Interpreting the SKM Equillibrium:

Consider a 2-sector economy - consumption (C) & Investment ($I = \bar{I}$).

SKM Equillibrium: $\boxed{Y = AD}$

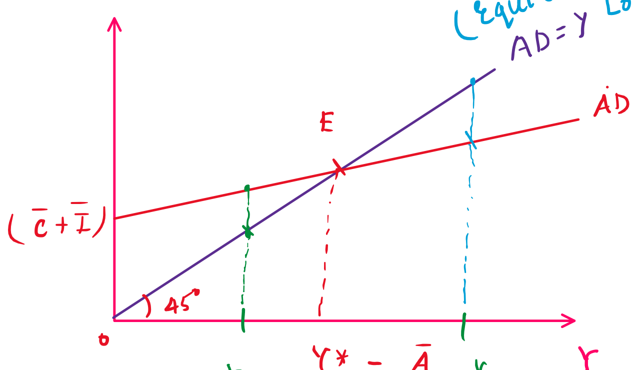
$$Y = C + I = \bar{C} + c' \cdot Y + \bar{I}$$

$$Y^* = \frac{\bar{C} + \bar{I}}{1 - c'} = \frac{\bar{A}}{1 - c'}$$

Representing the equillibrium in 2 possible ways:-

Case I: $Y = AD$

$AD = \bar{C} + \bar{I} + c' \cdot Y$



Keynesian Cross.

At $Y = Y_1$ ⇒ $AD > Y$, $\Delta INV < 0$

⇒ Firms will ↑ prodn

⇒ Y ↑

At $Y = Y_2$ ⇒ $AD < Y$, $\Delta INV > 0$.

⇒ Firms ↓ prodn

⇒ Y ↓.

∴ Equillibrium 'E' is stable.

Case II: $Y = C + I$

⇒ $(Y - C) = I$.

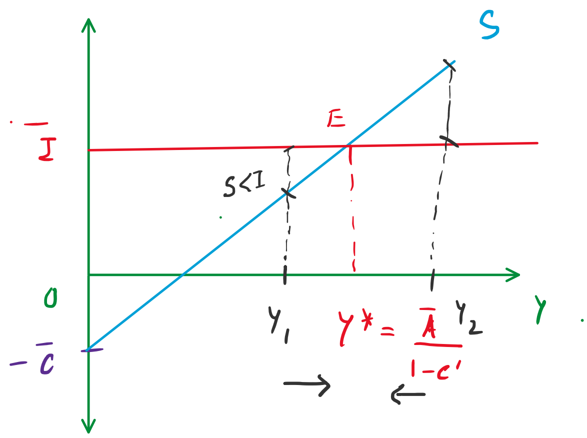
⇒ $\boxed{S = I}$ (Loanable Funds Equillibrium)

Saving fn ⇒ $S = Y - C = Y - \bar{C} - c' \cdot Y$

$= -\bar{C} + (1 - c') \cdot Y$

$= -\bar{C} + s' Y$.

∴ $\frac{ds}{dy} = s' = MPS$.



Equillibrium 'E' is stable (by the same logic)

Q. Find the BB Multiplier for the following scenarios:-

Case I: $I = I(Y) = \bar{I} + i \cdot Y$, $i > 0$

$AD = C + I + G$.

Case II: Open Economy SKM.

$AD = C + I + G + X - M$

$$AD = C + I + G$$

$$C = \bar{C} + c'\cdot(Y - T), \quad T = \bar{T}$$

$$G = \bar{G}$$

Case II: Open economy SKM.

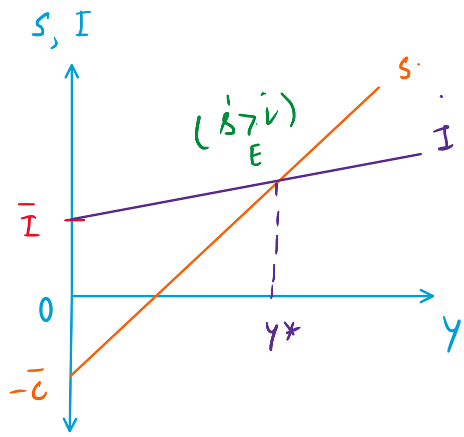
$$AD = C + I + G + X - M$$

$$C = \bar{C} + c'(Y - T), \quad T = \bar{T}$$

$$I = \bar{I}, \quad G = \bar{G}$$

$$X = \bar{X}, \quad M = \bar{M} + m\cdot Y, \quad m > 0$$

BB: $dG = dT$.



Case I: Equi: $Y = C + I + G$

$$Y = \bar{C} + c'(Y - T) + \bar{I} + i\cdot Y + \bar{G}$$

$$(1 - c' - i)Y = \bar{C} - c'\cdot T + \bar{I} + \bar{G}$$

Diff: $(1 - c' - i)\,dY = -c'\cdot dT + dG$

$$(1 - c' - i)\,dY = (1 - c')\cdot dG$$

$$\left.\frac{dY}{dG}\right|_{BB} = \frac{(1 - c')}{(1 - c') - i} = \frac{s' > 0}{(s' - i)_{>0}} > 1.$$

[$\because$ $s' > i$ is the Goods Mkt stability condition].

Case II: $Y = \underbrace{(C + I + G + X - M)}_{} = AD$.

$$Y = \bar{C} + c'(Y - \bar{T}) + \bar{I} + \bar{G} + \bar{X} - \bar{M} - mY$$

$$(1 - c' + m)\cdot Y = \bar{C} - c'\cdot\bar{T} + \bar{I} + \bar{G} + \bar{X} - \bar{M}$$

Diff: $(1 - c' + m)\cdot dY = -c'\cdot(dT) + dG$

$$(1 - c' + m)\,dY = (1 - c')\,dG \quad (\because dG = dT)$$

$$\left.\frac{dY}{dG}\right|_{BB} = \frac{(1 - c')}{(1 - c') + m} = \frac{s'}{s' + m} < 1$$

$M = \bar{M} + m\cdot Y, \ m > 0$

$\frac{dM}{dY} = m = MPM.$

Q. Consider a 3-sector class divided economy consisting of 2 groups - Rich ($MPC = c'_R$) and Poor ($MPC = c'_P$) s.t ($c'_P > c'_R$). The rich in the economy own 'θ' prop of the income $\theta \in [0, 1]$.

(a) Find the impact of increase in G on the ...

... own θ prop of the income $\theta \in [0,1]$.

(a) Find the impact of increase in G on the output level of the economy. (Assume no taxes, $I = \bar{I}$)

GDP $\to Y$.

$\theta Y \to$ Income of Rich, $(1-\theta)Y \to$ Income of the poor.

Rich: $C_R = \bar{C}_R + c_R'(\theta Y)$, $0 < c_R' < 1$.

Poor: $C_p = \bar{C}_p + c_p'(1-\theta)Y$, $0 < c_p' < 1$ & $c_p' > c_R'$.

Total consumption: $C = C_R + C_p$.

$\therefore$ $AD = C + I + G = C_R + C_p + I + G$

At equi: $Y = \bar{C}_R + c_R'(\theta Y) + \bar{C}_p + c_p'(1-\theta)Y + \bar{I} + \bar{G}$

$$[1 - \theta c_R' - (1-\theta)c_p']Y = \bar{C}_R + \bar{C}_p + \bar{I} + \bar{G}$$

Diff: $[1 - \theta c_R' - (1-\theta)c_p'] \cdot dY = dG$

$$\alpha_G = \frac{dY}{dG} = \frac{1}{1-\theta c_R' - (1-\theta)c_p'} = \frac{1}{(1-c_p') + \theta(c_p' - c_R')} > 0$$

(b) Find the impact of increase in inequality in the economy on the multiplier effect.

Inequality parameter $= \theta$.

Compute: $$\frac{d\alpha_G}{d\theta} = -\frac{1 \cdot \overbrace{(c_p' - c_R')}^{>0}}{\{\ \cdot\ \}^2} < 0.$$

(c) Suppose the govt devices a transfer scheme to transfer an amt $(\bar{Tr})$ from the rich to the poor: Find the impact of this income transfer on the output level of the economy.

Post Transfer:

Income of the Rich: $\theta Y - Tr$

Income of the Poor: ...

Income of the Rich: $\theta Y - T_r$

Income of the Poor: $(1-\theta) Y + T_r$.

Compute: $\frac{dY}{dT_r} = \gtrless 0$?

At equi: $Y = C + I + G = C_R + C_P + I + G$

$$Y = \bar{C}_R + c_R'[\theta Y - \bar{T}_r] + \bar{C}_p + c_p'[(1-\theta) Y + \bar{T}_r] + \bar{I} + \bar{G}$$

HW Diff: