

# Unit 2 :- The Keynesian Theory of Determination of National Income

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## → Concept of 'Ex Post' & 'Ex-ante'

The Actual/Realised Value,  
→ The Goods & Services Actually Produced & Consumed  
↓  
Discussed in Unit 1

The Planned/Intended Value  
OR  
Anticipated Value  
→ The Goods & Service Planned to Produced & Consumed.  
↓  
Will Be Discussed in this Unit.

## → Story of the THE GREAT DEPRESSION of 1930s.

Greatest Economic Crisis the Western World had Experienced.

अर्थशास्त्रज्ञों ने Economist को श्रेष्ठ मानते हैं

\* Classical Economist → Had No Developed theory  
↳ To explain persistent unemployment & NO SOLUTION.

\* Many Economist Recommended → Govt. Spending  
↳ To Reduce unemployment

But had no Macro economic theory to justify their Recommendation

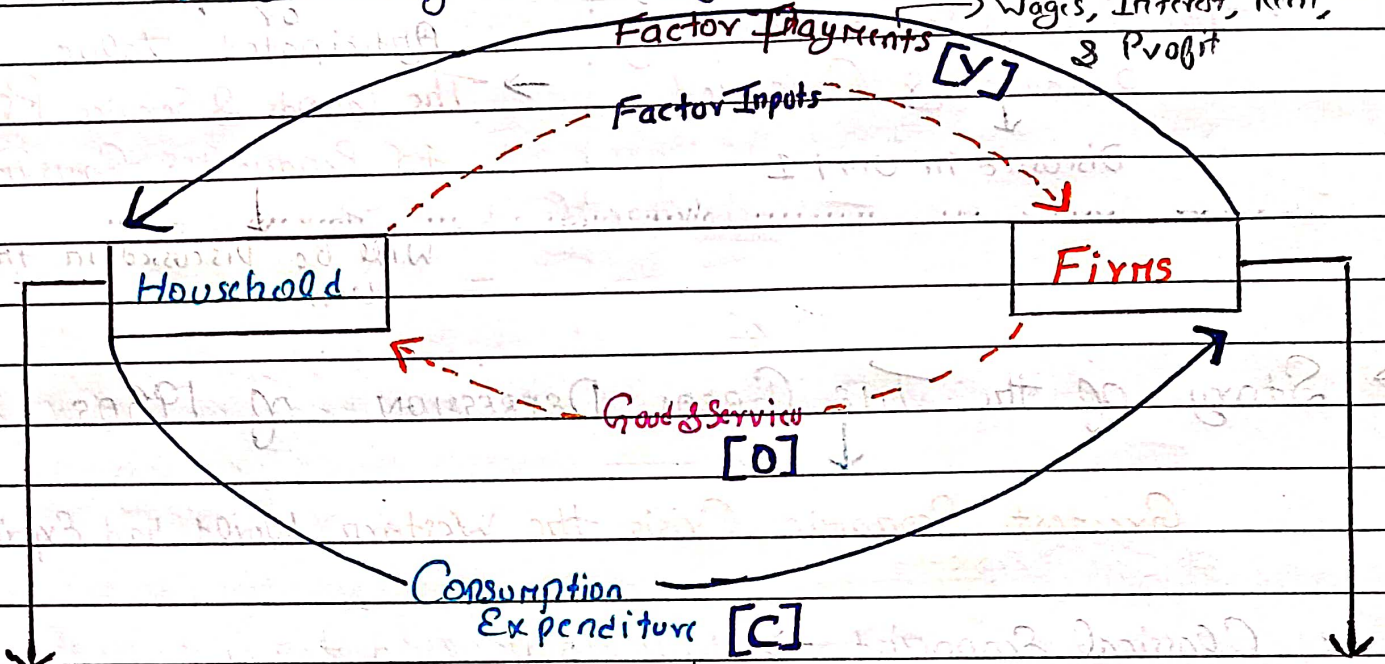
→ Macro Economics Revolutionised 1936  
↳ With the Publication of **John Maynard Keynes**  
General theory of Employment, Interest & Money

→ The Keynesian Theory of Income Determination is Presented in three models :-

- (i) Two-Sector Model → Household & Business Sector
- (ii) Three-Sector Model → Household, business sector & Government
- (iii) Four-Sector Model → Household, Business Sector & Govt. & Foreign Sector.

→ CIRCULAR FLOW in 2-Sector Model

How money moves through society / within an economy



1. Own all the 'Factor of prod'
2. Sell their Service to earn factor income.
3. Income is Entirely Spent on G&S  
↳ i.e. NO SAVINGS

1. Assumed to Hire factors of prod from Household
2. Produce & sell Goods & Service to Household
3. No Corporate Tax Or Retained Earnings

→ The Total income produced [Y] accrued to Household & is Equal to the Disposable personal Income

$$Y = Y_d$$

↳ Disposable Income

# \* Real & Money Flow

1. **Circular Broken line [Dotted line]** :- Shows Factor & Product flow  
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2. **Continuous line** shows :- "Money Flow" which are generated by Real flows

→ Since, Whole of Household income is SPENT on GSS Produced by the Firm

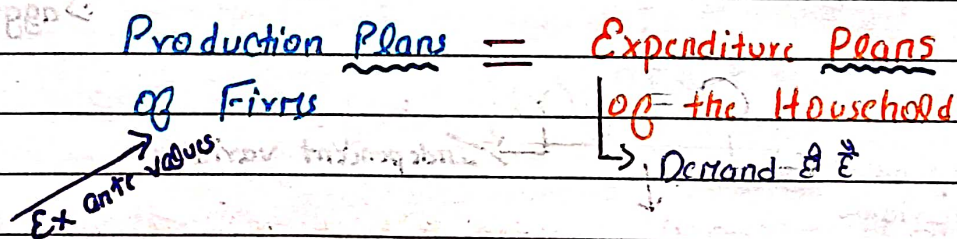
|                 |   |                  |   |                       |   |                       |   |                        |
|-----------------|---|------------------|---|-----------------------|---|-----------------------|---|------------------------|
| Factor Payments | = | Household Income | = | Household Expenditure | = | Total Receipt of firm | = | Value of Output        |
|                 |   |                  |   | ↓<br>no saving        |   |                       |   | ↓<br>Prod <sup>n</sup> |

## \* Meaning of Equilibrium:

↳ State in which there is no tendency to change - position of Rest.

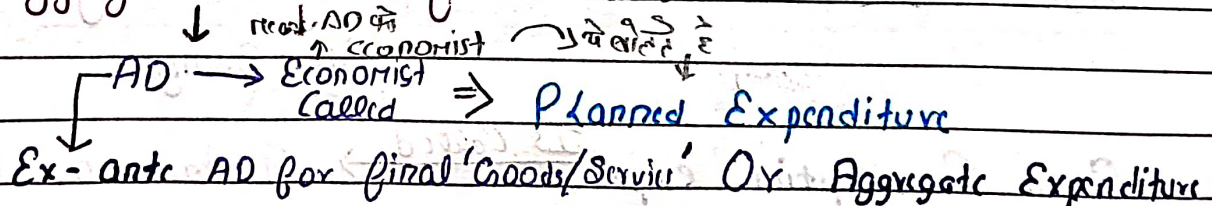
→ Output is at equilibrium when  $\Rightarrow$  Qty of output Produced = Qty Demanded

→ Economy is at Equilibrium when,



## \* Basic Concepts used in Theory of Income Determination.

### 1. Aggregate Demand Function [AD]



→ Consist of 2 components :-

1. Ex ante aggregate demand for Consumer Goods [C]

2. Ex ante aggregate demand for Investment Goods [I]  
 ↳ Capital Goods

$$AD = C + I$$

Accounts for Highest Proportion of GDP

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→ Here, Investment [I] is assumed to be Determined

Exogenously & Constant in Short Run

↓  
Externally

↳ Remains the Same

NOT influenced by Income

- Influenced by External Factors.

SHORT RUN, AD Function

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

↳ Constant Investment

→ We can conclude that in the Short Run,

AD Depends Largely On the Aggregate consumption Expenditure

CONSUMPTION FUNCTION

[C]

↳ Functional Relationship b/w

Aggregate Consumption expenditure

&  
Aggregate disposable income [Y]

$$C = \beta(Y)$$

Dependent variable

Independent variable

Consumption  $\Delta$  with  $\Delta$  in Income

1. → Even Where there is NO Income, Consumption exp. Exists  
For Basic necessities

- Household either borrow OR Use their Savings

↓  
Dis-Savings

Such Consumption exp. Is called → Autonomous Consumption

2. → When  $Y \uparrow$  → Consumer will increase their Consumption Expenditure  
But only by less than increase in Income

Good Write

$Y \uparrow > C \uparrow$

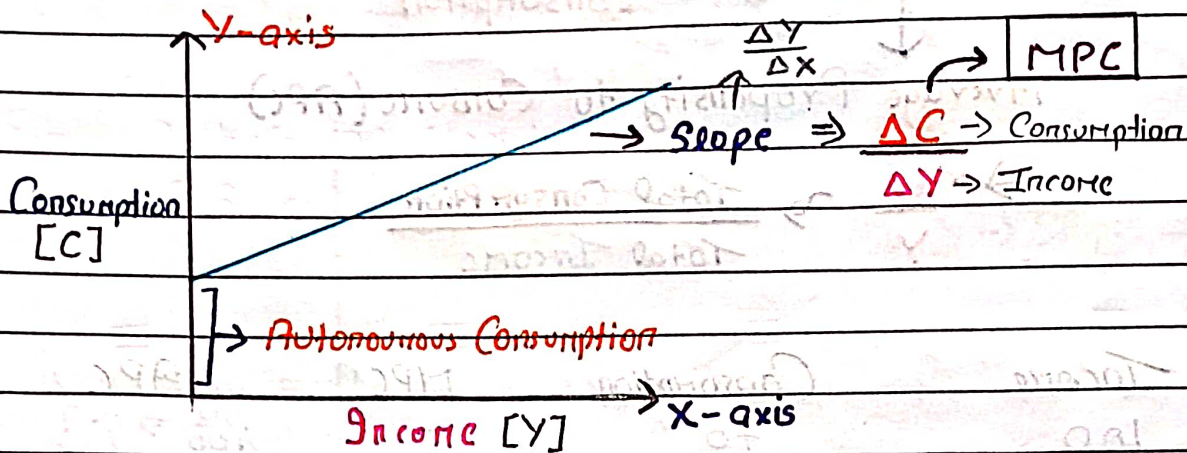
# Consumption Function

$$C = a + bY$$

$\downarrow$  Autonomous Consumption       $\downarrow$  Income       $\downarrow$  slope

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↳ Value of consumption at zero level of disposable income



$b =$  Marginal Propensity to Consume [MPC]  
↳  $\frac{\Delta C}{\Delta Y}$

| Eg- Income (Y) | Consumption (C) | MPC  |
|----------------|-----------------|--|
| 500            | 200             | $\frac{\Delta C}{\Delta Y} \Rightarrow \frac{300}{1000} \Rightarrow 0.3$ |
| 1500           | 500             |  |

Inc. in consumption

↳ Per unit inc. in Income

Means अगर मेरी income ₹1 से बढ़ेगी तो मेरी consumption ₹0.3 से बढ़ेगी।

→ Consumption Function Shows → Consumption corresponding to each level of Disposable income.

Means किसी भी level of income पे इस consumption होगा ये जो Function बताता है।

Eg- Autonomous Consumption = 50  
MPC = 0.45

Calculate Consumption exp. at income level of ₹800

$$C = a + bY$$

$$C = 50 + 0.45(800)$$

$$C \Rightarrow ₹410$$

\* Keynes Assumption :

$0 < MPC < 1$

$\Delta C < \Delta Y$

→ Relationship b/w Income & Consumption

Average Propensity to Consume (APC)

$\Rightarrow \frac{C}{Y} \Rightarrow \frac{\text{Total Consumption}}{\text{Total Income}}$

Eg:-

| Income | Consumption | MPC                              | APC                                |
|--------|-------------|----------------------------------|------------------------------------|
| 100    | 70          | -                                | $\frac{70}{100} \Rightarrow 0.7$   |
| 220    | 130         | $\frac{60}{120} \Rightarrow 0.5$ | $\frac{130}{220} \Rightarrow 0.59$ |

Savings =  $Y - C$   
 $\Rightarrow 220 - 130 \Rightarrow 90$

$Y = C + S$

Eg:-  $C = 50 + 0.75Y$

| Income (Y) | Consumption | APC  | MPC  | Savings |
|------------|-------------|------|------|---------|
| 0          | 50          | ∞    | -    | (50)    |
| 100        | 125         | 1.25 | 0.75 | (25)    |
| 200        | 200         | 1    | 0.75 | 0       |
| 300        | 275         | 0.92 | 0.75 | 25      |
| 400        | 350         | 0.88 | 0.75 | 50      |

→ Proportion of Income Spent on Consumption Decrease as Income Increases

↓  
 Proportion of Income is Saved as income increases.

↳ Means jha income ↑ to savings ↑ hri. E,

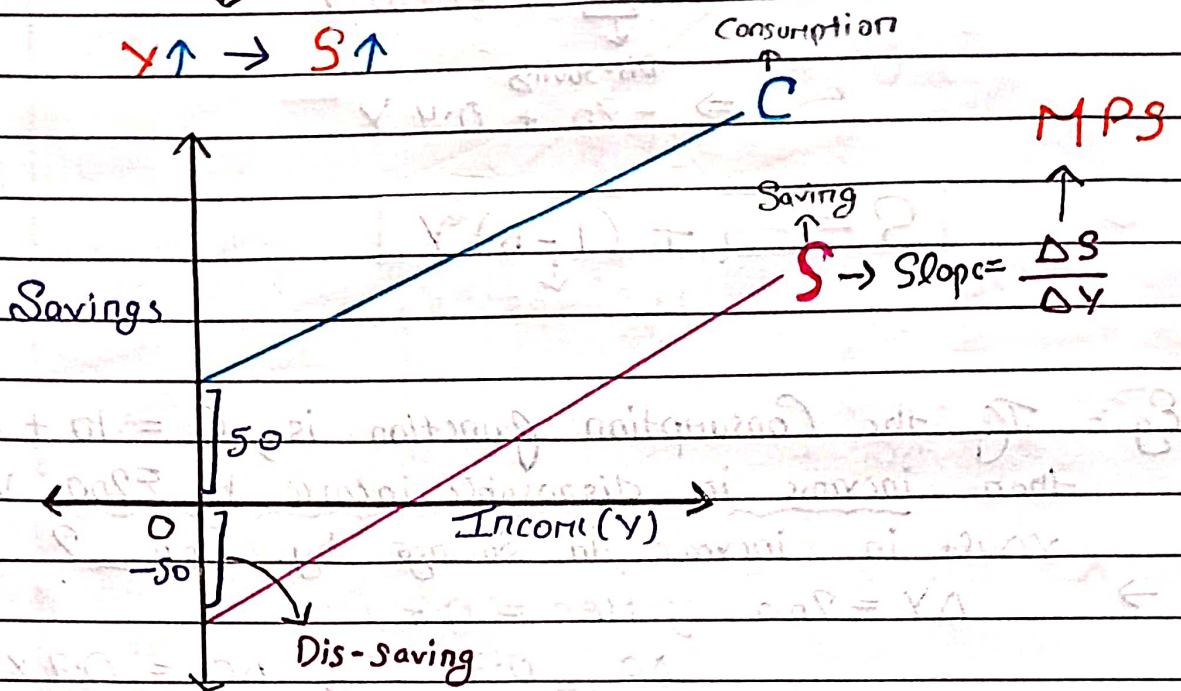
→ Relationship b/w Income, Consumption & Savings

\* Savings is also F<sup>n</sup> of Disposable Income

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$$S = f(Y)$$

$Y \uparrow \rightarrow S \uparrow$



| Eg - | Y   | C  | S    | MPC   | MPS   |
|------|-----|----|------|---|---|
|      | 0   | 50 | (50) |   |   |
|      | 150 | 90 | 60   | $\frac{\Delta C}{\Delta Y} \Rightarrow \frac{40}{150} = 0.27$ | $\frac{\Delta S}{\Delta Y} = \frac{10}{150} = 0.73$ |

→ MPS - Marginal Propensity to Save → Change in Saving  
↳ Per unit change in Income.

→ APS - Average Propensity to Save  $\Rightarrow \frac{\text{Total Saving}}{\text{Total Income}} \Rightarrow \frac{S}{Y}$

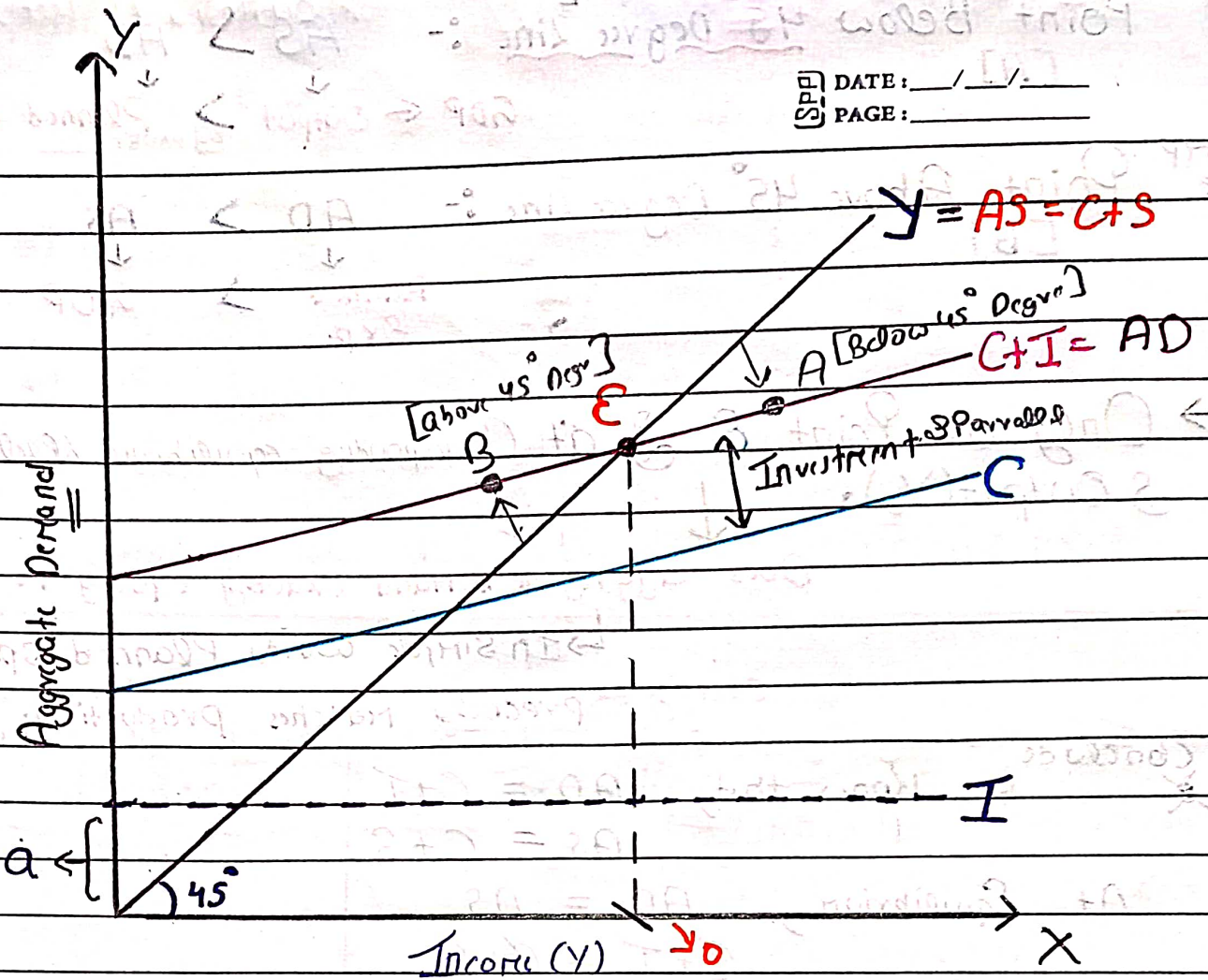
•  $APC + APS = 1$

•  $MPC + MPS = 1$

$b + MPS = 1$

→  $MPS = 1 - b$

If one unit increase in Disposable income leads to Increase of 'b' units, ↳ MPC. The Remaining [1-b] is the increase in Savings. ↳ MPS



Observations :-

a] Consumption line is **Positively Sloped**

↳ Since  $Consp. \uparrow$  as  $Income \uparrow$

But less than increase in Income.

↳  $[Y \uparrow > C \uparrow]$

→ It is flatter than 45 degree line

↳  $MPC \Rightarrow$  less than 1 nota hai

b] Investment exp. [I] is **Exogenous**  $\rightarrow$  i.e. Does not vary with  $\Delta$  in income.

→ It is **Constant**

c] AD line [Aggregate Exp. line] is **Linear & Positively Sloped**.

↳ Indication  $\Rightarrow$  As the level of National income Rises, the AD in the Economy also Rises.



# \* Saving Function, [From Consumption function]

Assuming  $C = a + bY \rightarrow$  Consumption Function

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$$S = -20 + (1-b)Y$$

Dis-savings

$$\Rightarrow -20 + 0.4Y$$

$$S = -a + (1-b)Y$$

MPS

Eg: If the Consumption function is,  $C = 10 + 0.7Y$ , then increase in disposable income by £200 will result in increase in Savings by 60?

$\rightarrow \Delta Y = 200, MPC = 0.7$

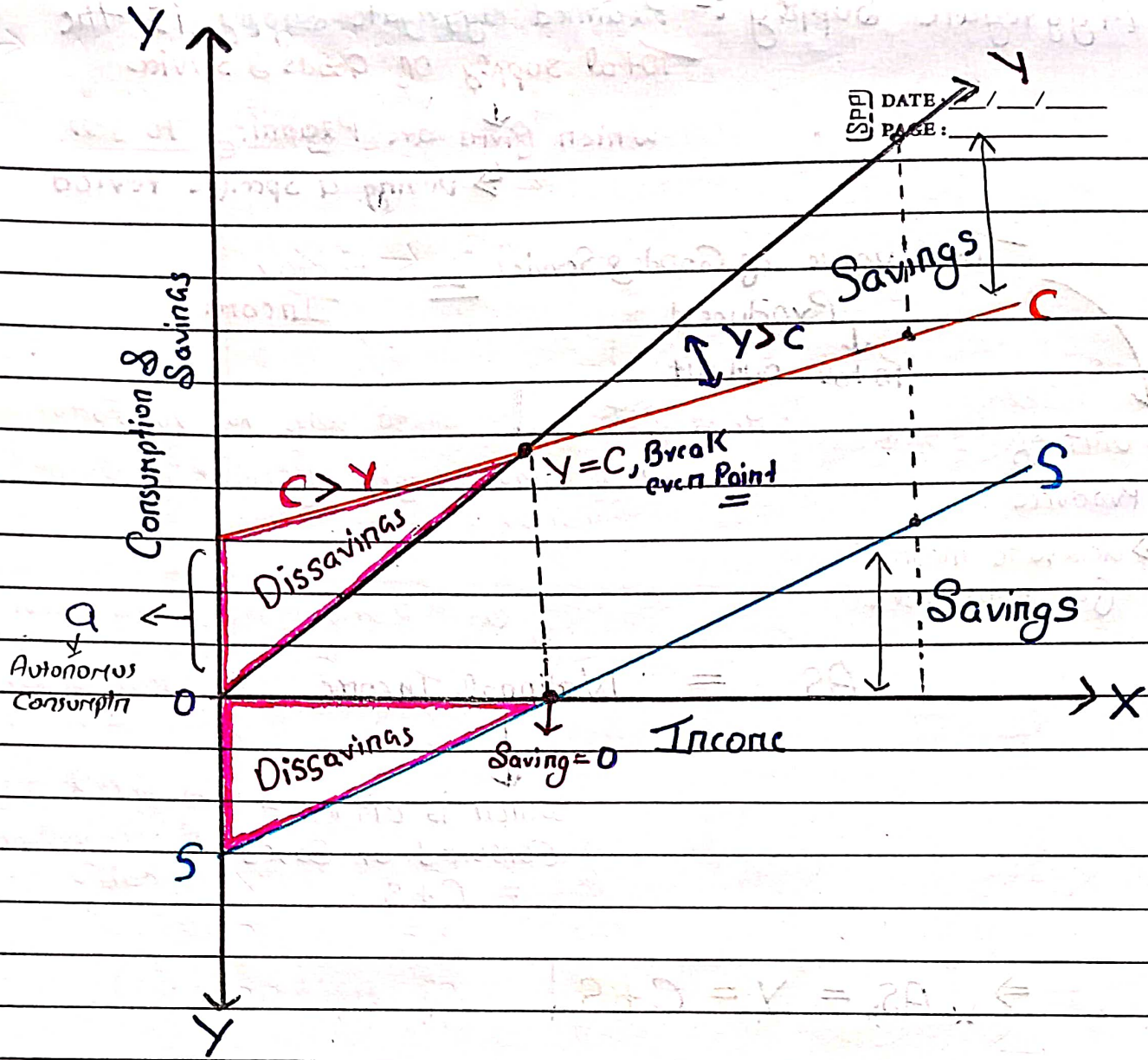
$$\frac{\Delta C}{\Delta Y} = 0.7 \Rightarrow \Delta C = 0.7 \times 200 = 140$$

$\rightarrow MPS = 0.3$

$$\frac{\Delta S}{\Delta Y} = 0.3 \Rightarrow \Delta S = 0.3 \times 200 = 60$$

X X X X X X X X X X X X X X

| Income (Y) | C   | S    |
|------------|-----|------|
| 0          | 20  | (20) |
| 60         | 70  | (10) |
| 120        | 120 | 0    |
| 180        | 170 | 10   |
| 240        | 220 | 20   |



At Break Even Point,  
 $Y = C$   
 $\downarrow$   
 Zero Savings  
 $\frac{C}{Y} \leftarrow APC = 1$ , So  $APS = 0$

Imp:

1. Saving is an incremental Function of Income  
 $\downarrow$   
 APS Keeps on Increasing

2. Consumption is an Decreasing function of Income  
 $\downarrow$   
 APC Keeps on Decreasing

IMP

Point Below  $45^\circ$  Degree line :-  $AS > AD$   
 [A]

$AS > AD$   
 $\downarrow$   
 GDP  $\leftarrow$  Output  $\rightarrow$  Planned exp./spending

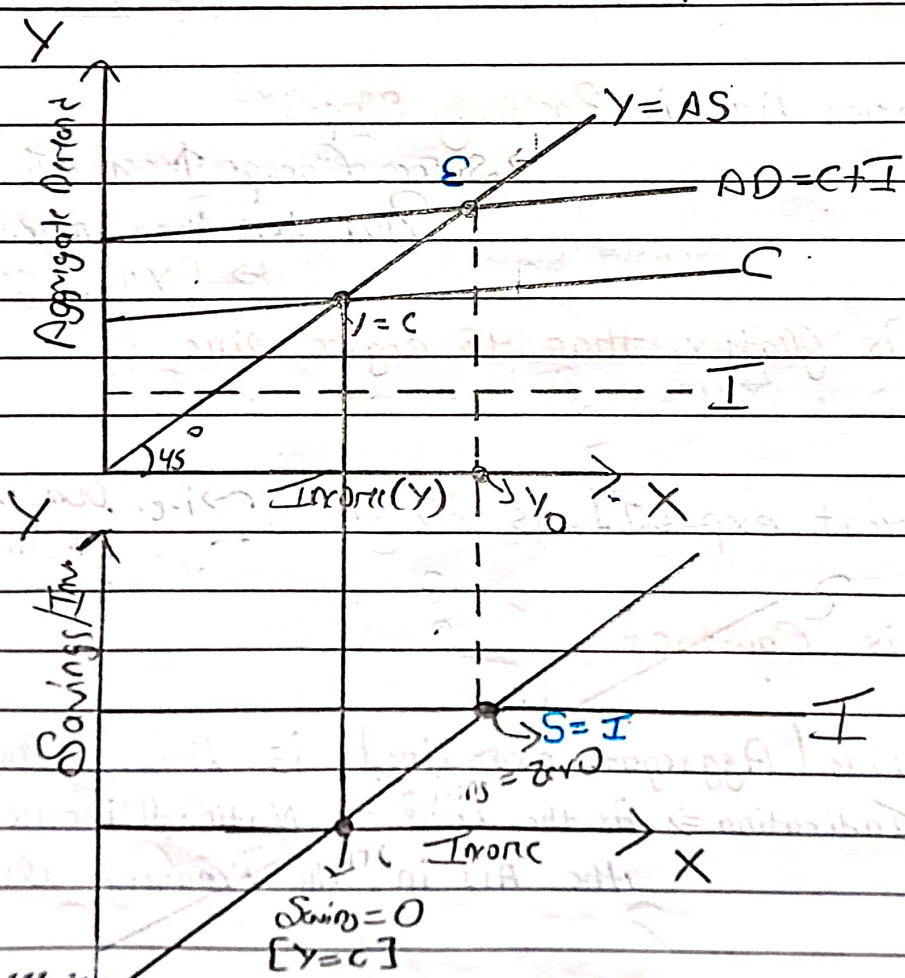
Point Above  $45^\circ$  Degree line :-  $AD > AS$   
 [B]

$AD > AS$   
 $\downarrow$   
 Planned exp.  $\rightarrow$  GDP

$\rightarrow$  Only at Point E at Corresponding equilibrium level of Income & Output ( $Y_0$ ).

Does Aggregate Demand exactly equal to Output  
 $\rightarrow$  In simple words, Planned Spending exactly  $\leftarrow$  precisely matches production.

Conclude We know that,  $AD = C + I$   
 $AS = C + S$   
 At Equilibrium,  $AD = AS$   
 $C + I = C + S$   
 $I = S$   
 Investment  $\leftarrow$  Savings



Good Write

2. Aggregate Supply :- Planned aggregate supply  
 Total supply of Goods & Services  
 Which firms are planning to sell  
 → During a specific period

Total value of Goods & Services = Factor Income

↓ Produced  
 Total output  
 also say  
 Every unit of Goods Produced  
 ↳ Generate income for household

Means that GSS of all value hai vo Factor of Prod<sup>n</sup> se distribute hogi [Unit - Reference]  
 ↳ Factor cost = Factor Income

Bez 2 sector economy hai Saari income households doing sector of hai

AS = National Income

Which is either consumed or saved  
 = C + S

⇒ AS = Y = C + S

→ Equilibrium in 2 sector Model.

AD = AS  
 ↓ ↓  
 Planned Exp. = Planned Production  
 ↓ ↓  
 Equilibrium → C + I = C + S

I = S

# Imp. Points According to Keynes:

1] AD will Not always be equal to Aggregate Supply

There is no Reason to Believe that:

a] Consumers Consumption plan always Coincide with Producers production plan

b] The Producers plan to Invest Matches always with Households plan to Save

→ For Equilibrium, the Household plan Must Coincide with Producers plan.

## \* Leakage & Injection

↓  
Outflow of income from circular flow of model

↳ Inflow of income to the circular flow  
↓  
Investment

→ That part of income which is not used to purchase Goods Service  
↓  
Savings

AT Equilibrium, Leakage = Injection

If, Leakage > Investment ⇒ National Income will fall

|      |       |       |     |
|------|-------|-------|-----|
| For. | Y     | C     | S   |
| Δ    | 1000  | 900   | 100 |
|      | ↓ 900 | ← 800 | 100 |

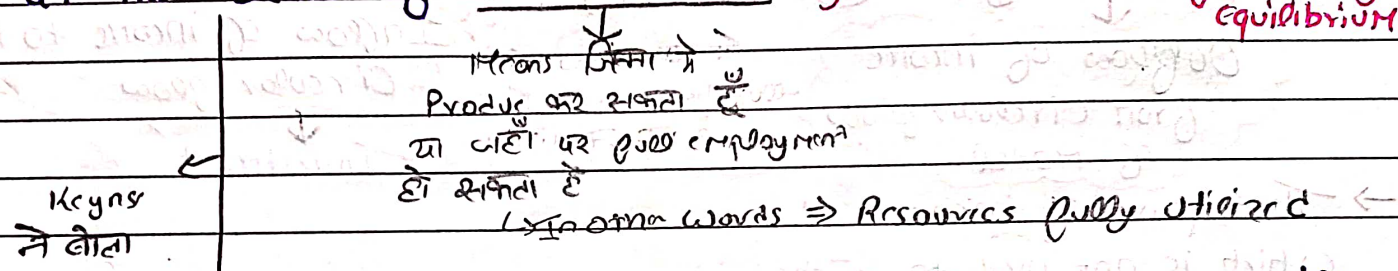
If, Leakage < Investment ⇒ National Income will rise

# → Classical Economist $V/s$ Keynesian Theory

1] Economy is self-Regulating  
 2] Economy is capable of achieving  $\rightarrow$  Equilibrium at the Natural level of GDP  
 ↓  
 Level of GDP that is obtained when economy's Natural Resources are fully utilized

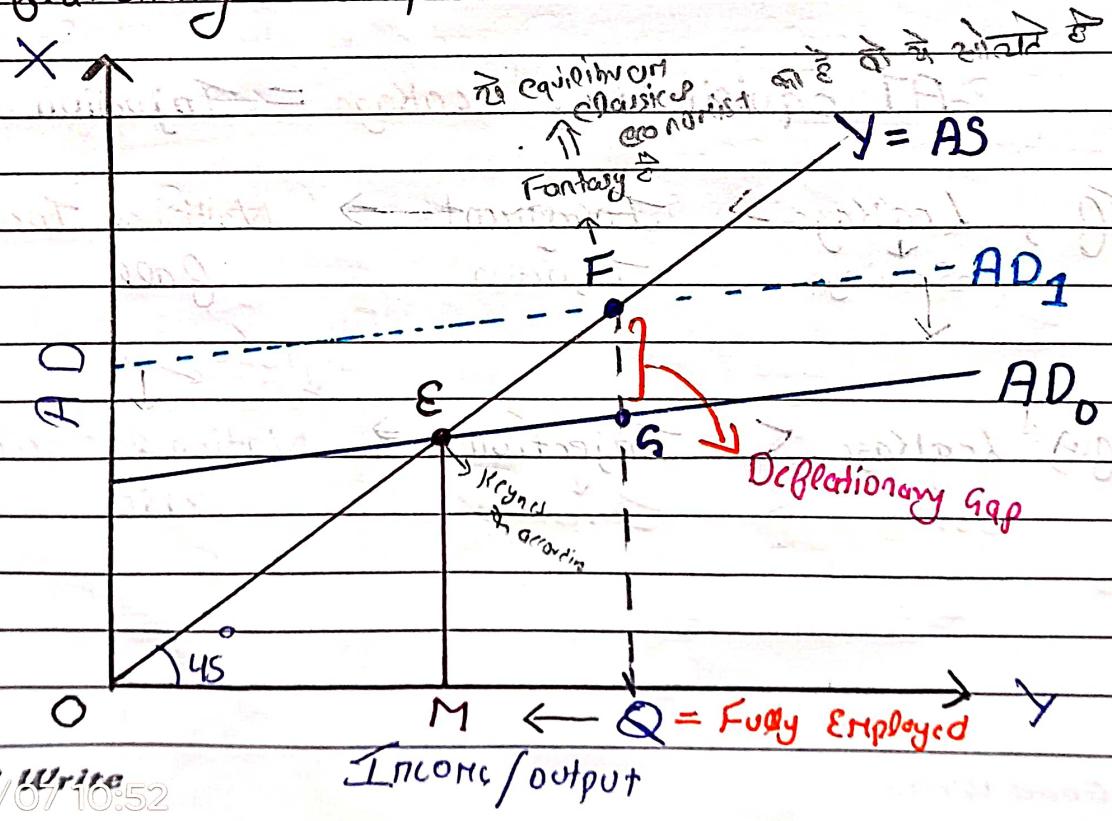
Market would NOT automatically lead to Full-employment equilibrium & the Resulting Natural level of Real GDP.  
 ↓  
 Economy could settle in equilibrium at any level of unemployment.

\* If the Aggregate Exp. (AD) line intersect the  $45^\circ$  line (AS) at the level of Potential GDP, then there is full employment equilibrium.



But, There is NO Guarantee that Equilibrium will occur at potential GDP level of output

## (i) Deflationary Gap



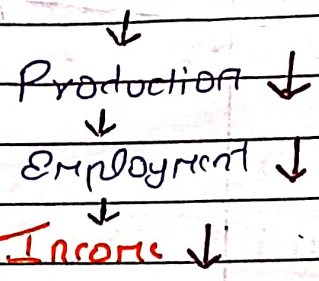
→ 'OQ' is the Full employment level of output,  
Where  $AD = QF$

But,

At  $AD = GQ$ , There is deficient demand.

Deflationary Gap =  $FG$

↓ → Unplanned Build up of Inventories → from stock level



→ If AD is for an amount of output, less than the full employment level of output

then we say

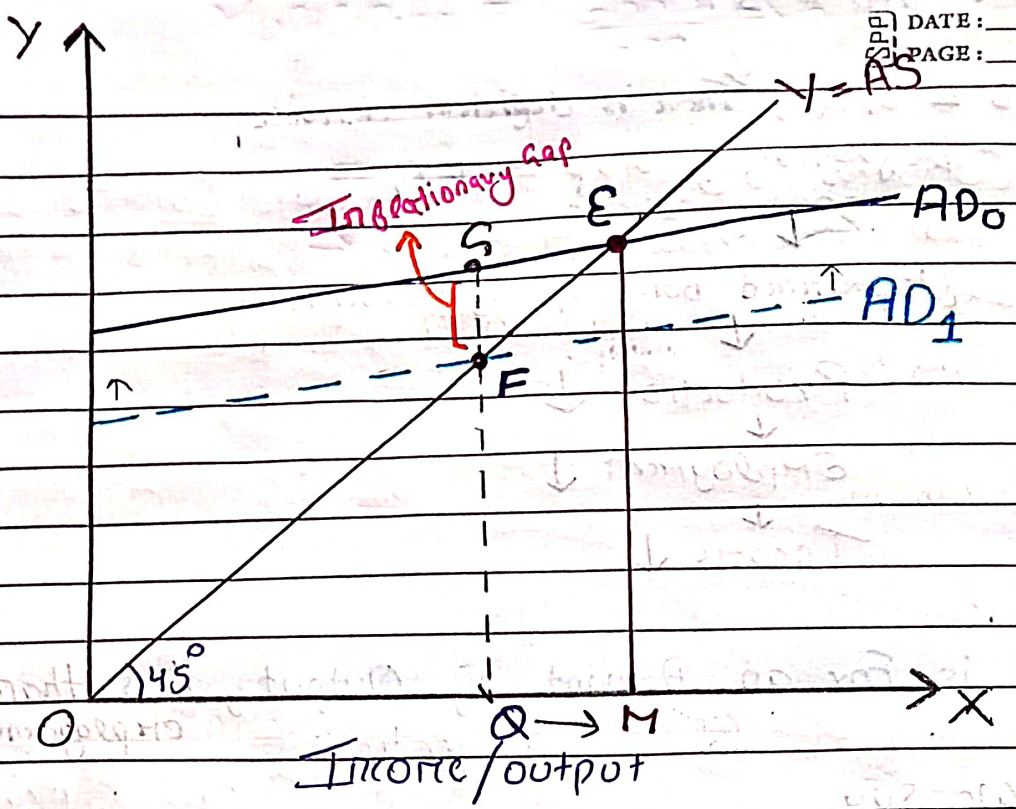
There is a Deficient Demand

↓  
Gives Rise to Deflationary Gap

↳ Or Recessionary Gap  
↳ Also known as Contractionary Gap.

\* It Occurs when Economy → Contraction or recession is in Business Cycle

# (ii) Inflationary Gap



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→ Economy at full employment equilibrium at **F**.

When,  $OQ$  is the level of Output & Income  
&  $AD = FQ$

But,

When  $AD = GQ$ , then there is Excess Demand,  
↳ Resulting in Inflationary Gap =  $FG$

Explanation  $O \rightarrow M$

→ The Real Output will be **Constant**, But Rise in Price level will causes → Increase in **Nominal** Output & Equilibrium GDP will be at **E** point.

Price ↑ → Nominal Output ↑

↳ Means Price में ↑ होने से Nominal Output ↑ हो री है  
एँ But  $OQ$  inc. नहीं हो री है

→ At new Equilibrium **[E]** → Real output  
→ Real Income  
→ Employment } Will be the Same.



In the Keynesian Model,

Neither Wages nor Interest Rates will decline in the face of abnormally high unemployment & excess capacity

Like Great Depression

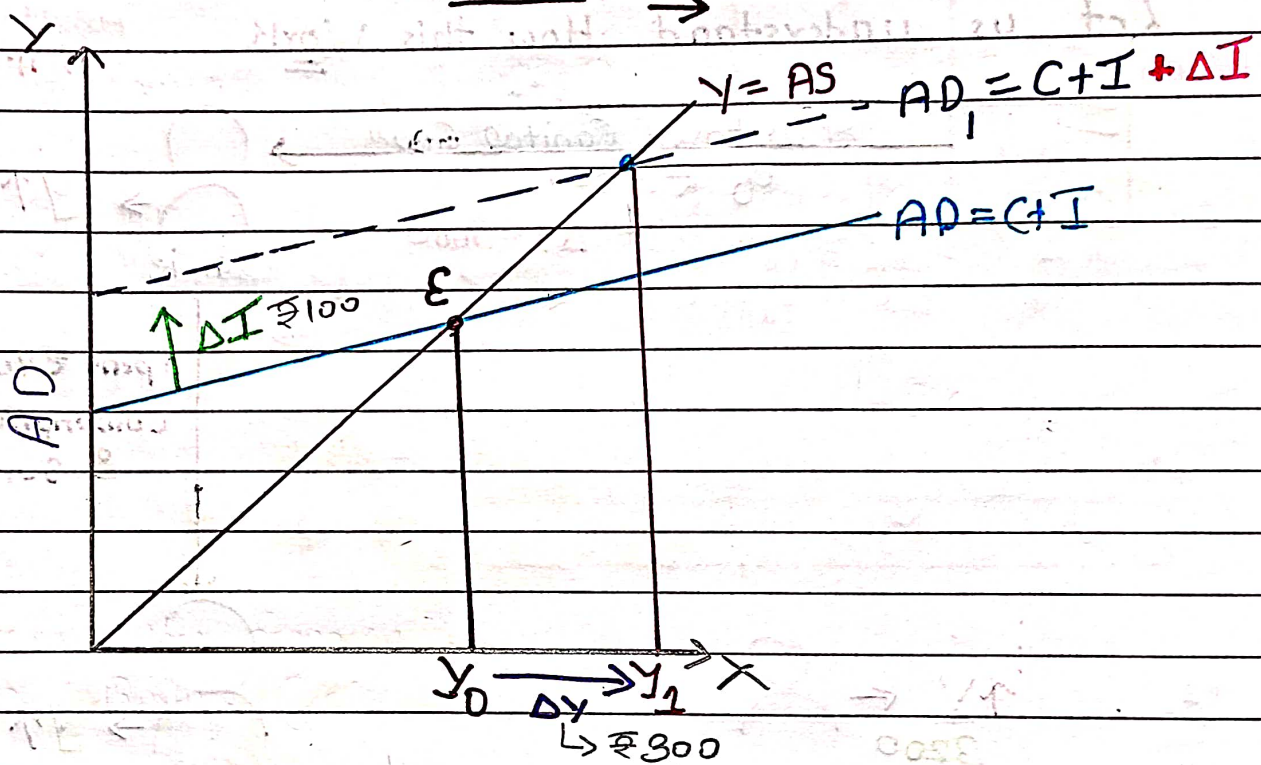
Means supply Jada hai

Output will remain at less than full employment rate as long as there is insufficient spending in the economy.

CRA FR

## Investment

### MULTIPLIER



→ Inc. in Investment Exp. [ $\Delta I$ ]

leads to Proportionately Larger change in equilibrium level of income [ $\Delta Y$ ]

$$\Delta Y > \Delta I$$

\* The Inv. Multiplier, Explains, How many times the equilibrium income increase as a result of increase in investment.

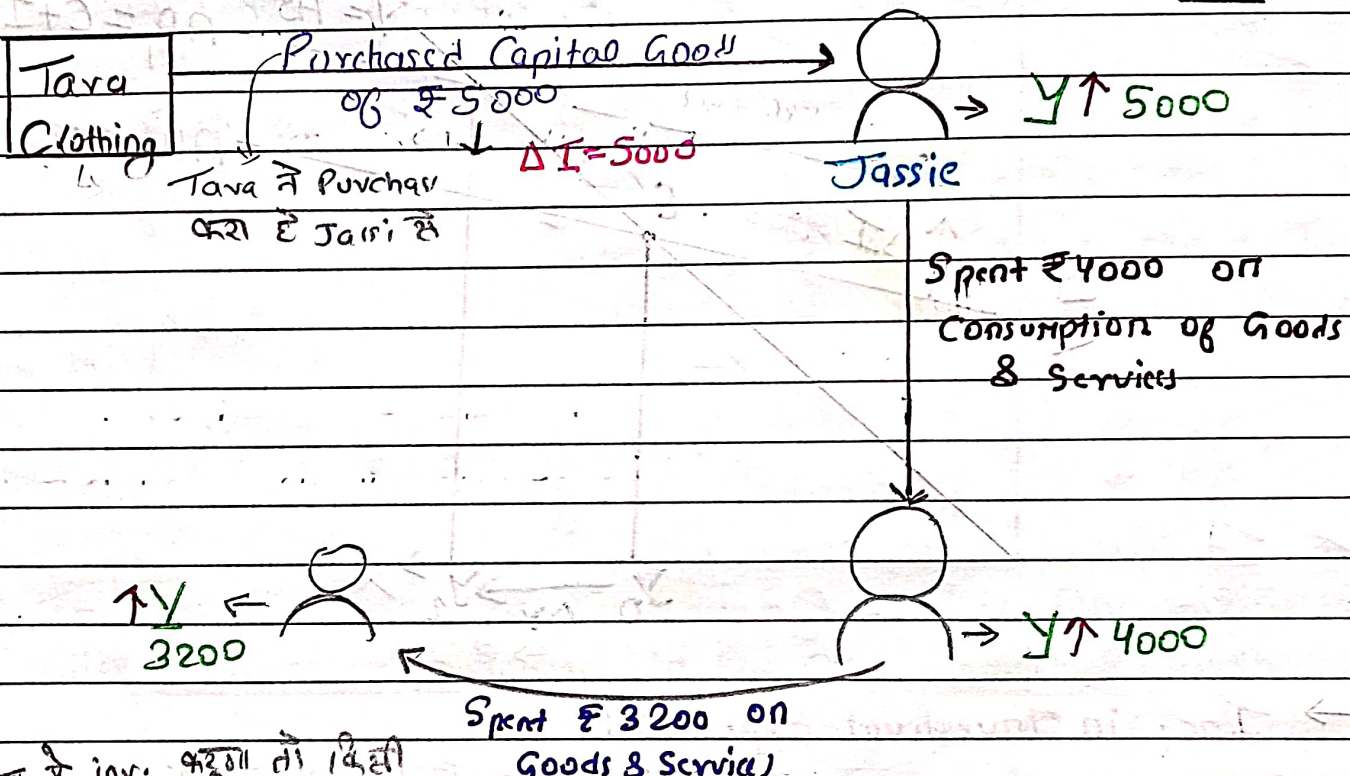
↳ Means jab investment ke inc. होते hai jab income kitni time inc. hogi.

Eg - If  $\Delta I = ₹500$ , Cause change in national income by ₹3000  
 Multiplier =  $\frac{3000}{500} \Rightarrow 6$  DATE: \_\_\_/\_\_\_/\_\_\_  
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$$K = \frac{\Delta Y}{\Delta I}$$

Multiplier indicates Change in equilibrium income  
 Means जब प्रे autonomous inc. For each rupees  
 का से  $\Delta$  होती है तो प्रेरी inc. Change in autonomous investment  
 कितने time  $\Delta$  होगी

Let us understand How this work Assure MPC = 0.8



जब प्रे inv. करेगा तो दिदी के inc.  $\uparrow$  होगी

| $\Delta I$ | $\Delta Y$ | $\Delta C$ | $\Delta S$ |
|------------|------------|------------|------------|
| 5000       | 5000       | 4000       | 1000       |
|            | 4000       | 3200       | 800        |
|            | 3200       | 2560       | 640        |

5000  $\rightarrow$  ?  $\rightarrow$  5000

Good Write Inc. जब तक inc  $\uparrow$  होगी जब तक equilibrium ना आ जाए

At Equilibrium,

$$I = S \rightarrow \text{Total } \Delta \text{ in } Y$$

$$5000 = \Delta Y \times \text{MPS}$$

$$5000 = \Delta Y \times 0.2$$

$$\frac{5000}{0.2} = \Delta Y$$

$$25000 = \Delta Y$$

$$K = \frac{\Delta Y}{\Delta I} \Rightarrow \frac{25000}{5000} \Rightarrow 5$$

$$K \Rightarrow \frac{\Delta Y}{\Delta Y \times \text{MPS}} \Rightarrow \frac{1}{\text{MPS}} = \frac{1}{1 - \text{MPC}}$$

इस Factor जिससे Multiplier की value effect होती है

→ MPC is the Determinant of the value of Multiplier.

Eg. 1)  $\Delta I = ₹100$ ,  $\text{MPC} = 1$   
 $\text{MPS} = 0$

$$K = \frac{1}{0} \Rightarrow \infty, \text{Max. value of Multiplier} \Rightarrow \infty$$

2)  $\Delta I = ₹100$ ,  $\text{MPC} = 0$   
 $\text{MPS} = 1$

$$K = \frac{1}{1} \Rightarrow 1, \text{Min value of Multiplier} \Rightarrow 1$$

→ Bcz people jada consume krte to income jada increase hogi

\* Direct Relationship B/w  $\rightarrow$  MPC & Multiplier  
↳ Higher the MPC, Higher the K.

\* Inverse Relationship B/w  $\rightarrow$  MPS & Multiplier  
↳ Bcz MPS ke up hone se

Near log inc. save kr rhe to save kr rhe to

Good Write to consume nahi kr rhe aur consume nahi kr rhe to income inc. kaise hogi

→ Multiplier Shows → How Shocks to one sector → Capital Goods Sector.  
 ↳ unexpected change  
 are transmitted throughout economy  
 ↳ Means same sector ka effect hoga /

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★ Multiplier & Leakage

→ Income that is not spent on Consumption of Good & Services  
 ↳ Leakage  
 ↳ Reduces the effect of Multiplier  
 ↳ Multiplier ke effect ko kam karta hai /

Causes of Leakage :-

1. Progressive Rate of Taxation  
 ↳ More income more taxes  
 ↳ Less Consumption

2. High liquidity preference → Low MPC  
 ↳ Holding of Cash Balance

3. Increased demand for Consumer Goods, Met out of Existing Stock OR through imports  
 या फिर मैंने जैसे Goods & Service consume करे है जो phone से ही बनने हुई hai, तो सभी material उनकी country phone से hi National Income में ही जोड़ होगी।  
 अगर मैंने Goods import करे हूँ तो वो inc. तो इंटांग में आता नहीं। जिससे मेरे inc. ↑ नहीं हुई।

4. Additional Income spent on Purchase Existing Wealth  
 OR Purchase of Share & Stock  
 ↳ Second hand खरीदना

5. Undistributed profits of Corporations

6. Part of increment in income used for payment of Debt.

7. Case of full employment, Additional investment will only leads to inflation

8. Scarcity of Goods & Services → Despite having high MPC

Bez uc me logo ke pass inc. kam hai to wo kam consume krte hai

→ MPC is High in Underdeveloped Countries

But the value of Multiplier is low

↳ Due to Structural Inadequacies

- Lack of Infrastructure
- Unskilled workforce.

→ Inc. in Consumption Exp. is NOT accompanied by inc. in Production.

Means Daily necessity ke liye hi consumption hai

uske liye saab ke nahi hai

### Determination of Equilibrium Income : Three Sector Model

Household

Business

Government

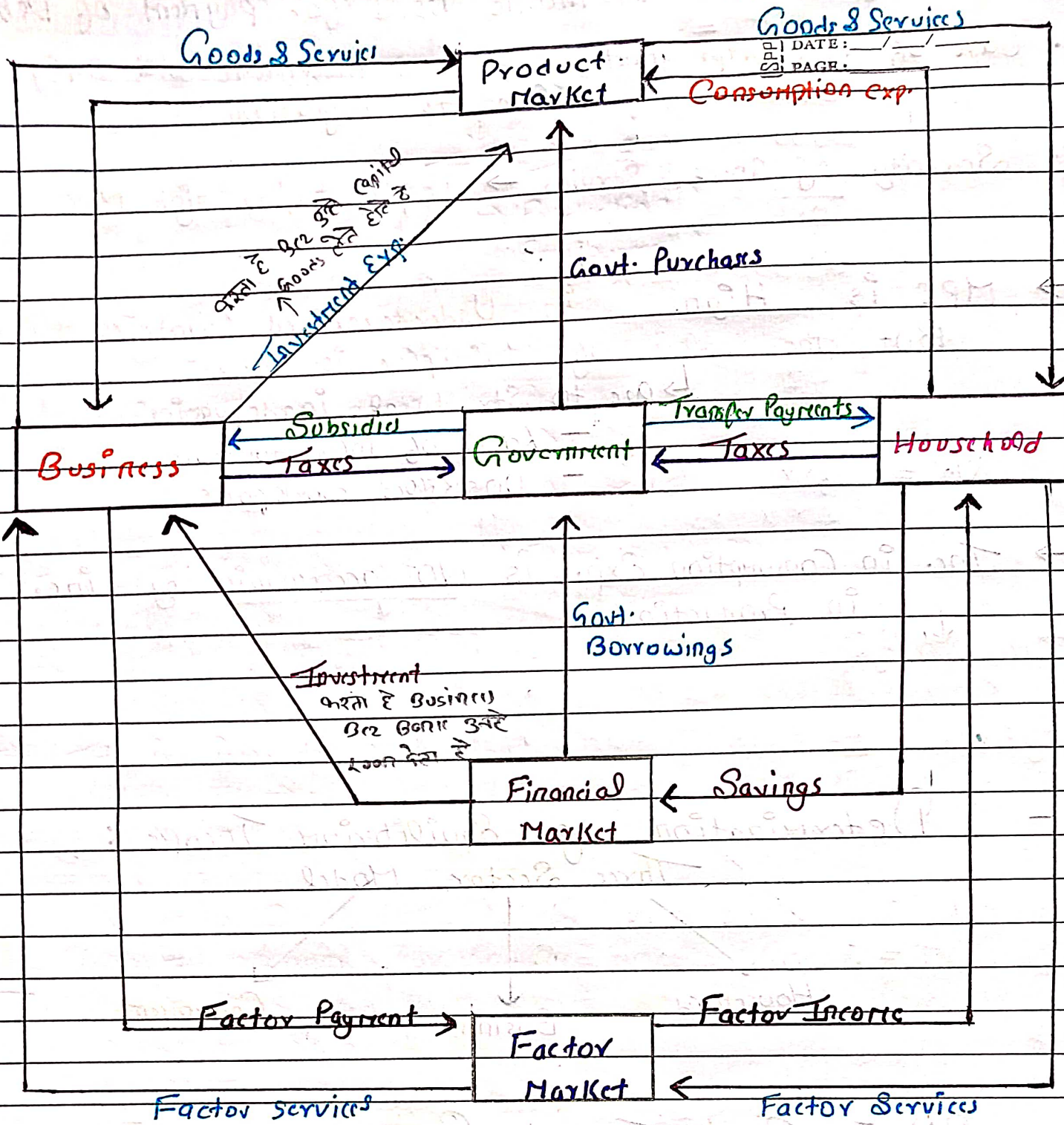
$$AD = C + I + G$$

Household consumption

Investment

Govt. sector demand for Goods & Services

$$AS = Y = C + S + Taxes$$



→ Role played by Govt. Sector in 3 Sector Model:

1. Taxes on  $\left. \begin{matrix} \rightarrow \text{Households} \\ \& \\ \rightarrow \text{Business sector} \end{matrix} \right\} \rightarrow$  to fund govt purchases.
2. Transfer payment to Household & Subsidy to Business
3. Govt. Purchase Goods & Services from <sup>Business</sup> Sector & Factors of Production from Household Sector.
4. Govt. <sup>Good Write</sup> Borrowing in financial markets to finance deficit

\*  $AD = C + \underline{I + G}$

Autonomous - Do not directly depends on income

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$AS = C + S + T$

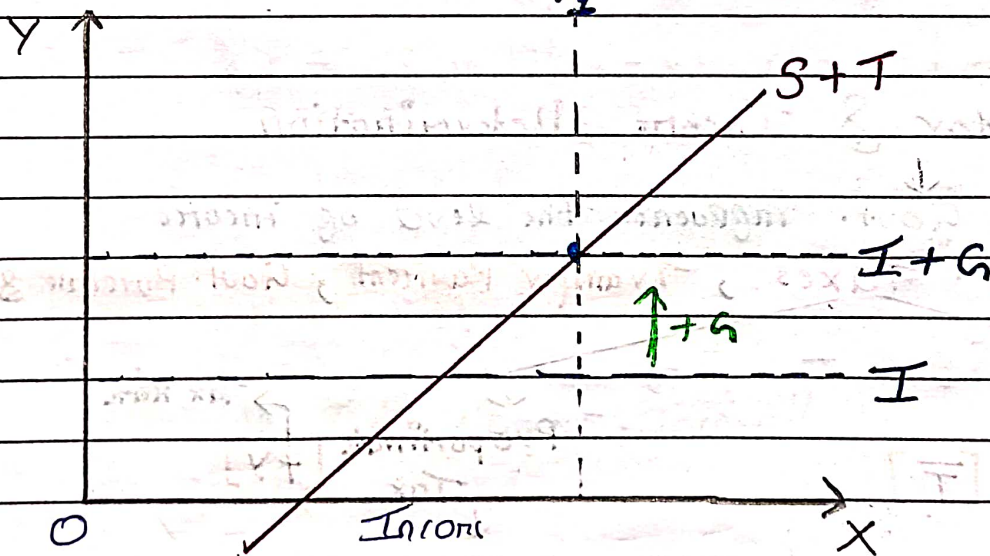
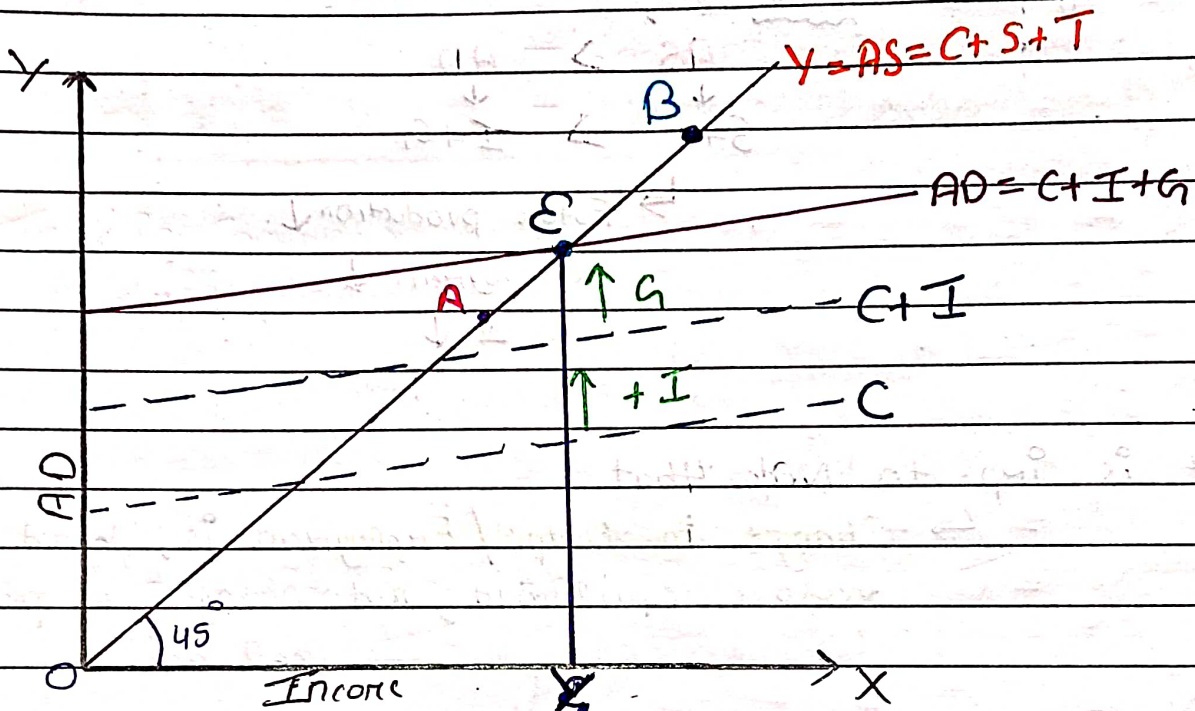
At equilibrium,

$AD = AS$

$\Rightarrow C + I + G = C + S + T$

$\Rightarrow \underline{I + G} = \underline{S + T}$

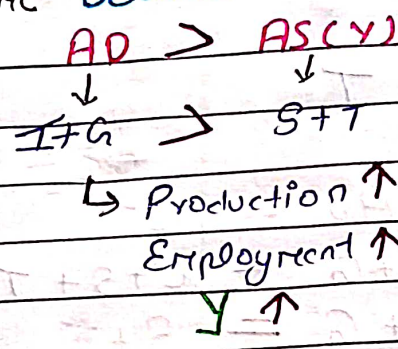
Injection = Leakage



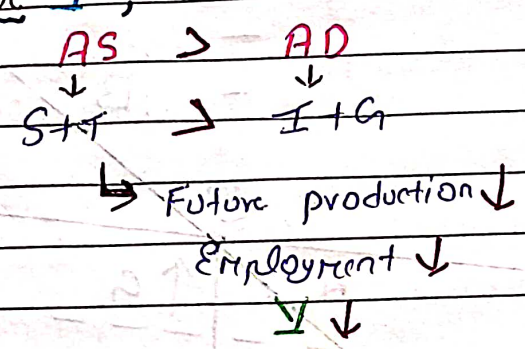
Why other points on the graph are not points of Equilibrium?

1. Consider level of Income below  $Y = A$

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2. Level of Income above  $Y$

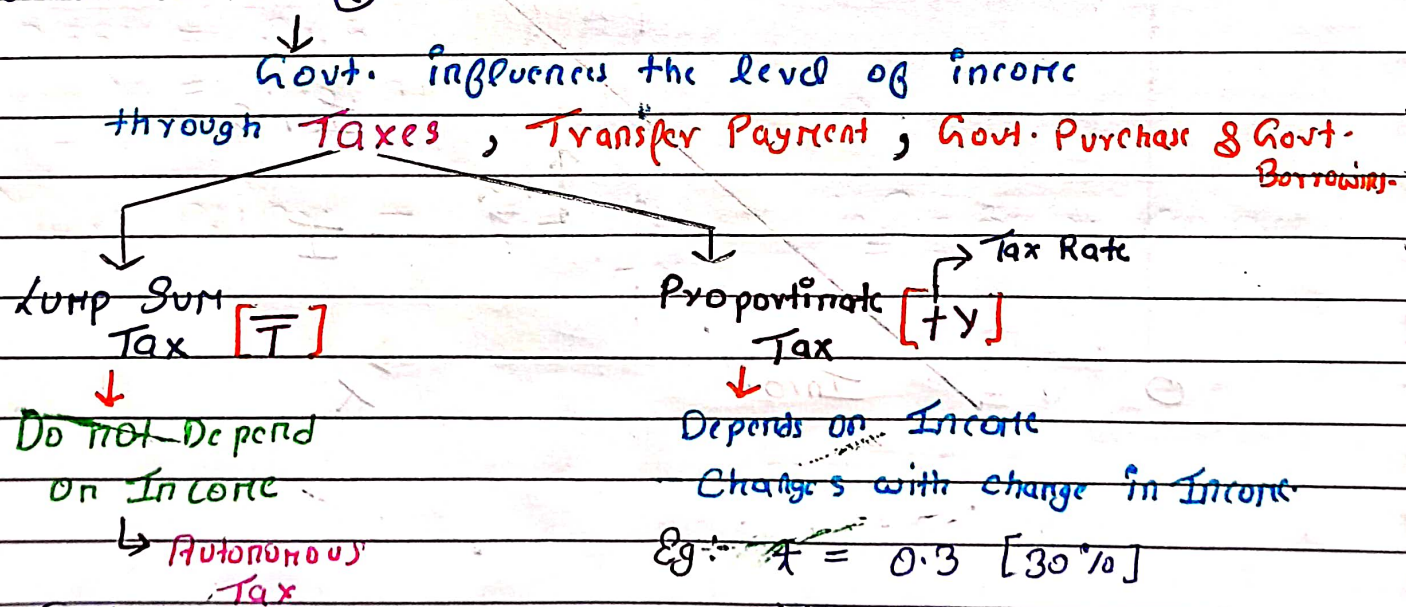


→ It is imp. to note that

↳ Change in Output/Employment is, what will restore equilibrium, not changes in price

↳ Output/Employment → Real hai

### Govt. Sector & Income Determination



Eg: GST etc

$Y = 100$   
 $= 100 \times 0.3 = 30$



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$$\text{Total tax, } T = \bar{T} + tY$$

Lump sum tax
Proportional Tax

Tax as a function of Income.

⇒ Disposable income

$$Y_d = Y - T$$

$$Y_d = Y - [\bar{T} + tY]$$

$$Y_d = Y - \bar{T} - tY$$

→ In case transfer Payment is Received :

$$Y_d = Y - \bar{T} - tY + TR$$

Autonomous → Because Do not depend on income

\* Consumption Function

$$C = a + bY_d$$

→ Disposable income

$$C = a + b[Y - \bar{T} - tY + TR]$$

At Equilibrium,

$$Y = C + T + G$$

$$Y = a + b[Y - \bar{T} - tY + TR] + T + G$$

Eg :-  $C = 10 + 0.75 Y_d$

$T = 50$

Balance Budget ←  $G = T = 20$

Calculate Equilibrium Income?

⇒  $Y_d = Y - T$  (Total Tax)

$$Y_d = Y - 20$$

$$Y = C + I + G$$

$$Y = 10 + 0.75[Y - 20] + 50 + 20$$

$$Y = 80 + 0.75Y - 15$$

$$0.25Y = 65 \Rightarrow Y = 260$$

Eg -  $C = 100 + 0.75 Y_d$

$I = 200$

$G = T = 100$

$TR = 50$

$\Rightarrow 1. Y_d = Y - 100 + 50$   
 $= Y - 50$

$Y = C + I + G$

$Y = 100 + 0.75 [Y - 50] + 200 + 100$

$Y = 400 + 0.75 Y - 37.5$

$0.25 Y = 362.5$

$Y = 1450$

Eg -  $C = 75 + 0.5 [Y - T]$

$T = 80$

$T = 25 + 0.1 Y$

$G = 100$

$\Rightarrow Y_d = Y - T - tY$   
 $= Y - 25 - 0.1 Y$

$Y_d = 0.9 Y - 25$

$Y = C + I + G$

$Y = 75 + 0.5 [0.9 Y - 25] + 80 + 100$

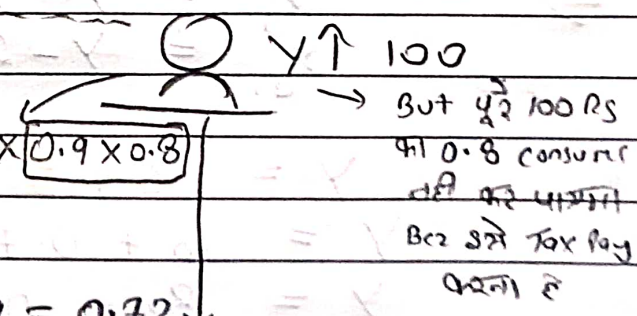
$Y = 255 + 0.45 Y - 12.5$

$0.55 Y = 24.5$

$Y = 449.91$

• Multiplier -  $K = \frac{1}{1 - MPC}$  in 2-sector economy  
Assuming  $MPC = 0.8$ ,  $t = 0.1$  (Proportional Tax)

Govt./Inv. - - - Spend = ₹100

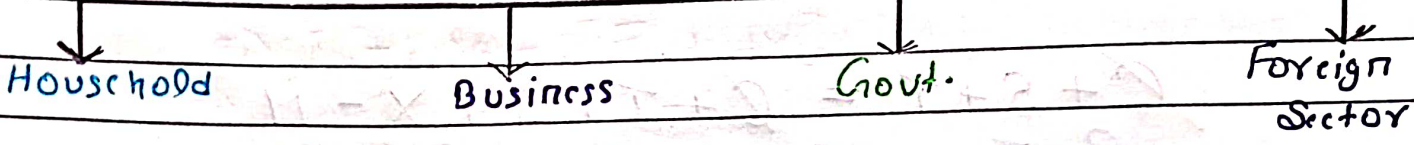


Good Write

$MPC [1 - t]$

$$K = \frac{1}{1 - MPC[1-t]}$$

# Determination of Equilibrium Income - Four Sector Model



## Three additional flows in 4 Sector Model:

1. Exports
2. Imports
3. Net Capital inflow [Cap. inflow - Cap. outflow]

$$* \underline{AD} = C + I + G + \underline{X - M}$$

↓ Total Planned exp.
↓ Net exports  
OR - Trade balance

→ Exports :- Injections in the National income  
 ↳ Foreign demand for domestic output.  
 ↳ Demand for export, depends on foreign income & is Exogenous & autonomous

→ Imports :- Leakage or Outflow of National income  
 ↳ Not Demand for domestic goods, deducted from AD

## Import Function :-

$$M = \bar{M} + mY$$

↓ Autonomous
↳ Marginal Propensity to import  
↳  $\frac{\Delta M}{\Delta Y} = \text{Slope}$

At Equilibrium,

$$AS(Y) = AD$$

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

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$$C = a + bY_d$$

$$M = \bar{M} + mY$$

$$C + S + T = C + I + G + X - M$$

$$\underbrace{S + T + M}_{\text{Leakage}} = \underbrace{I + G + X}_{\text{Injections}}$$

Decreases  $\leftarrow$   
the level of income

$\rightarrow$  increase the level  
of income.

Imp

$\rightarrow$  If  $X > M \rightarrow$  Net exports are Positive

$\rightarrow$  Injections  $>$  Leakage

National income increases

$\rightarrow$  If  $X < M \rightarrow$  Net exports are Negative

$\rightarrow$  Injections  $<$  Leakage

National income decreases

Some Graphs as two sector - 3 sector economy

$\rightarrow$  Foreign Trade Multiplier  $\rightarrow$  Export multiplier

$$\frac{\Delta Y}{\Delta X} = \frac{1}{1 - b + m}$$

MPC

MPI to import

If Proportional tax is included.

$$FTM = \frac{1}{1 - b(1 - t) + m}$$

MPC

Good Write

→ The Greater the value of 'M', Lower will be the autonomous exp Multiplier

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FTM  
↓  
explanation

→ The more open an economy is to foreign trade, the smaller will be the response of income to aggregate demand shocks.

Multiplier  
low effect

↳ Change in govt spending/Investment

→ Higher M :- larger proportion of income is spent on foreign goods not domestic goods [Imports]

### \* Expansionary & Contractionary effect

1. Inc. in Demand for Exports -  $AD \uparrow \rightarrow$  Equilibrium Income  $\uparrow$   
Expansionary

2. Inc. in Imports -  $AD \downarrow \rightarrow$  Equilibrium Income  $\downarrow$   
Contractionary

\* This should not be interpreted that Exports are goods & imports are harmful

→ Countries import goods that can be efficiently produced abroad & trade increase the overall efficiency of worldwide allocation of resources.  
↳ Means word अर्थी Goods balance के  $\rightarrow$  imports exports के