

***ADVANCED CAPITAL
BUDGETING DECISIONS***

CLASS 9-HW-Q20

Topic Conceptual Sums

Question 20:

Ambitious Investments Ltd is evaluating a project. The project requires an initial investment of Rs.200,000. The cashflows in different years of the project are independent. The following information relates to the project:

Year	Cash flow (Rs.)	Probability (%)	Cash flow (Rs.)	Probability (%)
1	20,000	15	25,000	85
2	75,000	50	60,000	50
3	88,000	40	95,000	60
4	97,000	35	87,000	65

The cost of capital of the company is 16% and the risk-free rate of discount is 10%.

You are required to determine the probability of the project giving a positive NPV (Assuming Normal Distribution).

(Source: FOD)

ANSWER :

Year	Cash Flow	Probability	Cash Flow	Probability	Expected Value	Variance	Standard Deviation
1	20000	0.15	25000	0.85	24250	3187500	1785.36
2	75000	0.50	60000	0.50	67500	56250000	7500.00
3	88000	0.40	95000	0.60	92200	11760000	3429.29
4	97000	0.35	87000	0.65	90500	22750000	4769.70

$$NPV = Rs.8,851.95$$

$$\sigma_{(NV)} = \left[\sum_{t=1}^n \frac{\sigma_t^2}{(1+k)^{2t}} \right]^{1/2} = Rs.7,636.00$$

$$Z = \frac{x - \mu}{\sigma}$$

$$= \frac{0 - 8851.95}{7636.00} = 1.16$$

$$P = 0.877$$