Economics
(Lec 4)

Market - Cost

Cost : The total spent for goods or services including money time Labor.

Variable cost : Variable costs are the cost that vary with output

(Long run).

increase at a constant rate relative to Labor and capital (raw materials, Labour, wages).

Fixed cost : fixed cost that do not vary with output.

Te used in ~~long~~ short run. Fixed cost often include rent, building machinery etc.

Total cost :

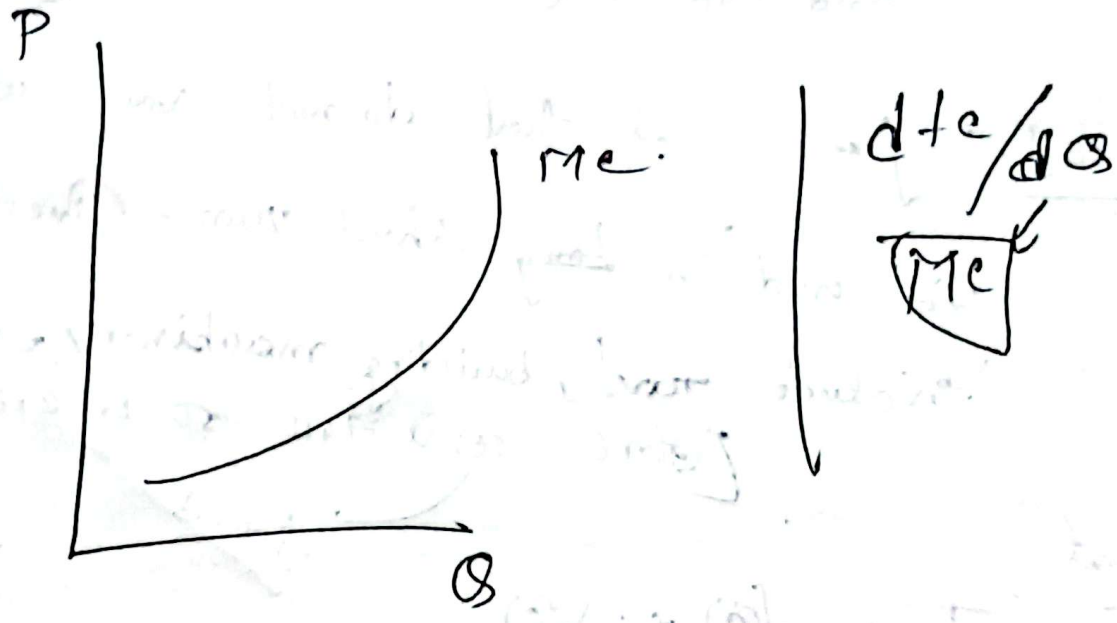
$$Tc = f(c) + V(c)$$

Mangial cost (MC): change in TC / change in Q and measure the cost of producing another unit

Additional cost per additional unit of output

If TC 75 to 100 $\Delta TC = 100 - 75 = 25$

$$MC = \frac{\Delta TC}{\Delta Q}$$ — change in the Quantity.



Average cost (AC) : TC/Q and measure the cost of a typical unit of output.

Average total cost = Average fixed + Average variable

ATC = AFC + AVC

$$TC/Q = \frac{TFC}{Q} + \frac{TVC}{Q}$$

$$\therefore AFC = \frac{TFC}{Q}, \quad AVC = \frac{TVC}{Q}$$

$$ATC = \frac{TC}{Q}$$

MC < AC — AC falling

MC > AC — AC rising

MC = AC — AC minimum.

$C = 10 + 2Q + 4Q^2$

fixed — variable cost

$P = 10$ so

Q	C	AC	MC
0	10	NA	NA
1	34		
2	66		
3	106		
4	154		
5	210		
6	274		
7	346		
8	426		
9	514		
10	610		

C/Q

change of cost / change of quantity

$= \frac{34 - 10}{1 - 0} = \frac{24}{1}$

$= 24$.

AC = MC হলে profit সর্বোচ্চ হয়

এই quantity produce করলে cost minimize হয়

Market

Concept of market in any structure that allows buyers and sellers to exchange any type of goods services and information.

- Many small and big sellers in market so no one can not effect market.

4 market structures

(1) perfect Competition market

- well functioning market
- many small and buyers and sellers.
- Buyers and seller equal accon.
- Free entry and exit from the market.
- Free information & Normal profit.

Ex- Agricultural Crops.

② Monopolistic Competition.

- There are many producers produce goods which are close substitutes of one another

- Large no of firms.
- Product are slightly different each other.
- Normal profit in long term.
- Freedom of entry exit
  Eg - Local Retail outlets, builders.

Pure monopoly :

- There only one seller for a product.
- Single sellers may be many buyers.
- Blocked entry for all.
- Strong barriers to entry due to
  - Govt. policy
  - Control over Raw materials
  - Size of the market.

Ex
local
utility
wodon
company

Firm = seller

Oligopoly.

There are only a few firms that make up an industry.

- Difficult to entry industry.
- significant barriers to information.
- Dominated in industry by a few firms.

Ex- automakers, electrical appliances.

Qu: $TC = \underbrace{1500}_{\text{fixed}} + \underbrace{150 - 6Q^2 + Q^3}_{\text{function}}$ variable

a) Total variable cost (TVC)?

$= 150 - 6Q^2 + Q^3$.

b) marginal cost function

$\rightarrow MC = \frac{dTC}{dQ} = \frac{d}{dQ}(1500 + 150 - 6Q^2 + Q^3)$

$= \frac{d}{dQ}1500 + \frac{d}{dQ}150 + - 6\frac{d}{dQ}(6Q^2) + \frac{d}{dQ}(Q^3)$

$= 15 - 12Q + 3Q^2$

(c) Average v. cost fnc.

$$AVC = \frac{TVC}{Q} = \frac{15Q - 6Q^2 + Q^3}{Q}$$

$$= 15 - 6Q + Q^2$$

(d) Calculate total cost, AVC, ATC, MC? when output 50 unit (Q)

Total Cost $= 1500 + 15 \times 50 - 6 \times 50^2 + 50^3$

$= 112250$

$$ATC = \frac{TC}{Q} = \frac{112250}{50} = 2245$$

$$MC = \frac{TC}{Q} =$$

$MC = 15 - 12Q + 3Q^2$

$= 15 - 12 \cdot 50 + 3 \times 50^2$

$= 6915$

Sequ sum

Cost function $TC = 700 + 37Q - 2Q^2 + 5Q^3$

(i) fixed cost on 100 and 500 unit output.

⇒ fixed cost 700 [যত unit হবে cost change হবে না]

(ii) Marginal cost (a) 100 unit (b) 1500 unit.

⇒ (a) here $MC = \frac{dTC}{dQ} = \frac{d}{dQ}(700 + 37Q - 2Q^2 + 5Q^3)$

$= 0 + 37 - 4Q + 15Q^2$

for 100 $= 37 - 4 \times 100 + 15 \cdot 100^2$

$= 149,637$

for 1500 $= 37 - 4 \times 1500 + 15 \times 1500^2$

$= 337\,44037$

Economic growth

- Economic growth mean national income of a country.
- Economic development will be to bone it on per Capital income of the country

growth	Development
It refers to quantitative change in economic variables.	It refers to an overall increase in the quantitative as well as qualitative aspects on economic Variable.
Just increase in the economic variable	Multi-dimensional Changes social, institutional aspects.
Continious growth Concept	Discontinious Concept.
Micro	Macro

Basic Determinants of Economic growth.

- ~~abs arbir~~
- availability of natural resources.
- rate of capital formation.
- capital output ratio.
- Technological Progress.
- Rate of growth population.

Problem with GDP measurement for developing economics:

- Home production & illigal activites doesn't include non-traded goods.
- Limited resources data not accurate.
- agricultural areas " " "

economic Development parton

- Govt Staff
- economic development org.
- ~~Utilities~~ . Utilities
- Commercial real estate proffessionals.
- Developers.
- Citizens.

Source of Econ: development:

& National resources: forest, water, and power resources, grapical factors Like climate and rainfall * varies widely among LDCs

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National growth Gn = $\frac{T}{P}$ + t ← Technological Progress.

Population growth

Human resources :

overpopulation → · Low per capital income.

· High population growth rates

· Increase income tends to increase population growth rates.

Human resources Development

· Increase skill, knowledge, abilities of their employe.

· HR Development designed to give employes the information they need to adapt to their organization culture and to do their jobs effectively.

Goal = To make better employes

Capital formation

It is the net store of capital goods such as equipment tools and electricity during a accounting period for a particular country.

higer Cf = faster economy can grow.

Technology

Technological advancement have led to new industries and products increased productivity and improved efficiency in existing industries

Household save from current income
↓
Companies invest this savings
↓
Creation of capital goods
↓
production of output increase
↓
economic growth.

Harrod Domar Growth model

If 'Gy' is the economic growth rate in income.
'I' is the investment, $\frac{\Delta Y}{\Delta K}$ is the marginal product of capital

Growth Ratio $gy = \frac{1}{Y} \times I \times \left(\frac{\Delta Y}{\Delta K}\right)$

In a balance growth economy.

$S = I$ where s = Saving

So $\frac{1}{Y} = \frac{S}{Y}$ / $\frac{S}{Y} = s$ — s representing the Saving ratio

$\therefore Gy = s\left(\frac{\Delta Y}{\Delta K}\right)$

But $\frac{\Delta K}{\Delta Y} = V$ (capital output ratio) So :

$gy = s \cdot \frac{1}{V}$ / growth rate $(gy) = \frac{\text{Ratio of Saving}}{\text{Capital output Ratio.}}$

$\Rightarrow \frac{s}{V}$