



70 📖 (PILLAR #4Z) MICROECONOMICS

मुख्य परीक्षा में इसका काम नहीं इसलिए हिंदी शब्दावली की ज्यादा जरूरत नहीं।

IAS Prelims →	2012	2013	2014	2015	2016	2017	2018	2019
Microeconomics	0 MCQ	0 MCQ	0 MCQ	0 MCQ	0 MCQ	0 MCQ	1 MCQ	0 MCQ

Economics is the science which studies human behaviour in areas of consumption, production and exchange. Depending on its 'scope' of study, economics is subdivided into:

📖 Microeconomics (व्यष्टि)	🏛️ Macroeconomics (समष्टि अर्थशास्त्र)
When the economics study relates to an individual unit or part of the economy.	<ul style="list-style-type: none"> - When the study relates to the whole / aggregate economy. - It gained focus after the British economist John Maynard Keynes published '<i>The General Theory of Employment, Interest & Money</i>' (1936)
Focus on Production, Consumption, Supply-Demand, Price Determination	Focus on Income, Savings, Investment, Unemployment, GDP, Inflation, Budget, Balance of Payment etc.
	2018 Nobel (Sveriges Riksbank) Prize in Economics given to US Economists Nordhaus & Romer for ' <i>integrating climate change & technological innovations into long-run macroeconomic analysis</i> '.

70.1 📦📖 TYPES OF GOODS

70.1.1 Goods where No one pays directly & No one is excluded

Types →	☞ Free goods	🌿 Common goods	💡 Public goods
Examples	Air	Fishponds, grazing land	Street light, Defence
Free or Paid?	Free	Free	Free
Can anyone be excluded from using?	No	No	No
Rivalry in consumption?	No	Yes (1 farmer grazing his herd = less grass for others)	(usually) No.
Opportunity Cost?	No	No	Yes, Govt could have used that ₹ to develop a new app/portal with a fancy name

😞 **Tragedy of Commons:** In common goods (fishing pond, grazing land) there is rivalry in consumption - one farmer grazes sheep → less grass for next farmer. Too many farmers & sheep → grassland can't replenish & no one cares about it → negative externality for the grasshoppers, snakes etc. **Solution?** Tax on grazing rights, ceiling on number of sheep etc.

📖 ? MCQ. What is meant by 'Public Good'? (Asked in UPSC-CDS-II-2015)

- A commodity produced by the Government
- A commodity whose benefits are indivisibly spread among the entire community



- c) A Government scheme that benefits the poor households
d) Any Commodity that is very popular among general public

MCQ. Which one of the following is not a “Public Good”? (Asked in UPSC CDS-2016/1)

- (a) Light House (for ships) (b) Public Parks (c) ☒ Electricity (we pay) (d) National Defense

MCQ. If a commodity is provided free to the public by the Government, then (Q32 in UPSC Prelims 2018 Set-D)

- a) the opportunity cost is zero.
b) the opportunity cost is ignored.
☒ c) the opportunity cost is transferred from consumers of the product to tax-paying public.
d) the opportunity cost is transferred from the consumers of the product to the Government.

70.1.2 Goods where you’ve to pay ₹ ₹ else you’re excluded

Types→	Private / Economic Good	Club Good / Artificially Scarce Good
Free or Paid?	Paid	Paid
Can anyone be excluded from using?	Yes you can’t use without paying.	Yes you can’t use without paying.
Rivalry in consumption?	Yes, one person buying textbook means less units of textbook available for purchase for the next customer. Similarly TV, Fridge, Mobile etc.	No. Quantity available for purchase doesn’t decline e.g. Kindle Ebooks, iTunes, Netflix, Google play-store paid / freemium apps.

These goods can also be subclassified into:

- A. Merit Good (हितकारी वस्तुएँ) e.g. textbook & ebooks or
B. Demerit Good (अवगुण / अहितकारी वस्तुएँ) e.g. tobacco & violent video games.

70.1.3 Price Discrimination (मूल्य में भेदभाव करना)

It happens when a Company charges different price to different groups of consumers for an identical good. Example,

- Microsoft & Adobe giving ‘**educational-discount**’ to students for purchasing softwares. (Because most students can’t afford the regular price, & software serial key is a ‘club-good’ so cost of producing ‘additional unit’ is almost zero for the Company.)
- Self-financed colleges charging extra fees for **NRI quota students** for the same course. (to make more profit on limited seats).
- **Airfares** differ based on how early you book the ticket. (To ensure all seats get filled.)
- Jio prepaid plans are different for **non-prime customers** vs prime-customers. (To lure customers into buying the prime-pack.)
- **Netflix’s** subscription plans for Mobile device are cheaper than their TV plans.








MCQ. What is meant by price discrimination? (Asked in UPSC-CDS-II/2015)

- a) Increase in price of a commodity over time
☒ b) A situation where the same product is sold to different consumers for different prices
c) Subsidization of a product by the Government to sell it at a lower price
d) General decrease in price of a commodity over time



71 MICROECONOMICS → DEMAND (मांग)

71.1 DEMAND TYPES FOR ECONOMIC GOOD

 Individual Demand	⇒ Demand by one person / household e.g. 10 kg onion.
 Market Demand	⇒ Total Sum of all households' demands e.g. 1 lakh kg onions + 1 lakh kg Potatoes..
 Ex Ante	⇒ Actual need of a consumer. He wanted to buy 10 kg onion
 Ex Post	⇒ Need of consumer changed due to market factors. Although he wanted to buy 10 kg but bought only 5 kg due to price rise / supply shortage.
Joint Demand 	⇒ Items used together and bought together. E.g. Car-Petrol, Tea-Sugar, Bread-Butter, Cigarette-lighter. These are examples of 'joint-demand'. ⇒ Here, If car becomes expensive then demand of petrol also falls as less people buy car. And vice versa.
Composite Demand 	⇒ Total demand of a good with multiple alternative uses. ⇒ E.g. Steel → demanded by spoons & cutlery factories, pipemakers, automobile industry etc.
Derived Demand 	⇒ Customer wants to buy an apartment → A builder starts constructing an apartment, then ⇒ It leads to demand of steel + wood + cement = this is 'derived demand'. ⇒ Also leads to demand of Land + Labour + Capital to build that apartment. Therefore, 'Demand for factors of production' is said to be a 'derived demand'.

 **MCQ. The demand for a “factor of production” is said to be derived demand because (Asked in UPSC APFC/EPFO-2016)**

- (a) It is a function of the profitability of an enterprise
- (b) It depends on the supply complementary factors
- ☒ (c) It stems from the demand for the final product
- (d) It arises out of means being scarce in relation to wants

71.2 PRICE CONTROL

- ⇒ **Price Ceiling** is the legal maximum price for a good or service. E.g. MRP written on a packet of biscuits, NPPA's price control over medicine and medical devices, House rent control, Rickshaw/Taxi fare ceilings,
- ⇒ **Price Floor** is the legal minimum price. E.g. Minimum wages for workers, Minimum support price (MSP) for the farmers, MSP for Minor forest produce collected by ST.

 **MCQ. Which one of the following is an example of a price floor? (CDS2019-II-Q28)**

- ☒ a) Minimum Support Price (MSP) for Jowar in India
- b) Subsidy given to farmers to buy fertilizers
- c) Price paid by people to buy goods from ration shops
- d) Maximum Retail Price (MRP) printed on the covers/packets of goods sold in India



MCQ. Which one of the following is an example of a price ceiling? (CAPF19-Q119)

- a) Fares charged by Airlines in India
- ☒ b) Price printed on biscuit packets
- c) Minimum support price for cane growers
- d) Minimum wages fixed by state Governments

DEMAND ELASTICITY : RESPONSIVENESS TO PRICE/INCOME

आप की पगार या वस्तु की कीमत में बदलाव आने पर उस वस्तु की मांग पर क्या असर होता है... वह मांग कितनी तेजी से बढ़ती या कम होती है... उसका लचीलापन (elasticity) देखना है।

71.3 DEMAND ELASTICITY TYPE#1: AGAINST PRICE OF THE GOOD

Law of demand: Consumer's demand for a good is inversely related to the price of the good (at '**Ceteris Paribus**' meaning all other things remaining same / constant- his salary doesn't increase, he doesn't fall ill, there is no new fashion for clothes, rival brand's mobile phones have not changed their price / features /added 500 cameras on back etc.)

this happens

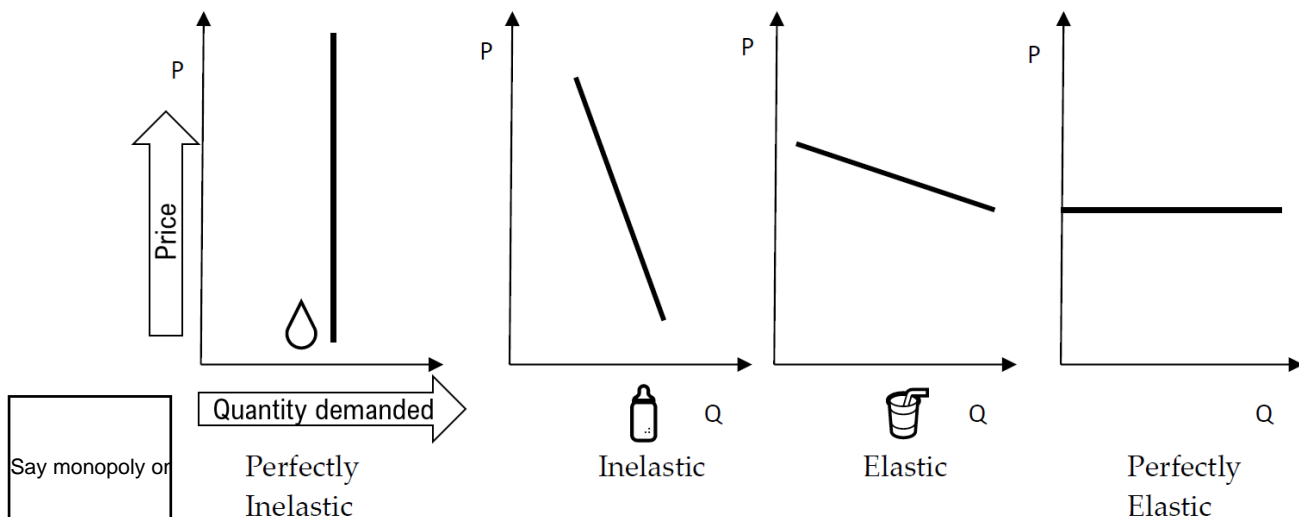
MCQ. Which one of the following is not an assumption in the law of demand?

(Asked in UPSC-CDS-2019-i)

- a) There are no changes in the taste and preferences of consumers
- b) Income of consumers remains constant
- ☒ c) Consumers are affected by demonstration effect
- d) There are no changes in the price of substitute goods.

Demonstration effect = copying other's fashion trend

For normal goods (bread, butter, soap, shampoo, icecream etc.), following could happen:



$$\text{Price elasticity of demand} = \frac{\% \text{change in demand}}{\% \text{change in price}} = \frac{(dQ/Q)}{(dP/P)}$$

71.3.1 Normal Good: Demand may be Perfectly inelastic ($e_P=0$)

- When increase or decrease in price doesn't change demand.
- E.g. If a company had monopoly on drinking water. Demand will be inelastic, because people will be (forced) to buy about the same amount whether the price drops or rises. Here slope will be vertical.



71.3.2 🕒 Normal Good: Demand may be (Relatively) inelastic ($e_P < 1$)

- Price ▲ by 10% = demand falls, BUT by less than 10%
- E.g. Milk because no close substitute, Railways by monopoly, Tobacco by addiction.

71.3.3 🕒 Normal Good: Demand may be (Relatively) elastic ($e_P > 1$)

- Price ▲ by 10% = demand ▼ by more than 10%
- Happens if close substitutes (करीबी विकल्प) available e.g. Pepsi gets expensive → people start drinking Coca Cola → Pepsi's demand falls significantly. Similarly Pizza Hut to Domino; Asus mobile to Xiaomi etc.
- This is more prevalent for Luxury / Comfort items: TV, AC, Organic Food.
- If time-period is longer → R&D → new substitutes → more fall in original item's demand (e.g. Blackberry phones in the aftermath of multiple Chinese brands)
- If buying can be postponed (e.g. jeans) then price rise → more fall in demand.

71.3.4 Normal Good: Demand may be Unitary elastic ($E_P = 1$)

- For a good when price increased by 10% = demand falls by 10%; and
- when price decreased by 20% = demand increases by 20%,
- then its Elasticity of Demand with respect to price is 'Unitary' = 1.
- Elasticity = How responsive one variable (Demand) is to a change in another variable (Price). Since the two variables are measured in percentage changes, the units of each variable are cancelled, and the resulting elasticity has no units.
- Here Price rise (y-axis) vs quantity demanded (x-axis): Curve shape= Rectangular Hyperbola (Banana shape 🍌)

71.3.5 Normal Good: Demand may be Perfectly elastic ($e_P = \infty$)

- Customers willing to buy all they can at "x" price, but will buy zero quantity at slightly higher price. Hypothetical scene, happens during Perfect competition. Here slope will be horizontal.

infinite buyer and infinite seller

71.3.6 🕒 Veblen Good: Higher price → Higher Demand

- For normal good, price of good (y-axis) vs quantity demanded (x-axis) shows a negative slope i.e. As the prices increase, the demand decreases. However in certain good or situation: when price increases, demand also increases! So it will show a positive slope ☑. (which is called '**Exceptional Demand Curve**'). For example:
- During **Curfew / Indira-Gandhi-walli-Emergency**: People expect there will be more shortage in future & prices will rise even more, so they continue to demand (& buy) more and more, even if price (of rice, petrol, LPG cylinder) keeps increasing.
- **Snob Appeal Good or Veblen Good** (named after US Economist Thorstein Veblen)
 - **Diamond, Iphone, Paintings**: higher price is seen as status symbol, so when company increases price, demand also increases.
 - Thinking expensive item = Better quality & more status (Iphone 6 to 6s)

📌 MCQ. What is the slope of exceptional demand curve? (UPSC-CDS-2015-I)

- (a) Downwards to right (b) Upwards to right (c) Horizontal (d) Upwards to left

📌 MCQ. The value of slope of a normal demand curve is (CDS2019-II-Q27)



(a) positive

(b) negative

(c) zero

(d) infinity

MCQ. Zero price elasticity of demand means (CAPF19-Q98)

- a) whatever the change in price, there is absolutely no change in demand
- b) for a small change in price, there is a small change in demand
- c) for a small change in price, there is a large change in demand
- d) for a large change in price, there is a small change in demand

MCQ. Suppose that the price of a commodity increases from ₹ 90 to ₹ 110 and the demand curve shows that the corresponding reduction in quantity demanded is from 240 units to 160 units. Then, the coefficient of the price elasticity of demand will be **(CAPF19-Q99)** **Answer Codes:** (a) 1.0 (b) 2.4 (c) 1.5 (d) 2.0

$$\text{Ans. Price Elasticity of Demand} = \frac{\% \text{ change in demand}}{\% \text{ change in price}} = \frac{(33.33\%)}{(22.22\%)} = 1.5$$

71.3.7 Giffen Good: Higher Price = ↑ Demand; Lower Price = ↓ Demand

Scottish economist Robert Giffen (1800s) observed:

- If there is an inferior good without substitutes e.g. potato, rice, jowar, bajra then its higher prices will increase the demand (because poor people fear even more shortage in future, and they don't have any 'alternative' food to replace potato, rice.) So they'll demand (& buy) more quantity as buffer.
- Giffen good's lower price will decrease its demand. Because then poor people will use their (spared) income to buy superior good in daily-diet such meat, wheat etc.
- Some economist debate Giffen Goods are hypothetical, they don't exist in real life.

Veblen and Giffen goods are special type of goods which do not follow law of demand.

- ****In Veblen Good:** higher price = higher demand, lower price will decrease demand because 'status symbol effect will decline' but it'll still not greatly decrease demand, because people will still buy paintings / iphones for their resale value in future.
- *****In Giffen Good:** lower price = greater fall in demand because people prefer to use income for better quality foods so 'income effect' dominates.

Price effect on Demand:	Higher price will result in	Lower price will result in
Normal Good	Lower Demand	Higher Demand
Veblen Good	Higher Demand	**Demand will fall but greatly fall
Giffen Good	Higher Demand	***Greater fall in demand
Inferior Good (Kerosene, coarse grains)	Higher INCOME = Lower Demand	Lower INCOME = Higher Demand

will not (I think)

71.4 DEMAND ELASTICITY TYPE#2: AGAINST INCOME OF PEOPLE

- Effect of people's income on demand of a good is called '**Income Effect**'.
- Graphs showing the relationship between income and demand are called, "**Engel Curves**" named after German Statistician Ernst Engel.



- For Normal good, Income of people (y- axis) vs Quantity demanded (x-axis) shows a positive slope (\nearrow) i.e. As your income increases, the demand of that good increases.

(that is the definition of a 'normal good')

Income elasticity of demand = %change in demand / %change in income

71.4.1 Normal Good: Demand Elasticity with respect to income

- **Ei = 1:** Demand may **unitary** elastic IF 10% salary rise = 10% demand rise.
- **Ei > 1:** Demand may relatively **more elastic** IF 10% salary rise → More than 10% demand rise e.g. mobile phones, movie tickets, Swiggy food orders, air travel & other luxury goods.
- **0 < Ei < 1:** Demand may **relatively inelastic** IF 10% salary rise → demand grows but at less than 10% e.g. daily necessities like soap, toothpaste because salary increase doesn't mean daily you'll brush & bath four times a day.
- **Ei = 0:** Demand may **perfectly inelastic** for inexpensive essential items: salt, matchbox. So, increase or decrease in salary may have no effect on its demand.

71.4.2 🐼 Inferior Good: Demand Elasticity with respect to Income

- When a poor Gullyboy becomes a famous Rapstar, he'll shift (substitute / replace) consumption pattern from Maize to Wheat, Kerosene stove to LPG stove.
- So, Inferior goods (with substitutes) like Maize, Bajra, Kerosene will show negative Income elasticity e.g. 10% salary rise → "x%" fall in their demand. Accordingly, they'll have a **Negative-slope** (\searrow). $E_i < 0$
- Thus, we can say demand for normal goods is directly related to the income of the buyer but demand for inferior goods is inversely related to the income of the buyer.

MCQ. Income elasticity of demand for inferior good is (UPSC-CDS-2013-II)

- (a) Less than one (b) Less than zero (c) Equal to one (d) Great than one

MCQ. In view of the fact that kerosene is an inferior good in India, what is/are its implication(s)? (Asked in UPSC-CDS-2015-II)

1. As households get richer, they consume less kerosene.
2. Over time there is a decline in quality of kerosene.
3. Government needs to stop subsidies on kerosene.

Codes: (a) 1 only (b) 1 and 2 only (c) 2 and 3 only (d) 1, 2 and 3

MCQ. Which of the following modes of transportation has the highest elasticity?

(Asked in UPSC APFC/EPFO-2016): (a) Air (b) Rail (c) Road (d) Water

Luxury goods are more elastic

71.4.3 🐼 ↗ ✖️ ✓ Demand Elasticity Type#3: Cross-Price Elasticity

It measures the responsiveness of demand for one good with respect to a change in the price of another good:


+ve Cross elasticity (Demand increase)	☕☕ Substitutes: Coffee and tea. If tea price increases then people will shift to coffee → coffee demand increases.
-ve Cross elasticity (Demand decrease)	🍞🧀 Complimentary Goods: Increase in bread price will reduce the demand of bread and butter both. Similarly, Pizzabread & Cheese, Car & Petrol, Cigar & Lighter.
Zero Cross elasticity (No effect on demand)	☕🌽 Unrelated Goods: Cheaper tea → no impact on corn demand.




72 MICROECONOMICS → SUPPLY (आपूर्ति)

- Stock (भण्डार) = Available quantity of goods at a particular date with the seller.
- Supply (आपूर्ति) = Quantity of goods (stock) that a seller is willing to sell.
- Total Sum of individual firms' supply = Market supply.


72.1 SUPPLY ELASTICITY AGAINST PRICE OFFERED

- For a normal good, more price offered → more entrepreneurs will manufacture → more supply.
- So for normal good, Price offered (y- axis) vs Quantity supplied (x-axis) shows a Positive slope () i.e. As price increases, the supply increases, at *ceteris paribus* (all other things remaining same- no war, disaster, hoarding etc.)
- **Break-even point** is the point on the supply curve at which a firm earns normal profit

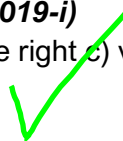
Elasticity of Supply is	When
Perfect Inelastic $E_s = 0$	<ul style="list-style-type: none"> - Price change can never change supply. e.g. <u>Monalisa</u> Painting. Medieval / Colonial era's Philately, Numismatics, Museum collections. - Here supply curve will be <u>vertical</u> () (↑).
(Relatively) Inelastic $E_s < 1$	<ul style="list-style-type: none"> - 10% price rise = supply will increase eventually but less than 10% - E.g. Milk, Tomatoes, Pulses, Electricity etc. because inputs are finite (land / cattle / coal) or its time consuming to produce more quantity.
Unitary Elastic $E_s = 1$	<ul style="list-style-type: none"> - 10% increase in price offered = 10% increase in supply.
(Relatively) Elastic $E_s > 1$	<ul style="list-style-type: none"> - 10% increase in price offered = supply will increase MORE THAN 10%. - For durable, non-perishable goods because seller will unload stock from godown. - In long run, supply will greatly increase with new plants, rival companies, R&D (e.g. mobile phones in 1990s vs 2010s)
Perfect Elastic $E_s = \infty$ (Hypothetical)	<ul style="list-style-type: none"> - At "x" price- seller willing to supply infinite quantity. At any price less than "x"- he completely stops the supply. - Here supply curve will be HORIZONTAL.

72.1.1 Supply Curve: Backward sloping when

Wages offered (y- axis) vs hourly labour supplied (x-axis) shows a backward slope (=mirrored 'C'), because beyond a point, labourer would prefer to spend time on rest / leisure instead of working more.

 **MCQ. When some goods are completely fixed in amount, regardless of price, the supply curve is (Asked in UPSC-CDS-2019-i)**

- a) horizontal b) downward sloping to the right **c) vertical** d) upward sloping to the right








$E_s = \frac{\% \text{change in supply}}{\% \text{change in price offered}}$



73 MICROECONOMICS → MARKET & COMPETITION TYPES

Market (बाजार) is a place / platform where buyer and seller strike a deal. Doesn't need geographical location. Market can be classified by on type of competition:

प्रतियोगिता	Buyers	Sellers
 Perfect Competition	INFINITE Buyers	<ul style="list-style-type: none"> - INFINITE sellers with identical products. So, even little change in price will shift ALL buyers to another seller. - So, buyer is the PRICE MAKER, Seller is the PRICE TAKER (बेचना है तो बेच, वरना फुट इधर से)
 Monopolistic Competition	MANY Buyers	<ul style="list-style-type: none"> - MANY sellers. Each seller has slightly different version of product (iphone vs Samsung Galaxy vs Oneplus) each with some loyal fans. So, a little change in price will not instantly shift all buyers to another seller. - So, Seller is the PRICE MAKER not Price TAKER (upto a level depending on brand loyalist fans)
<div>Oligopoly</div> अल्पाधिकार 	MANY Buyers	<ul style="list-style-type: none"> - Few sellers with identical product & but with intense competition among themselves e.g. SpiceJet, Jet Airways, IndiGo, Vistara so price wars, discount-offers, advertisement cost high. - Cartel (उत्पादक संघ)= when they form a gang to restrict the supply / raise prices e.g. OPEC oil producing nations. - To fight against cartelization / price fixing once we had Monopolies & Restrictive Trade Practices Act (MRTP: 1969) → 2002 replaced by Competition Commission of India (CCI: भारतीय प्रतिस्पर्धा आयोग), a statutory body under the Ministry of <u>Corporate Affairs</u>
Monopoly एकाधिकार 	MANY Buyers	<ul style="list-style-type: none"> - ONLY ONE Seller e.g. Indian Railways. - No close substitute or competition for a particular price / service / region. - Marketing / Advertising cost = 0 - Seller is the PRICE MAKER, Buyer is the PRICE TAKER (लेना है तो ले वरना फुट इधर से) - Duopoly= a market with just two firms. But if they form a cartel, then it'll become as if it's 'monopoly'. - Monopoly firm can restrict output, raise prices, and enjoy super-normal (= abnormally high) profits in the long run. Ofcourse, that does not happen in Indian Railways because of cross subsidization of passenger fares for populism.
<div>Monopsony</div> 	ONE Buyer	<ul style="list-style-type: none"> - MANY Sellers but only ONE Buyer. e.g. Indian Railways buying seats for railway; or Indian Army buying Uniforms / Insignia / Machineguns. - Buyer is the PRICE MAKER. Seller is the PRICE TAKER. (बेचना है तो बेच, वरना फुट इधर से) - Term was coined by British Economist Dr. Joan Robinson, she was teacher of both ManMohan & Amartyasen.



MCQ. Which one of the following is an example of a 'natural monopoly'? (Asked in UPSC-CDS-2015-II)

- (a) Indian Airlines (b) Delhi Jal Board
(c) Delhi Transport Corporation (d) Steel Authority of India

MCQ. Market with large number of sellers but each selling somewhat differentiated but close product, is termed as (Asked in UPSC-CDS-2014-II)

- (a) Perfect competition (b) Monopoly (c) Oligopoly (d) Monopolistic competition

74 MICROECONOMICS → PRODUCTION (उत्पादन)

- **'Production Function'** is the relationship between inputs used and output produced by a firm. This production function is determined by **the given** level of technology
- Since technological knowledge determines the maximum output that can be produced using different combinations of inputs, so, If the technology improves → Production Function will definitely change.
- **'Cost Function'** is the relationship between cost incurred while producing output. This cost function is determined **by level of output**. To produce more output you'll have to engage more factors of production → have to bear more cost (as wages to workers, rent on bigger factory, interest on capital).

MCQ. The production function of a firm will change whenever (Asked in UPSC-CDS-2013-II)

- (a) input price changes (b) the firm employs more of any input
(c) the firm increases its level of output (d) the relevant technology changes

Social Cost	Factories emit smoke → local residents fall ill, their cars / clothes require more frequent washing. Those are 'social cost', not recorded in company's balance sheet.
Private Cost	₹ ₹ Amount a factory owner has to spend to produce goods. Recorded in company's balance sheet.
Real Cost	A producer takes a lots of pain, stress, sacrifices and toils to establish business. This is 'real cost', CANNOT be measured in monetary terms.
Money Cost	Wage to labour, rent for building, interest on borrowed funds etc. are paid in monetary units and hence called money cost
Explicit Cost	Farmer's Cost of buying fertilizer, insecticide etc from market
Implicit Cost / Imputed cost	Farmer's (imputed) Cost of self provided inputs like farmer's own land, water, seeds saved from last crop, his own family's labour.
Normal Profit	<ul style="list-style-type: none"> - 'Normal profit' is producer's minimum expectations from a business. So long as he gets this minimum, he will continue to do this business, ELSE he will shift to another business. - So, to remain in a business, he must recover his Explicit Cost + Implicit Cost + Normal Profit.



Table 1: To Produce Vimal Gutka

Fixed Cost, Supplementary Cost, Overhead Cost, Unavoidable Cost	<p>Irrespective of how many Gutka packets are produced, industrialist will have to pay:</p> <ul style="list-style-type: none"> ⇒ Property tax, Rent on building, Depreciation of machinery ⇒ Salary to permanent employees ⇒ Interest on loan. ⇒ License fee / royalty if Gutka formula patent bought from Manikchand. <p>Here the Fixed Cost (y-axis) vs Quantity produced (x-axis): slope will be a horizontal line.</p>
Variable Cost, Prime Cost, Direct Cost, Avoidable Cost	<ul style="list-style-type: none"> - Raw Material, GST, Casual Workers, Electricity. - These costs will increase or decrease depending on how many Gutka packets are to be produced <p>Here the Variable Cost (y-axis) vs Quantity produced (x-axis): slope will be a positive slope (↗).</p>
Total Cost	It is the sum of above things (fixed + variable cost)
Average Cost	Total Cost divided by Total Units produced
Average Fixed Cost	<ul style="list-style-type: none"> - Total fixed cost divided by Total units produced. - It'll be a <u>rectangular hyperbola</u> (🍌 banana shape). c/x ? - Average fixed cost will fall with the increase in output because now the fixed cost is spread over more number of Gutka packets.

MCQ. Which one among the following is a fixed cost to a manufacturing firm in the short run? (Asked in UPSC-CDS-2013-I)

- (a) Insurance on buildings (b) Overtime payment to worker
(c) Cost of energy (d) Cost of raw materials

MCQ. The average fixed cost curve will always be (Asked in UPSC-CDS-2013-II)

- (a) a rectangular hyperbola (b) a downward sloping convex to the origin curve
(c) a downward sloping straight line (d) a U-shaped curve

74.1 ⚙️ PRODUCTION → RETURNS TO SCALE

- It's a set of laws to measure relations between increase in inputs (land, labour, capital, raw material) to increase in production of final goods / services.
- Depending on a company's size & technological progress, it could be A) increasing B) constant C) decreasing.

74.1.1 ⚙️ ⚙️ 🧠 Economies of Scale: बड़े पैमाने पर उत्पादन करने होने वाली किफायतें

- As the firm grows in size, its average fixed cost continues to decline → Production starts to become 'More PROFITABLE'.
- This happens due to better R&D, managerial & operational efficiency = less wastage of raw material, upstream expansion (e.g. Vimal buying farms in Kashmir to cultivate KESAR)
- Result: 10% increase in inputs (of land, labour, capital, raw material) brings more than 10% increase in production.



74.1.2 ⚙️ ⚙️ ⚙️ : 🧐 Diseconomies of scale

- Beyond a point, if firm grows bigger in size → production starts to become 'LESS PROFITABLE' with increased Average cost (total cost divided by total units).
- E.g. Vimal's A'bad factory increasing production from 20 lakh to 100 lakh Gutka packets but addicts in local market are limited so Vimal must send cargo to Maharashtra's market = added transportation cost + have to hire new salesmen to tie up with their pan-parlours etc.
- Accordingly, there is a Law of variable proportion: Stage-I: increasing return, State-II: **diminishing return**, State-III: negative return on production.

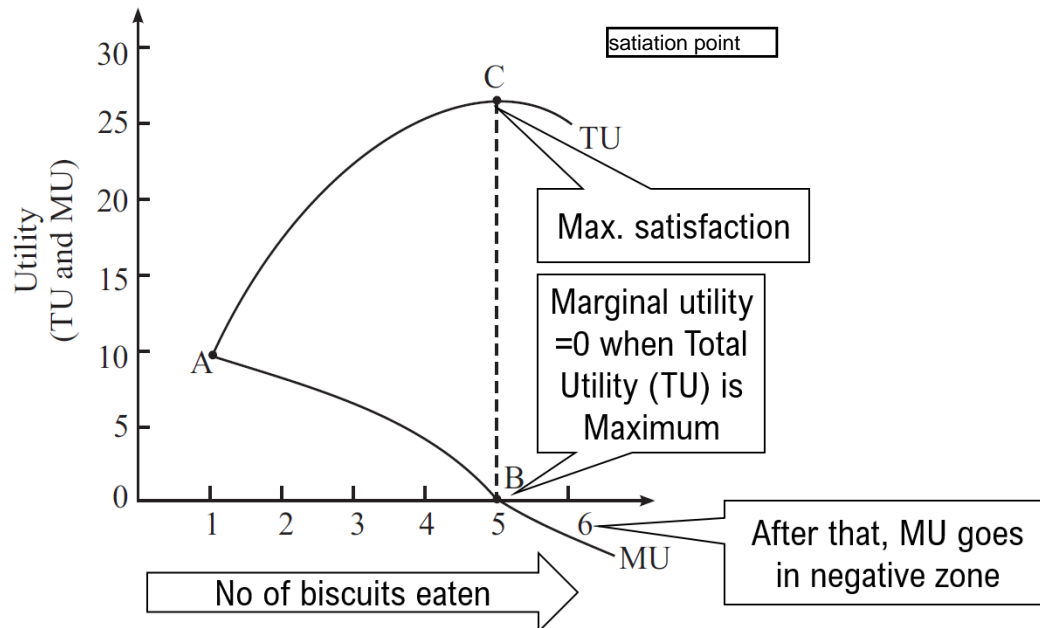
MCQ. The way total output changes due to change in all inputs in same proportion is known as law of (Asked in UPSC-CDS-2014-II)

- (a) Returns to scale (b) Diminishing returns (c) Increasing returns (d) Constant returns

75 📖 🧐 MICROECONOMICS → UTILITY, PREFERENCES & MISC.

- 😞 **Need** (जरूरत): demand of a particular good whose absence will cause death e.g. Food / Water / Air.
- 😊 **Want / Desire** (चाहत/इच्छा): demand of a good whose absence may not cause death e.g. Shelter, Clothing, Mobile etc.
- 🍀 **DEMAND**: Willingness to buy @certain price @certain time
- ⚙️ **Production**: Making goods/ services that have "utility"
- **Utility** (उपयोगिता): power of a good to satisfy your 'need / want / desire'. Utility is relative in nature. Hungry man will value a Roti more than a non-hungry man. Utility is free of morality & ethics. Customer buys knife for cutting vegetables or doing murder- utility doesn't say it's 'right' or 'wrong'.
- **Marginal Utility** (सीमांत उपयोगिता): It is the additional satisfaction from consuming one more unit. Marginal utility is usually diminishing because with every piece of biscuit your belly will start to fill up & your hunger will start to decrease. (However this law does not apply to a mad collector of rare stamps or a miser (कंजूस) who likes accumulating wealth)
- **Total Utility (TU)** = Sum of Marginal Utilities (MU). When total utility is **maximum**, marginal utility is 0. Beyond this point, total utility will decline and marginal utility will enter negative zone.

Demand: willingness to buy @ certain price @ certain time. Production: Making goods / services that have utility



MCQ. Demand of a particular commodity refers to (Asked in UPSC-CDS-2015-I)

- (a) Desire (b) Need (c) Quantity demanded
 ✓ (d) Quantity demanded at certain price during a particular period of time.

MCQ. According to the law of diminishing marginal utility, as the amount of a good consumed increases, the marginal utility of that good tends to (UPSC-CDS-2018-1)

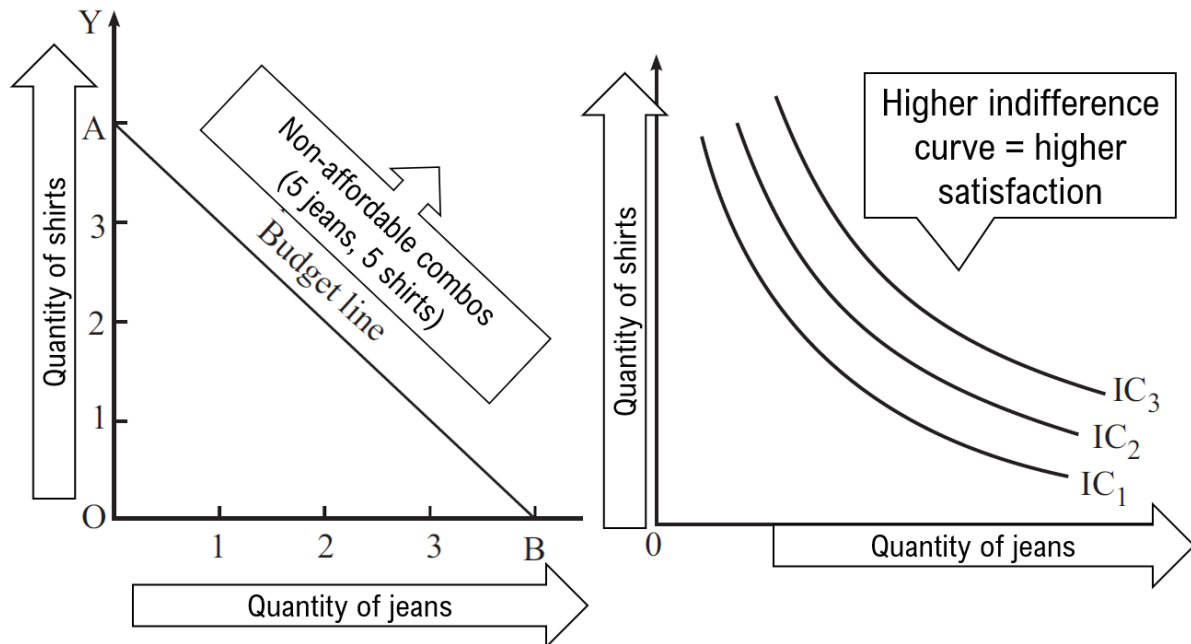
- (a) improve ✓ (b) diminish (c) remain constant (d) first diminish and then improve

MCQ. Which one of the following statements is not correct? (UPSC-CDS-2019-i)

- a) When total utility is maximum, marginal utility is zero
 b) When total utility is decreasing, marginal utility is negative
 ✓ c) When total utility is increasing, marginal utility is positive
 ✓ d) When total utility is maximum, marginal and average utility are equal to each other.

75.1 🧑🏠 PREFERENCES, INDIFFERENCES (वरीयता, उदासीनता)

- **Budget set** is the collection of all bundles that the consumer can buy with his income at the prevailing market prices. E.g. (2 jeans, 2 shirts), (4 books, 0 movie) etc.
- **Budget line** consists of all bundles which cost exactly equal to the consumer's income. Bundles above the budget line are 'not-affordable' e.g. (5 jeans, 5 shirts). & on, below are
- When a consumer consumes various goods, then there are some combinations (bundles) which may give him same satisfaction (1 jeans, 2 shirts) (2 jeans, 1 shirt). The graphical representation of such combinations is termed as **Indifference Curve**. It's convex to the origin (🍉). If there are multiple **Indifference Curves** then higher curve will give more satisfaction. Indifference curves run parallel, they don't cut / intersect each other.



- **Marginal rate of Substitution (MRS)** refers to the rate at which consumer is willing to give up number of jeans to obtain one extra shirt without affecting total satisfaction. E.g. IF (5 jeans, 3 shirts) → (2 jeans, 4 shirts) → same satisfaction, then $MRS = 5 - 2 = 3$
- **Non-monotonic preference:** For some goods, there is a perfect optimal amount beyond which it'll give negative utility / experience e.g. salt in a soup, sugar in a tea. Accordingly he will not purchase some bundle even if his budget permits e.g. (50 bags sugar, 1 bag tea).
- **Monotonic Preference:** For some goods, consumer will continue to buy more and more quantity (within his income limit) because it'll give him more utility /satisfaction. E.g more clothes & shoes for an instagram-selfie addict. More guns & ammunition for an army, So, if their budget permitted (2 guns, 50 bullets).....(1 guns, 25 bullets) → they'll always buy (2 guns, 50 bullets).

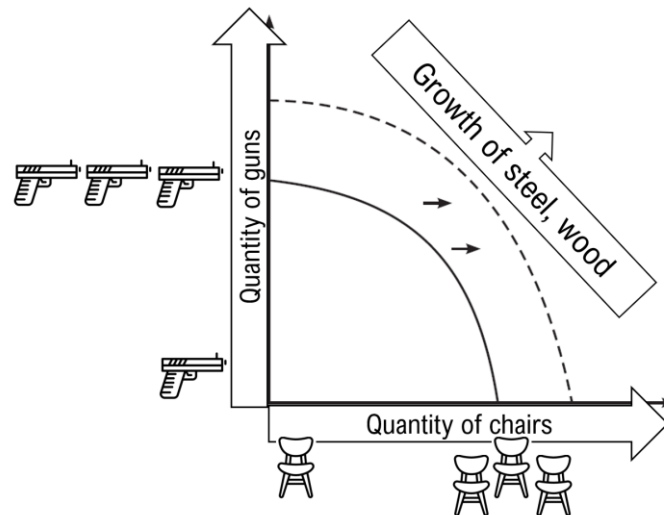
MCQ. Find correct statement(s) abt indifference curves : (Asked in UPSC-CDS-2019-i)

1. Indifference curves are convex to the origin.
2. Higher indifference curve represents higher level of satisfaction.
3. Two indifference curves cut each other.

Codes: a) 1 only ☒ b) 1 and 2 c) 2 and 3 d) 3 only

75.2 PRODUCTION POSSIBILITY CURVE

- The basic / central **Economic Problem** faced by every nation is: our resources finite, but our wants are infinite.
- If we have 100 kg steel and 100 kg wood what should we produce? (200 guns for army, 0 chairs for students), (150 guns, 50 chairs), (0 guns, 200 chairs).
- When this is plotted on a graph, the resultant curve is called **Production Possibility Curve or Production Possibility Frontier (PPF) or Transformation curve**. It is **concave from origin and slopes downward**: This means that more of a good can be produced only by sacrificing some quantity of the other good.



- **Opportunity cost** is the 'gain' foregone from the "Activity A" when you're doing "Activity B". More chairs = more comfort to students, but you've foregone the national security by NOT producing guns. Thus, the sacrifice of 'guns for army/ national security' is the 'opportunity cost' of producing chairs.
- If the economy functions at a point inside the production possibility curve (e.g. 20 guns, 20 chairs), then it indicates either underutilization or inefficient utilization of resources.
- If there is growth of resources (100 kg steel and 100 kg wood → 200-200 kgs) there will be an outward shift of the production possibility curve = higher levels of outputs possible.

MCQ. Which one of the following statements is true with regard to an economy which is on its production possibility frontier? (CAPF19-Q120)

- a) The economy has to sacrifice some production of one commodity in order to increase the production of another commodity
- b) There is no limit or constraint for the economy in the production of goods and services
- c) The economy can produce more of one commodity up to a point without reducing the production of any other commodity
- d) Its production possibility frontier is an upward sloping curve

76 ECONOMIC MODELS & CONCEPTS

Economic model is a simplified representation of real situation.

- Such models to describe economic activities, their relationships and their behaviour. E.g. circular flow of income between household and business firms.
- Such models explain how the economy, or part of the economy, works.
- Most economic models are built with mathematics, graphs and equations, and attempt to explain relationships between economic variables.

MCQ. CDS2019-II-Q26. Which one of the following statements with regard to economic models is not correct?

- a) They involve simplification of complex process
- b) They represent the whole or a part of a theory
- c) They can be expressed only through equations




d) They help in gaining an insight into cause and effect

76.1 PARETO OPTIMAL

- Named after Italian Economist Vilfredo Pareto.
- Once an economy is in a Pareto Optimal state...then beyond this point one person/sector can't be made more happier / efficient / profitable without making others unhappy.
- E.g. during Pareto optimal situation, all the disguisedly unemployed workers from agriculture have been given skill training and shifted to the industrial sector. So, agricultural sector is producing maximum output and industrial sector is also producing maximum output, And all the (domestic) customers are happily buying the their desired goods / services at the best prices.
- So beyond on this equilibrium, if an industrialist wanted to increase output (so as to increase his profit through exports etc.), he may have to offer higher wages shifting agro labourers to factories= agro production down = food inflation = unhappiness for customers = inefficient economy.

 **MCQ. Which of the following statements (s) are true with respect to the concept of "EFFICIENCY" as used in mainstream economics? (Asked in UPSC-CDS-2016-I)**

1. Efficiency occurs when no possible reorganisation of production can make anyone better off without making someone else worse off
2. An economy is clearly inefficient if it is inside the Production Possibility Frontier (PPF)
3. At a minimum, an efficient economy is on its Production Possibility Frontier (PPF)
4. The terms such as 'Pareto Efficiency', 'Pareto Optimality' and 'Allocative Efficiency' are all essentially one and same which denote 'efficiency in resource allocation'

Codes: (a) 1 and 4 only (b) 1 and 3 only (c) 2 and 3 only  (d) 1, 2, 3 and 4

76.2 ADAM SMITH'S DIAMOND-WATER PARADOX

- In his book 'Wealth of Nations', the father of Economics Adam Smith (Scotland) wrote about the '**invisible Hand**' - an unseen force that moves the supply, demand and free market economy.
- He also observed that water has high 'Value in Use' - from survival, to cooking and bathing. So, water has little 'value in exchange' e.g. sold for just ₹ 10-15 a bottle.
- Whereas diamond, which has little 'value in use' - ladies wear only on special occasions yet it has great 'value in exchange' - diamonds are sold for lakhs & crores of rupees.
- The reason behind this "**Value paradox (मूल्य का विरोधाभास)**" is 'Scarcity (दुर्लभता)' because water is abundantly available whereas diamonds are scarce / rare.
- Therefore, we also have '**Paradox of Plenty (बहुतायत का विरोधाभास)**': more the crop production = farmer will earn lesser, because crop prices will crash with excess supply- just like the water.
- '**Paradox of Thrift (मितव्ययता का विरोधाभास)**': John Maynard Keynes noted that when an individual begins to save more → he buys less TV/fridge/Computer → industrialist's profit declines → he'll throw out employees / reduce their wages → those



employees will be able to save less ₹ ₹ . Thus, when individual's saving increases, 'TOTAL Savings' in economy decreases.

- **Avg. Propensity to Save** = Total Saving ÷ Total Income so divide by
- **Marginal Propensity to save** = % Change in yours saving with the % change in your income?
- **Average propensity to consume** (उपभोग करने की सामान्य सहजप्रवृत्ति) = Total Consumption ÷ Total Income so divide by
- **Marginal Propensity to consume** = what is the % change in your consumption with the % change in your income? Since as your income increases, your consumption will increase so the graph of Consumption (Y Axis) vs Income (X Axis) is always a **positive slope** (↗)

MCQ. Who coined the concept of “Paradox of Thrift”? (CAPF19-Q121)

- (a) Adam Smith (b) Alfred Marshall
(c) John Maynard Keynes. (d) Paul A. Samuelson

MCQ. According to simple Keynesian theory, the slope of the aggregate consumption curve against income is (CAPF19-Q118)

- (a) Positive (b) Negative (c) Zero (d) Infinity

76.2.1 ✖️ **Marginal Propensity to consume → Output Multiplier**

- Suppose in a closed economy with zero taxes, income of a family increased by x%. And their marginal propensity to consume = 0.9. So their consumption will increase by 0.9 times the original consumption.
- To meet this increased consumption demand, bread factory may produce more quantity of goods → factory workers will get overtime salaries → workers will also consume more gutka → more production. Thus, there is a multiplier effect on output.

$$\text{Output Multiplier} = \frac{1}{(1 - \text{Marginal Propensity to Consume})}$$

In above example, Output multiplier will be = $1/(1-0.9)$ = 10 times the aggregate output of economy will increase.

MCQ. In a closed economy with no taxes, if the marginal propensity to consume is always 0.90, then the value of the output multiplier will be (CAPF19-Q117)

- (a) 10.00 (b) 1.00 (C) 0.90 (d) 0.10

76.3 🏆 **COMMODITY THEORY OF MONEY (KARL MARX)**

In his book Das Kapital, Karl Marx observed: 2 primary functions of money are 1) measure of value and 2) medium of exchange.

- We measure volume in litres, weight in kilograms, similarly we measure value of a commodity in ₹. E.g. 1 litre milk = \$ 50.
- Suppose we've a gold-standard currency system where \$1 = US promised to pay bearer on demand 14gm of gold.



Money's value	Commodity's 'use-value'	Impact on 'price' of commodity
<i>If unchanged</i>	If Increased (e.g. milk required not just for tea but also in ice-cream industry)	Milk price increased
<i>If decreased (e.g. overprinting of \$ disregarding gold-std, or reducing underlying gold quantity \$1= 10gm)</i>	If unchanged	Milk price increased
<i>If increased (e.g. new gold std \$1=15 gm of gold)</i>	If unchanged	Milk price decreased
<i>If unchanged</i>	If decreased (e.g. new diet-fashion where people sip black coffee without milk)	Milk price decreased

MCQ. Rise in the price of a commodity means (Asked in UPSC-CDS-2015-I)

- (a) rise in the value of currency only
- (b) fall in the value of currency only
- (c) rise in the value of commodity only
- ✓ (d) fall in the value of currency and rise in the value of commodity.

76.4 MANAGERIAL REVOLUTION (1941)

American Philosopher James Burnham argued in his book 'The Managerial Revolution':

- ⇒ **Capitalism:** industrialists greatly influence the public policy.
- ⇒ **Socialism:** workers greatly influence the public policy.
- ⇒ Gradually, Capitalism will disappear, but Socialism will not replace it. Instead, the business executives, technicians, bureaucrats and soldiers, will collectively act as "managers".
- ⇒ These managers will eliminate the influence of both industrialists and the workers. They'll form 'super states' consisting of multiple industrial centres across multiple nations.

MCQ. CDS2019-II-Q99. Who among the following in his book "The Managerial Revolution" argued that a managerial class dominated all industrial societies, both capitalist and communist, by virtue of its technical and scientific knowledge and its administrative skills?

- (a) James Burnham (b) Robert Michels (c) Gaetano Mosca (d) Vilfredo Pareto

76.5 LIQUIDITY TRAP (J.M. KEYNES)

- We measure value of '(borrowed) money' in terms of interest rate.
- To fight deflation, RBI should pursue cheap money policy: cut the repo rate / increase the money supply → cheaper loan interest rates → more car loans / home loans / biz.loans → more demand → deflation is fought.
- During a severe and long lasting depression (= Recession) there is fall in demand of goods and services. So, even if RBI tries to increase money supply (by cutting repo rate, engaging in OMO etc.), it merely increases the idle cash balances of (liquid) money in



the hands of banks/NBFC/people. It'll not result in further reduction in loan interest rates because they have already fallen very low. This phenomenon is called '*Liquidity Trap*'.

Thus, Liquidity trap refers to a situation in which an increase in the money supply does not result in a fall in the interest rate but merely in an addition to idle cash balances.

76.6 💰🧑🏠 INCOME HYPOTHESIS: 4 TYPES

1. Absolute **Income Hypothesis by J.M. Keynes:** It deals with how consumer divides his disposable income between consumption and saving. Rich people consume a lower proportion of their income (= save more portion of their income), compared to poor people. However American Economist Simon Kuznets found this hypothesis wrong in his experiment, it's called '**Kuznets Paradox**'.
2. **Relative Income Hypothesis:** A person's present consumption or saving pattern is not dependent on his current income but relative income compared to previous years. E.g. after recession → economy grows → Workers getting more salaries but still they're not immediately increasing consumption because they've to repay old debts, they fear of another recession hence saving more and consuming less.
3. **Permanent Income Hypothesis by Milton Friedman:** people will spend money at a level consistent with their expected long-term average income. (thinking in future, I'll earn enough to repay debt)
4. Life Cycle **Hypothesis:** Young people take (education / car / home) loans hoping that future income will allow them to repay it. Whereas middle aged people spend less & prefer to save more for their retirement planning / child-education / child-marriage etc.

persons saving / consumption depends on age.

MCQ. Which one of the following hypothesis postulates that individual's consumption in any time period depends upon resources available to the individual, rate of return on his capital and age of the individual? (Asked in UPSC-CDS-2019-i)

- a) Absolute Income Hypothesis b) Relative Income Hypothesis
 ✓ c) Life Cycle Hypothesis d) Permanent Income Hypothesis

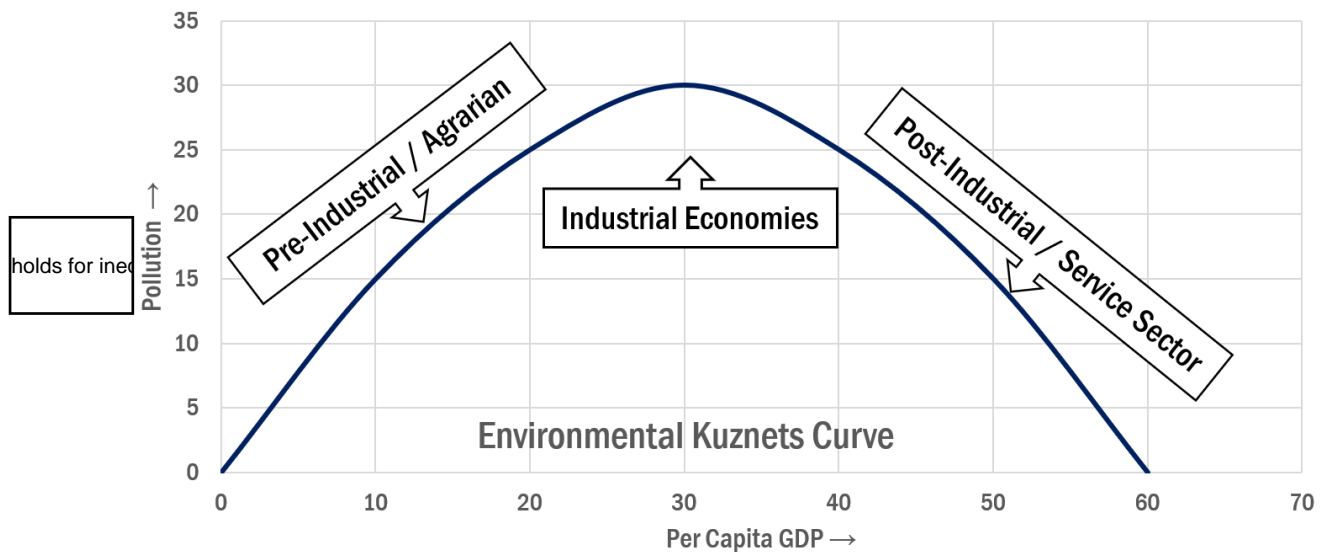
76.7 🧑🏠📈🧑🏠 KUZNETS CURVE (BY US ECONOMIST SIMON KUZNETS)

filled gradually

- As an economy develops, market forces will first increase inequality and then decrease inequality among people. (because growth will percolate towards rural areas and poor people) (other reasons - progressive taxation, better tax: to GDP, pension - insurance social security cover, reurbanisation & jobs)
- Inequality (Y axis) vs per capita GDP (X axis) will be an inverted U shape curve.



76.8 🐱📊🦋🐱 ENVIRONMENTAL KUZNETS CURVE



- Pollution / environmental degradation (Y axis) vs per capita GDP (X axis) will be an inverted U curve.
- As countries develop from agriculture to industrial economy → Pollution increases. But with further development → industrial to service sector led-economy (while industrial production is outsourced to a third world country & people have become more climate-conscious) → pollution declines in the given country.

MCQ. Find correct statement(s) in the context of income-environment relationship (Asked in UPSC-CDS-2015-II)

1. Pollution trends tend to follow an inverse-U shaped relationship across different stages of economic development.
 2. In the beginning stage, pollution increases due to urbanization and industrialization.
 3. In the later stage, pollution declines due to structural changes towards services sector.
- Codes: (a) 1 only (b) 1 and 2 only **(c) 1, 2 and 3** (d) 2 and 3 only