

## Non-Keynesian Ideas : Investment

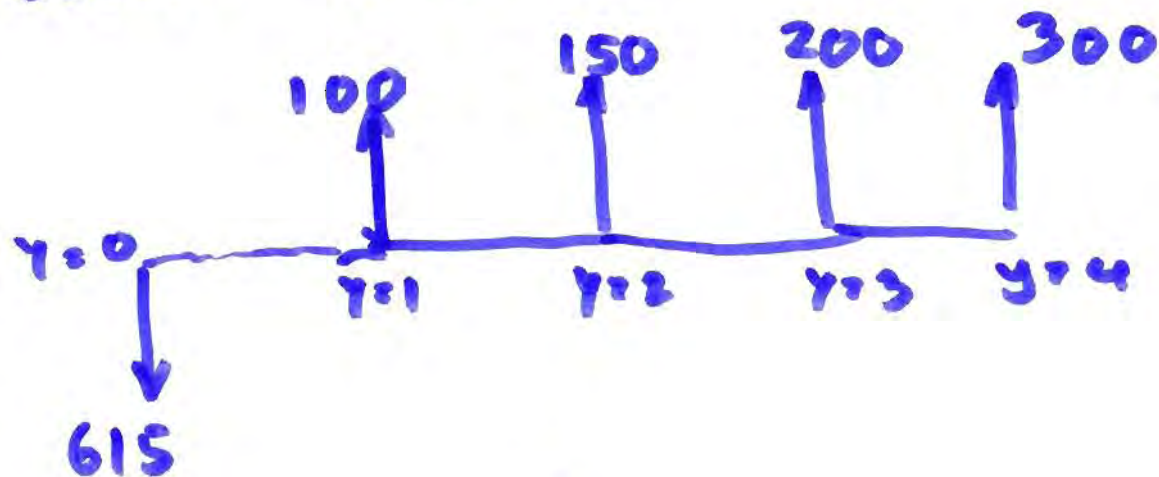
① PV, NPV

② IRR, MEC

③ Accelerator Principles

Keynesian Investment :  $I = I_a + dY$

# ① Present Value (PV) & Net Present Value (NPV)



$$\rightarrow 100 + 150 + 200 + 300$$

$$\rightarrow 750$$

$$PV_1 = \frac{100}{1+r} \quad ; \quad PV_2 = \frac{150}{(1+r)^2} \quad ; \quad PV_3 = \frac{200}{(1+r)^3} \quad ; \quad PV_4 = \frac{300}{(1+r)^4}$$

- r = 5%
- r = 6%
- r = 7%
- r = 8%

	100	150	200	300
r = 5%	95.23	136.05	172.76	246.81
r = 6%	94.33	133.49	167.92	237.62
r = 7%	93.45	131.01	163.25	228.86
r = 8%	92.59	128.60	158.76	220.50

- NPV = 650.87 - 615 → invest
- 650.87 (PV) > 615
- 633.39 (PV) > 615
- 616.60 (PV) ≈ 615
- 600.46 (PV) < 615

Indifferent to invest because NPV ≈ 0

NPV = 600.46 - 615 (not invest) because NPV < 0

## ② Internal Rate of Return (IRR) or Marginal Efficiency of Capital (MEC)

IRR = the discount rate that makes  $NPV = 0$

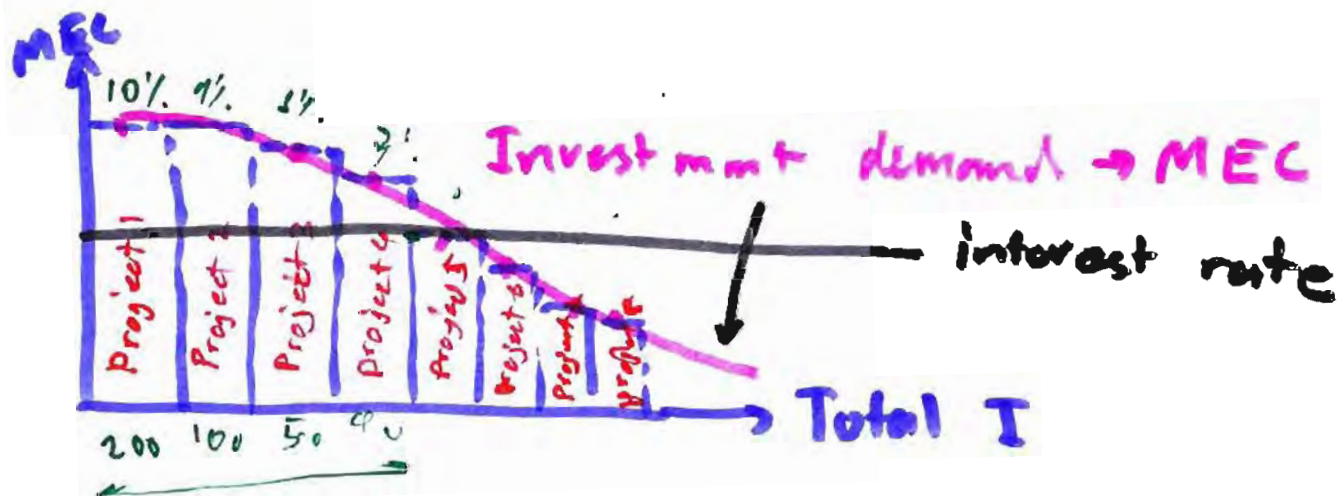
MEC ↗

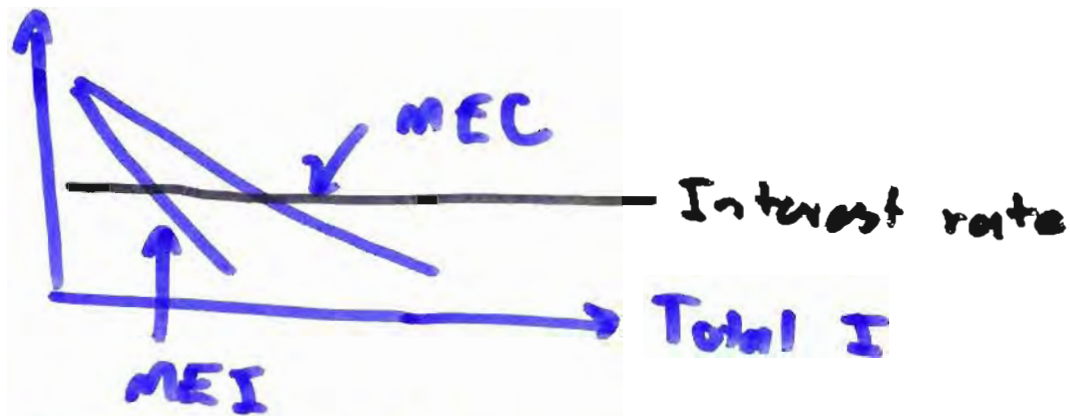
↗ The interest rate in the market

if  $IRR > \text{cost of capital} \rightarrow \text{invest}$

$IRR = \text{—————} \rightarrow \text{indifferent to invest}$

$IRR < \text{—————} \rightarrow \text{not invest}$





Marginal Efficient of Investment (MEI)

When Investment demand  $\uparrow \rightarrow$  prices of raw materials will increase  $\rightarrow$  slope of MEC  $\rightarrow$  MEI

MEI = demand for investment corrected by change in prices of materials.

### [3] Accelerator Principles

①  $Y \rightarrow$  Desired Capital Stock ( $K_t^d$ )

$$K_t^d = \alpha Y_t ; \alpha > 0$$

②  $K_{t-1}^d = \alpha Y_{t-1}$  (Previous year's desired capital stock)

③ Net Investment = change in Capital Stock

Flow variable

$$I_t = K_t^d - K_{t-1} \Rightarrow = \alpha (Y_t - Y_{t-1}) = \alpha \Delta Y$$

Stock Variable

$$\alpha Y_t$$

$$\alpha Y_{t-1}$$

$$[I = F_0 + \alpha Y]$$

↑

Kyriesian Investment

[ $\alpha$  = Accelerator]