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Prodi : Manajemen

1. Proyeksi usulan investasi suatu perusahaan, hitung aliran kas!

Jawab : Cash Flow $T_0 = -10.200$

$T_1 = 4.750$

$T_2 = 4.700$

$T_3 = 4.800$

$T_4 = 5.000$

2. Analisis usulan investasi

a. Payback Period

T_0	T_1	T_2	T_3	T_4	Payback period :
-10.200	4.750	4.700	4.800	5.000	$= 4.750 + 4.700 + \left(\frac{750}{4.800} \right)$
					$= 1 \text{ tahun} + 1 \text{ tahun} + 0,15625$
					$= 2,16 \text{ tahun}$

b. Discounted Payback Period

T_0	T_1	T_2	T_3	T_4	df = 22 %
-10.200	4.750	4.700	4.800	5.000	
DP = -10.200	+ 3.893	+ 3.157	+ $\left(\frac{1000}{2.645} \right)$		
					$= 2 \text{ tahun} \dots \text{bulan}$

c. Accounting Rate of Return (ARR)

Investasi : 10.000

depresiasi : 2.500

pendapatan : 7.000

$$\text{rata-rata investasi} = \frac{(10.000 + 7.500 + 5.000 + 2.500)}{4}$$

$$= \frac{25.000}{4}$$

$$= 6.250$$

ARR = $\frac{7.000}{6.250}$

$= 1,12$ atau 112 %

d. Net present value (NPV)

• misalkan pada discount rate 22 %

Tahun	Cash Flow	Discount	PV
0	-10.200		-10.200
1	4.750	0,819	3.893
2	4.700	0,671	3.157
3	4.800	0,550	2.643
4	5.000	0,451	2.256
			11.950

$$\begin{aligned} \text{NPV } 22\% &: \text{Total PV} - 10.200 \\ &= 11.950 - 10.200 \\ &= 1.750 \end{aligned}$$

• misalkan pada discount rate 25 %

Tahun	Cash flow	Discount	PV
0	-10.200		-10.200
1	4.750	0,8	3.800
2	4.700	0,64	3.008
3	4.800	0,512	2.457
4	5.000	0,409	2.046
			11.313

$$\begin{aligned} \text{NPV } 25\% &: \text{total PV} - 10.200 \\ &= 11.313 - 10.200 \\ &= 1.113 // \end{aligned}$$

c. (IRR) Internal Rate of Return

$$\text{IRR} = \frac{\text{NPV } 22\%}{\text{NPV } 25\%}$$

$$= \frac{1.750}{1.113} \times 25\%$$

$$= 39,3\% > 22\%$$

Karena IRR lebih besar, maka usulan investasi tsb dilakukan

3.		A	B	C
	Pengeluaran awal	-10.000.000	-10.000.000	-10.000.000
	Cash Flow T ₁	3.362.000	0	1.000.000
	T ₂	3.362.000	0	3.000.000
	T ₃	3.362.000	0	6.000.000
	T ₄	3.362.000	13.605.000	7.000.000

Tentukan IRR masing-masing proyek!

• Proyek A

misalkan pada discount rate 10%

$$\begin{aligned}
 NPV &= \left[\frac{3.362.000}{(1+0,1)} + \frac{3.362.000}{(1+0,1)^2} + \frac{3.362.000}{(1+0,1)^3} + \frac{3.362.000}{(1+0,1)^4} \right] - 10.000.000 \\
 &= (3.056.363 + 2.778.612 + 2.527.819 + 2.269.291) - 10.000.000 \\
 &= 10.211.616 - 10.000.000 \\
 &= 2.111.616
 \end{aligned}$$

$$\begin{aligned}
 IRR A &= \frac{NPV 10\%}{NPV 12\%} \times 12\% \\
 &= \frac{635.985}{21.616} = 36,29\% > 12\%, \text{ maka layak di Setujui}
 \end{aligned}$$

• Proyek B

misalkan discount rate 10%

$$\begin{aligned}
 NPV &= \left(\frac{13.605.000}{(1+0,1)^4} \right) - 10.000.000 \\
 &= 9.292.398 - 10.000.000 \\
 &= -707.601
 \end{aligned}$$

misalkan pd discount rate 12%

$$\begin{aligned}
 NPV &= \left(\frac{13.605.000}{(1+0,12)^4} \right) - 10.000.000 \\
 &= 8.646.329 - 10.000.000 \\
 &= -1.353.670
 \end{aligned}$$

$$\begin{aligned}
 IRR B &= \frac{NPV 10\%}{NPV 12\%} \times 12\% \\
 &= \frac{-707.601}{-1.353.670} \times 12\% \\
 &= 0,62\% < 10\%, \text{ maka proyek tidak layak disetujui}
 \end{aligned}$$

• Proyek C

misalkan pdg discount rate 10%

$$\begin{aligned}
 NPV &: \left[\frac{1.000.000}{(1+0,1)^1} + \frac{3.000.000}{(1+0,1)^2} + \frac{6.000.000}{(1+0,1)^3} + \frac{7.000.000}{(1+0,1)^4} \right] - 10.000.000 \\
 &: (909.090 + 2.479.338 + 4.507.888 + 4.781.099) - 10.000.000 \\
 &: 12.677.410 - 10.000.000 \\
 &: 2.677.410
 \end{aligned}$$

misalkan pdg discount rate 12%

$$\begin{aligned}
 NPV &: \left[\frac{1.000.000}{(1+0,12)^1} + \frac{3.000.000}{(1+0,12)^2} + \frac{6.000.000}{(1+0,12)^3} + \frac{7.000.000}{(1+0,12)^4} \right] - 10.000.000 \\
 &: (892.857 + 2.391.581 + 4.270.681 + 4.448.681) - 10.000.000 \\
 &: 12.003.745 - 10.000.000 \\
 &: 2.003.745
 \end{aligned}$$

$$IRR C = \frac{2.677.410}{2.003.745} \times 12\%$$

: 16.03% > 10% maka proyek layak disetujui