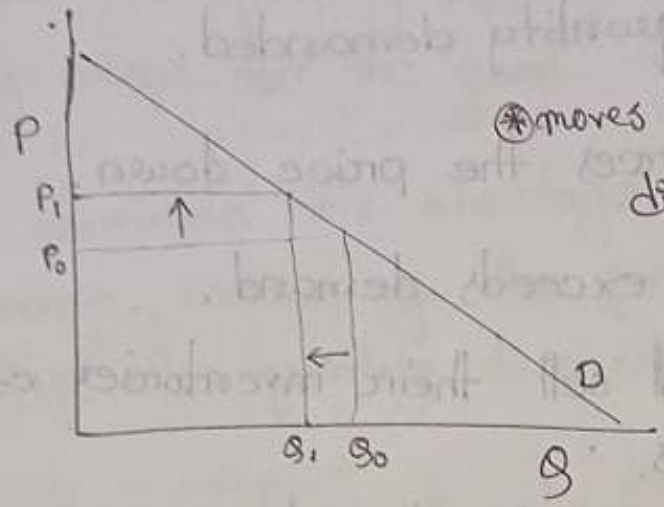
Video - 12 (Direction Vs Scale)/size

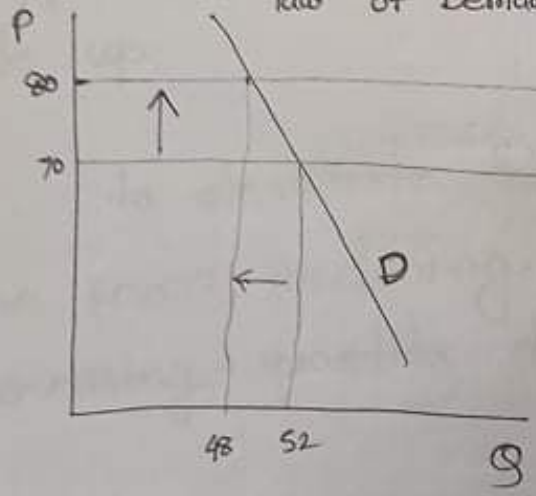
Law of Demand $P \uparrow\downarrow \rightarrow Q_D \downarrow\uparrow$ (Depend on Directions)



*moves in opposite direction.

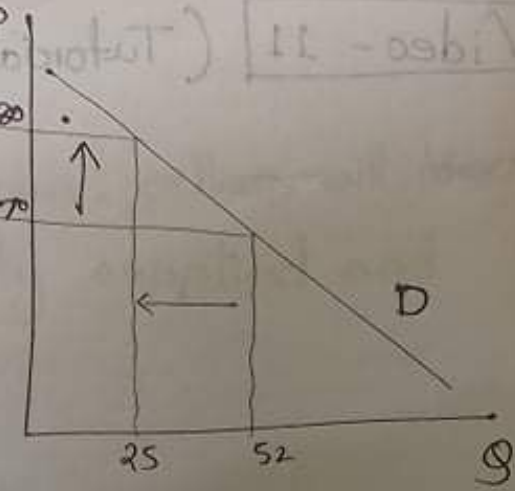
Law of Supply $P \uparrow\downarrow \rightarrow Q_D \uparrow\downarrow$ (Depend on Directions)

These two satisfy the law of Demand



Medicine

~~Weak~~ (weak relationship)
{খুব বেশিদূর demand slightly বেশি}



Coke

(Strong relationship)
{খুব বেশিদূর demand অনেক বেশি}

Video - 13 (Intro of Elasticity)

- Direction vs Scale / Size
- Responsiveness & Elasticity
- 4 types of elasticity
- calculating elasticities

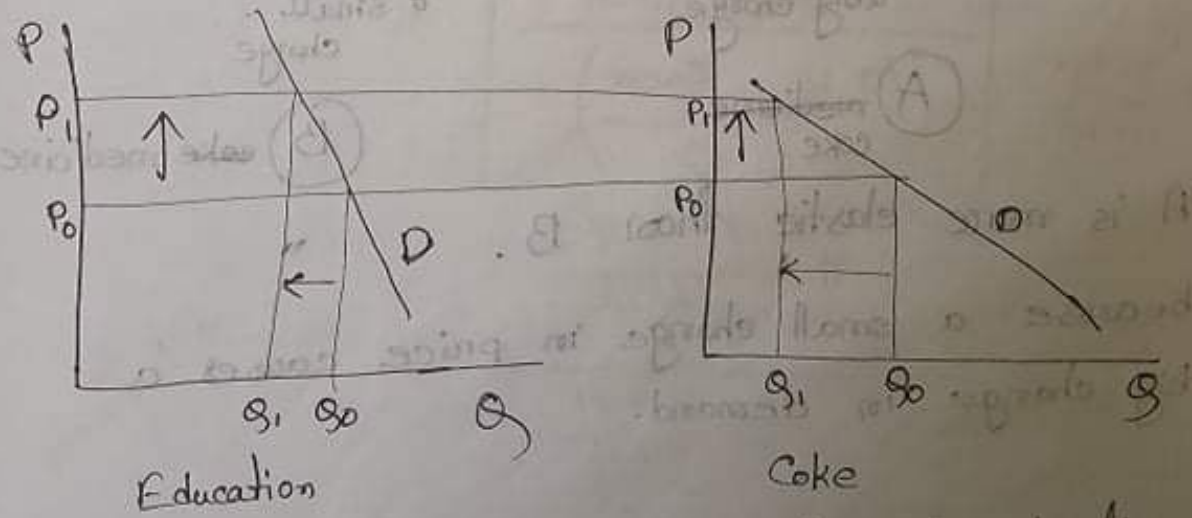
} level 1

- factors effecting elasticity
- Analysing the market using elasticity

} level 2

- Solve problem } level 3

Video - 14 Responsiveness & Elasticity

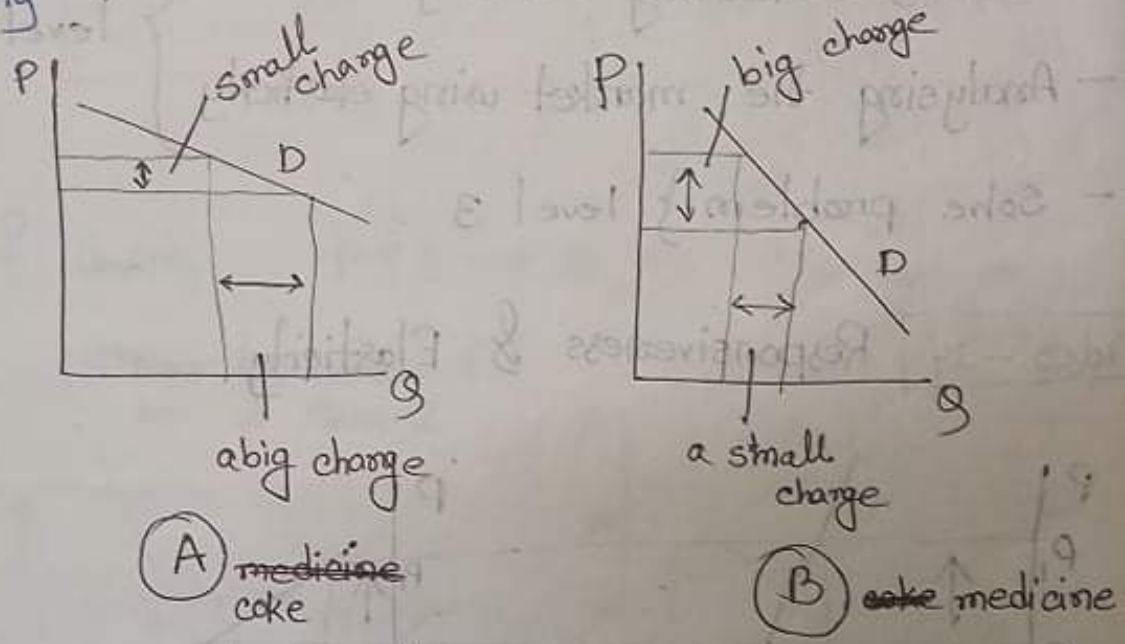


Coke is more price responsive than to education.

Responsiveness

If there is a huge change in quantity demand due to price change then the product is price responsive and their relationship is strong.

Elasticity



(A) ~~medicine~~ cake

(B) ~~cake~~ medicine

A is more elastic than B.

because a small change in price causes a big change in demand.

Video – 15 (Price Elasticity of Demand) PED

- PED is one of the types of Elasticity.
- The % changes in Q_D when P changes by 1%.
  (this % will always be less than 1)

Formula of PED

$$PED = \frac{\left[\frac{\text{new } Q_D - \text{old } Q_D}{\left(\frac{\text{new } Q_D + \text{old } Q_D}{2}\right)}\right]}{\left[\frac{\text{new } P - \text{old } P}{\left(\frac{\text{new } P + \text{old } P}{2}\right)}\right]}$$

$$= \frac{\frac{80 - 88}{\frac{80+88}{2}}}{\frac{14 - 10}{\frac{14+10}{2}}}$$

$$= -0.39$$

Example:

	P	Q_D
old	75	20
new	90	175

$$PED = \frac{\left[\frac{175-200}{\left(\frac{175+200}{2}\right)}\right]}{\left[\frac{90-75}{\left(\frac{90+75}{2}\right)}\right]}$$

$$= \frac{\left(\frac{-25}{187.5}\right)}{\left(\frac{25}{87.5}\right)}$$

$$= -0.47$$

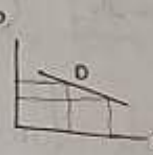
we get the negative value because of the law of demand.

$P = \frac{1}{Q_D}$ — D

∴ if price change by 1%. Q_D will change by 0.47%.

Values of PED

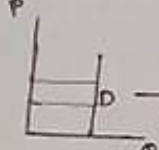
1. PED $< -1 \longrightarrow$ PED is elastic



2. PED $\in (0, -1) \longrightarrow$ PED is inelastic

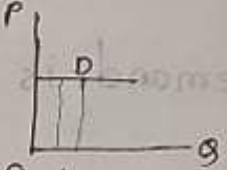
3. PED $= -1 \longrightarrow$ PED is unit elastic

4. PED $= 0$



$\rightarrow$ perfectly in elastic

5. PED $= \infty \rightarrow$ perfectly elastic



$\rightarrow$ a change in price has no effect in Q_D.

$\rightarrow$ even if price increase slightly, Q_D will fall to 0.

Video - 16 (Total Expenditure & Total Revenue)

Normal formula of TE

total expenditure = $Q \times P$

(TE)

- if demand is elastic → due to 1% increase in ~~price~~ P,

$TE = Q \times P$
$\downarrow \quad \downarrow$

Q_D will fall by more than 1%.

- if demand is inelastic → due to 1% increase in P,

$TE = Q \times P$
$\downarrow \quad \downarrow$

Q_D falls by less than 1%

total revenue = $Q \times P$

Video - 17 (Income Elasticity of Demand) YED

- The % change in Q_D when income changes by 1%.

YED Formula

$$YED = \frac{\left[\frac{\text{new } Q_D - \text{old } Q_D}{\left(\frac{\text{new } Q_D + \text{old } Q_D}{2}\right)}\right]}{\left[\frac{\text{new } Y - \text{old } Y}{\left(\frac{\text{new } Y + \text{old } Y}{2}\right)}\right]}$$

Example:	Y	Q_D
old	10000	50
new	12000	80

$$YED = \frac{\left[\frac{80-50}{\left(\frac{80+50}{2}\right)}\right]}{\left[\frac{12000-10000}{\left(\frac{12000+10000}{2}\right)}\right]}$$

$$= \frac{\frac{30}{65}}{\frac{2600}{11000}}$$

$$= 2.54$$

if income change by 1%, Q_D will change by 2.54%.

Values of YED

1. YED $< -1 \rightarrow$ elastic
2. YED $\in (-1, 0) \rightarrow$ inelastic

} inferior goods (−) decrease case

3. YED $\in (0, 1) \rightarrow$ inelastic
4. YED $> 1 \rightarrow$ elastic

} normal goods (+) increase case

Video – 18 (Cross Elasticity of Demand) XED

— The change in Q_D of Good A if the price of Good B changes by 1%.

Formula of XED

$$XED = \frac{\left[\dfrac{\text{new } Q_D^A - \text{old } Q_D^A}{\left(\dfrac{\text{new } Q_D^A + \text{old } Q_D^A}{2}\right)}\right]}{\left[\dfrac{\text{new } p^B - \text{old } p^B}{\left(\dfrac{\text{new } p^B + \text{old } p^B}{2}\right)}\right]}$$

Example:	p^B	Q_D^B	Q_D^A
new	100	60	90
old	120	50	110

$$PED^B = \frac{\left[\frac{50-60}{\left(\frac{50+60}{2}\right)}\right]}{\left[\frac{120-100}{\left(\frac{120+100}{2}\right)}\right]}$$

$$= \frac{\frac{-10}{55}}{\frac{20}{110}}$$

$$= -1$$

∴ when p^B change by 1%, Q_D^B change by 1%

B is unit elastic

Values of XED

1. XED $< -1 \rightarrow$ elastic
2. XED $\in (-1, 0) \rightarrow$ inelastic } complementary goods
3. XED $\in (0, 1) \rightarrow$ inelastic
4. XED $> 1 \rightarrow$ elastic } Substitute goods

Video - 19 (Price Elasticity of Supply) PES

— The change in Q_s when the price changes by 1%.

Formula of PES

$$PES = \frac{\left[\frac{\text{new } Q_s - \text{old } Q_s}{\left(\frac{\text{new } Q_s + \text{old } Q_s}{2}\right)}\right]}{\left[\frac{\text{new } P - \text{old } P}{\left(\frac{\text{new } P + \text{old } P}{2}\right)}\right]}$$

Example:	P	Q_s
old	85	93
new	60	71

PES is positive due to the law of demand.

Value of PES

1. PES $\in (0,1)$ → Supply is inelasticity
2. PES > 1 → Supply is elasticity

Video-20 (Interpreting the values of Elasticity)

Price elasticity of demand

- This is always negative and 0 sometimes

Income elasticity of demand

- This can be positive and negative

Cross elasticity of demand

- This can be both positive and negative
- XED < -1 elastic ø complement
- $0 > XED > -1$ inelastic complement
- XED $= 0$ no relations
- $1 > XED > 0$ inelastic substitue
- XED > 1 elastic substitute
- XED $= -\infty$ perfect complements
- XED $= \infty$ perfect substitutes

Price elasticity of supply

- This is always positive due to the law of supply
- PES $= 0$ perfectly inelastic
- $1 > PES = 0$ inelastic

- PES = 0 unit elastic

- PES > 1 elastic

- PES = ∝ perfectly elastic

Income elasticity of demand

- $^{Y}\!/_{}$PED = ∝ perfectly elastic
- $^{Y}\!/_{}$PED < -1 elastic
- $^{Y}\!/_{}$PED = -1 unit elastic
- 0 < $^{Y}\!/_{}$PED < -1 Inelastic
- $^{Y}\!/_{}$PED = 0 Perfectly inelastic

Price elasticity of Demand

PED = ∝ perfectly elastic

Price elasticity of Demand

PED = ∞ perfectly elastic

PED < -1 elastic

PED = -1 unit elastic

$0 <$ PED < -1 inelastic

PED = 0 perfectly inelastic

Income elasticity of Demand

YED < -1 elastic inferior

$-1 <$ YED < 0 inelastic inferior

YED = 0 no relation

$1 >$ YED > 0 inelastic normal

YED > 1 elastic normal

Video - 21 (Factors that affects the elasticity of Demand)

1. closeness of substitutes

close substitute → elastic demand

no close substitute → inelastic demand

2. Proportion of income spent

large part of income → elastic demand

small part of income → inelastic demand

3. Time since the price change

short run → inelastic demand

long run → elastic demand

Video-22 (The factors that affect the elasticity of supply)

~~closeness of substitutes~~

1. Resource substitution possibility

easy substitutability → elastic supply

not easy substitutability → inelastic supply

2. Time frame of supply

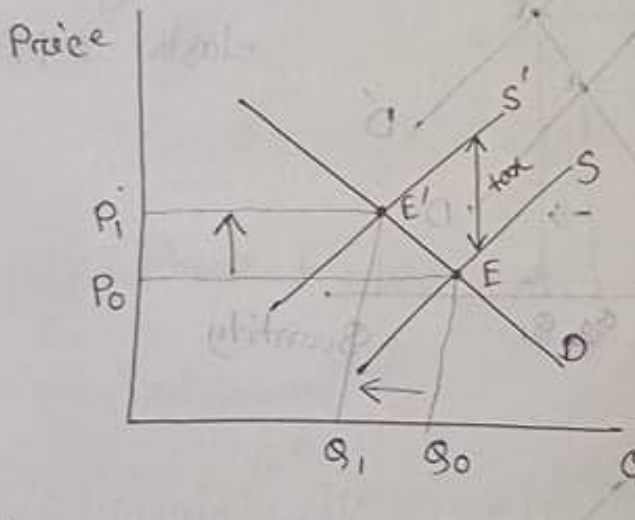
short run → inelastic supply

long run → elastic supply

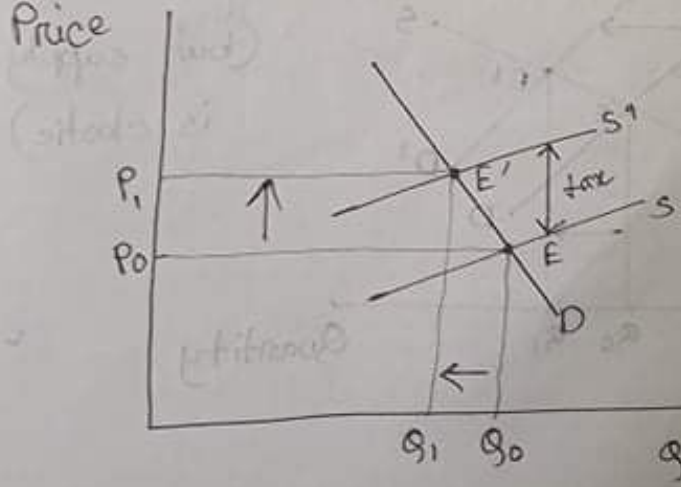
Video - 23 (Elasticity of Demand and decision making) :)

- That means making decision for a product by knowing their elasticityness.

1. government wants to discourage the compansation of soda



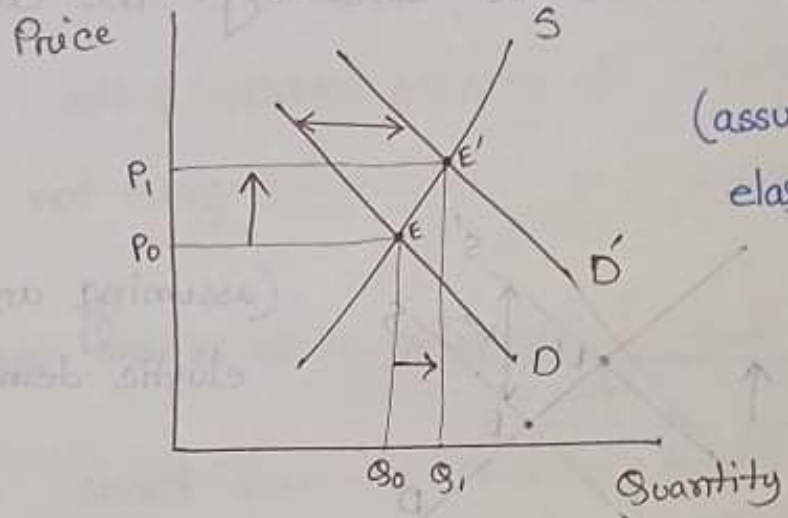
(assuming an elastic demand)



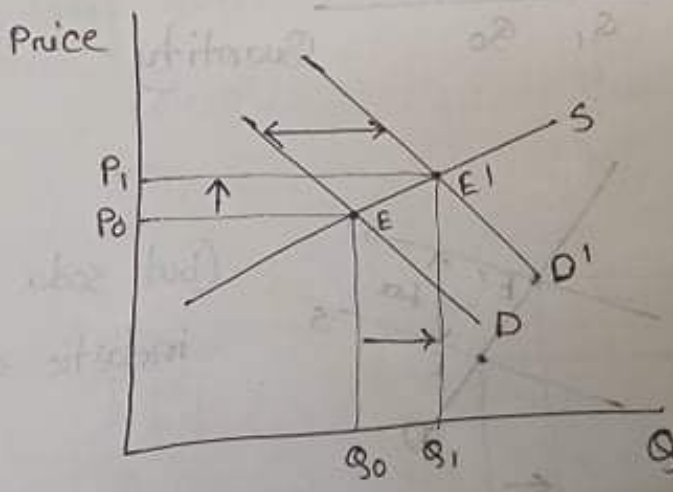
(but soda has an inelastic demand)

Video - 24 (Elasticity of supply and decision making)

A person wants to produce and sell ice-creams at home.



(assuming an elastic supply)



(but supply is elastic)

Video - 25 (Factors that affect the Elasticity of supply)

1. Resource Substitution Possibility

Easy substitutability → elastic supply

not easy substitutability → inelastic supply

2. Time frame of Supply

Short run → inelastic supply

long run → elastic supply

Video - 26 (Price Elasticity of Demand)

Elasticity of Demand

Elasticity of Demand = the percentage change in quantity divided by the percentage change in price.

$$E_D = \frac{\%\Delta Q_D}{\%\Delta P}$$

$$ED = \frac{\Delta Q_D \%}{\Delta P \%}$$

where Δ is the mathematical symbol for change in.

— The E_D is always negative, so we typically drop the negative sign and use absolute value instead.

Values for Demand Curve

$|E_D| < 1$ → demand curve is inelastic

$|E_D| > 1$ → demand curve is elastic

$|E_d| = 1$ → demand curve is unit elastic

Midpoint formula of E_D

$$E_D = \frac{\% \Delta Q_D}{\% \Delta P} = \frac{\frac{\Delta Q_D}{Avg.Q_D} \times 100}{\frac{\Delta P}{Avg.P} \times 100}$$

or,

$$E_D = \frac{\frac{Q_{after} - Q_{before}}{(Q_{after} + Q_{before})/2}}{\frac{P_{after} - P_{before}}{(P_{after} - P_{before})/2}}$$

Ex: At the initial price of 10, the quantity demanded is 100. when the price rises to 20 the quantity demanded falls to 90. what is the elasticity?

$$E = \frac{\% \Delta Q_D}{\% \Delta P} = \frac{\frac{\Delta Q}{\text{Avg. } Q}}{\frac{\Delta P}{\text{Avg. } P}}$$

$$\frac{\frac{\Delta Q}{\text{Avg. } Q}}{\frac{\Delta P}{\text{Avg. } P}} = \frac{\frac{90 - 100}{(90 + 100)/2}}{\frac{20 - 10}{(20 + 10)/2}}$$

$$= \frac{\frac{-10}{95}}{\frac{10}{015}} = \frac{-0.105}{0.666} \cong -0.158$$

Ans.

its inelastic

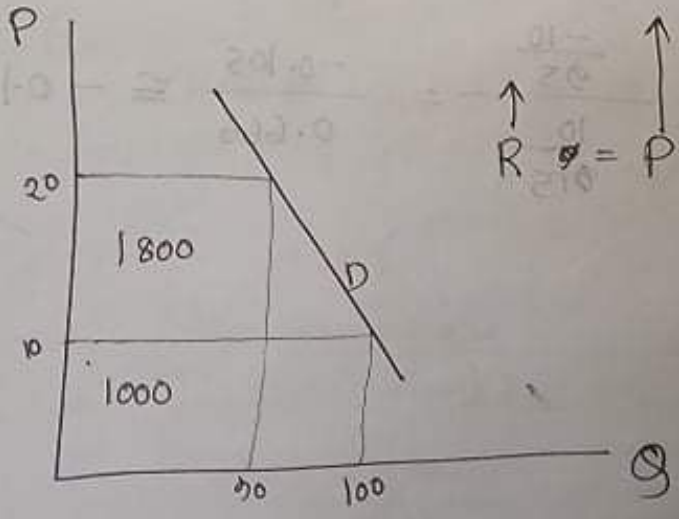
- A firm's revenues are equal to price times quantity sold

Revenue = Price x Quantity

$R = P \times Q$

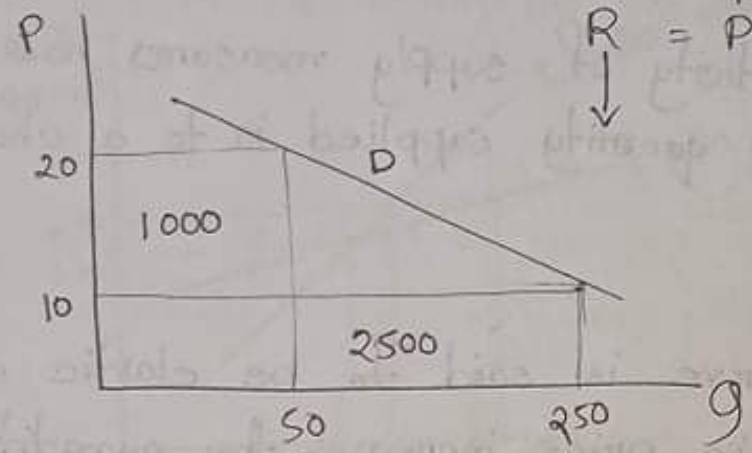
- The elasticity of demand is about the relationship between price and quantity and so will also have implications for revenue.

(1) Revenues Rise as Price Rises if Demand is Inelastic



$R = P \times Q$

② Revenues Fall as Price Rises with Elastic Demand Curves



$R = P \times Q$

Relationship ~~among~~ between Elasticity of Demand and Revenues

$|E_D| < 1$ → Inelastic → P & R move together

$|E_D| > 1$ → Elastic → P & R move opposite

$|E_D| = 1$ → Unit Elastic → P moves but R remains same

1 Video - 27 (Price Elasticity of Supply)

Elasticity of Supply

The elasticity of supply measures how responsive the quantity supplied is to a change in price.

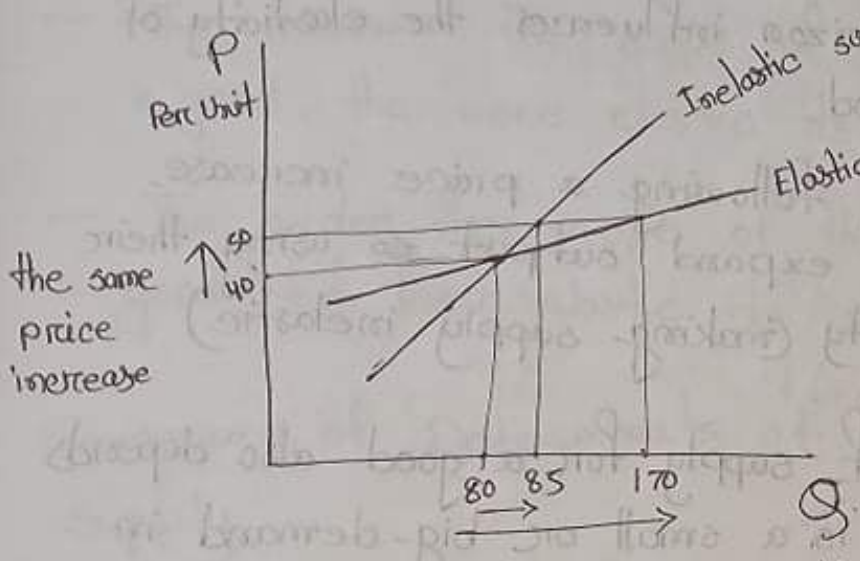
— A supply curve is said to be elastic when an increase in price increases the quantity supplied a lot. (and vice versa)

— A supply curve is said to be inelastic when the same increase in price increases quantity supplied just a little.

Determinants of Elasticity of supply

1. change in per unit costs with increased production
2. Time Horizon
3. Share of Marcket for inputs
4. Geographic Scope

(1) Elasticity of Supply Captures the Sensitivity of Quantity Supplied to changes in price



causes a small increase in quantity supplied if supply is inelastic

causes a big increase in quantity supplied if supply is elastic

1. The main determinant of the elasticity of supply is how quickly per unit costs increase with an increase in production
   - if increased production requires much higher costs, then the supply curve will be inelastic

Year.

— if production can increase with constant costs then the supply curve will be elastic.

2. The time horizon influences the elasticity of supply for a good

— immediately following a price increase, producers can expand output ~~so~~ using their current capacity (making supply inelastic)

3. The elasticity of supply for a good also depends on whether it is a small or big demand in its input markets, i.e. the industry's share of the demand for its inputs.

— Supply is elastic when the industry is a small demander in its input markets because supply can be expanded without causing a big increase in the demand for the industries input.

— supply is inelastic when the industry is a big demander in it's input markets.

4. The geographic scope of the market determines elasticity of supply for a good.

— The narrower the scope of the market of a good, the more elastic its supply.

— The wider the scope of the market of a good the less elastic its supply.

Summary of Determinats of Elasticity of Supply

Less Elastic	More Elastic
1. Difficult to increase production at constant unit cost	1. Easy to increase production at constant unit cost
2. Short run	2. Long run
3. Large share of market for inputs	3. Small share of market for inputs
4. Global supply	4. Local supply

- Elasticity of Supply = The percentage change is quantity supplied divided by the percentage change in price

Midpoint formula for E_S

$$E_S = \frac{\%\Delta Q_S}{\%\Delta P} = \frac{\frac{\Delta Q_S}{Avg.Q} \times 100}{\frac{\Delta P}{Avg.P} \times 100}$$

or,

$$E_S = \frac{\frac{Q_{after} - Q_{before}}{(Q_{after} + Q_{before})/2}}{\frac{P_{after} - P_{before}}{(P_{after} + P_{before})/2}}$$

Ex: At the initial price of 10, the quantity supplied is 100. When the price rises to 20, the quantity supplied is 110.

$$\frac{\frac{\Delta Q}{\text{Avg } Q}}{\frac{\Delta P}{\text{Avg } P}} = \frac{\frac{110 - 100}{(110+100)/2}}{\frac{20 - 10}{(20+10)/2}}$$

$$= \frac{\frac{10}{105}}{\frac{10}{15}} = \frac{0.095}{0.666} \cong 0.143$$

Values of E_s

$|E_s| < 1 \rightarrow$ supply curve is inelastic

$|E_s| > 1 \rightarrow$ supply curve is elastic

$|E_s| = 1 \rightarrow$ supply curve is unit elastic

Present State of International Trade

- The value of global trade is huge.
- In calendar year 2019 (January 1, 2019 – December 31, 2019), the value of global exports and imports was 49 trillion US Dollars (USD).
- The value of global exports and imports was more than half of size of the global economy (88 trillion USD) in calendar year 2019.
- In fiscal year 2020 or FY2020 (July 01, 2019 – June 30, 2020) the value of exports and imports was 83 billion USD, which is a quarter or one-forth of the size of the economy of Bangladesh (334 billion USD) in FY2020.

Comparative advantage

- It is the catalyst behind international trade.
- It refers to the situation when a country can produce a good or service at a lower opportunity cost compared to another country.

- The opportunity cost of producing a good is measured in terms of the price of that product.
- Countries gain by specializing in the production of good in which they have a comparative advantage and then trading with each other.

Video - 37 (Global markets in action - Tariff & import quota)

Tariff

- Tariff refers to a tax on a good that an importing country pays when the imported good ~~pre~~ crosses its international boundary.
- Tariffs are a source of revenue of the govt.
- Individuals who work in import competing industries, are benefitted by tariff.
- It increases the domestic production of the imported good. Hence, domestic producers of the imported good are benefitted by tariff.