

Date: 14-10-2024

## Cost of Production

- Q1: What can shift the cost curves?
- Q2: What are the explicit and implicit costs of attending the university?
- Q3: Do the resources remain fixed and variable in the long run?
- Q4: Interpret Economies of Scale, Economies of Scope, and Economies Diseconomies of Scale.
- Q5: What are the resources used in the making of a newspaper? Why newspapers are so cheap? How cost of production is covered?

Ans 1: Economies of scale, inflation, market structure (competition), increase of labour, increase quality of inputs, technology.

Ans 2: Explicit: Tuition, security, course books, project material, transport, fuel (visible expense).

Implicit: Degree, Income from freelancing, time.

Ans 3: Not fixed, but variable as all inputs are flexible.  
All become variable as expansion takes place.

Ans 5: Labour, equipment, administration, raw materials (paper, ink), delivery, information, printing press.

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Ans 5: Labour, equipment, administration, raw materials (paper, ink), delivery, information, printing press.

Cheap because of Economies of scale,  
Advertising revenue, subscriptions, digital transition.

Cost of production is covered by Advertising,  
Subscriptions and Sales, Additional services.

Ans 4: Economies of scale is cost advantage that a business obtains due to the scale of its production e.g. Chase Up.

As output increases, the average cost per unit decreases.

Economies of scope refers to the efficiencies gained by producing multiple products together rather than separately. When a company can share resources, such as equipment or distribution channels, it can lower the overall cost of production across different products e.g. Habitt (both economies of scope and scale).

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## Pure Competition

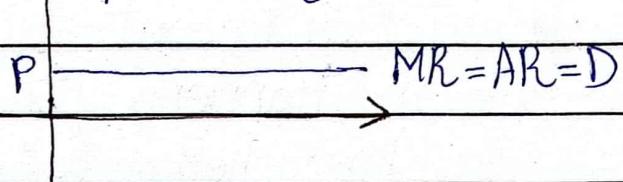
- Market model.
- Many buyers and sellers.
- The demand curve for this market is perfectly elastic, price is uniform.
- Price is equal to marginal revenue, average revenue, and demand.
- Firms can enter and exit the market at any time as there are no barriers to enter and exit.
- Products are homogeneous (all firms are producing same product).

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## Pure / Perfect Competition

A simplified market model.

1. Large number of buyers and sellers
2. Product is homogeneous
3. The firms are price takers.
4. There is no government.
5. Demand collectively is perfectly elastic
6.  $P = MR = AR = D$



7. Free entrance and exit

### Applications:

1. It is applicable in agriculture to the point when crop is not reaped.
  - Seeds
  - Fertilizer
  - Irrigation
  - Technology
2. Call rates
  - SMS packages

Pure/Perfect competition not 100% applicable, in small parts only.

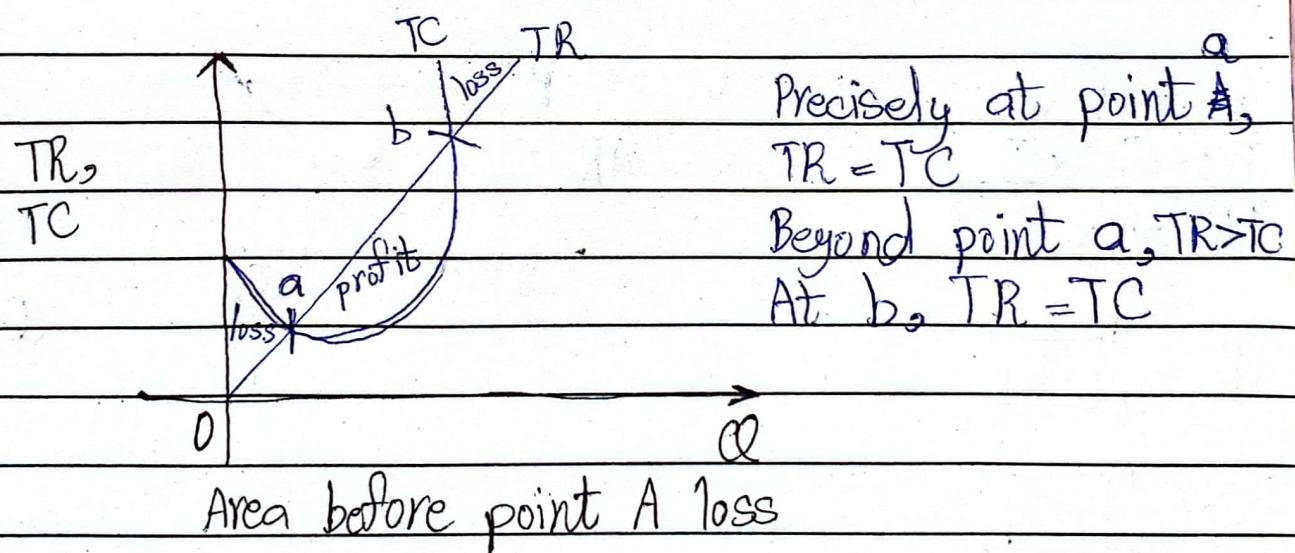
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## Profit Maximisation Approaches in Short Run of a Purely Competitive Firm:

- 1- Total Revenue( $TR$ ) and Total Cost ( $TC$ ) Approach
- 2- Marginal Revenue and Marginal Cost Approach

### Conditions (1- TR and TC Approach):

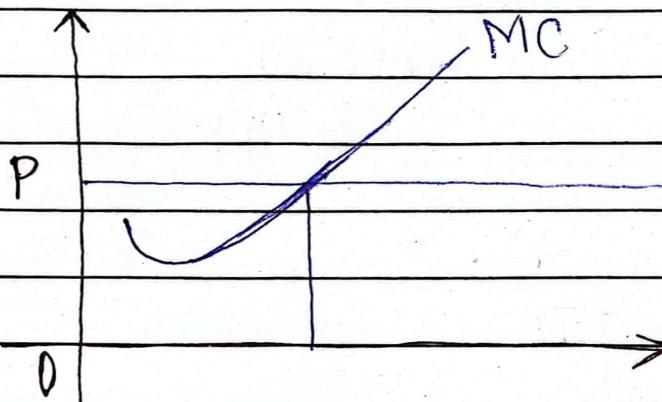
- 1-  $TR > TC \rightarrow$  Economic Profit
- 2-  $TR < TC \rightarrow$  Loss
- 3-  $TR = TC \rightarrow$  Break Even / Normal Profit
- 4-  $TR = AVC \rightarrow$  Firm being indifferent to shutdown
- 5-  $TR < AVC \rightarrow$  Firm has to shutdown



Normal Profit: Opportunity cost of the entrepreneur.

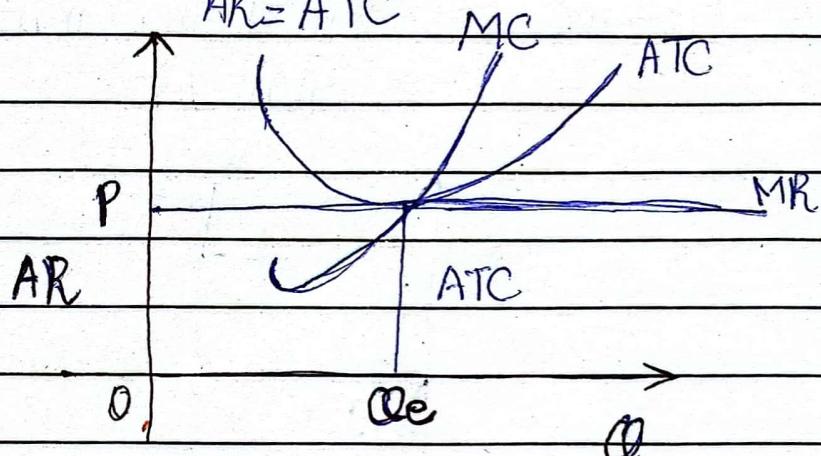
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$$P = MR = AR = D$$



Intersection of MC and MR determines equilibrium output, cost area, and revenue area.

### Break Even ( $TR = TC$ )



$Q$  = Product = Output

$$D = MR = AR = P$$

$$AR = TR / Q$$

$$TC = ATC \times Q$$

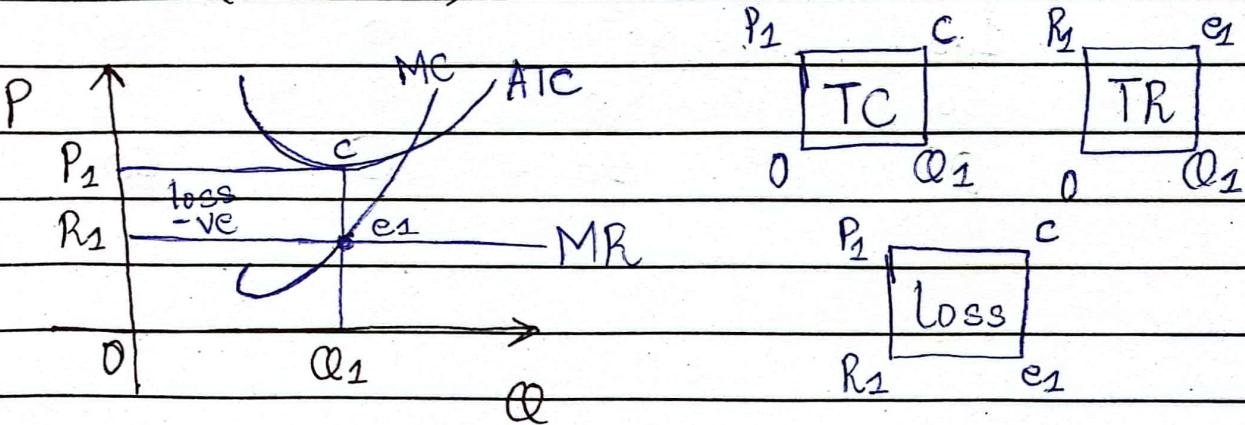
$$TR = AR \times Q$$

$$TR = \boxed{P} \begin{matrix} Q \\ TR \end{matrix} e$$

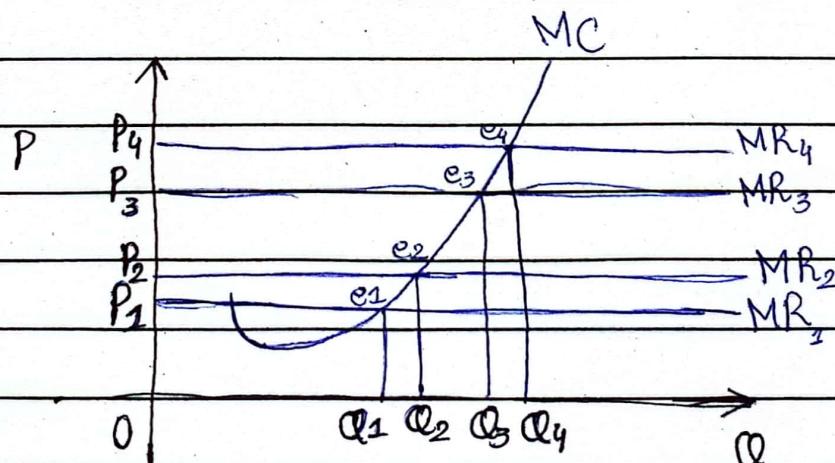
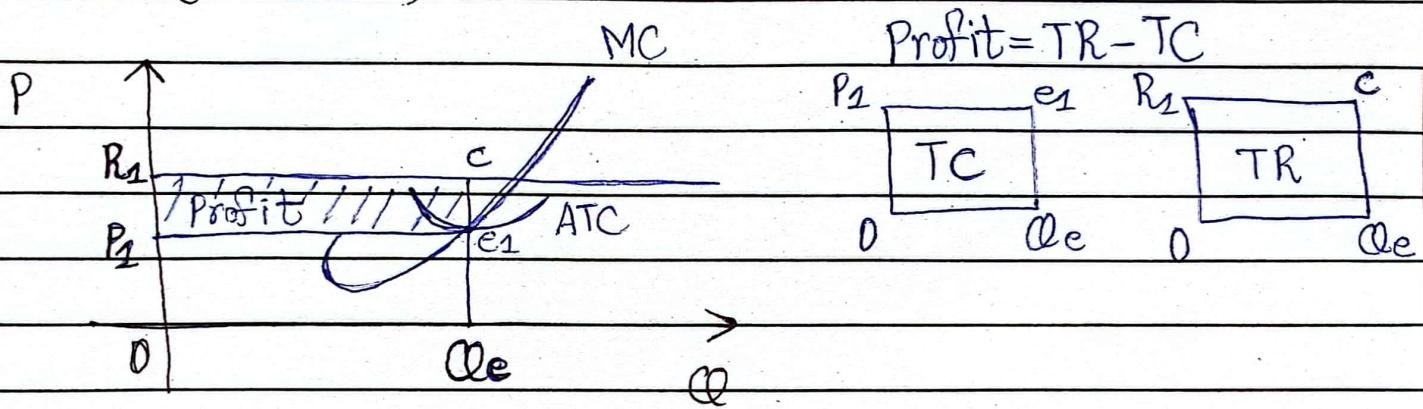
$$TC = \boxed{P} \begin{matrix} Q \\ TC \end{matrix} e$$

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### Loss ( $TC > TR$ )



### Profit ( $TR > TC$ )

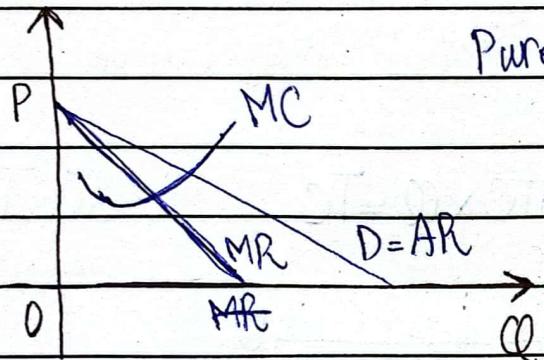


In long run, all firms exhibit normal profit

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## Pure Monopoly

1. There is a single seller
2. There are barriers to entry and exit
3. A monopolist is a price maker
4.  $P = AR$
5. A monopolist can practise price discrimination.
6. Legal issues and copyright issue also exist.
7. There are regulations (government).



Pure Monopoly e.g. Pak Railways

When  $MC = MR$

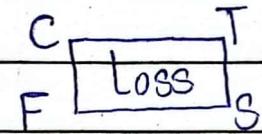
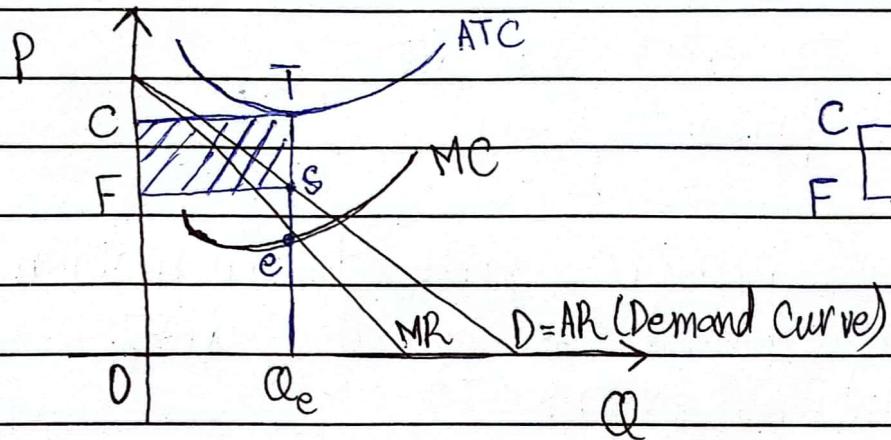
- Equilibrium output price
- Determine TC and TR areas

### Cases:

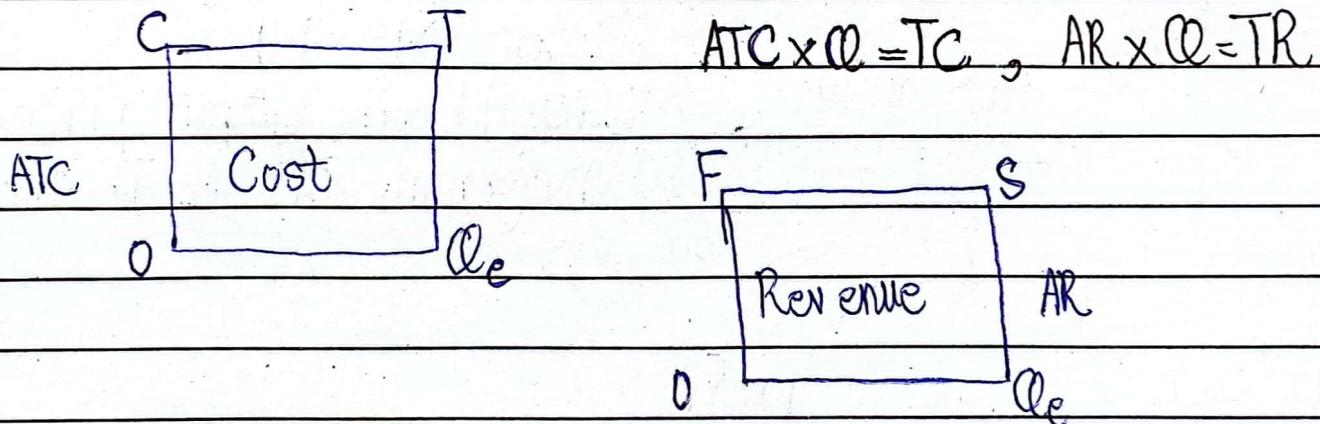
1.  $TR > TC$  Economic Profit
2.  $TR < TC$  Loss
3.  $TR = TC$  Break even
4.  $TR = AVC$  Indifferent (loss)
5.  $TR < AVC$  Shutdown

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#### 4. Economic Profit ( $TR > TC$ ):

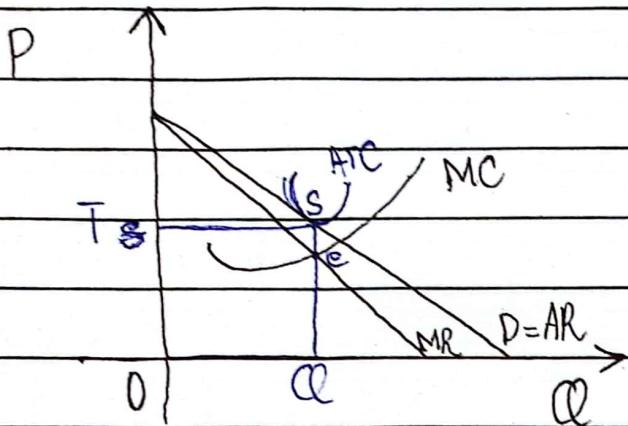


Cost Area is under average total cost curve

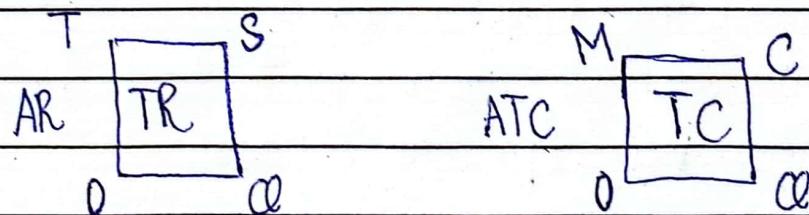
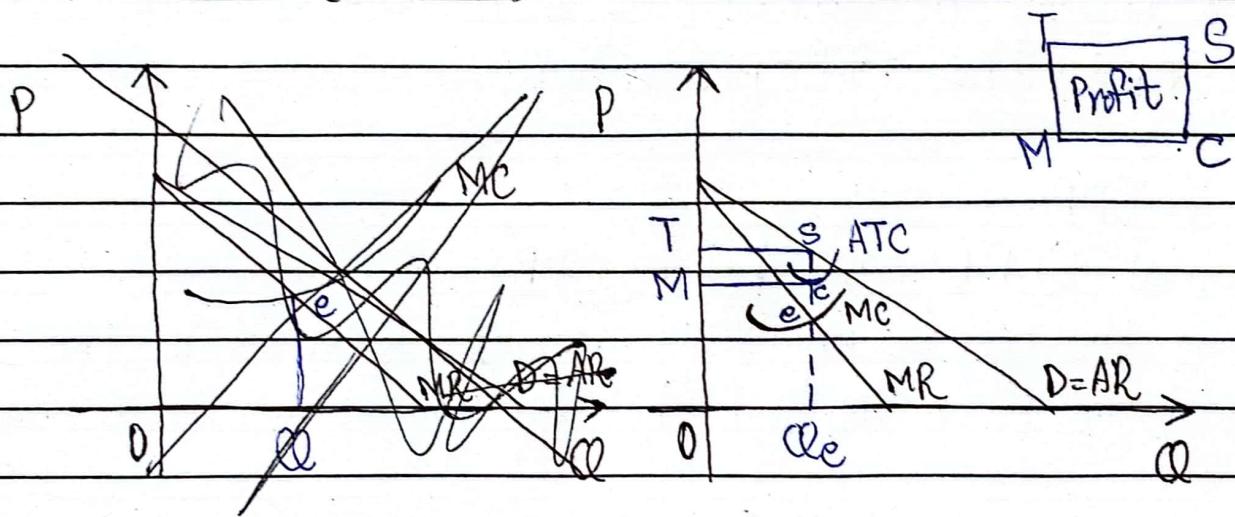


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Breakeven ( $TR = TC$ ):



Economic Profit ( $TR > TC$ ):



$$ATC \times Q = TC$$

$$AR \times Q = TR$$

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## Macroeconomics

Issues:

- GDP, GNP
- Unemployment
- Exchange Rate
- Balance of Payments

GDP:

Total production within the borders in fixed time.  
National Income Accounts are just any accounts maintaining the GDP production measures.

Types of GDP:

1. Nominal GDP (Current Dollar GDP):

It is the production of goods and services in the current year multiplied by the prices in current year.

2. Real GDP (Constant Dollar GDP):

Production in current year multiplied by the prices in the base (previous) year.

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• GNP:

Production within the borders and beyond the borders ~~within~~ in fixed time.

$$GNP = \text{Production} + \text{Exports} + \text{Remittances}$$

(Primarily)

Calculation Methods:

- 1 - Product Method (Value added approach)
- 2 - Income Method (All types of income)
- 3 - Expenditure Method (Ultimate users of product)

$$\text{Production} = \text{Income} = \text{Expenditure} \text{ constant}$$

1 - Product Method:

• Value added = Final Output - Input

• Value added can also be described as total goods and services produced in a fixed time period at market price.

2. Income Method : • GDP is sum of all incomes in fixed time period.

• Profit (R.T. Revenue - T. Cost)      • Rate of interest (Bonds

• Wages (Hourly earned income)      and Securities)

• Salaries (Monthly earned income)

• Proprietor's Income (Self employed's income)

• Taxes (Income for government)

• Dividends (Earnings on stocks and shares)

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### GDP 3 - Expenditure Method:

- Takes into account ultimate users of product.

$$Y = C + I + G + NX \quad (I = \text{Investment}, G = \text{Govt. Spending}, NX = \text{Net Exports})$$

Where  $C = \text{Consumption} = a + b Y_D$

Where  $a = \text{Autonomous Consumption}$

- Kind of consumption which prevails / exists even when not earning

$$Y_D = D + \text{Disposable Income} = y - T Y - T$$

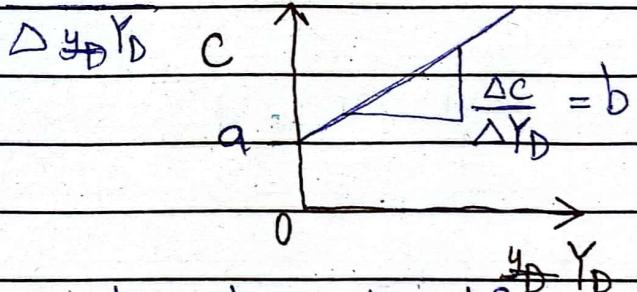
- Will be zero for non-earners

Where  $y = \text{income}$

$T = \text{taxes}$

$b = \text{Marginal Propensity to Consume}$

$$= \frac{\Delta C}{\Delta Y_D}$$



Consumer Durables: Tend to have long life e.g. jewellery

Consumer Non-Durables: Tend to have short life e.g. food.

I = Investment

- Residential Investment
- Investment in Stocks and Bonds
- Insurance

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G = Government Spending

- Bailouts / Stimulus Package
- Public Investment
- Transfers
  - EDIBI (Pensions - Private / Public both)
  - Pension (Government employee compulsory)
  - Public hospitals

(e) Consider hypothetical economy with two enterprises: Orange INC and Juice INC

- Orange INC has orange orchards
- Juice INC produces orange juice.

Orange INC Transactions

• Wages paid to employees: \$15000

Juice INC Transactions

• Wages paid to employees: \$10000

• Taxes paid to govt.: \$2000

government: \$5000

• Revenue received from the sale of oranges: \$35000

• Revenue - oranges

- Oranges sold to public: \$10000

- Oranges sold to Juice INC: \$25000

• Oranges purchased from Orange INC: \$25000

• Orange juice sale: \$40000

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Product Method:

Value Added = Final output - Input

For Orange INC, VA = 35000 - 0 = \$35000

For Juice INC, VA = 40000 - 25000 = \$15000

GDP = VA<sub>O</sub> + VA<sub>J</sub> = 35000 + 15000 = \$50000

Income Method:

Includes all types of incomes i.e. Profits + Wages + Taxes

Two ways of calculating GDP

- Before tax profit

- After tax profit

- Before Tax Profit:

A = For Orange Inc, 35000 - 15000 = \$20000 = Profit

For Juice Inc, 40000 - (10000 + 25000) = \$5000 = Profit

Profits + Wages = GDP = (20000 + 5000) + (15000 + 10000)  
= \$50000

Here, tax is neither a liability nor an income

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### Expenditure Method:

(For A, revenue from public) + (For B Juice Inc, revenue)  
Orange Inc

$$10000 + 40000 = \$50000 \text{ GDP}$$

### Income Method:

After Tax Profit: After tax profit + Wages + Taxes

$$\text{For Orange Inc, } 35000 - 15000 - 5000 = \$$$

$$\text{For Juice Inc, } 40000 - (\cancel{10000} + \cancel{25000})$$

$$\text{For Orange Inc, } (20000 - 5000) + 15000 + 5000 = \$35000$$

$$\text{For Juice Inc, } (5000 - \cancel{3000}) + 10000 + \cancel{3000} = \$15000$$

$$\text{GDP} = 35000 + 15000 = \$50000$$

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Nominal GDP = Current Year Quantities  $\times$  Current Year Prices

Real GDP = Current Year Quantities  $\times$  Base Year Prices

GDP Deflator = Quarterly Measure of Inflation

$$\frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

Base Year Data			Current Year Data		
Fruit	Quantity	Prices	Fruit	Quantity	Prices
Apples	3000	\$2	Apples	4000	\$3
Oranges	6000	\$3	Oranges	14000	\$2
Bananas	8000	\$4	Bananas	32000	\$5

~~Nominal Preg~~

$$\begin{aligned} \text{Nominal GDP (Base Year)} \\ 3000 \times 2 \\ 6000 \times 3 \\ + 8000 \times 4 \\ 56000 \end{aligned}$$

$$\begin{aligned} \text{Nominal GDP (Current Year)} \\ 4000 \times 3 \\ 14000 \times 2 \\ + 32000 \times 5 \\ 200,000 \end{aligned}$$

$$\begin{aligned} \text{Real GDP in Current Year} \\ 4000 \times 2 \\ 14000 \times 3 \\ + 32000 \times 4 \\ 1,78,000 \end{aligned}$$

Real GDP in Base Year = Nominal GDP in Base Year

Since no base year of base year

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GDP Deflator (Base Year)

100 since

Nominal = Real

GDP Deflator (Current Year)

$\frac{200000}{100} \times 100$

178000

Growth Rate =  $\frac{\text{Nominal GDP in Current Year}}{\text{Nominal GDP in Base Year}} \times 100$

Growth Rate =  $\frac{(\text{Nominal GDP in Current Year} - \text{Nominal GDP in Base Year})}{\text{Nominal GDP in Base Year}} \times 100$