

Calculation of NPV

$$NPV = PVC I - PVC O$$

$$\begin{aligned} P I (19\%) &= (600000 \times PVAf, 19\%, 4) - 1500000 \\ &= (600000 \times 2.639) - 1500000 \\ &= \text{₹ } 83400 \end{aligned}$$

$$\begin{aligned} P II &= (600000 \times 0.870) + (400000 \times 0.756) \\ (15\%) &+ (500000 \times 0.657) + (200000 \times 0.572) \\ &- 1100000 = 167200 \end{aligned}$$

$$P III \Rightarrow 213800$$

Project III
is the best
due to the highest
NPV.

Question 23

An enterprise is investing ₹ 100 lakhs in a project. The risk-free rate of return is 7%. Risk premium expected by the Management is 7%. The life of the project is 5 years. Following are the cash flows that are estimated over the life of the project:

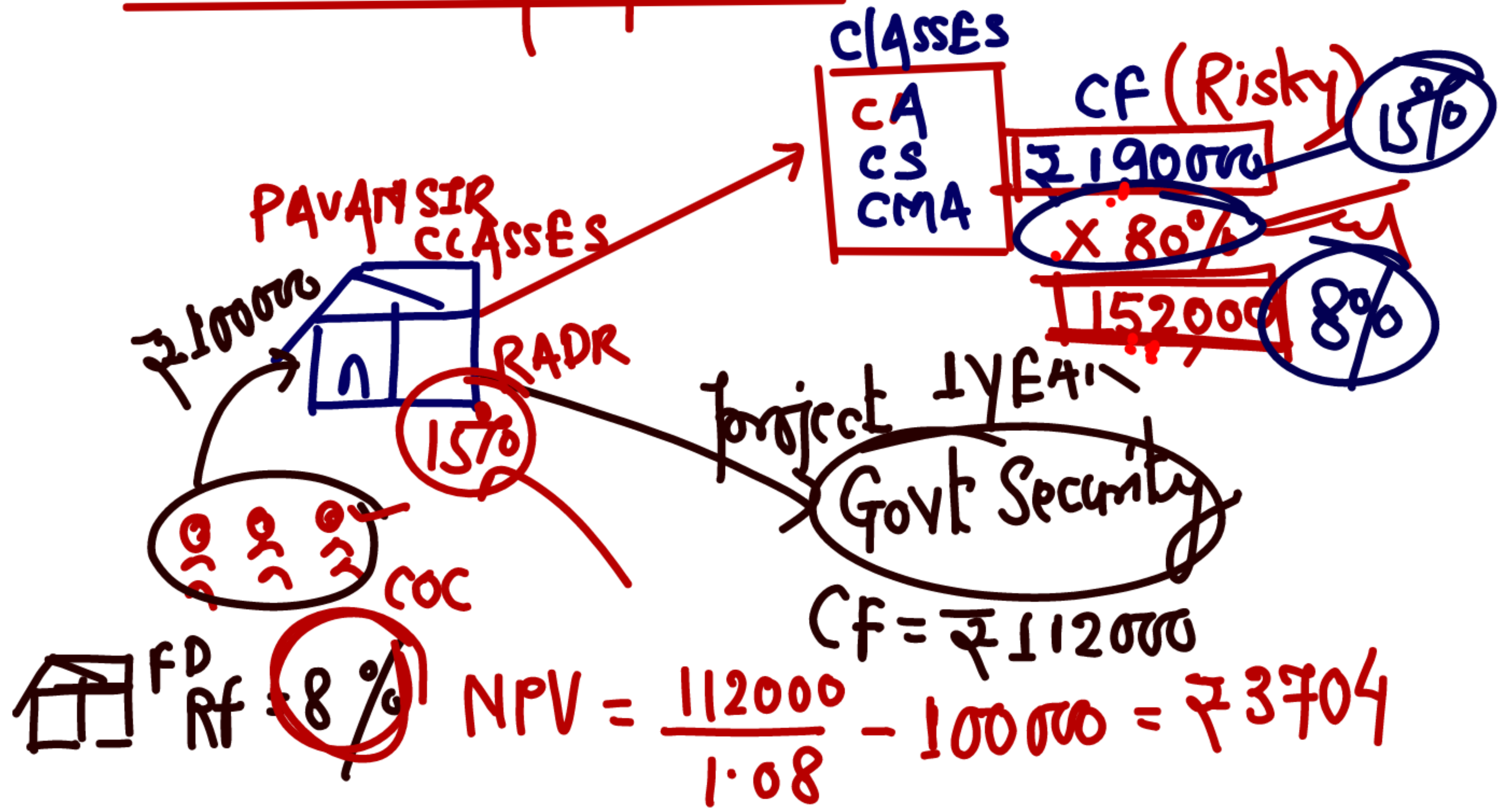
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Year	Cash flows (₹ in lakhs)
1	25
2	60
3	75
4	80
5	65

~~₹ 100~~

Calculate Net Present Value of the project based on Risk free rate and also on the basis of Risks adjusted discount rate

2. Certainty Equivalent



C.E

Following steps are applied to calculate NPV as per Certainty Equivalent approach

Step 1 Calculate Risk free Cash flows

$$\text{Risk free Cash flows} = \frac{\text{Expected Cash Flows}}{\text{C.E.}}$$

Step 2 Calculate NPV using R_f as a discounting Rate.

Cost of project = 120000

YEAR	Expected CF	C.E.
1	80000	0.8
2	92000	0.7
3	78000	0.5

Rf Rate = 6% p.a.

Calculate NPV using C.E. Approach

Calculation of NPV

YEAR	Exp. CF	C.E.	RF CF	PVF (6%)	P.V.
1	80000	0.8	64000	0.943	60352
2	92000	0.7	64400	0.890	57316
3	78000	0.5	39000	0.840	32760

PVCI 150428
 (-) PVCO 120000
 NPV 30428



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Question: 24

The Textile Manufacturing Company Ltd., is considering one of two mutually exclusive proposals Projects M and N, which require cash outlays of ₹ 8,50,000 and ₹ 8,25,000 respectively. The certainty-equivalent (C.E.) approach is used in incorporating risk in capital budgeting decisions. The current yield on government bonds is 6% and this is used as the risk free rate. The expected net cash flows and their certainty equivalents are as follows:

Project M			Project N	
Year-end	Cash Flow ₹	C.E.	Cash Flow ₹	C.E.
✓ 1	4,50,000	0.8 ✓	4,50,000	0.9
✓ 2	5,00,000	0.7 ✓	4,50,000	0.8
✓ 3	5,00,000	0.5 ✓	5,00,000	0.7

Present value factors of ₹ 1 discounted at 6% at the end of year 1, 2 and 3 are 0.943, 0.890 and 0.840 respectively.

Required:

- Which project should be accepted?
- If risk adjusted discount rate method is used, which project would be appraised with a higher rate and why?

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