3.4.4.1 Internal Rate of Return Example

Q: IRR ≥ 15% ?

discount rate 15%

$$IO = \sum_{n=1}^{t} \frac{ACF_t}{(1+IRR)^t}$$

ACF_t → annual after tax cash flow for time period t

t ↓ project expected life

IO ↓ initial cash outlay

Year	inflows	Discount Factor at 15%	NPV
1	$2500		
2	2000		
3	2000		

Present value of inflows

Cash investment

Difference.

Solution ①

Year	inflows	Discount Factor at 15%	NPV
1	$2500	0.870	2175
2	2000	0.756	1512
3	2000	0.658	1316
Present value of inflows			5003
Cash investment			5000
Difference.			3

$\frac{1}{1+0.15} = 0.87$ $\quad 2500 \times 0.87 = 2175$

$\frac{1}{(1+0.15)^2} = 0.756$ $\quad 2000 \times 0.756 = 1512$

$\frac{1}{1.15^3} = 0.658$ $\quad 2000 \times 0.658 = 1316.$

$2175 + 1512 + 1316 = 5003$

$3 > 0$, So, the IRR meet the requirement