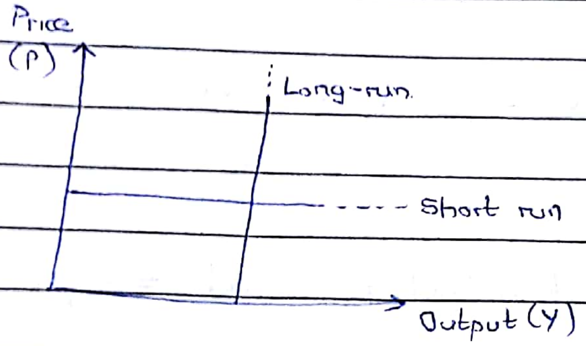
Keynesian Economics

A] Keynesian V/S Classical



SR - Prices don't change
LR - Output doesn't change as resources are already fully employed

- Super LR :- The output can change as amount of resources itself can change

(Keynesian)
• Because there is unemployment, firms can obtain as much labour as they want at the current wage.

• Assuming that labour market is always in equilibrium at full-employment level. As labour force is fully employed, Y cannot increase even if price increases. Labour market equilibrium ~~underlines~~ underlying vertical schedule is maintained by quick adjustments in nominal wage.

eg Economy is in equilibrium. Aggregate DD shifts to right. Firms try to obtain more labour by offering higher wages. But more labour is not available. In the process, wages ↑, making firms raise price of goods. But Y stays constant.

→ In the Keynesian model of income determination, the central simplification is the assumption that :-

1. Prices do not change
2. Firms are willing to sell any amount of output at given level of prices

• Aggregate supply curve is horizontal.

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I Aggregate Demand

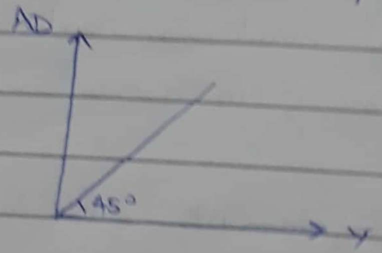
$$AD = C + \underset{\text{Planned investment}}{I} + G + NX$$

→ Equilibrium Output :-
... when quantity of output produced == quantity demanded

→ $AD > Y$:- Inventories of goods are depleted
$IU < 0$ (Firms want to ↑ production)
$AD < Y$:- Accumulation in inventories
$IU > 0$. (Firms want to ↓ production)

- IU = Unplanned investment.

- Equilibrium output :- $AD = Y$



→ Assume $NX = 0$ (closed economy)
I = planned investment = $\bar{I}$ = constant
$G = \bar{G}$ = constant

→ General form of $C = \bar{c} + cY$
Y ↳ can be thought of as aggregate income

Marginal propensity to consume
$\frac{dC}{dY} = c \in (0, 1)$

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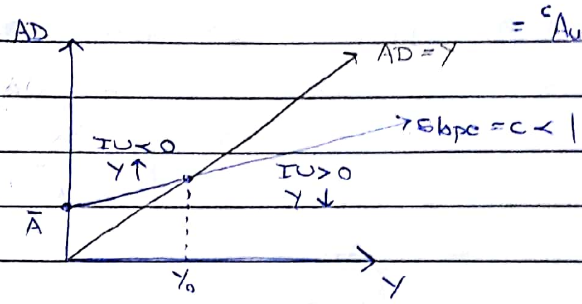
→ Savings (S) $= Y - C = -\bar{C} + \underbrace{(1-c)}_{\text{Marginal propensity to save.}} Y$

• For every unit increase in income, c is consumed, $1-c$ is saved.

→ $AD = \bar{C} + cY + \bar{I} + \bar{G}$

$= \bar{A} + cY$ where $\bar{A} = \bar{C} + \bar{I} + \bar{G}$

= 'Autonomous demand' does not depend on income



At $Y < Y_0$, $AD > Y$. Firms' inventories ↓ ∴ Y ↑

$>$ $<$ ↑ ↓

• At equilibrium, $AD = Y = Y_0 = \dfrac{\bar{A}}{1-c}$

When autonomous components of expenditure changes, by how much does Y change

→ Multiplier $\alpha = \dfrac{\partial Y^*}{\partial \bar{A}} = \dfrac{1}{1-c}$ Y_0

Intuition:-

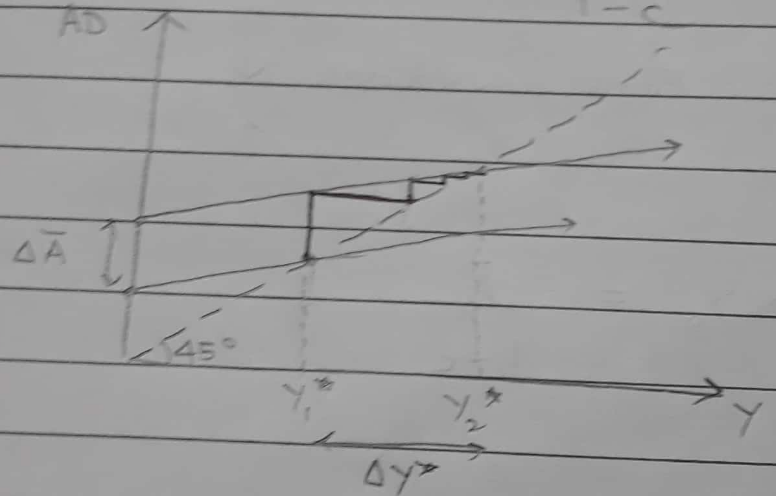
If $\bar{A} \to \bar{A} + \Delta\bar{A}_1$, initially $\Delta Y_1 = \Delta\bar{A}_1$ Income ↑ by

$\therefore$ Demand ↑ by $\Delta A_2 = c\Delta Y_1$

$\therefore$ Income ↑ by $\Delta Y_2 = \Delta\bar{A}_2$

Net increase in Y :- $\Delta\bar{A}_1 + c\Delta\bar{A}_1 + c^2\Delta\bar{A}_1 - - - -$

$= \dfrac{\Delta\bar{A}_1}{1-c}$



III Disposable Incomes (Y_D)

= Nett income available for spending by households after receiving transfers from and paying taxes to the government

= $Y - T$

→ Modifications:- $Y_D = C + S$

$AD = \bar{C} + cY_D + \bar{I} + \bar{G}$

→ Tax function :- $T = \bar{T} + tY$ (income-dependent taxe

At equilibrium, $Y^* = \bar{C} + c(Y^* - \bar{T} - tY^*) + \bar{I} + \bar{G}$

$$\therefore [1 - c(1-t)]Y^* = \underbrace{\bar{C} - c\bar{T} + \bar{I} + \bar{G}}_{\bar{A}}$$

$$\therefore Y^* = \frac{\bar{A}}{1 - c(1-t)}$$

- Imposing taxes reduces propensity to consume from c to $c(1-$
- Government can adjust $\bar{A}$ by changing $\bar{G}$, $\bar{T}$.

New multiplier = $\frac{1}{1-c(}$

→ Automatic Stabilizer.

Any mechanism in the economy that reduces the amount by
output changes in response to a change in autonomous dema

eg Tax rate.

Q Consider an increase in transfer payments and government expen
by same amount. Which has bigger impact on Y ?

Ans $\bar{G}$, because payments transferred to households will increas
after being multiplied by c

Transfer payments reduce $\bar{T}$ (?)

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$$BS^* = tY^* - \bar{G} - \overline{TR}$$

- The difference between actual and full-employment budget cyclic component of budget.

IV Goods Market Equilibrium (IS Curve)

- Shows combinations of interest rates and output such tha[t] Planned Spending = AD = Output

[Mod]ification $\bar{I} \rightarrow \bar{I} - bi$ ← Interest rate.

- $AD = Y = C + I + G$

$$= \bar{C} + cY_D + \bar{I} - bi + \bar{G}$$

$$Y_D = Y + \overline{TR} - tY$$

$$= \underbrace{(\bar{C} + c\overline{TR} + \bar{I} + \bar{G})}_{\bar{A}} + c(1-t)Y - bi$$

$$Y = \frac{\bar{A} - bi}{1 - c(1-t)} \quad \text{--- in eq}^{m}\text{?}$$

$$= \alpha_G(\bar{A} - bi)$$

→ multiplier $= \dfrac{1}{1 - c(1-t)}$

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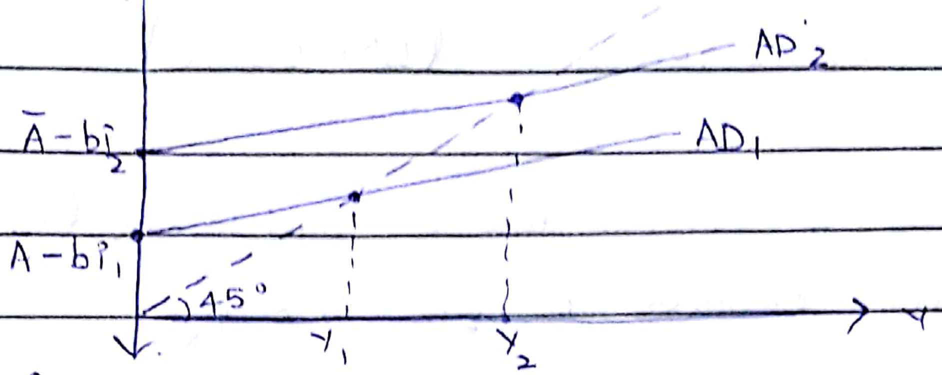
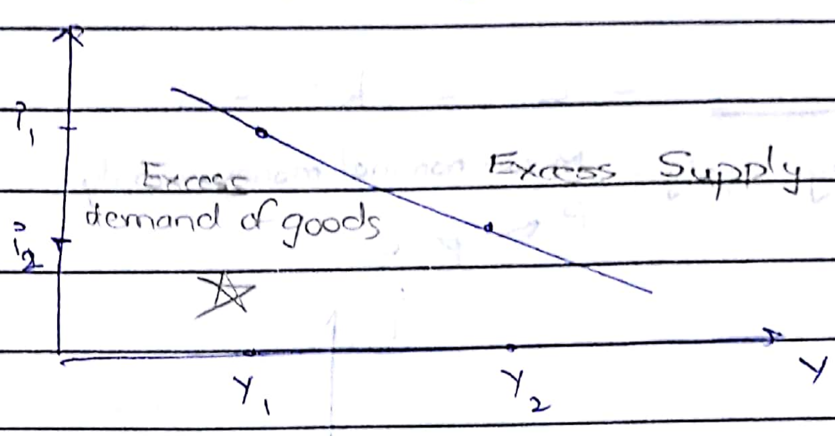
$Y < Y_{eq}$

$DD > SS$





$i = \frac{\bar{A}}{b}$

EDG :- Market shifts rightwards

ESG :- leftwards

→ Consider $c \uparrow$ and/or $t \downarrow$ $\Rightarrow \frac{1}{1-c(1-t)} \uparrow$

$\Rightarrow$ Slope of AD v/s Y $\uparrow$ $\Rightarrow Y^* \uparrow$

- |Slope| of i v/s Y $\downarrow$

→ Consider $\bar{A} \uparrow$

AD v/s Y and i v/s Y shift upwards by $\bar{A}$ and

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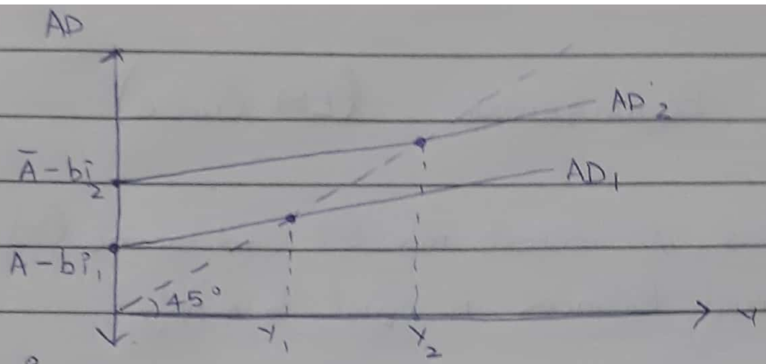
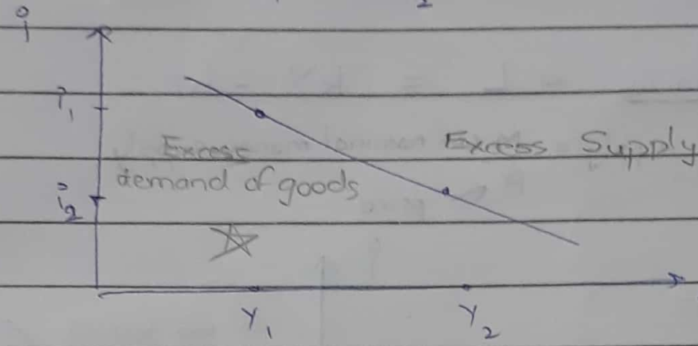
$Y < Y_{eq}$

$DD > SS$



$i_2 < i_1$



$$i = \frac{\bar{A}}{b} - \frac{(1 - c(1-t))Y}{b}$$

EDG :- Market shifts rightwards

ESG :- leftwards

→ Consider $c \uparrow$ and/or $t \downarrow$ $\Rightarrow \frac{1}{1 - c(1-t)} \uparrow$

$\Rightarrow$ Slope of AD v/s Y $\uparrow$ $\Rightarrow Y^* \uparrow$

• |Slope| of i v/s Y $\downarrow$

→ Consider $\bar{A} \uparrow$

AD v/s Y and i v/s Y shift upwards by $\bar{A}$ and $\frac{\bar{A}}{b}$ respectively

Supply of real money $= \frac{M}{P}$ ← Cash + chequeable deposits

'In equilibrium', $L = \frac{M}{P}$

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V Money Market Equilibrium (LM Curve)

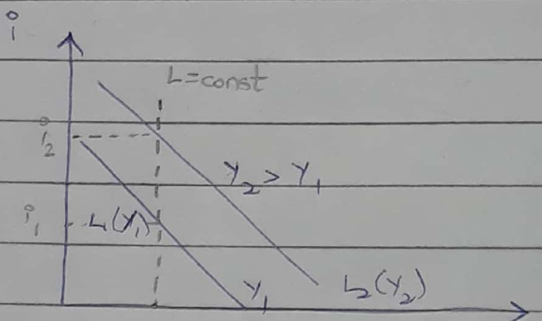
- Shows all combinations of interest rate (i) and income (Y) such that the demand for real balances is equal to supply.

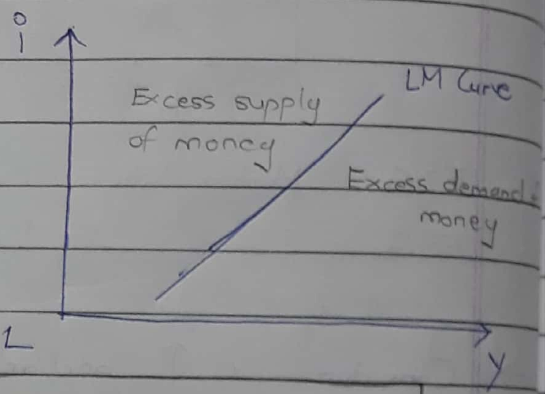
- Demand for real balances $= L = kY - hi$

  real money supply $= \frac{M}{P}$ ← nominal money supply; P ← price

$Y > Y_{eq}$

DD > SS





- ESM :- Market moves downwards

  EDM :- upwards

$$\boxed{i = \frac{k}{h}Y - \frac{1}{h}\frac{M}{P}}$$

- Central bank can adjust M. P does not change in short run.

VI Combination