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Derive the ordinary (Marshallian) and Compensated (Hicksian) demand curve for a normal good.

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In the case of normal good, increase in price of a commodity decreases in its demand and vice versa and increase in money income increases the demand for both goods.

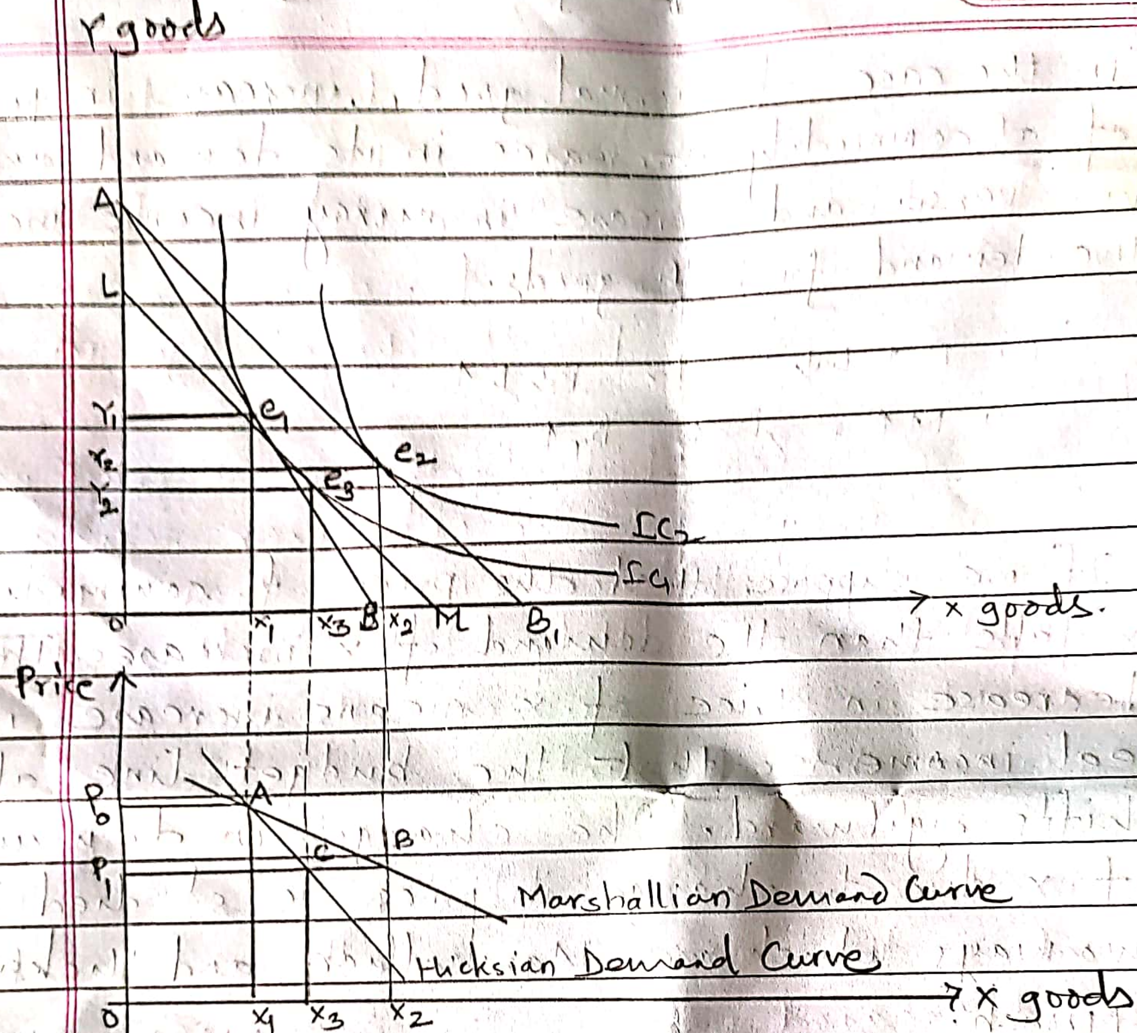
(i) $P\uparrow D\downarrow \longrightarrow P\downarrow D\uparrow$

(ii) $M\uparrow \Longrightarrow D_x\uparrow, D_y\uparrow$

If we suppose that the price of commodity x falls than the demand of x increases. The decrease in price of x means increase in real income so that the budget line also shifts rightward. The change in demand of x due to change in price is studied in two ways which are Marshallian and Hicksian approach.

The Marshallian approach is changes in demand of good x due to changes on price with changes in real income. Similarly, the Hicksian approach is changes in demand for commodity x with compensated budget line and unchanged utility curve.

In the both cases of Marshallian and Hicksian condition, the decrease in prices of commodities leads to increase in its demand but Hicksian demand curve is steeper than Marshallian demand curve.



In the above figure the initial budget line is AB and e_1 is the point where a consumer gets maximum utility consuming x_1 commodity at ~~Price~~ price P_0. When the price of goods x fell down to P_1 from P_0, the budget line has shifted rightward to AB_1 and the new utility has become IC_2 (new indifference curve) where at point e_2 he/she consumes OX_2 of X commodity and OY_2 of Y.

The price. commodity combination at lower panel gives us point A and B. If we draw a straight line over these two points we get Marshallian demand curve for commodity x. This is derived with the change in price.

If we increased budget line is compensated in such a way that the consumer remains in initial indifference curve, then the budget line parallely shifts leftward to LM. Now the consumer attains new equilibrium at point e_3 with the decreased in price of x. So, the demand for commodity x in the case of substitution effect is less that in the case of price effect. Or at the decreased price P_1 the consumer buys x_3 commodity and the new price commodity equilibrium point is c. If we draw a straight line passing through A C, we get Hicksian or compensated demand curve for commodity x.

So, $e_1 - e_2$ = Price Effect $(x_1 \to x_2)$

$e_2 - e_3$ = Income Effect $(x_2 - x_3)$

$e_1 - e_3$ = Substitution Effect $(x_1 - x_3)$

P.E = S.E + I.E.