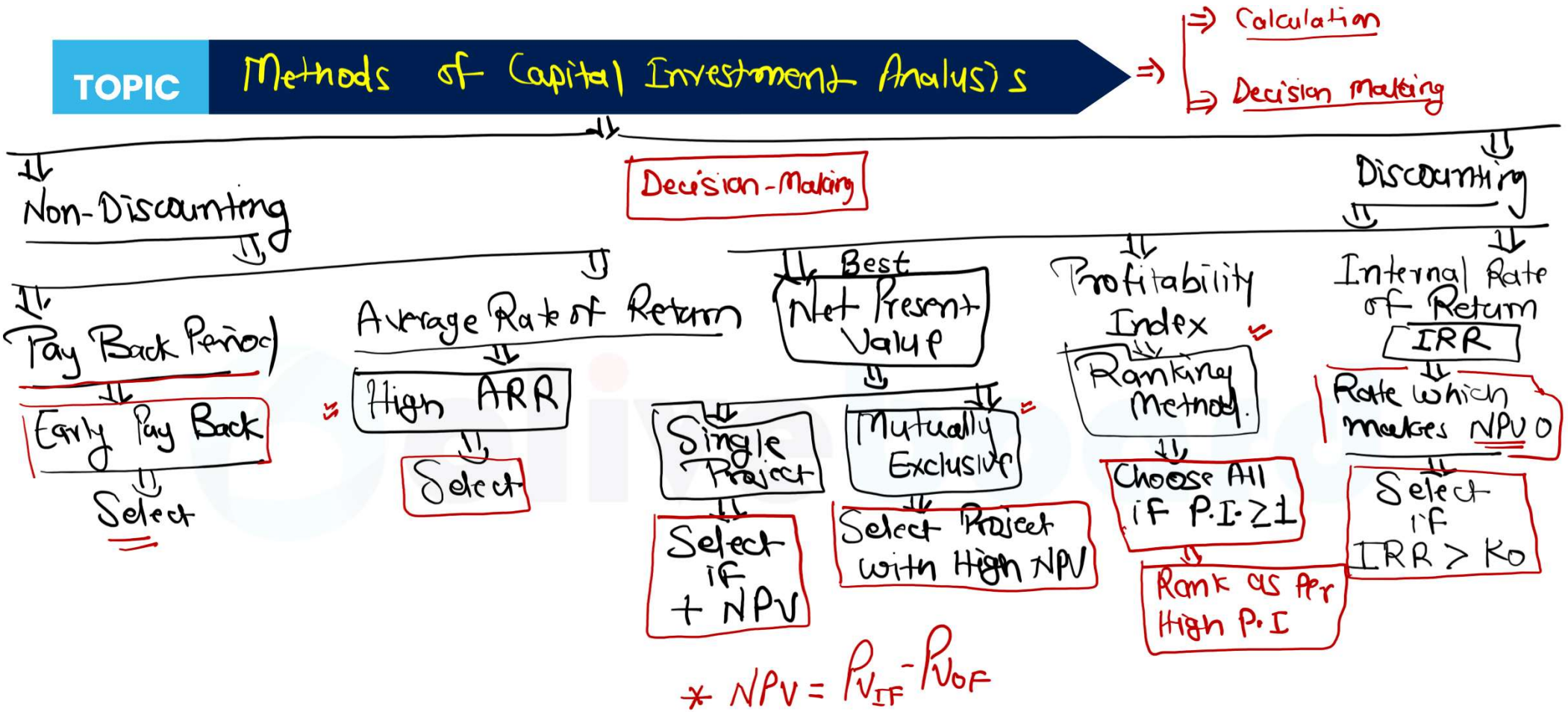
Capital Budgeting

Capital Investment Decisions/Term Loans



TOPIC

Sales	20,00,000 ✓
− Variable cost	(10,00,000) ✓
Contribution	10,00,000 ✓
− Fixed cost	(3,00,000) ✓
− Depreciation	(2,00,000) Imp −
EBIT	5,00,000 =
− Interest	(1,00,000) =
Profit Before Tax	4,00,000 =
− Tax	(1,00,000) =
Profit After Tax	3,00,000 → ARR Imp
+ Depreciation	+ 2,00,000 Imp +
Cash flow after Tax [CFAT]	5,00,000 → All other Methods =


TOPIC
Methods of Capital Investment Analysis
⇒ Calculation
⇒ Decision Making
Decision-Making
Non-Discounting
Discounting
Pay Back Period
Early Pay Back
Select
Average Rate of Return
High ARR
Select
Best
Net Present Value
Single Project
Select if + NPV
Mutually Exclusive
Select Project with High NPV
Profitability Index
Ranking Method
Choose All if P.I. ≥ 1
Rank as per High P.I
Internal Rate of Return
IRR
Rate which makes NPV 0
Select if IRR > Ko
* NPV = PV_IF - PV_OF

TOPIC **Non-discounting Method**

(1) Pay-Back Period :- "Recovery Period"

eg:- Project X ⇒ outflow = 2000000 — Given

Inflow (1Y - 5Y) = 6,00,000

Sol. Pay Back = $\frac{20,00,000}{6,00,000}$

⇒ 3.33 year

0.33 × 12 = 4m

Project Y ⇒ outflow = 20,00,000

Inflow (CFAT)

Y	CFAT	C.C.F.
1	8L	8L
2	7L	15L
3	6L	21L
4	5L	
5	4L	

5L

Sol.

2Y + $\frac{5L}{6L}$

= 2.83 year.

0.83 × 12 = 10m.

Decision = Select Project Y

$X_{PB} > Y_{PB}$

3Y 4m > 2Y 10m

TOPIC

② Average Rate of Return Method / Accounting Rate of Return

Use PAT ⇑ **ARR**

* Avg. PAT = $\frac{\Sigma PAT}{n}$

$\frac{\text{Avg. PAT}}{\text{Avg. Investment}} \times 100$

* Avg. Investment = $\frac{\text{Initial Invest} + \text{Scrap value}}{2}$

eg:-

Project X ⇒ outflow = 50L (given) ⇒ Scrap value = 0

Y	PAT
1	1L
2	2L
3	3L
4	4L
5	5L
	15L
÷	5
Avg. PAT	3,00,000

⇒ Avg. Inv. = $\frac{50L + 0}{2}$ = 25,00,000

ARR = $\frac{3L}{25L} \times 100$ = **12·1·**

Y	PAT
1	6L
2	5L
3	4L
4	4L
5	3L
	22,00,000
÷	5
Avg. PAT	4,40,000

Project Y ⇒ outflow = 50L ⇒ Scrap value = 10L

Avg. Inv. = $\frac{50L + 10L}{2}$ = 30,00,000

ARR = $\frac{4,40,000}{30,00,000} \times 100$ = **14·67·**

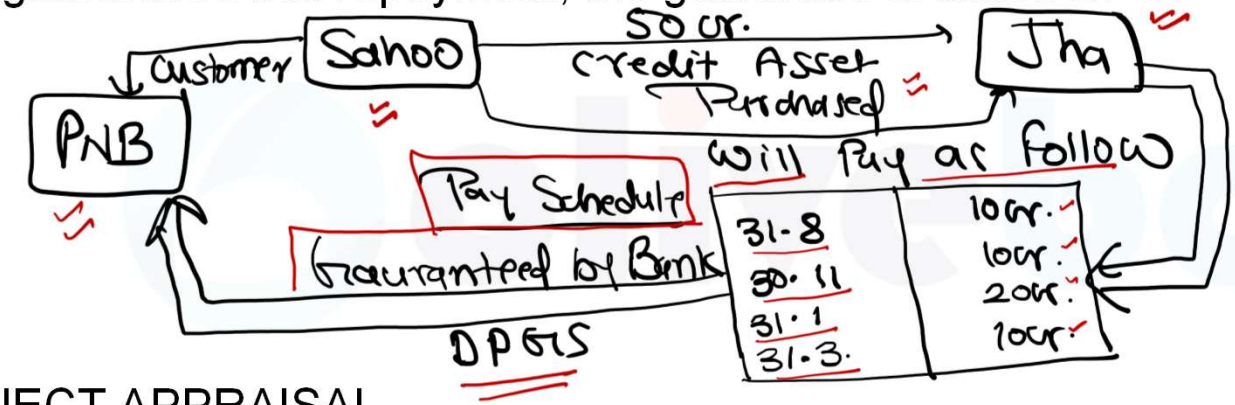
Decision: Select Y

$X_{ARR} < Y_{ARR}$

TOPIC

TOPIC

DEFERRED PAYMENT GUARANTEES (DPGS):- When the purchaser of a fixed assets does not pay to the supplier immediately, but pays according to an agreed repayment schedule, and the bank guarantees this repayment, the guarantee is called DPG.



PROJECT APPRAISAL

Appraisal of Managerial Aspects

Technical Appraisal

Economic Appraisal

TOPIC

Appraisal of Managerial Aspects:

- credentials of the promoters
- financial stake of promoters
- form of business organisation

Technical Appraisal:

- location
- products
- infrastructure
- technology
- availability of raw materials
- marketing arrangements

Economic Appraisal

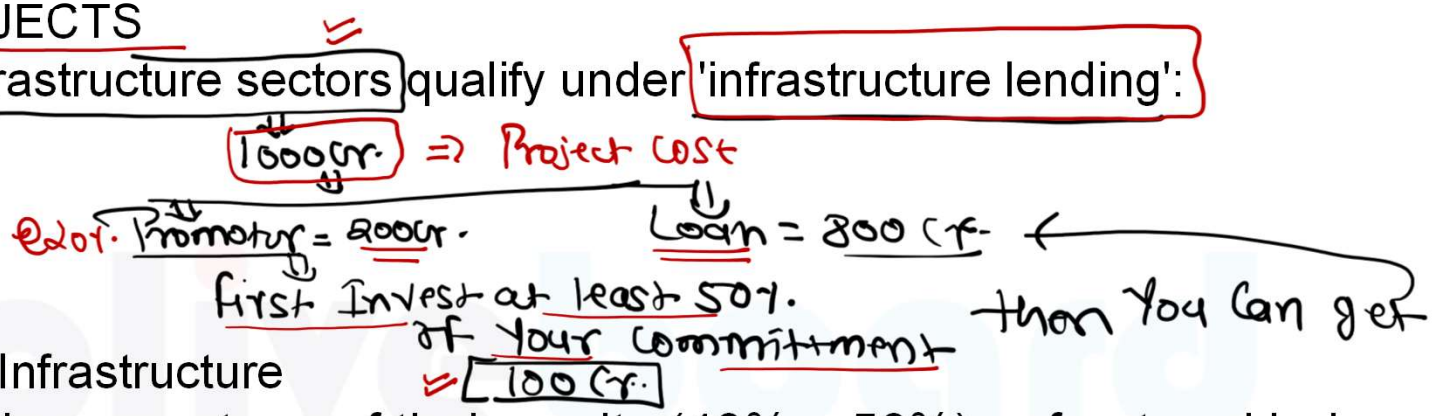
- Return on Investment
- Break-even Analysis
- Sensitivity Analysis ⇒ Risk

TOPIC

INFRASTRUCTURE PROJECTS

Presently, the following infrastructure sectors qualify under 'infrastructure lending':

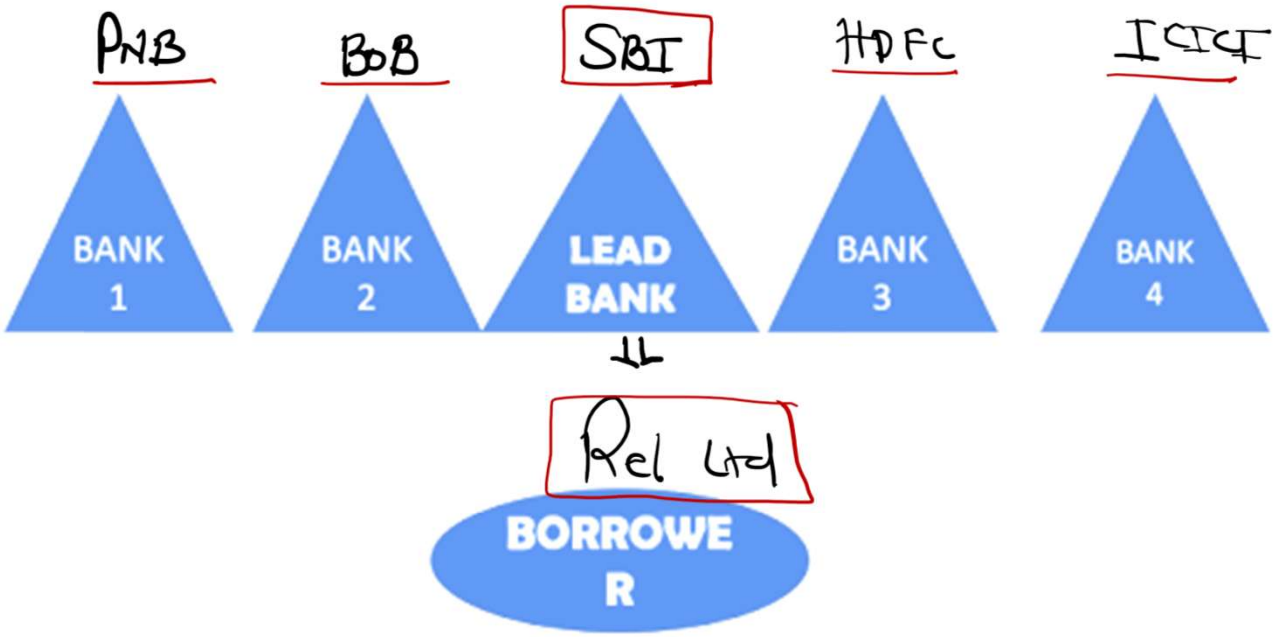
- Transport
- Energy
- Water & Sanitation
- Communication
- Social and Commercial Infrastructure



-→Promoters bring certain percentage of their equity (40% – 50%) upfront and balance is brought in stages.

SYNDICATION OF LOANS:- The term 'Syndication' is normally used for sharing a long-term loan to a borrower by two or more banks.

TOPIC



SYNDICATION OF LOANS

TOPIC

DISCOUNTING METHODS ⇒

* Actual Value of outflow → PVOF

① Net Present Value = "PVIF − PVOF" ⇒ Best Method for Capital Investment

eg:- Project A ⇒ outflow = 10,00,000

Y	CFAT	PVAF@10%	PVIF
1-5Y	3,00,000 ×	3.79 =	11,37,000

NPV = PVIF − PVOF
= 11,37,000 − 10,00,000
NPV ⇒ + 1,37,000

Select if only 1 Project is Available

Discounting Rate (Interest Rate) (Expected Rate) ⇒ 10%

1/1+r ⇒ 1/1.10 ⇐ 1/1+0.10

Project B
outflow = 10,00,000
Mutually exclusive

Y	CFAT	PVF	PV
= 1	5L ×	0.909	4,54,500
= 2	4L ×	0.826	3,30,400
= 3	3L ×	0.751	2,25,300
= 4	2L ×	0.683	1,36,600
= 5	1L ×	0.621	62,100
		PVIF ⇒	12,09,000

NPV_B = 12,09,000 − (10,00,000)
NPV +2,09,000

Select Project B
NPV_A < NPV_B

Short cut:

⇒ Same Cash flow :- 1/1.10 = m+ (1Y) = m+ (2Y) = m+ (3Y) = m+ (4Y) = m+ (5Y) MRC 3.79

⇒ When diff. Cash flow :- 5L/1.10 = m+ | 4L = m+ (2 times) | 3L = m+ (3 times) | 2L = m+ (4 time) | 1L = m+ (5 times)

12,09,000 ⇐ MRC