

***ADVANCED CAPITAL
BUDGETING DECISIONS***

CLASS 5-HW-Q10

Topic Scenario Analysis

Question 10:

XYZ Ltd. is considering a project "A" with an initial outlay of ₹ 14,00,000 and the possible three cash inflow attached with the project as follows:

Particulars	Year 1	Year 2	Year 3
Worst case	450	400	700
Most likely	550	450	800
Best case	650	500	900

Assuming the cost of capital as 9%, determine NPV in each scenario. If XYZ Ltd is certain about the most likely result in first two years but uncertain about the third year's cash flow, analyze what will be the NPV expecting worst scenario in the third year.

(Source: ICAI)

ANSWER:

The possible outcomes will be as follows:

Year	PVF @ 9%	Worst Case		Most likely		Best case	
		Cash Flow	PV	Cash Flow	PV	Cash Flow	PV
		(₹ '000)	(₹ '000)	(₹ '000)	(₹ '000)	(₹ '000)	(₹ '000)
0	1	(1,400)	(1,400)	(1,400)	(1,400)	(1,400)	(1,400)
1	0.917	450	412.65	550	504.35	650	596.05
2	0.842	400	336.80	450	378.90	500	421.00
3	0.772	700	540.40	800	617.60	900	694.80
NPV			-110.15		100.85		311.85

If XYZ Ltd. is certain about the most likely result in first two years but uncertain about the third year's cash flow, then, NPV expecting worst case scenario is expected in the third year will be as follows:

$$= - ₹ 14,00,000 + \frac{₹ 5,50,000}{(1+0.09)} + \frac{₹ 4,50,000}{(1+0.09)^2} + \frac{₹ 7,00,000}{(1+0.09)^3}$$

$$= - ₹ 14,00,000 + ₹ 5,04,587 + ₹ 3,78,756 + ₹ 5,40,528 = ₹ 23,871$$