

remains imperfect. The value of money changes with changing circumstances e.g. a person inherits a great deal of money and does not hesitate to pay \$10 for a sandwich for which he was not willing to pay \$3 even though his marginal utility has not changed.

2. Great emphasis on rational consumer behaviour and the search for utility maximization. This may not always explain consumer behaviour. When we consider inputs like advertising, peer pressure and impulse buying etc.

3. Utility theory assumes that consumer income is fixed. While money income may be fixed, a consumer's real income or purchasing power changes with the prices of the good consumed. E.g. if a consumer consumes a good on a regular basis + its price falls, his real income effectively rises.

INDIFFERENCE CURVE ANALYSIS (INCOME + SUBSTITUTION EFFECT)

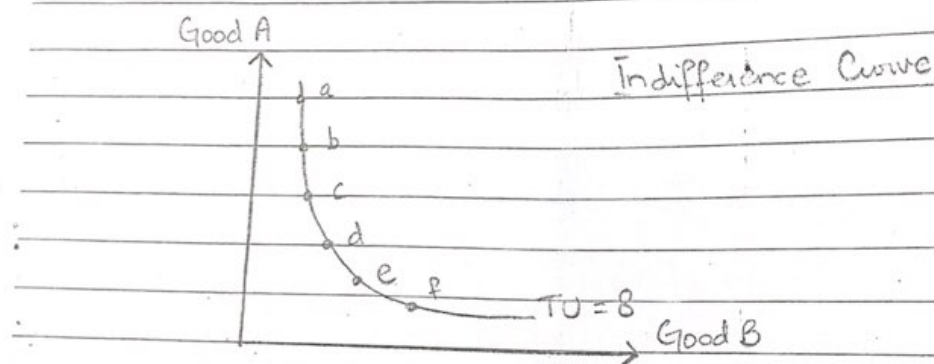
Indifference curve analysis adopts an ordinal approach which means that it follows a ranking procedure which does not depend on the precise measurement of utility. It ranks one combination of goods, relative to any other combination in terms of total satisfaction. This analysis uses indifference curves + budget lines to evolve income and substitution effects that provide an alternative theory explaining the downward sloping demand curve. Unlike utility theory, which quantifies how much a consumer is better or worse off, consumer indifference analysis shows preferences in favour of one bundle of goods over another.

All the following combinations of Good A and of Good B yield the same total utility

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All the following combinations of Good A + Good B yield the same total utility.

Good A	Good B	TU
30	6	= 8 (a)
24	7	= 8 (b)
20	8	= 8 (c)
17	9	= 8 (d)
15	10	= 8 (e)
14	11	= 8 (f)



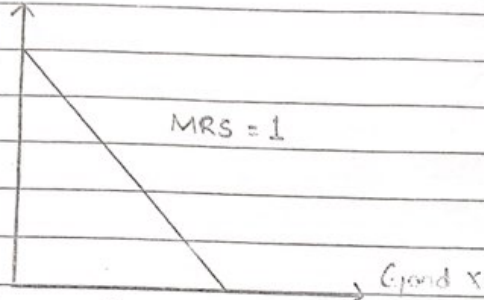
An indifference curve graphically represents consumer preferences by showing all combinations of 2 goods that provide a consumer with equal amounts of utility and satisfaction. The indifference curve is both downward sloping and inward bowed or complex.

The downward slope reflects the basic assumption that more of a good is better than less and upward slope would have meant that the consumer is indifferent between two combinations even when one allows them more of both goods. This is not possible.

The convexity of the curve reflects the Marginal Rate of Substitution (MRS) which is related to the principle of diminishing marginal utility. As a consumer gives up units of A for B, his M.U. for A increases + for B, falls. As more + more units of B are consumed, he will be less prepared to give up units of A for each additional unit of B.

"EXCEPTIONAL INDIFFERENCE CURVES"

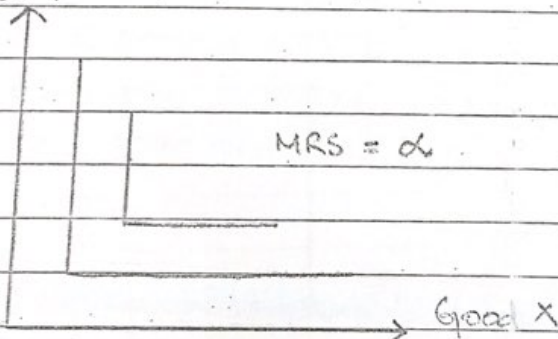
Good Y



1 for 1 → you don't really care

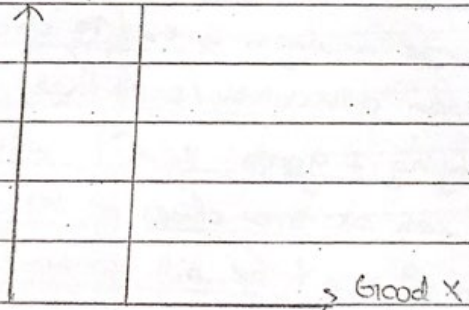
In case of perfect substitutes, indifference curves take the shape of negatively sloped straight lines. Here the consumer only cares about total number of Good X + Good Y that they have, not whether they're getting more of X or Y - so the indifference curves are straight lines.

Good Y



when 2 goods are perfect complements, the indifference curves take the shape of right angles. Having more of Good Y does not increase your utility unless you increase X as well. e.g. pair of shoes (left + right)

Good Y



This graph shows neutral goods. Like the consumer does not have any options, so all that matters is the amount of Good X he has, his utility does not increase by having more of

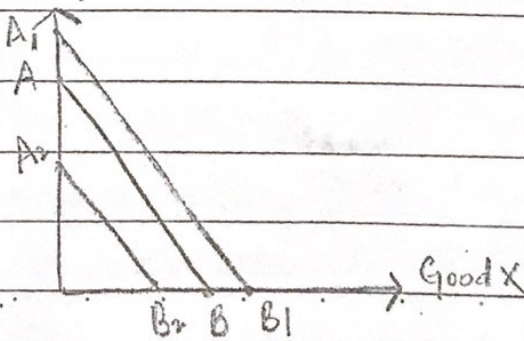
If you don't smoke - you're not getting

for cigarettes.

BUDGET LINES & BUDGET CONSTRAINTS

A major strength of indifference analysis is that it shows the constraints or the limited consumption possibility / potential facing each consumer. A consumer buying 2 goods, X & Y , will have to consider both, his income as well as the prices of the goods before he decides which combination of X & Y , he will consume.

Good Y



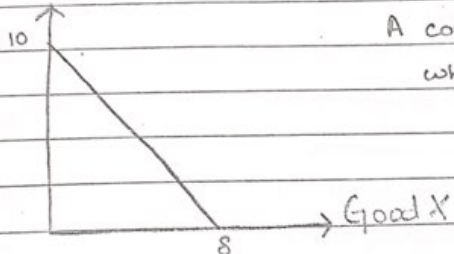
AB = original budget line

A_1B_1 = Consumer income has increased

A_2B_2 = consumer income has decreased

A budget line shows all possible combinations of 2 products that can be purchased with a given level of income. The slope of the budget line shows the relative prices of the 2 goods.

Q) Good Y



A consumer has a budget of £40.
what are the prices of X + Y?

$$10Y + 8X = 40$$

$$10Y = 40$$

$$Y = £4$$

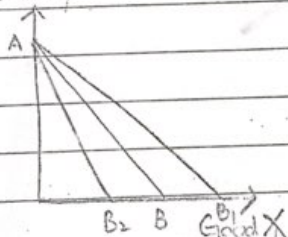
$$8X = 40$$

$$X = 40/8$$

$$X = £5$$

• with £40, all you can buy is
10 units of Y, so per unit price
will be $\frac{40}{10}$, £4.

Good Y



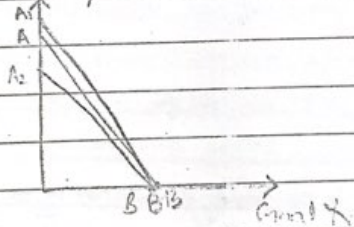
$AB_1 \rightarrow$ price of Good X \downarrow

$AB_2 \rightarrow$ price of Good X \uparrow

$AB_1 \rightarrow$ outward pivot

$AB_2 \rightarrow$ inward pivot

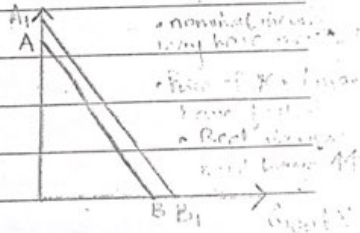
Good Y



$BA_1 = P$ of Y \downarrow

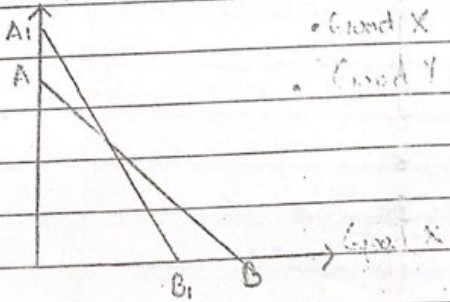
$BA_2 = P$ of Y \uparrow

Good Y



• nominal income
may have changed
• Price of X + Income
have both changed
• Real income
and hence AF

Good Y



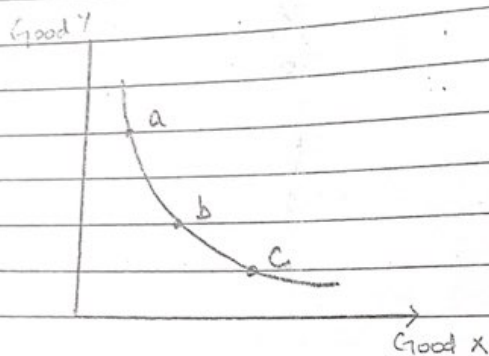
• Good X \rightarrow expensive (Price \uparrow)

• Good Y \rightarrow cheaper (Price \downarrow)

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CONSUMER OPTIMUM

Consumer optimum must be confined to the budget line. It occurs at the point of tangency b/w the budget line and the indifference curve. At this point, the relative prices of goods consumed are equal to the marginal rate of substitution (MRS) (STEP 1)



MRS is based on the amount of Good Y that a consumer is prepared to give up, in order to obtain an extra unit of X

The $\left(\frac{\Delta Y}{\Delta X}\right)$ diminishes as more & more of X is consumed.

because the consumer is less prepared to give up Y in order to obtain extra units of X. Defined in terms of utility $MRS = \frac{MU_X}{MU_Y}$

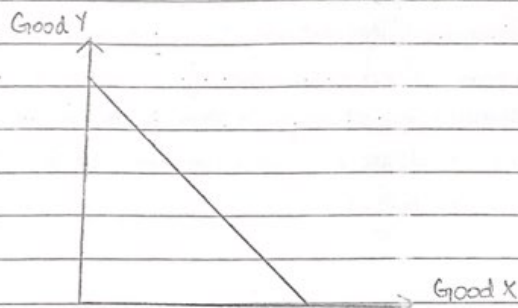
because the utility gained by consuming more of X must be equal to the utility from the units of Y given up. This means that the slope of the indifference curve in terms of utility equals.

$$MRS = \frac{MU_X}{MU_Y}$$

$$MU_X \times \Delta Y = MU_Y \times \Delta X$$

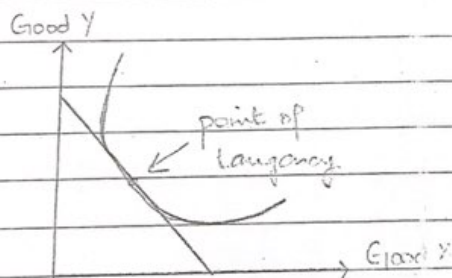
$$\frac{MU_X}{MU_Y} = \frac{\Delta Y}{\Delta X}$$

Stage 2



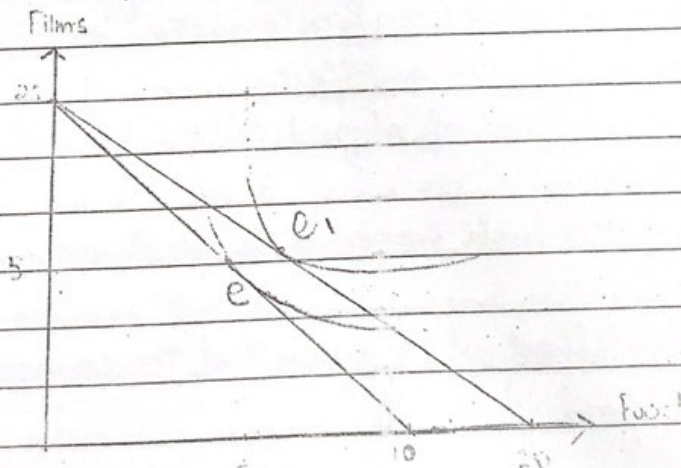
The slope of the budget line is the ratio of the price of Good X to the price of Good Y, or, $\frac{P_x}{P_y}$.

Stage 3



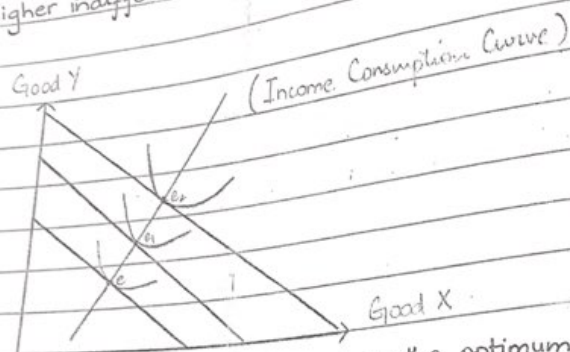
At the point of tangency, the slope of the budget line ($\frac{P_x}{P_y}$) is equal to the slope of the indifference curve ($\frac{M_{ux}}{M_{uy}}$). This means that consumer optimum is achieved where $\frac{M_{ux}}{M_{uy}} = \frac{P_x}{P_y}$.

Question: A consumer's income is £50. Food costs £1/unit and films cost £2/unit. Draw a budget line and choose point e as optimal initial consumption. Suppose the price of food falls to £2.50, label the new consumption point as e_1 .

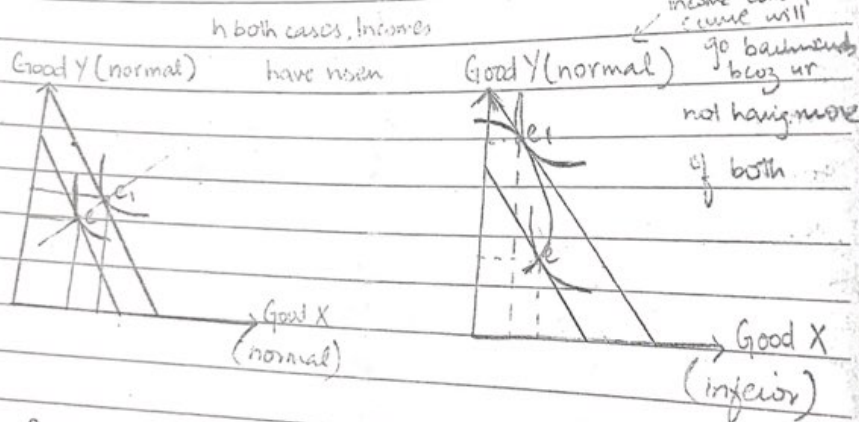


Effects of Changes in Income (The Income Consumption Curves)

An increase in income is represented by a parallel shift in the budget line (assuming no change in the prices of the two goods consumed). This will lead to a new optimum consumption point on a higher indifference curve.



The Income Consumption Curve shows how the optimum level of consumption changes as income changes with prices of the 2 goods held constant.



Effects of Changes in Price (The Price Consumption Curve) or The Income + Substitution Effect.

A fall in the price of a good results in 2 simultaneous effects:

- 1) The income effect which increases the purchasing power of the consumer.
- 2) The substitution effect which means that the consumer substitutes in favour of the good.

Case 1

Case 2

Subs

Case 1: no

Case 2:

NOTE:

Substit

in pr

price

incon

what

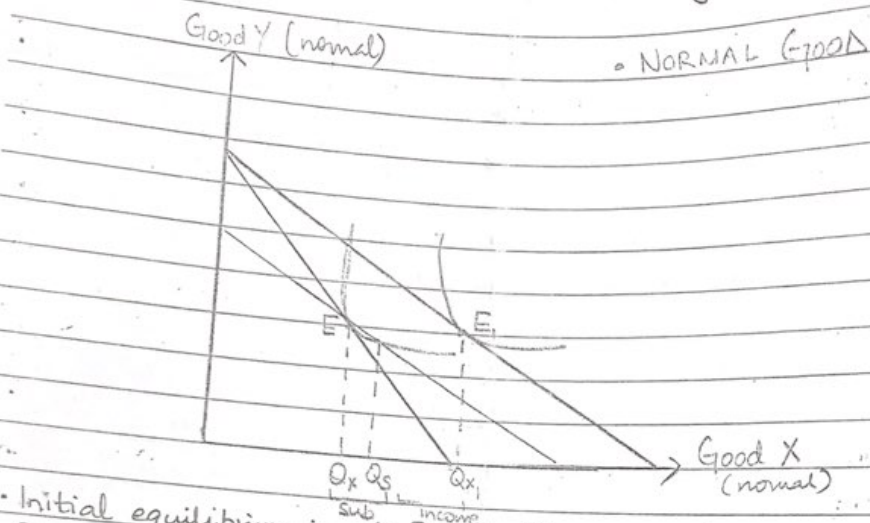
bcoz

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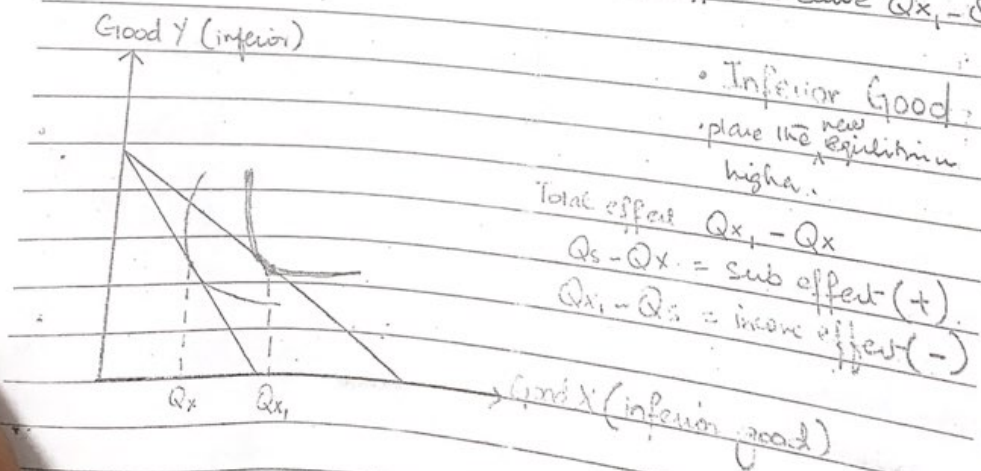
even

oppos

The simultaneous substitution & income effect can be identified & separated on a graph. The substitution effect constitutes a movement along the original indifference curve. The income effect is defined by a parallel shift in the budget line & a movement to a higher indifference curve.

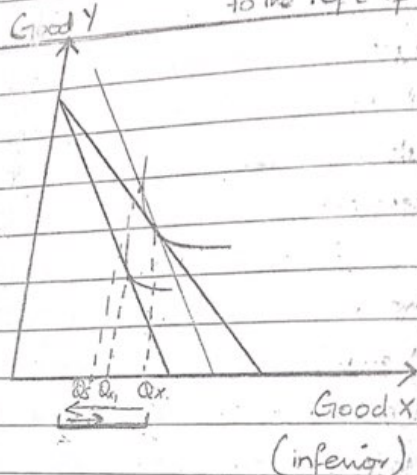


- Initial equilibrium is at E, with Q_x consumption
- Price of X falls so budget line pivots. New equilibrium at E_1 . Total effect $Q_{x1} - Q_x$.
- Substitution effect can be shown by sliding the new budget line until it becomes tangent to a new point on the original indifference curve $Q_s - Q_x$.
- Income effect is the shift to the new indifference curve $Q_{x1} - Q_s$.



SUBSTITUTION & INCOME EFFECTS OF A PRICE RISE

* You Q_s should be to the left of Q_{x_1}



$P_x \uparrow = Q_{Dx} \downarrow$

= sub. effect (-)

= income effect (+)

total effect

significantly (-)

(normal)

$P_x \uparrow = Q_{Dx} \downarrow$ (diluted fall)

sub effect (-)

income effect (+)

substitution > income

(mild decrease)

(inferior)

GIFFEN

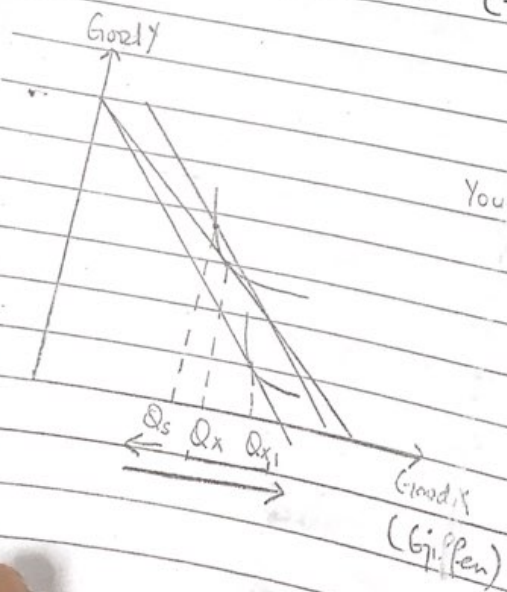
$P_x \uparrow = Q_{Dx} \uparrow$

total effect (+)

sub " (-)

income " (+)

income effect > sub effect

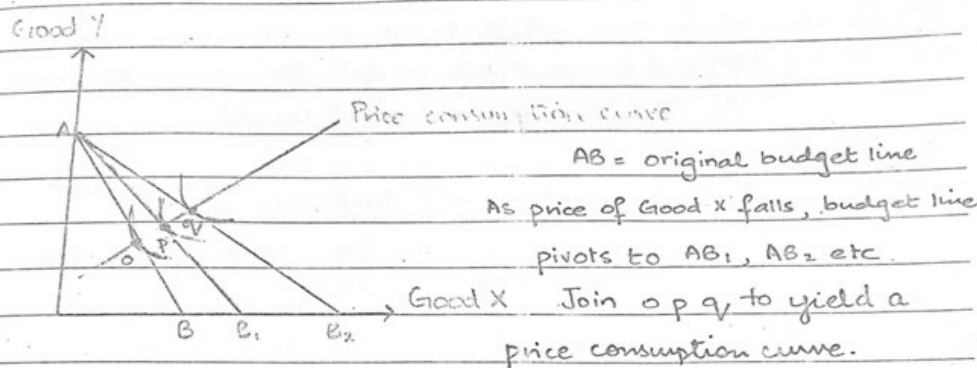


You're buying more of the good.

(Giffen)

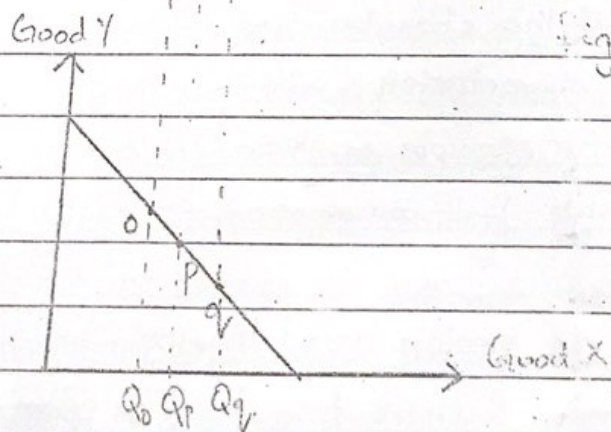
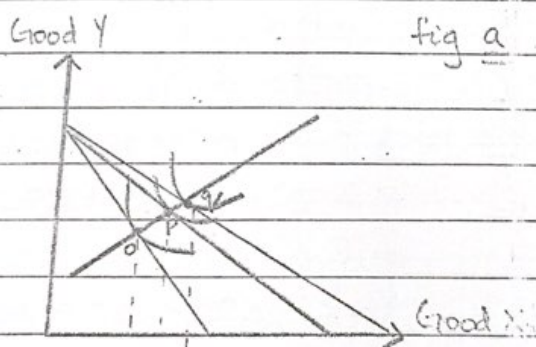
The of two assumptions Th be used O, P, Q

THE PRICE CONSUMPTION CURVE & THE DERIVATION OF THE DEMAND CURVE.



The price consumption curve shows how optimum level of consumption of two goods changes as the price of one of the two goods changes (assuming nominal income & price of the other good, unchanged)

The analysis of price changes & the price consumption curve can be used to derive the demand curve of a product. Note that points o, p, q, are all establishing price and quantity relationships.

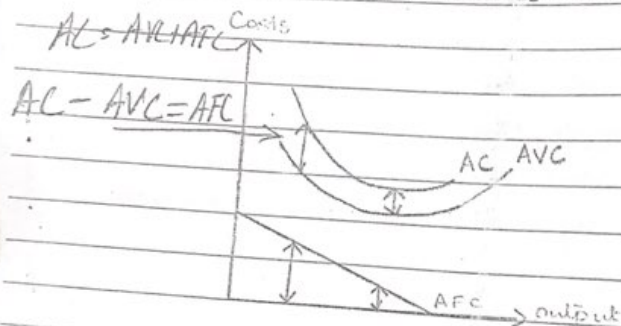


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(iii) Average Total Costs (ATC) or Average Cost (AC)

$$ATC = \frac{TC}{Q} = \frac{FC + VC}{Q} = AFC + AVC$$

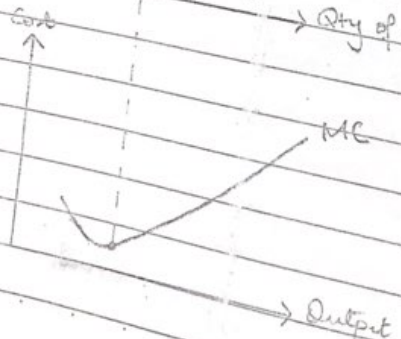
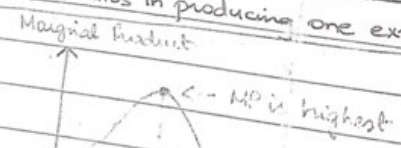
The AC curve can be found graphically by adding, vertically, the AFC and the AVC curves. Note that, the vertical distance between the AC curve & the AVC curve measures AFC at that level of output.



(iv) Marginal Cost (MC)

$$MC = \frac{\Delta \text{ in Total Cost}}{\Delta \text{ in Output}} = \frac{\Delta \text{ in TC}}{\Delta \text{ in } Q} = \frac{\overset{\text{doesn't change}}{FC} + VC}{Q} = \frac{\Delta \text{ in VC}}{\Delta \text{ in } Q}$$

Marginal cost, sometimes called incremental cost, is the increase in total cost that results in producing one extra unit of output.



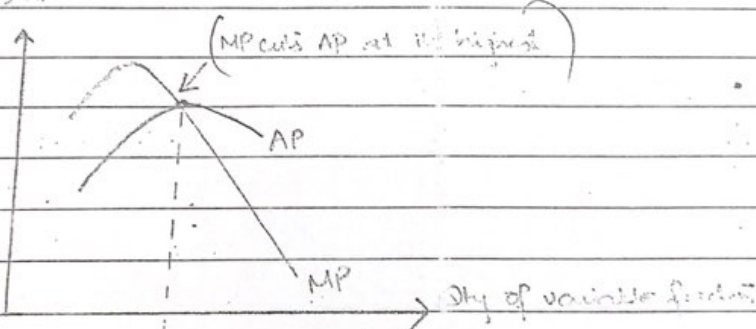
Relationship b/w MC and AC + b/w MC and AVC

The Marginal-Average relationship is a mathematical occurrence which results in the MC curve, cutting both the AC and the AVC curves at their lowest minimum point. This can be explained as follows:

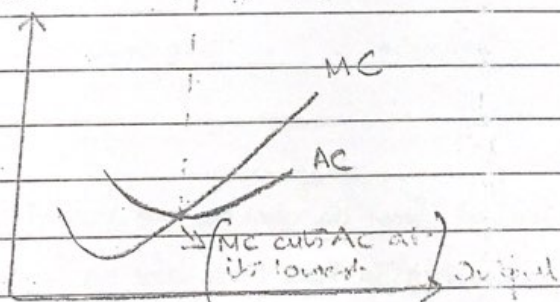
when MC is lower than AC, Average costs must fall. Conversely when MC is above AC, Average cost will rise. At the point of intersection where $MC = AC$, Average cost has stopped falling but it has not started rising. This is the minimum pt. on the AC curve where MC equals AC.

The relationship between MC + AVC, reveals that MC cuts AVC curve at its minimum point. Note that MC is defined as the addition to Total Cost when one extra unit of output is produced. This means that there is no relationship between MC and the AFC curves.

MP + AP



Costs



→ $MC < AC$

AC fall

→ $MC > AC$

AC rises

→ $MC = AC$

Intersection
AC stops falling
but it has not
start rising.

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a summation of all individual demand curves in the market, that the market demand curve is also negatively sloped.

NOTE: Individual demand curve is the same as a consumer's marginal utility curve. When the price of a good is high, a person consumes less and his M.U. is high. As price falls, consumption rises, but this causes M.U. to fall. This means that M.U. measured in terms of price shows the same relationship with quantity demanded as price itself.

TIE-UP CONCEPTS:

(i) Consumer Surplus + Utility:

The negative slope of the demand curve has an interesting consequence. Consumers pay less than they would be willing to pay for the total amount of any product that they consume. The difference b/w what they are willing to pay (Value of Total utility) and what they actually pay (total expenditure) is their consumer surplus.

(ii) Elasticity + Utility

Utility can explain elasticity variations when we distinguish between indispensable goods with inelastic demand (eg. food, petrol) and dispensable goods with elastic demand (electronics, jewellery). Indispensable goods have a large area under the demand curve showing large total utility derived. Dispensable goods have shallower demand curves so that total utility is much lower. Elasticity however is not dependant on total utility but rather marginal utility. It depends on the value consumers place on having a little more or a little less of the product.

EVALUATION OF UTILITY THEORY

1. The need to place precise + absolute figures on T.U. and M.U. is bound to create problems. In practical terms this involves an arbitrary and subjective allocation of measurement. Even when money replaces the traditional measure of utility.