

3.4.3 Discounted payback period

Q: Initial investment: 30k

Yearly Return on Investment: 12.5%

Promised yearly return: 10k

Calculate: Discounted payback period

Year	Project Cash Flow Discount	Undiscount
1		
2	?	?
3		
4	,	,
5		

Solution ① Discount Factor $\frac{1}{1+0.125} = 0.89$

Year	Project Cash Flow Discount	Undiscount
1	8900	\$ 10,000
2	7921	\$ 10,000
3	7050	\$ 10,000
4	6274	\$ 10,000
5	5584	\$ 10,000
Payback period	3.9769 Years	3 Years

$$10,000 \times 0.89 = 8900$$

$$10,000 \times 0.89^2 = 7921$$

⋮

$$10,000 \times 0.89^5 = 5584$$

$$30,000 - 8900 - 7921 - 7050 = 6129$$

$$4 - \frac{6274 - 6129}{6274} = 4 - \frac{145}{6274} = 3.9769$$