

What is Economics

Economics: The study of how people choose to use their limited resources to satisfy their unlimited wants.

⇒ not always directly concerned with the stock market, politics or even money.

⇒ When you are trying to make the most use of # what you have... you are doing economics.

An economy is a system used to manage those limited resources.

Scarcity: The situation which exists when there are not enough resources to meet human wants.

Economic Systems: The way a society uses scarce resources to satisfy its people's unlimited wants.

Microeconomics:

Studying the particular aspects of an economy; such as the price cost relationship of a firm.

Macroeconomics:

broad and general aspects of an economy: such as the relationship between the income and investments of a country as a whole.

Economic Interpretations

Positive

- Way of describing and explaining economics as it is
- A type of economic analysis that describes how things are. It is objective and fact based.
- PE statements do not have to be correct, but they do need to have the ability to be proved or disproved.

Nonnormative

- way of describing and explaining economic behaviour as it ought to be.
- A type of economic analysis that describes how things should be. It is subjective and based on opinions and value judgements.

¶ Paradox of Values:

⇒ A cynic is someone who knows the price of everything & values nothing.

¶ Cost benefit analysis:

Trade off: the exchange of one thing for another.

⇒ The choice between alternative uses for a given quantity of a given resource.

¶ Opportunity cost: The most desirable thing you give up when you make a choice.

- Money that could have been made working.

Formula:

OC of each unit of good,

$$x = \frac{(Y_1 - Y_2)}{(X_1 - X_2)} \text{ units of good } Y$$

$$OC = \frac{\text{what one sacrifice}}{\text{what one gain}} = \frac{\text{loss}}{\text{gain}}$$

Trade off:

- ⇒ the exchange of one things for another.
- ⇒ the choice between alternative uses for a given quantity of a given resources.
- ⇒ Everything else you could've been doing.

* Opportunity Cost:

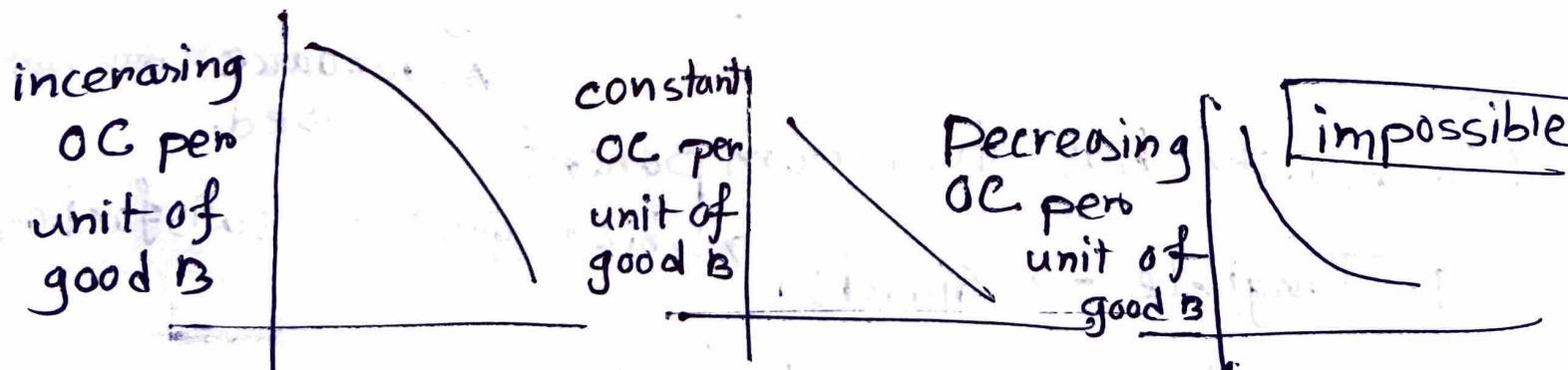
- ⇒ The most desirable thing you give up when you make a choice.

• Formal definition:

- ⇒ Opportunity cost of each unit of good Y.

$$x = \frac{y_1 - y_2}{x_1 - x_2} \text{ units of good Y.}$$

∴ Opportunity cost = what one sacrifice
what one gain

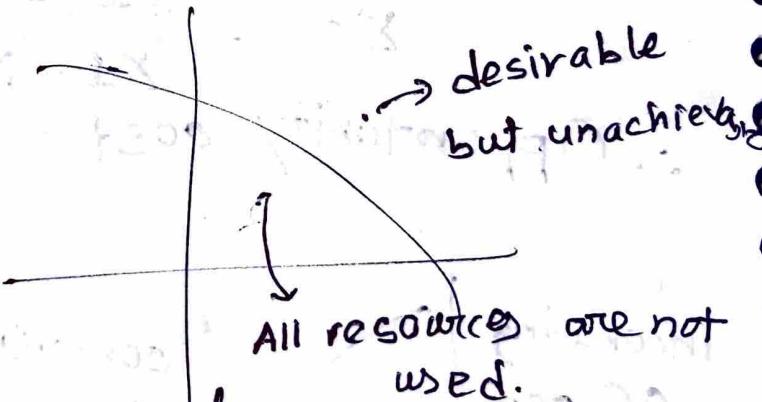


International Trade

* STEM

$$OC = \frac{\text{loss}}{\text{gain}} \quad [\text{loss over gain}]$$

- when you have to achieve more, you need to sacrifice smthg.



Community has two component,

1. Tangible \rightarrow Goods \rightarrow which gives us satisfaction
2. non-tangible \rightarrow services

which is tangible to us called goods.
which is non-tangible " " " services.

Absolute advantage & comparative ad

- Absolute advantage: is the ability to produce a greater quantity of a good or service with the same quantity of inputs per unit of time.
- Comparative advantage: is the ability to produce a good at a lower opportunity cost than another producer.

MATH

$$OC_{VU} = \frac{30}{60} = 0.5$$

If country A has a lower OC of producing a good, then it has a comparative advantage in that compared to country B.

$$OC_{TV}^{US} = \frac{60}{30} = 2$$

USA should produce vaccine.

$$OC_V^K = \frac{60}{30} = 2$$

$$\text{Since, } OC_V^{US} < OC_V^K \\ (0.5) \quad (2)$$

$$OC_{TV}^K = \frac{30}{60} = 0.5$$

Therefore, US has a CA in producing Vac.

\Rightarrow OC $\overset{\text{KOREA}}{\text{TV}}$ $\overset{\text{USA}}{\text{Vaccine}}$ CA $\overset{\text{USA}}{\text{first}}$

\therefore KOREA Should Produce TV.

AA never determine trade.

⇒ CA can.

Us is specialized in producing wheat.

$$OC_w^{us} = \underline{0.1}$$

$$OC_L^{us} = 10$$

USA →
AA fast

$$OC_w^J = 0.25$$

Japan is specialized in produce laptop

$$OC_L^J = \underline{4}$$

Bigger number doesn't determine trade

⇒ OC less can determine, will be better in trade.

RMG

AA → USA

$$OC_{RMG}^{us} = \frac{500}{50} = 10$$

$$OC_{RMG}^{BD} = \frac{2}{20} = 0.1$$

$$OC_L^{us} = \frac{50}{500} = 0.1$$

$$OC_L^{BD} = \frac{20}{2} = 10$$

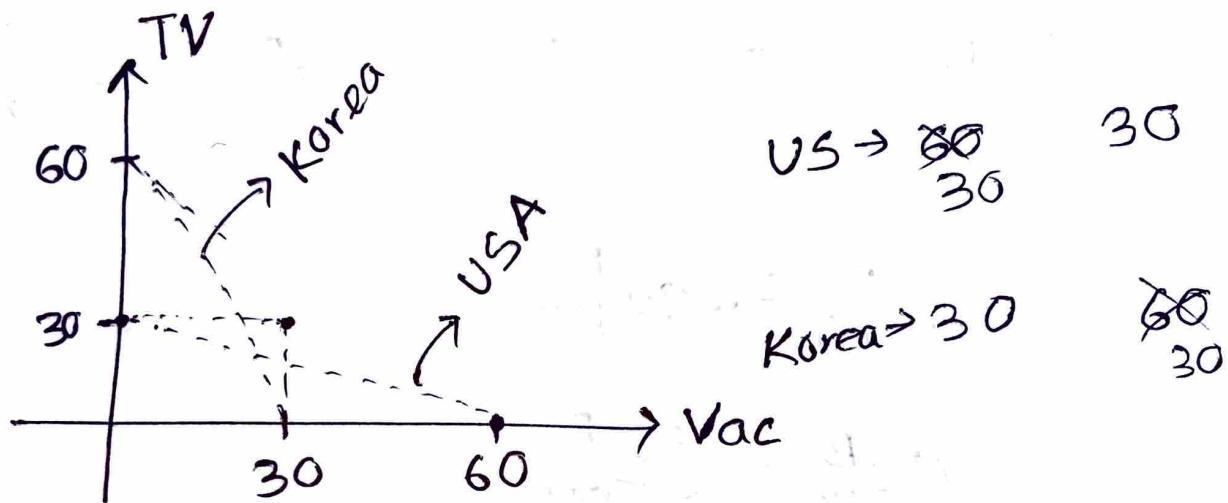
⇒ Since Us has a lower OC in producing laptop, Us should specialize in laptop.
and BD → RMG

No trade situation

3.11.2024

term of trade → which term you want to trade

PPF → Production Possibilities frontier.



PPF স্বতন্ত্র যাইছে থাওয়া মানে its better.

কোরিয়া প্রযুক্তি কম আছে এবং কোরিয়া প্রযুক্তি কম আছে।

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$$OC_{KT}^B = \frac{15 \cancel{+6}}{10} = 1.5 \quad OC_{KT}^F = \frac{\cancel{+9}}{6} = 1.5$$

$$OC_{PN}^B = \frac{10}{15} = 0.67$$

$$OC_{PN}^F = \frac{5}{9} = 0.56$$

$$\underline{OC_{KT}^B = OC_{KT}^F}$$

$$\underline{OC_{KT}^B = OC_{PN}^F}$$

∴ if OC is equal then there is no trade.

Input: anything & everything that produce something.

in Input approach OC gives completely opposite answers. ∴ $\frac{\text{gain}}{\text{loss}}$

Output approach = $\frac{\text{loss}}{\text{gain}}$ } both correct

PPF এর অন্য output approach convert করবে নিচে দেখ [must]

- Input approach टेक्स्ट आकर्ति देखो।
scale होने के लिये, उत्तम डाटा देने-
output -> convert करना।

bromide to a bitartrate salt

Ch-2

Demand

Demand:

• willingness + capacity to pay → demand

• Demand means a willingness and capacity to pay. Unless you are willing and able to pay for it, you may ~~willing~~ want it, but you don't demand it.

Three main characteristic's of demand:

- ① Willingness and ability to pay
 - ② Demand is always at a price.
 - ③ Demand is always per unit of time.
- Table of information → demand schedule
 - graphical representation → demand curve
- Entaine demand curve

* Demand schedule: is a table showing how much of a given product a household would be willing to buy at different prices.

* Demand Curve: is a graph illustrating how much of a given product one would be willing to buy at a different prices.

Demand curve are usually derived from demand schedule

④ Demand vs Quantity demand:

- Quantity demand: means only certain point on the demand curve or one quantity on the demand schedule.

⇒ demand means relationship between a range of prices and quantity demand at those.

* ⇒ demand refers to the curve and quantity demanded refers to a specific point on the curve.

④ The law of demand:

q. Why does the demand curve slope downward?

⇒ The law of demand states that as the price goes up, the quantity demanded goes down, other things constant.

⇒ Alternatively, the price and quantity demand are inversely related, so the demand curve slopes downward to the right.

The law of demand:
keeping all other factors constant
and increasing price, will decrease
quantity demand. (vice-versa)

$Q^d \rightarrow$ Quantity demand

$$\begin{array}{l} P \uparrow Q^d \downarrow \\ P \downarrow Q^d \uparrow \end{array}$$

but demand
remain change.

• There's other factor that changes
demand.

demand याड़िये curve right shift.

demand कमाल curve left shift.

6 factor affecting demand:

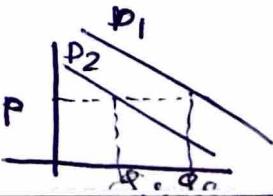
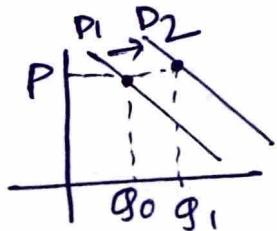
1. Income / wealth: when people's income changes
demand change [shifts in demand]

Normal goods

$I \uparrow D \uparrow$

$I \downarrow D \downarrow$

$I \uparrow D \downarrow$ } Inferior
 $I \downarrow D \uparrow$ } goods



Grains from trade arise from comparative advantage [Ch-1]

- Export: \Rightarrow Goods produced domestically and sold abroad.
 \Rightarrow To export means to sell domestically produced goods abroad.
- Import:
 \Rightarrow Goods produced abroad and sold domestically
 \Rightarrow To import means to purchase goods produced in other country.

Pre and Post Trade situation:

	Vac	TV	Vac	TV
US \rightarrow 60		30	US \rightarrow 30	30
Korea \rightarrow 30	30	60	Korea \rightarrow 30	30

Before trade After trade

choosing least quantity (30) minimize the risk for both country. Higher than 30 introduces potential risk, while lower than 30 can lead to smaller gains from trade. Both countries might end up with more of their own products, but they

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Esomeprazole USP



would also receive fewer goods from each other ultimately reducing the overall benefits of trade

2.

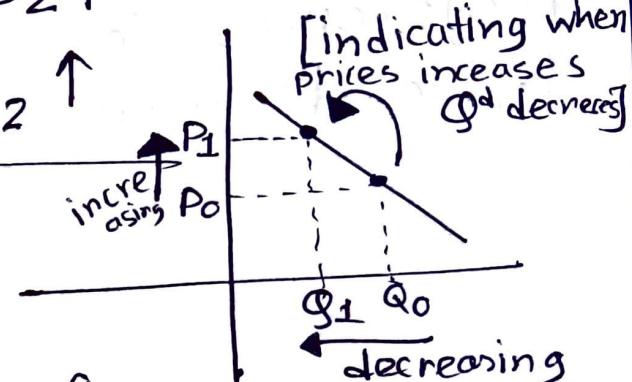
2. Prices of related goods: Changes in the prices of related goods can increase or decrease demand.

- Substitute Goods: $P_1 \uparrow Q_1^d \downarrow P_2 \downarrow D_2 \uparrow$

P₁↑ Q₁^d ↓ P₂ D₂ ↑

P₁↓ G₂^d↑ DP₂ ↑

substitute
good



* একটির দায়িত্ব কৰা আবেক্ষণ্য demand affect

Two goods are substitute goods if an increase in price of one good cause an increase demand for another good.

- ## • Complementary Goods:

$$\begin{array}{l} P_1 \uparrow Q_1 \downarrow \\ P_1 \downarrow Q_1 \uparrow \end{array} \qquad \begin{array}{l} D_2 \downarrow \\ D_2 \uparrow \end{array}$$

Two goods are complementary goods if an increase in price of one good causes a decrease in the demand for another good.

3. Taste and preferences:

If the taste and preferences is favourable there'll be higher demand, if the taste and preferences is unfavourable, there'll be lower demand.

4. Expectations about future prices and Market condition:

In future if you expect the prices of a good might decrease or increase that might also change your consumption behaviour.
⇒ if your future expectation is positive, your demand will be higher.
⇒ if your future expectation is negative, your demand will be lower.

5. Population/No of Consumers:

increase population → high demand
decrease population → low "

Supply

keeping all the factor constant,

$$P \uparrow Q^s \uparrow$$

$$P \downarrow Q^s \downarrow$$

■ Supply schedule: is a table showing how much of a product firms [producers] will supply at different prices.

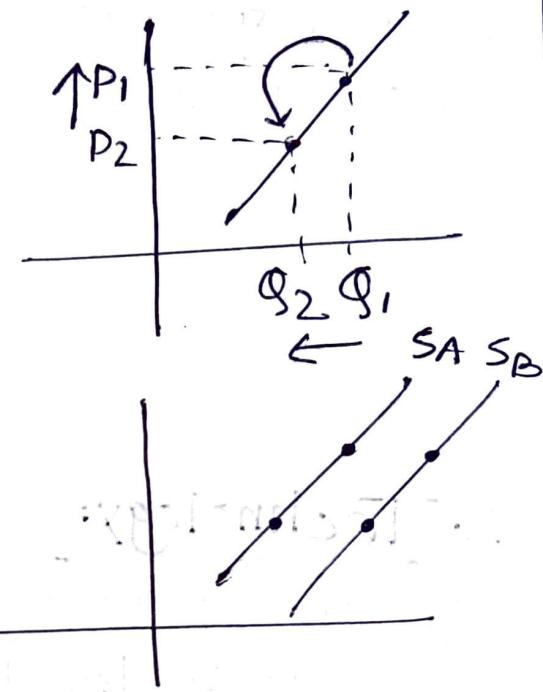
■ Supply curve: is a graph illustrating how much of a given product firms [producers] would be willing to sell at different prices.

■ Supply vs Quantity supplied:

⇒ Supply refers to the curve, and quantity supplied refers to a specific point on the curve.

• Only for the price there will be a movement along the supply curve, other factors cause supply curve to shift to its right or left.

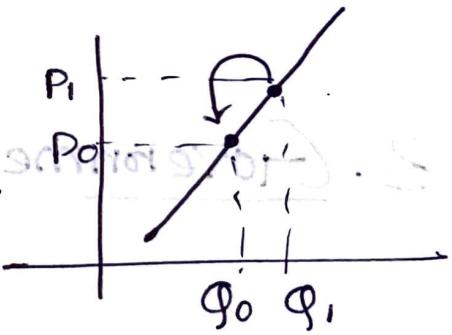
Movement along the curve vs. shift in the supply curve:



Determinants of Supply:

1. Price:

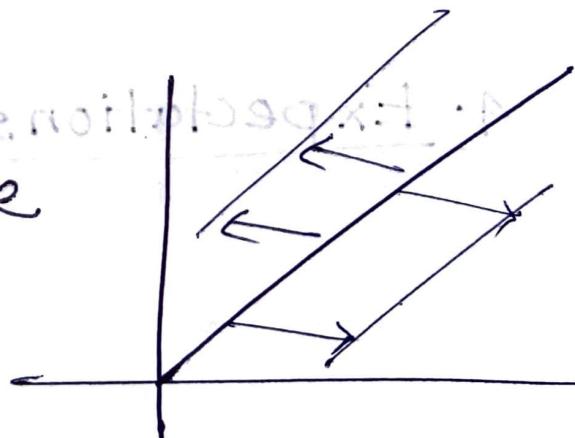
Any changes in price cause a movement along the supply curve.



• Shift factors of supply:

right shift \rightarrow increase

left shift \rightarrow decrease



1. Prices of Inputs:

If input cost rise with no change in output, profit will decline and a firm has less incentive to supply and vice-versa.

2. Technology:

=> New technology can reduce the costs of production, leading to an increase in supply.

3. Government Policy:

Will affect supply.

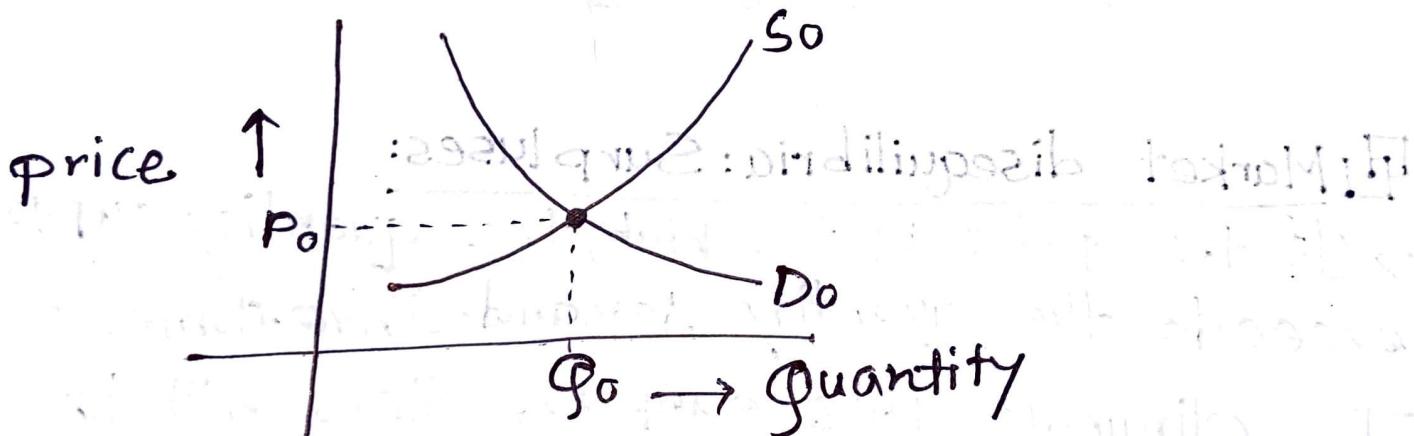
4. Expectations:

Market Equilibrium:

Interaction between demand & supply, how these determine market equilibrium price & quantity.

⇒ The market equilibrium price is the price is the price at which the quantity demanded equals the quantity supplied. (P_0)

⇒ The market equilibrium quantity is the quantity bought and sold at the equilibrium price. (Q_0)



demand = Supply → Market equilibrium

Market Disequilibria: Shortage:

If the price is too low, the quantity demanded exceeds the quantity supplied. People are willing to pay more for the good.

To eliminate this shortage, sellers will raise the price, increasing the quantity supplied and reducing the quantity demanded.

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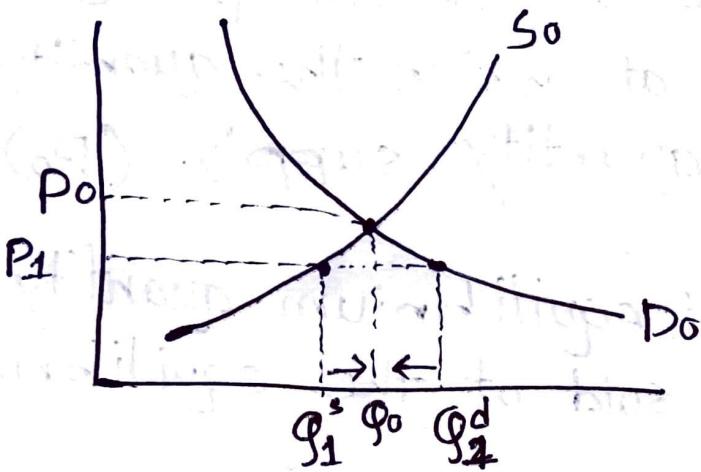
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Healthcare

excess demand = $d - b$

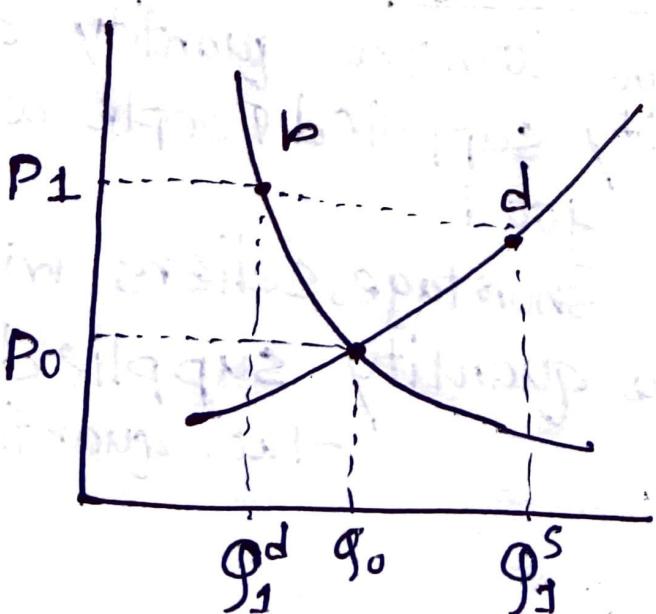
⇒ when price decreases from equilibrium level, that creates an excess demand, that causes sellers to raise the price,



Market disequilibria: Surpluses:

⇒ If the price is too high, the quantity supplied exceeds the quantity demanded. Inventories pile up.

To eliminate this surplus, sellers will lower the price, reducing quantity supplied and increasing quantity demanded.



Demand Supply, Equilibrium:

- If the demand and supply curve for comp. are:
- $D = 100 - 6P$, $S = 28 + 3P$; where P is the price of computers.
- What is the quantity of computers bought and sold at equilibrium?
- What will be the equilibrium price?

Ans:
$$\begin{aligned} D &= S \\ 100 - 6P &= 28 + 3P \end{aligned}$$

$$\Rightarrow 9P = 72 \therefore P = 8$$

Equilibrium quantity $\Rightarrow D = 100 - 6 \times 8 \quad | \quad S = 28 + 3 \times 8$

$$= 52$$

- Demand curve \rightarrow always downward sloping
- Supply curve \rightarrow always upward sloping
- Intersection \rightarrow Equilibrium

Graps:

→ a) Both demand and supply might change.

~~DD↑ & SS↑ [Price same, no change in price]~~

① a) Both demand & supply might change at the same time in real life examples:

1. Both demand and supply increases:

a) $DD\uparrow = SS\uparrow$ [no changes in price]

10% demand increase — 10% supply increase

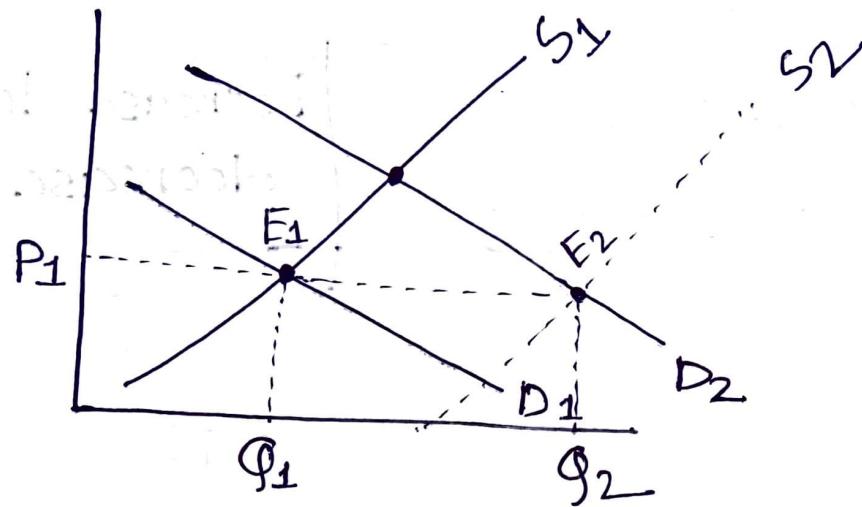
b) $DD\uparrow > SS\uparrow$

20% demand increase — 10% supply increase

c) $DD\uparrow < SS\uparrow$

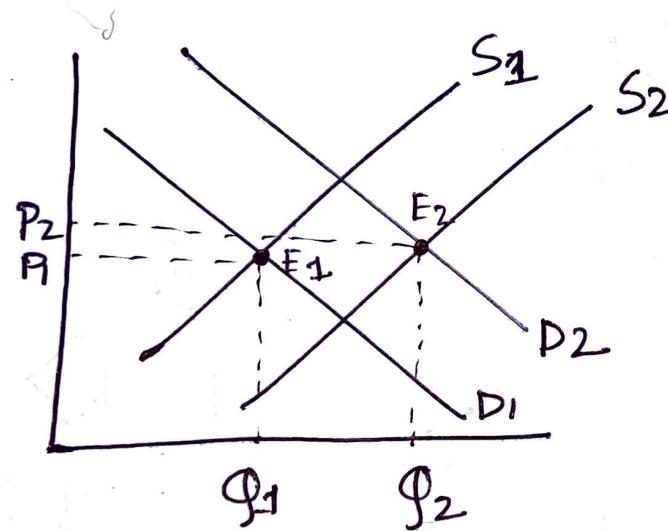
10% demand increase — 20% supply increase

1[a]

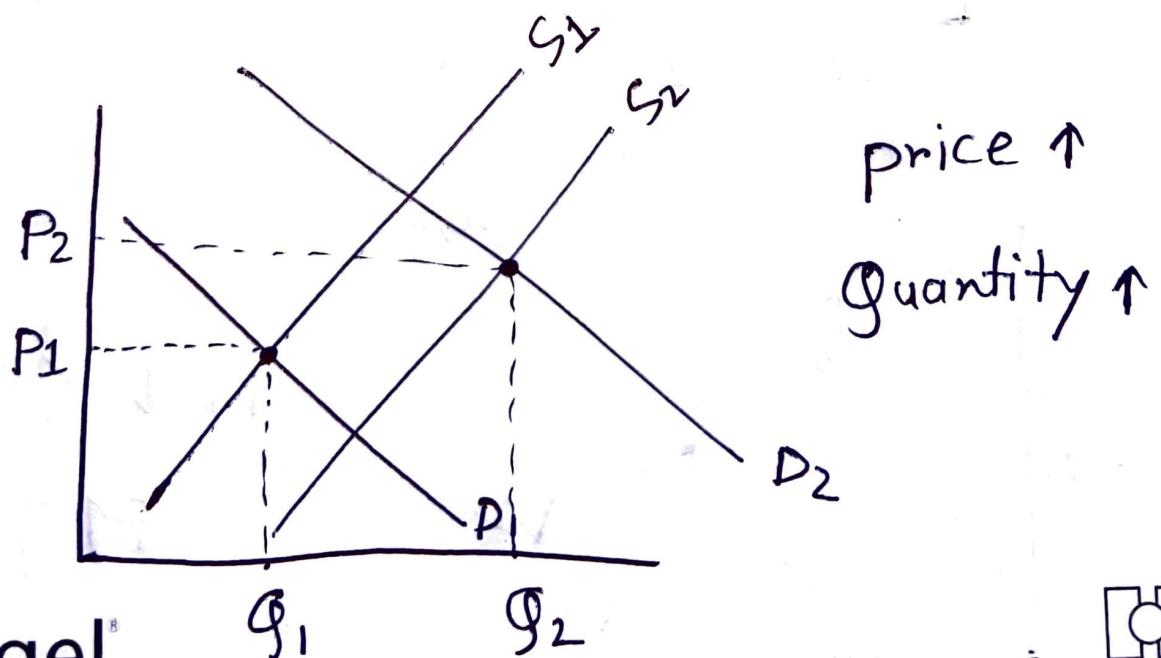


Effect: Price unchanged, consumption ↑
↳ time for more profit.

1[b]



1[c]



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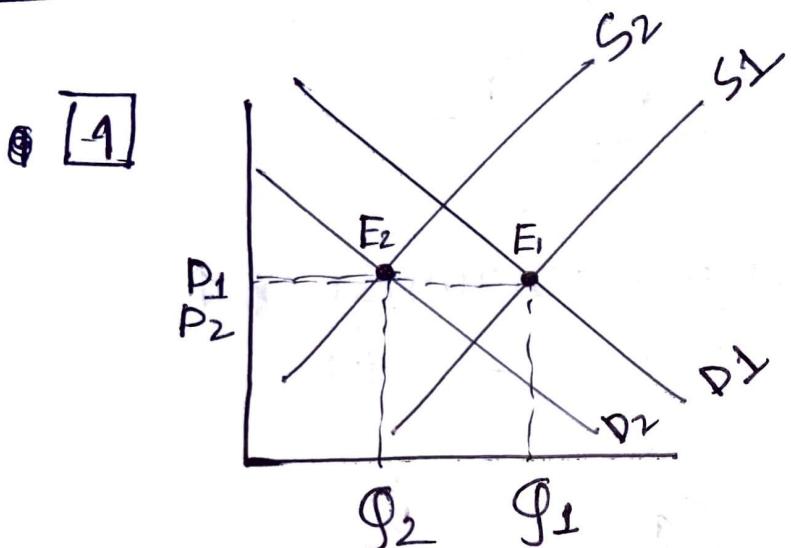


2 $DD \downarrow \approx SS \downarrow$ [P same]

5 $DD \downarrow > SS \downarrow$

6 ~~DD~~ $DD \downarrow < SS \downarrow$

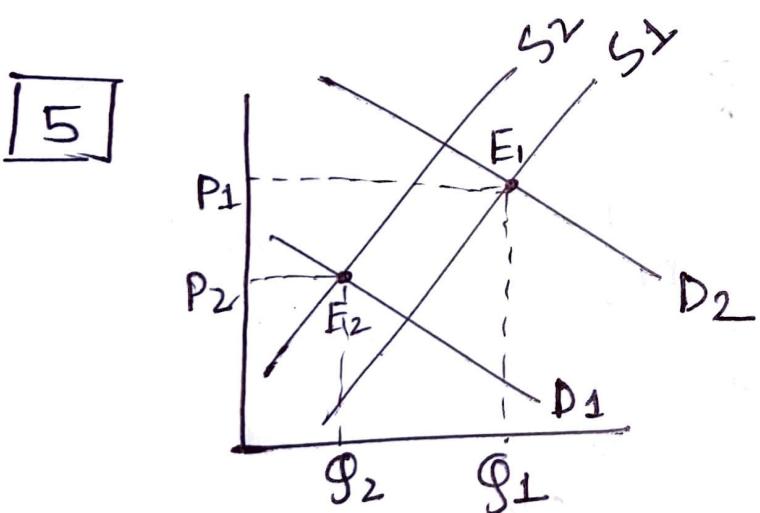
Decrease demand,
decrease supply



Effect:

$DD \downarrow \approx SS \downarrow$

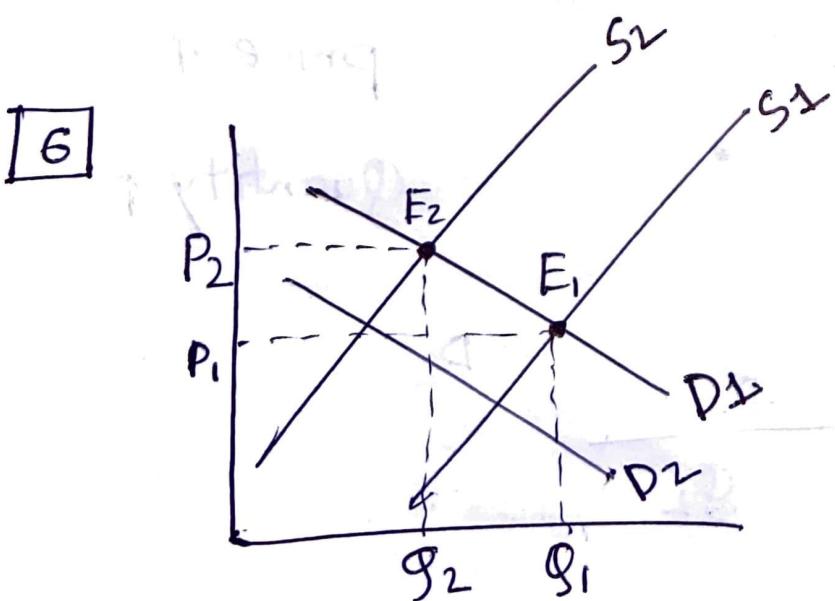
P same Q ↓



Effect:

$DD \downarrow > SS \downarrow$

P ↓ Q ↓

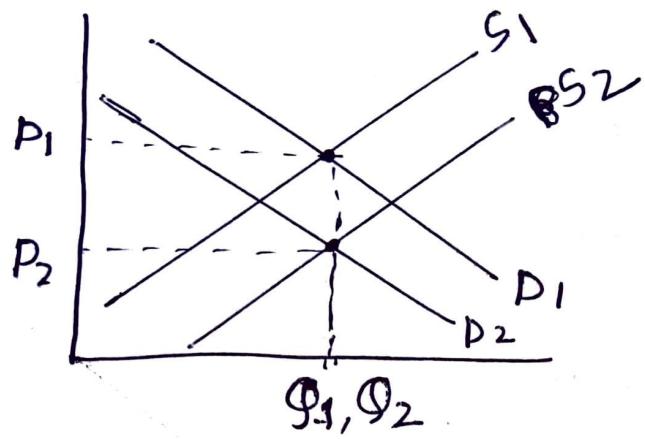


$DD \downarrow < SS \downarrow$

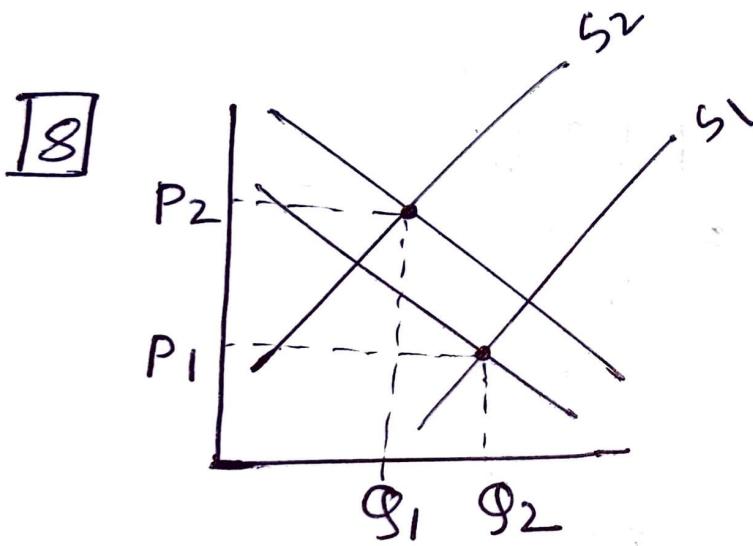
P ↑ Q ↓

Increase demand, decrease supply:

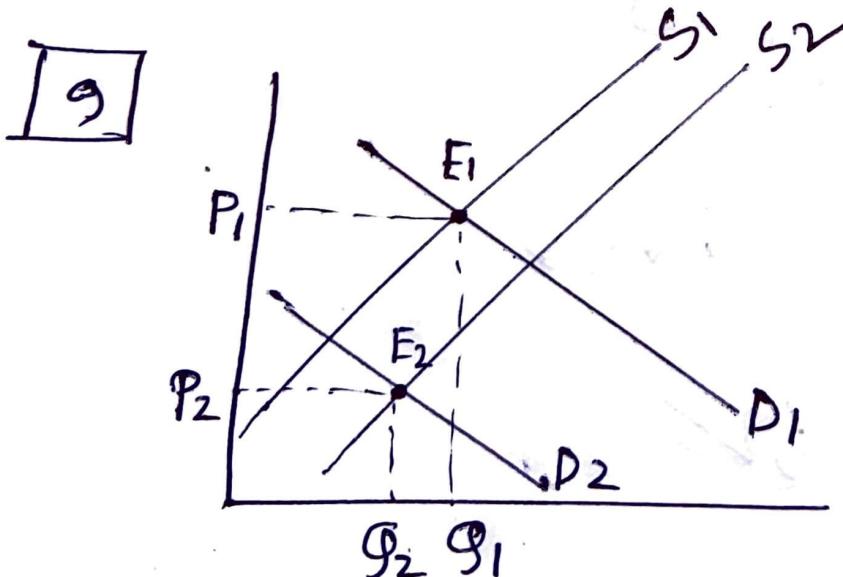
DD↑ ≈ SS↓



DD↑ ≈ SS↓
P↑ Q same



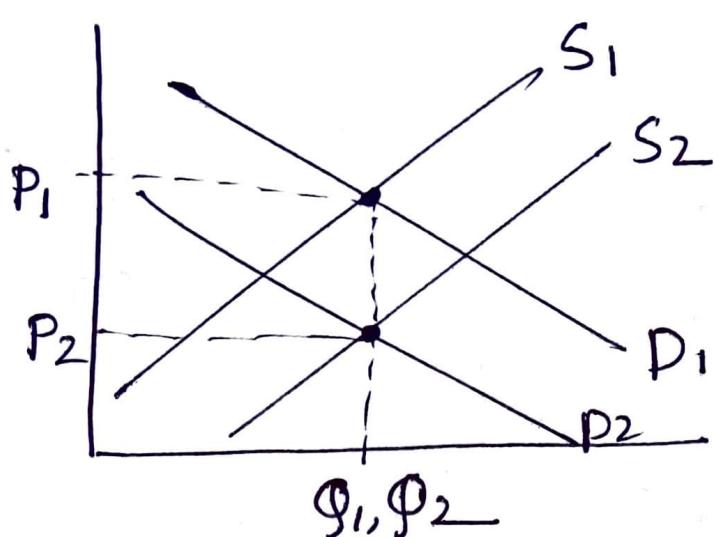
~~DD↑ ≈ SS↓~~
DD↑ < SS↓
Q↓ P↑



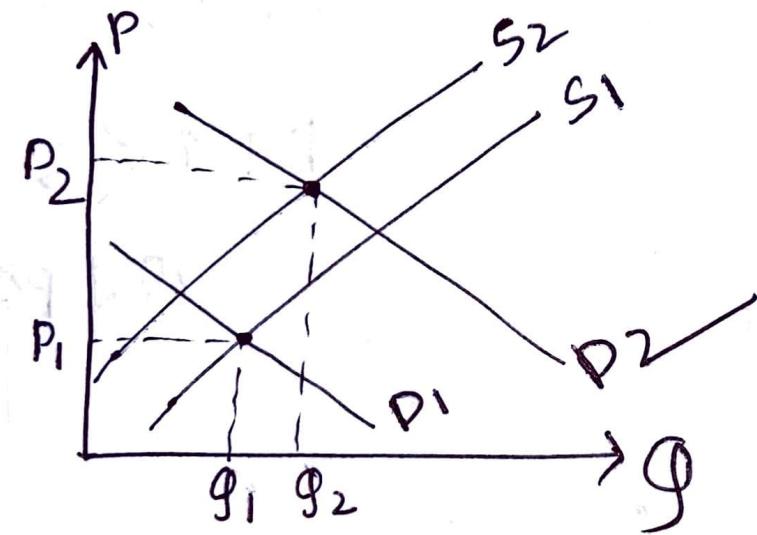
DD↑ > SS↓
Q↑ P↑

Increase supply, decrease demand

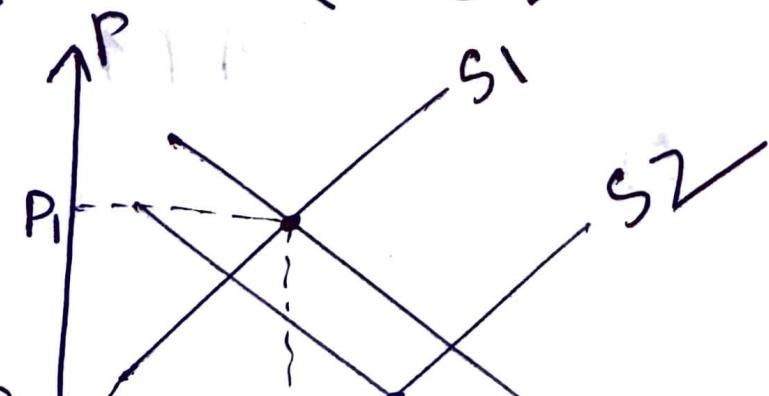
10 $DD \downarrow \approx SS \uparrow$ Q same P \downarrow



11 $DD \downarrow > SS \downarrow$ P \downarrow Q \downarrow



12 $DD \downarrow < SS \downarrow$ P \downarrow Q \downarrow



Elasticity

P↑ Qd↓

Decrease in demand

fig 7

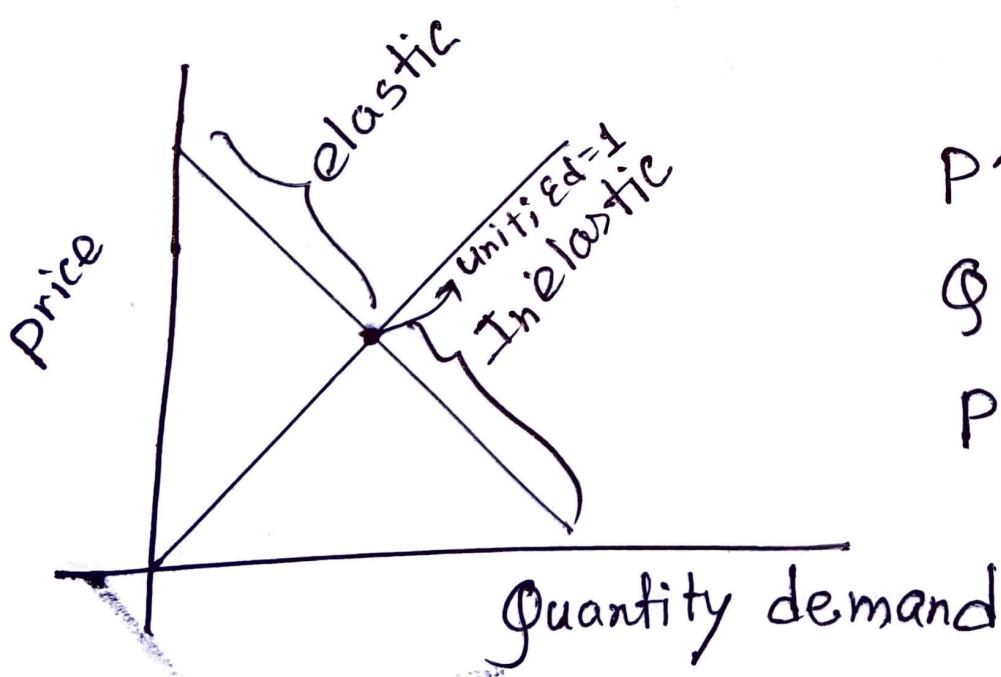
Fig 8

Fig 9

Price Elasticity of Demand:

$$Ed / PED = \left| \frac{\% \Delta \text{ in } Q_d}{\% \Delta \text{ in } P} \right|$$

- $Ed / PED > 1$: Elastic demand (^{Luxury} good)
- $Ed / PED < 1$: Inelastic demand (^{Necessary} goods)
- $Ed / PED = 1$: Unit elastic demand
 $= 0$: Perfectly inelastic demand
(Extremely ^{Luxury} demand)
- $= \infty$: Perfectly elastic demand



$$\begin{aligned} P \uparrow Q_d \downarrow \\ Q = f(P) \\ P = f^{-1}(Q) \end{aligned}$$

Price Elasticity of Demand and Total Revenue:

$$TR = P \times Q$$

P	Q	TR
100	100	10000
110	95	10450

$$|Ed| = \left| -\frac{5}{10} \right| = 0.5 \text{ [Inelastic]} \quad P \uparrow TR \uparrow$$

P	Q	TR
100	100	10000
90	105	9450

$$|Ed| = 0.5 \text{ [Inelastic]} \quad P \downarrow TR \downarrow$$

P	Q	TR
100	100	10000
110	80	8800

$$|Ed| = \frac{20}{10} = 2 > 1 \quad \text{[elastic]} \quad P \uparrow TR \uparrow$$

<u>P</u>	<u>Q</u>	<u>TR</u>
100	100	10000
90	120	10800

$$| \epsilon_d | = \frac{20}{10} = 2 > 1, \text{ elastic} \quad P \downarrow \text{TR} \uparrow$$

$$PED = \frac{120 - 150}{150 - 60} = -3.0$$

$$\left| \frac{\frac{60 - 70}{70} \times 100}{\frac{150 - 120}{120}} \right| = 0.6668 \xrightarrow{-1} \text{[Inelastic]}$$

$$\frac{7}{9} \geq 1 \text{ [elastic]}$$

Price Elasticity of Supply (PES):

P↑ Q^s↑

P↓ Q^s↓

$$\epsilon_s = \frac{\% \Delta \text{ in } Q^s}{\% \Delta \text{ in } P}$$

$\epsilon_s > 1$ = elastic supply

$\epsilon_s < 1$ = inelastic supply

$\epsilon_s = 1$ = unit supply