

1. Suppose you invest by buying machine at Year 0 = 100 Baht. Suppose your machine last only two years. At year 1, you get payoff = 0 Bahts [$R_1 = 0$]. At year 2, you get payoff 110.25 Bahts (value of machine at year 2 plus return)[$R_2 = 110.25$].

- $NPV = \frac{R_1}{1+r} + \frac{R_2}{(1+r)^2} + \dots + \frac{R_n}{(1+r)^n} - \text{Cost}$

- (a) Suppose interest rate (r) = 5%, find NPV.
- (b) Suppose interest rate (r) = 4%, find NPV.
- (c) Suppose interest rate (r) = 6%, find NPV.
- (d) Please find IRR or MEC of this investment.

- Marginal Efficiency of Capital (MEC) or Internal Rate of Return (IRR) is the discount rate that makes $NPV = 0$.
- MEC, IRR is the rate of returns on Investment.

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2. Suppose now we currently have 10 worth of capital goods. Assume that depreciation rate is equal to **0.1**.

Capital	Investment Needed (Desired Investment)	Marginal Product of Capital	Return on Capital = MPK-depreciation rate
10	0	0.7	$0.7 - 0.1 = 0.6$
11	1	0.6	$0.6 - 0.1 = 0.5$
12		0.5	
13		0.4	
14		0.3	
15		0.2	

- Plot the relationship between desired investment and interest rate.

