

Chapter 2 : Theory of Demand.

Effective Demand

Desire

Ability To Pay

Willingness To Pay

How is demand expressed?

Quantity

Price

Time

Factors affecting demand.

1] Price of the commodity

$P \uparrow \quad D \downarrow$

$P \downarrow \quad D \uparrow$

Ceteris Paribus : Other things being constant.

2] Price of Related Commodity.

Substitutes

Tea and Coffee

Tea₀

Coffee_R

P_1 @

P_2 @

10 100

10 100

10 150

15 50

10 50

5 150

Complementary

Pen and Ink

Car and Petrol

Pen₀

Ink₀

P

Q

P

Q

10

100

10

100

20

50

10

60

5

150

10

150

Direct Relationship between

P_R and D_0

Indirect Relationship

between P_R and D_0 .

3] Income of the consumer (Micro)
 Income & Assets } Income ↑ DT } (ceteris Paribus)
 Income ↓ D↓ }
 Purchasing power

Exception:
 Necessities eg: medicines, food
 Inferior Goods eg: Incm ↑ Demand for Inferior goods ↓

4] Habits, Tastes and Preferences:
 Goods in Trend command higher demand.
 Goods in Fashion command higher demand.

- Demonstration Effect / Bandwagon Effect
- Snob Effect - To enhance richness (Show off) (To look rich)
- Veblen Effect - To maintain their High Richness
 Consume high priced goods.

5] Consumers Expectation - Future Price
 - Income
 - Supply in Market

6] Population - Size of Population S↑ DT, S↓ D↓
 - Composition of Population (Age, Sex)

7] Level of National Income and Interest Distribution (Macro)
 8] Consumer Credit facility and Interest Rates

• LAW of Demand

↳ Based on Assumption

Other things being Constant $\rightarrow P \uparrow D \downarrow$

$P \downarrow D \uparrow$

↳ Price of related Commodity
Habits / Tastes, etc

MCS There is an Inverse relationship Between P and Q
Demanded

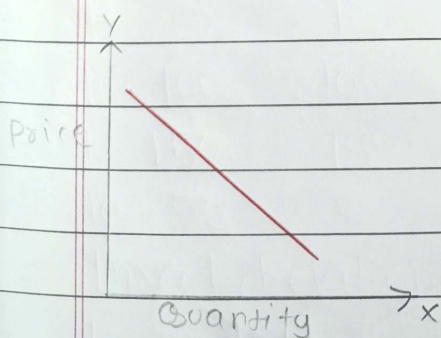
There is an Inverse relationship between Price and Quantity

Demand Schedule

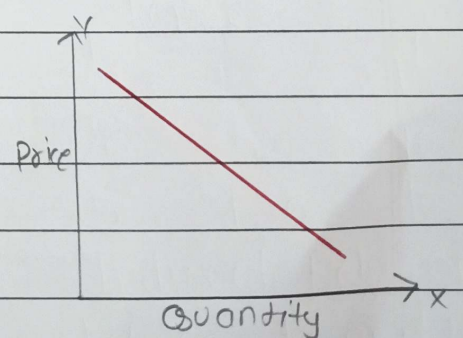
Individual Demand Schedule v/s Market Demand Schedule

P	Q	P	Q ₁	Q ₂	Q ₃	Q Total
50	5	50	5	3	2	10
25	10	25	10	10	10	30
10	20	10	20	20	15	55
5	30	25	30	40	20	90

Individual Demand Curve



Market Demand Curve

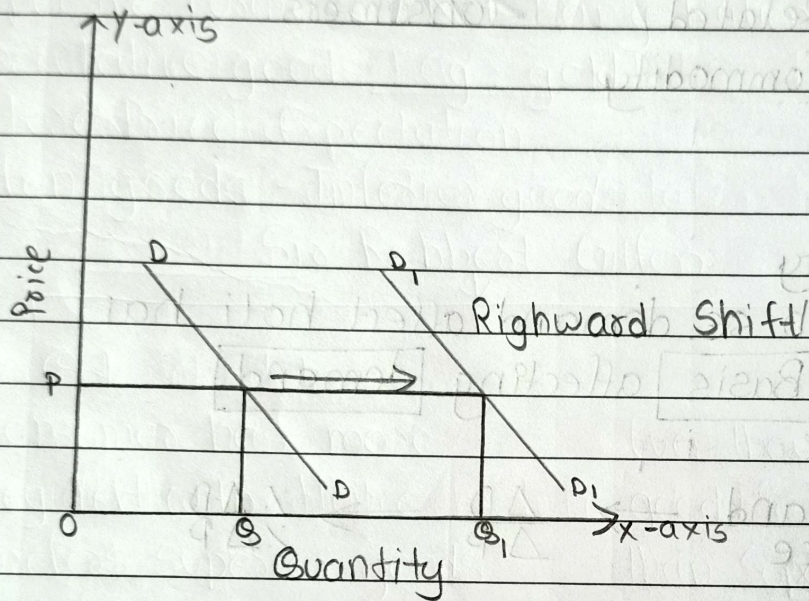


Downward Sloping
from Left to Right

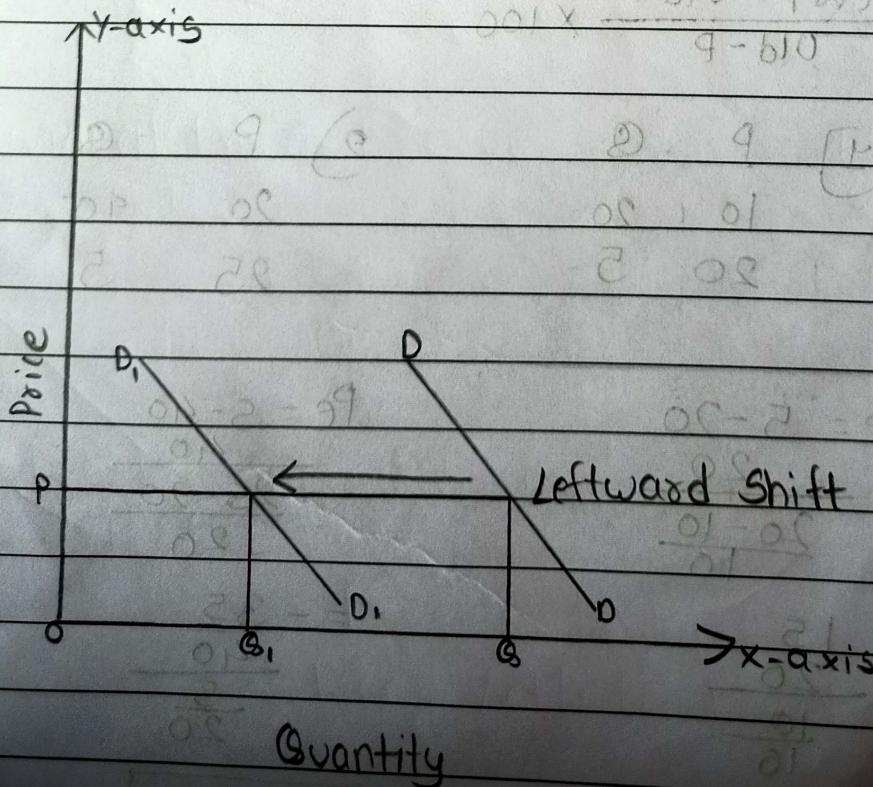
* Increase and Decrease of Demand

When there is change in Demand due to factors other than price

① Increase: When there is ~~change~~ Rise in Demand due to factors other than price.

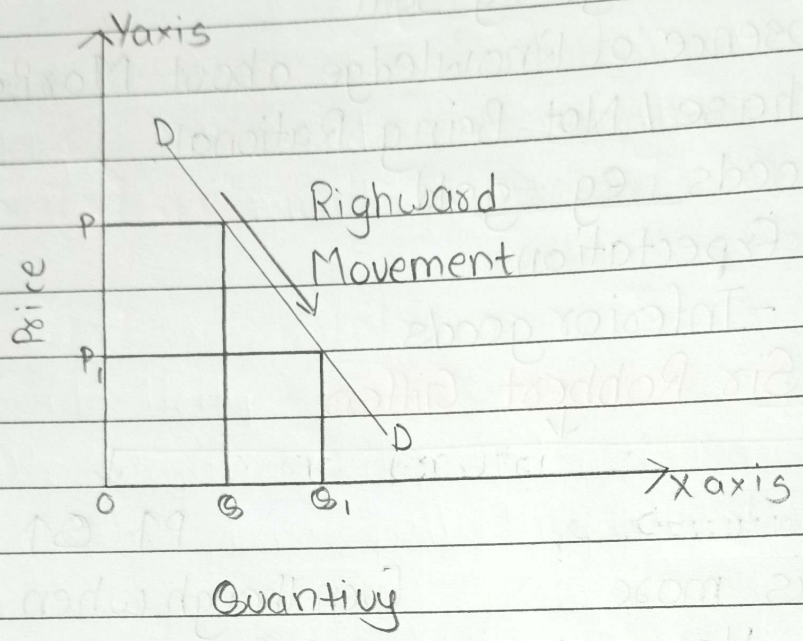


② Decrease: When there is fall in Demand due to factors other than price

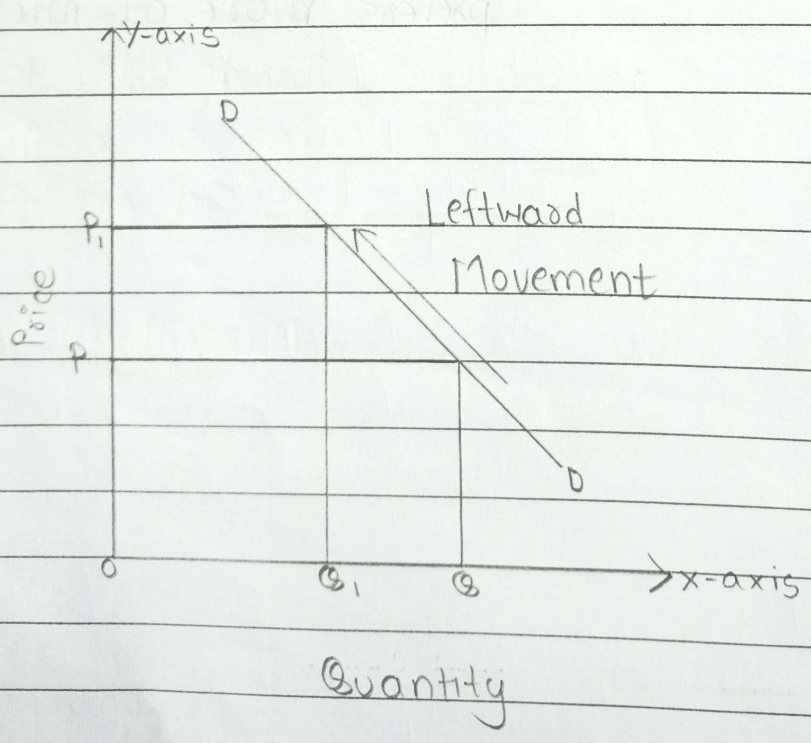


* Expansion and Contraction of demand:
When there is change in demand due to price

① Expansion: When price falls demand rises



② Contraction: When price rises and demand falls



Exception of Law of Demand

- a) Conspicuous goods - eg: LV, gucci bag
- b) Conspicuous necessities - eg: mobile, laptop
- c) Demand for necessary - eg: salt
- d) Ignorance / Absence of Knowledge about Market Conditions.
- e) Impulsive Purchase / Not Being Rational.
- f) Speculative goods eg: gold
- g) Future Price Expectation
- h) Giffen goods - Inferior goods

Six Robert Giffen

$P \downarrow$ $Q \downarrow$

An consumer has more money left with. Hence he prefers superior goods over inferior

$P \uparrow$ $Q \uparrow$

Even though when price of inferior goods is more, it is still cheaper than superior goods. \therefore Consumer prefers more of inferior goods

Rationale of Law of Demand

↓

(Logic / Reason)

4) Price Effect

i) Income Effect (eg: Purchase a t-shirt of 500 in 7. in 250) ^{gives feeling of Income rising}

ii) Substitution Effect (eg: If substitute is not there we will purchase original commodity no matter what)

2) Arrival of New Consumers - PT Only those who can afford

P↓ Arrival of new consumers

(poor people)
(eg: milk)

3) Different uses / Multiple uses
eg: Milk, electricity, water

Determine of Price Elasticity ∞

1
↓

Unit Elastic	Relatively Elastic	Perfectly Elastic
$\% \Delta D = \% \Delta P$	$\% \Delta D > \% \Delta P$	$\% \Delta D = \infty$ $\% \Delta P = \text{Slight}$
<p>Y-axis X-axis $e=1$</p>	<p>Y-axis X-axis $e > 1$</p>	<p>Y-axis X-axis $e = \infty$</p>
	<ul style="list-style-type: none"> • Away from Y-axis • Flatter 	<ul style="list-style-type: none"> • Parallel to X-axis

Eg:- Pani Puri

1	1	1	1	1	1
HJ	AB	RA	PRD	AP	SP
□	□	□	□	□	□
₹10	₹10	₹10	₹10	₹10	₹10
					₹12x
					₹8x

So he will continue to sell @ ₹ 10.

0

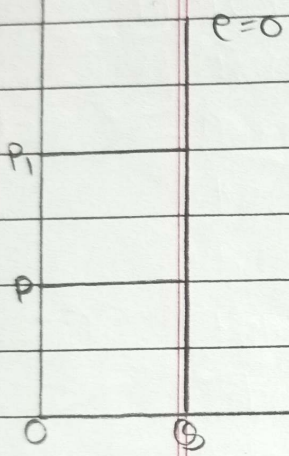


Perfectly Inelastic

$$\% \Delta D = 0$$

$$\% \Delta P = \checkmark$$

Y-axis



Parallel to Y-axis

Price se
demand utri hi
oo negl
force ni

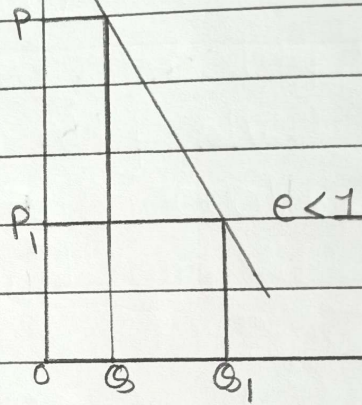
<1



Relatively Inelastic

$$\% \Delta D < \% \Delta P$$

Y-axis



• Closer to Y-axis

• Steeper

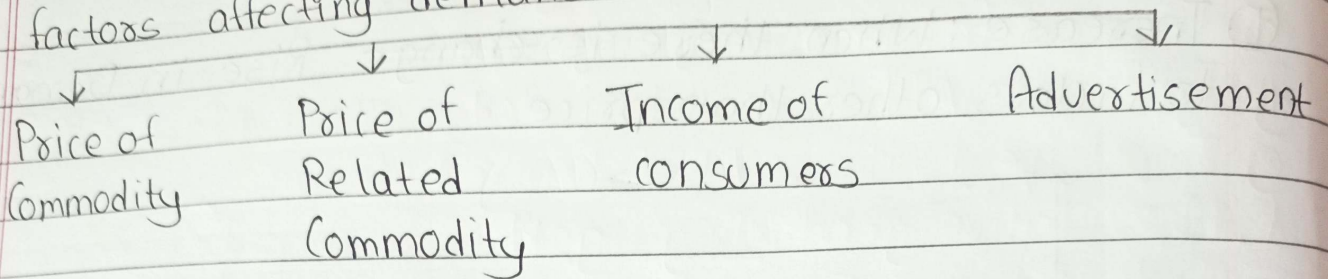
Note: a) Co-efficient of Price Elasticity will always be -ve

b) \therefore For the sake of convenience, -ve sign is ignored

c) Until otherwise specifically mentioned we will compute only price elasticity

⊗ Elasticity of Demand

Sensitivity, Response to change in Demand due to factors affecting demand



1] Price Elasticity

Price ke wajah se demand affect hoti hai

Price is the Basis affecting demand

Formula: $\frac{\text{Demand}}{\text{Price}} \Rightarrow \frac{\Delta D}{\Delta P} \Rightarrow \frac{\% \Delta D}{\% \Delta P}$

$$\frac{\text{New D} - \text{old D}}{\text{old D}} \times 100$$

$$\frac{\text{New P} - \text{old P}}{\text{old P}} \times 100$$

Illustration: 1)

P	Q
10	20
20	5

2)

P	Q
20	40
25	5

$$Pe = \frac{5-20}{20}$$

$$\frac{20-10}{10}$$

$$= \frac{15}{20}$$

$$\frac{10}{10}$$

$$= -0.75$$

$$Pe = \frac{5-40}{40}$$

$$\frac{25-20}{20}$$

$$= -\frac{35}{40}$$

$$\frac{5}{20}$$

$$= -3.5$$

(Asc - elasticity)

e) Midpoint Elasticity

Logic: - Ice-cream

Situation 1

P	Q
10	20
20	5

Situation 2

P	Q
20	5
10	20

$$Pe = \frac{\text{New D} - \text{Old D}}{\text{Old D}} \times 100$$
$$\frac{\text{New P} - \text{Old P}}{\text{Old P}} \times 100$$

$$= \frac{5 - 20}{20} \times 100$$

$$\frac{20 - 10}{10} \times 100$$

$$= \frac{-15}{20} = -0.75$$
$$\frac{10}{10}$$

$$\therefore Pe = 0.75$$

$$Pe = \frac{\text{New D} - \text{Old D}}{\text{Old D}} \times 100$$
$$\frac{\text{New P} - \text{Old P}}{\text{Old P}} \times 100$$

$$= \frac{20 - 5}{5} \times 100$$

$$\frac{10 - 20}{20} \times 100$$

$$= \frac{15}{5}$$
$$\frac{-10}{6}$$

$$\therefore Pe = 6$$

Formula:

$$\frac{\text{New D} - \text{Old D}}{\frac{\text{New D} + \text{Old D}}{2}} \times 100$$

$$\frac{\text{New P} - \text{Old P}}{\frac{\text{New P} + \text{Old P}}{2}} \times 100$$

b) Income Elasticity

Logic: Income ke wajah se demand affect hoti hai
Income is the basis affecting demand.

$$\text{Formula: } \frac{\text{New D} - \text{Old D}}{\text{Old D}} \times 100$$

$$\frac{\text{New Inc} - \text{Old Inc}}{\text{Old Inc}} \times 100$$

c) Cross Elasticity

Logic: Price of related commodity ke wajah se, demand of original commodity affect hoti hai.

Price of related commodity is the basis affecting demand of original commodity.

$$\text{Formula: } \frac{\text{New } D_o - \text{Old } D_o}{\text{Old } D_o} \times 100$$

$$\frac{\text{New } P_R - \text{Old } P_R}{\text{Old } P_R} \times 100$$

d) Advertisement Expenditure Elasticity

$$\text{Formula: } \frac{\text{New D} - \text{Old D}}{\text{Old D}} \times 100$$

$$\frac{\text{New AE} - \text{Old AE}}{\text{Old AE}} \times 100$$

d) Number of uses

Single uses



Inelastic

Multiple uses



Elastic

e) Time Period

Short

Run



Inelastic

Long

Run



Elastic

f) Consumer's Habits

Inelastic

Elastic

g) Tied Demand - Inelastic

h) Price Range

Cheap



Inelastic

Expensive



Inelastic

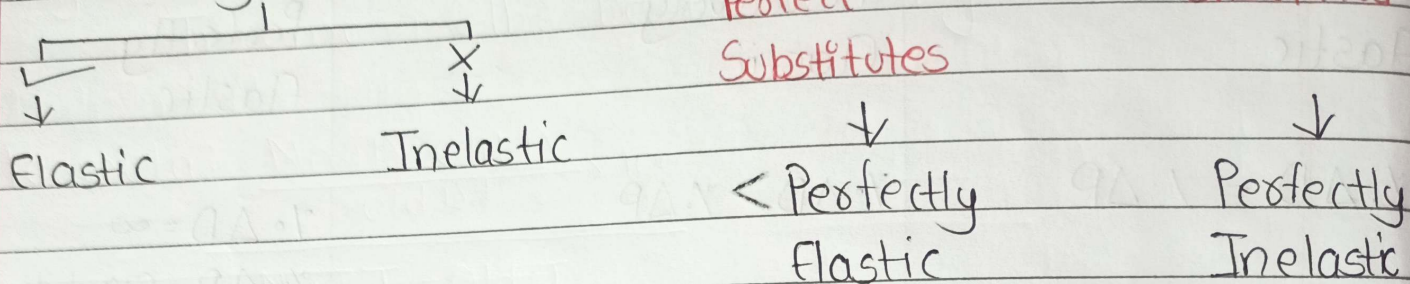
Moderate

(Medium)

elastic

* Determinants of Price Elasticity

a) Availability of substitutes



b) Position of commodity in consumers budget

Pocket Money = 10,000/-

Restaurant = 1000

Petrol = 3000 → ₹ 5000/- $e > 1$

Recharge = ₹ 500

Shopping = 2500

Stationery = 100 → ₹ 200/- $e < 1$

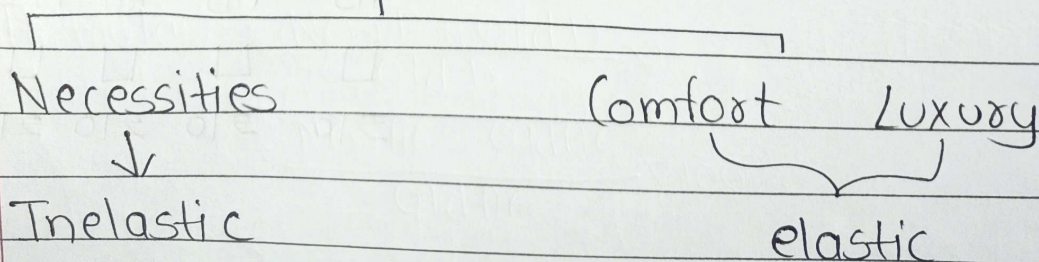
Savings = 500

Books = 1400

OTT = 500

Grooming = 300

c) Nature of the Need



extra utility derived from consumption of one extra unit

Pizza Qty	Total Utility ΣMU	Marginal Utility $TU_n - TU_{n-1}$
1	100	100
2	180	80
3	220	40
4	230	10
5	230	0
6	220	-10

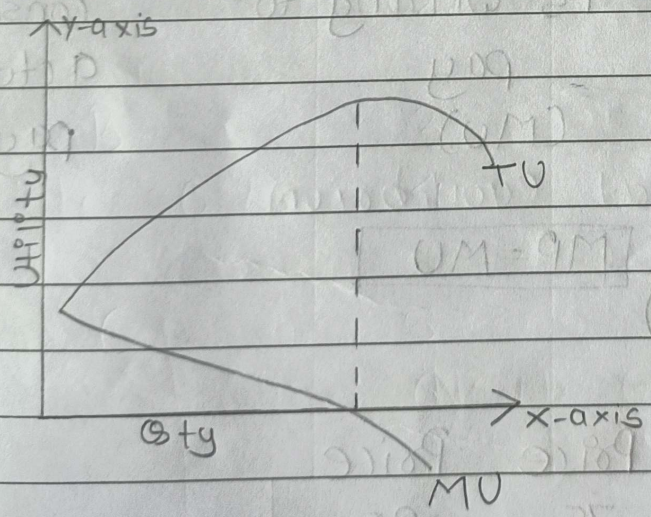
Illustration:

Qty	TU
1	100
3	300

find $MU = \frac{\Delta TU}{\Delta Q} = \frac{200}{2} = 100$

Average MU ✓

Diagram:



Relationship

$TU \uparrow$ $MU \downarrow$

$TU = \text{Max}$ $MU = \text{Zero} \rightarrow$

Point of Satiation
(Full Satisfaction)

$TU \downarrow$ $MU = -ve$

Theory of Consumer Behaviour

Human Wants : Unlimited } \therefore Not all Human Wants
Resources : Limited } can be satisfied.

↓
Consumer only purchases those goods and services which has **want satisfying power**

↓
Utility

≠ Satisfaction

≠ Usefulness

≠ Pleasure

= Anticipated Satisfaction

Concept of Utility is ethically neutral

Marginal Utility Analysis

Indifference Curve Analysis

↓
Alfred Marshall

↓
Hicks & Allen

[Cardinal Approach]

(Ordinal approach)

Marginal Utility Analysis.

- i) Rationality
- ii) Utility can be measured
- iii) Money is used as a measuring Rod.
- iv) Constancy of MU of money.
- v) Hypothesis of independent utility.

Illustration 1

Situation	P	Q	Total Outlay	Elasticity
A ↓	5	20	100	$e > 1$
	4	30	120	Relatively Elastic
B	5	20	100	$e = 1$
	4	25	100	unit elastic
C ↓	5	20	100	$e < 1$
	4	22	88	Relatively Inelastic

Illustration 2

Situation	P	Q	Total Outlay	Elasticity
A	1	6	6	$e < 1$
	2	5	10	Relatively Inelastic
B	3	4	12	$e = 1$
	4	3	12	Unit Elastic
C	5	2	10	$e > 1$
	6	1	6	Relatively Elastic

P Q
10 20
20 5

P Q
20 5
10 20

Midpoint Elasticity

$$= \frac{5-20}{\frac{5+20}{2}} \times 100 = \frac{-15}{12.5}$$

$$\frac{20-10}{\frac{20+10}{2}} \times 100 = \frac{10}{15}$$

$$= \frac{-1.20}{0.67} = -1.80$$

$$\therefore Pe = 1.80$$

Midpoint Elasticity

$$= \frac{20-5}{\frac{20+5}{2}} \times 100 = \frac{15}{12.5}$$

$$\frac{10-20}{\frac{10+20}{2}} \times 100 = \frac{-10}{5}$$

$$= \frac{1.20}{0.67} = -1.80$$

$$\therefore Pe = 1.80$$

f) Point Elasticity
When the % AP is very small

$$\frac{\text{New D} - \text{Old D}}{\text{Old D}} \times 100$$

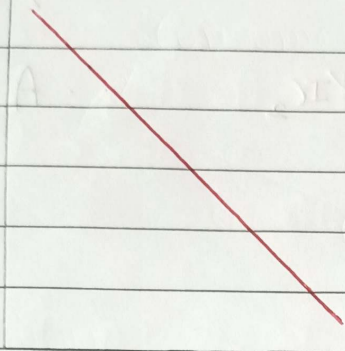
$$\frac{\text{New P} - \text{Old P}}{\text{Old P}} \times 100$$

g) Total Outlay Method } Alfred Marshall
Total Expenditure Method }

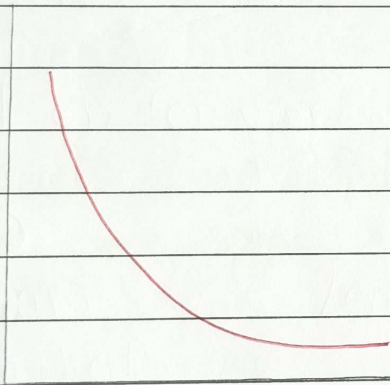
- Based on analysis of Expenditure Pattern
- No formula
- No Co-efficient / Number

Properties of Indifference Curve (IC = Indifference Curve)

a) IC is downward sloping from left to right

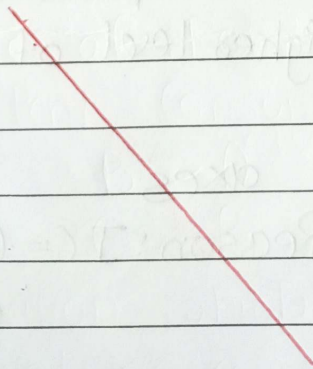


b) IC is convex to origin



Reason: Decreasing MRS
(Marginal Rate of Substitution)

* What if MRS is constant = IC would be a straight line

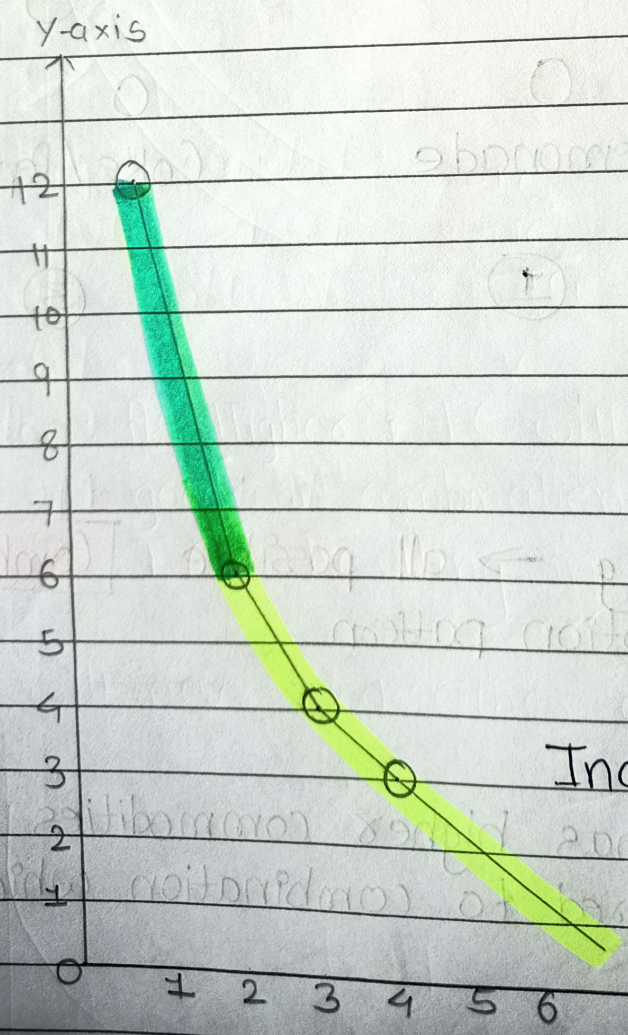


→ Indifference Curves : Defination

- i) is a curve
- ii) all the combination
- iii) of 2 Goods
- iv) which will give same level of satisfaction.

Combination	Food	Clothing	MRS (Marginal Rate of Substitution)
A	1	12	6
B	2	6	2
C	3	4	1
D	4	3	-

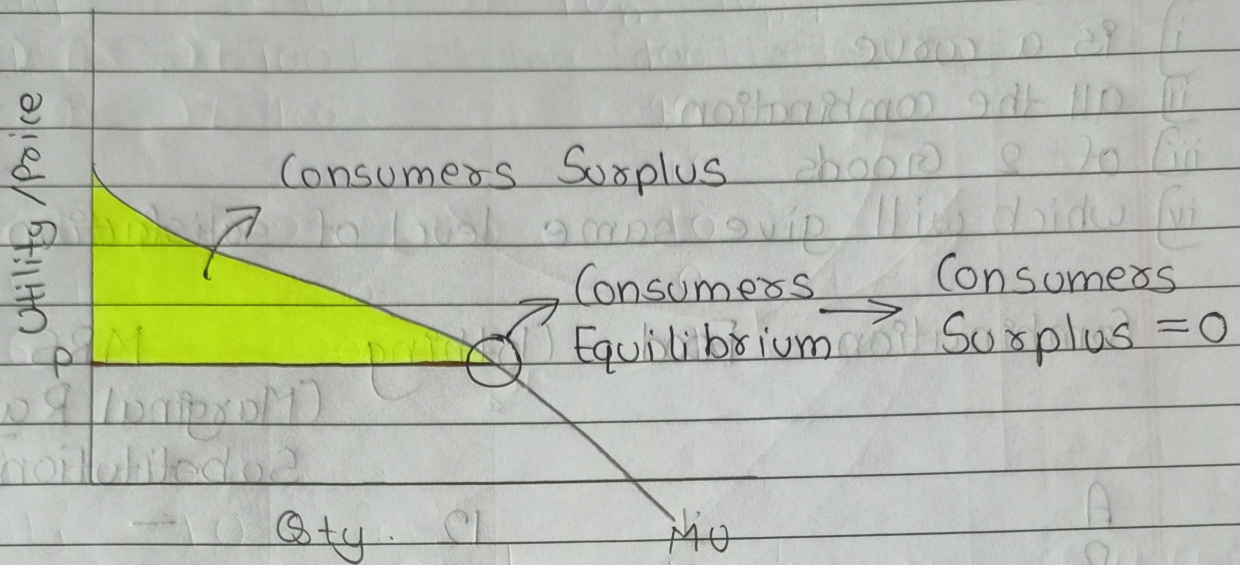
Diagram:



Indifference Curve: Convex to Origin

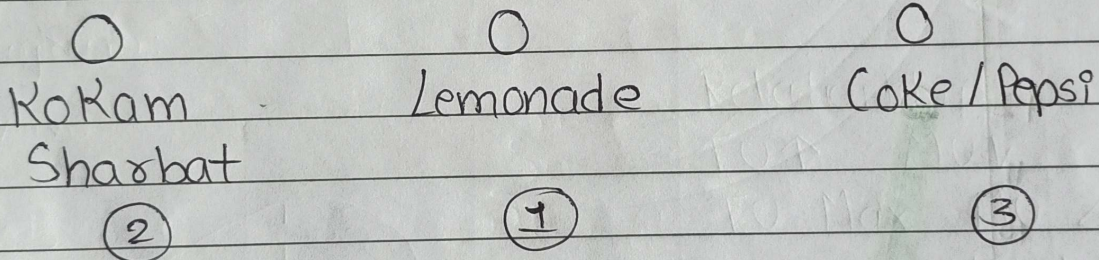
Reason: Decreasing MRS

Diagram:



Indifference Curve Analysis: Hicks Allen

• Based on Consumers Preference / Ordering of Preference



NR00830354
2006-02-23

→ Assumption

- a) Rational
- b) Capable of Ranking → all possible Combination
- c) Consistent Consumption pattern
 $B > A$
 $C > B$
- d) Combination which has higher commodities shall be preferred as compared to combination which has less commodities.

Law of Diminishing Marginal Utility

Additional Benefit a consumer derives from consumption of an (one) additional unit goes on decreasing.

→ Assumption

- i) Continuous Consumption
- ii) Reasonable Size
- iii) Homogenous
- iv) No Change in Taste & Preference

Exemption

- i) ~~Padhai~~
- ii) Paisa
- iii) Daxu
- iv) Hobbies
- v) Music
- vi) Mises
- vii) Prestigious Goods

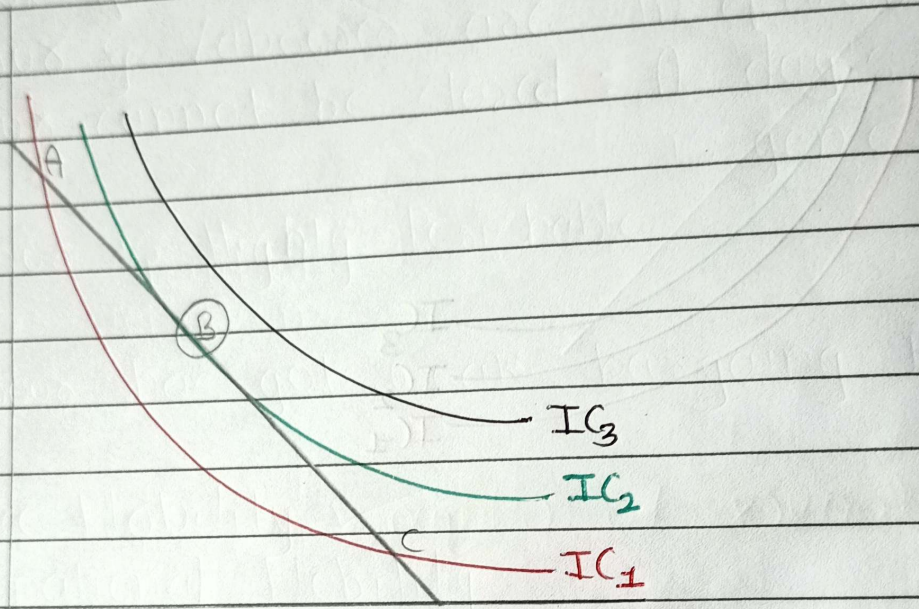
Consumer's Surplus = What the consumer (-) is willing to pay (MU) - What the consumer actually pays (MP)

Consumer surplus is 0 at equilibrium

Consumer Equilibrium: $MP = MU$
(Maximum Satisfaction)

Qty	MU	Price	Price	Price
1	100	50	75	25
2	75	50	75	25
3	50	50	75	25
4	25	50	75	25
5	10	50	75	25

Consumer Equilibrium = When Budget line Intersect
IC at Tangency



Law of Equi-marginal utility

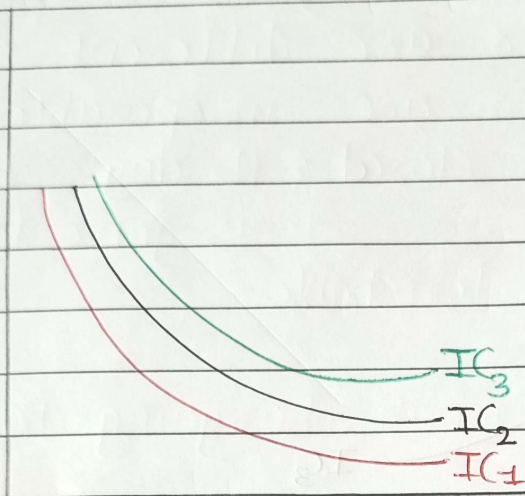
	Pizza	~	Nadparav	~	Buages
Price	100	Give same	10		50
Utility	200	level of	20	Not giving	60
		satisfaction		same level	of satisfaction

MU_p
 MU_v

$$\frac{MU_p}{MP_p} = \frac{MU_v}{MP_v}$$

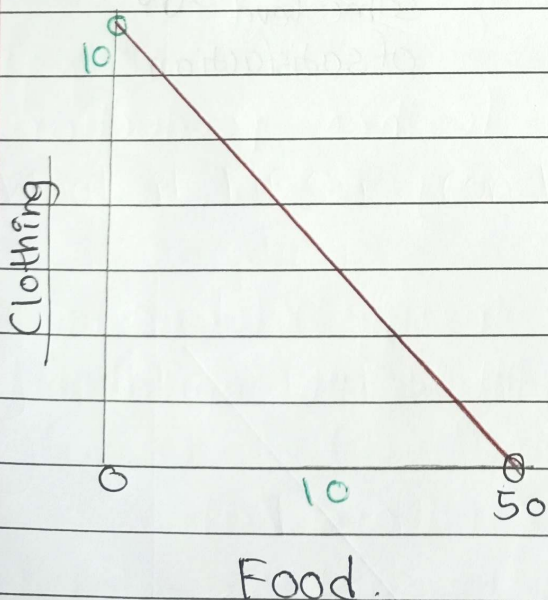
Indifference Curve map

Collection of IC is called as IC map



Budget Line / Price Line

₹10,000 : We spend entire money



* Find Price of commodities

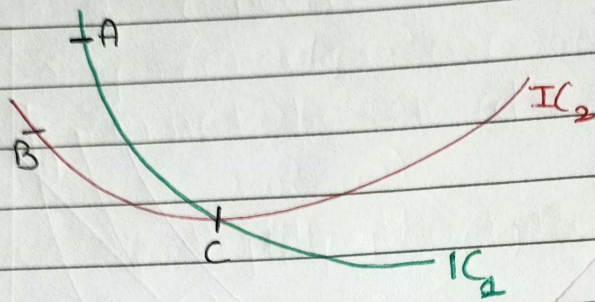
a) 1000, 200

b) 200, 1000 [first X axis then Y axis (10,000 ÷ 50, 10,000 ÷ 10)]

c) Both a & b

d) Either a & b

c) Two IC will never intersect each other.

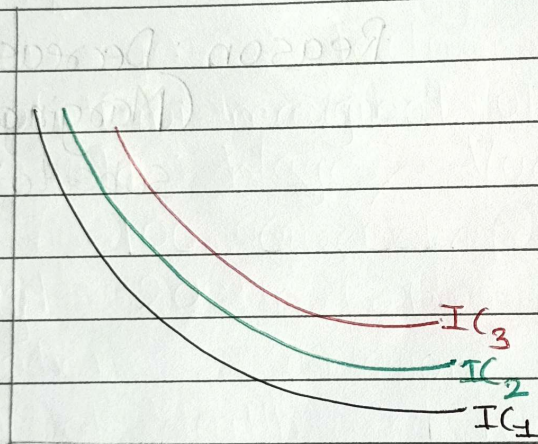


$$IC_1 \Rightarrow A=C$$

$$IC_2 \Rightarrow B=C$$

$$\therefore A \neq B$$

d) Higher IC will give Higher level of satisfaction



Reason: As Higher IC will have more No. of goods in combination as compared to lower IC \therefore Resulting in Higher level of satisfaction.

e) IC will never touch either of axes

Reason: IC = Combination of 2 Goods

