26 December 2023 06:08 PM

Decomposition of Price effect into Substitution Effect and Income Effect.

(1) Income effect shows the feeling of "better-offness" that a consumer experiences when the price of even one commodity that he buys falls. With his given planned expenditure, he can now buy the same quantity of each commodity as he did before the fall in price of one of them and have some money left over. It is as if all prices had remained unchanged and the consumer had been able to increase his planned expenditure.

for any given fall in prices of any one good, the size of gain will be greater, therefore, the increase in purchasing power of the consumer that follows a relative fall in price of one of the goods that he buys is as if his income has risen & all prices have remain at the same level. It is as if the consumer moves along the income consumption curve. It is the Income Effect due to price change.

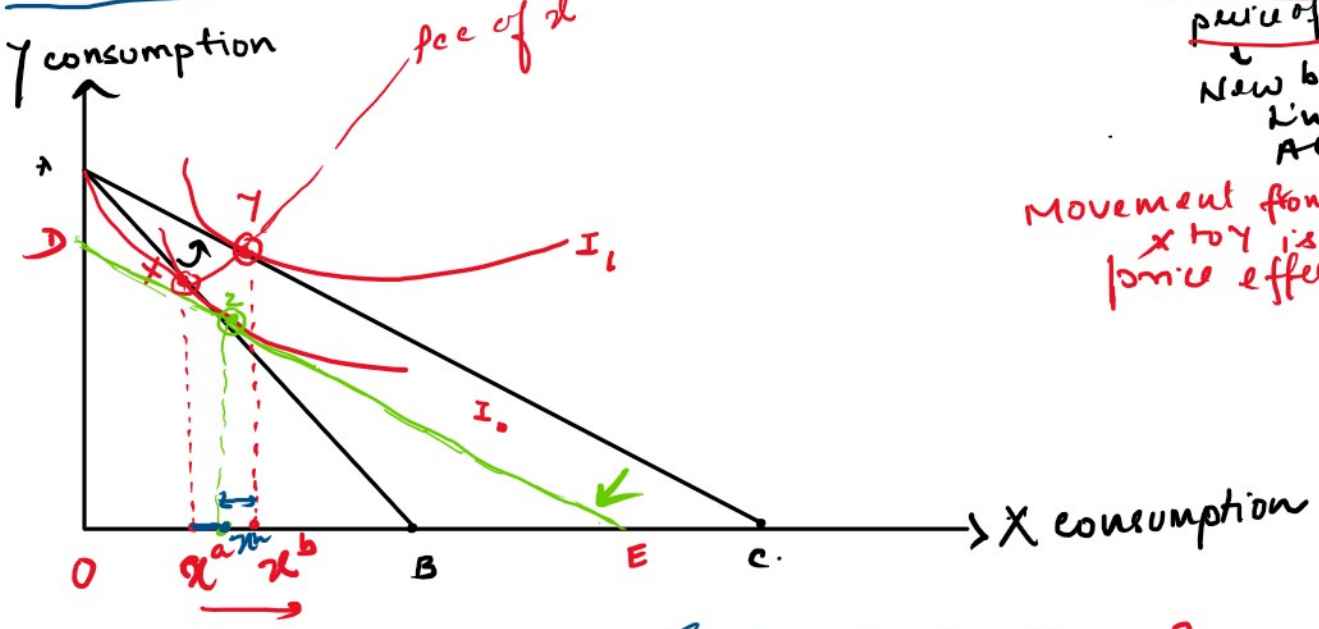
The second component consists of the consumer's reaction to the change in the relative attractiveness

The second component is the relative attractiveness of the cheaper good. The consumer will tend to buy more of the cheaper good, substituting it for the good that is now relatively expensive. This effect is called the substitution effect.

These notional movement of components on price consumption curve from one point to another can be illustrated in two different ways

(i) Hick's Approach (ii) Slutsky's Approach.

Hick's Approach of Decomposition of Price Effect:



Decrease in price of x → New budget line AC.

Movement from x to y is price effect.

Movement from pt x to pt z (xa xh) → substitution effect.

Movement from pt z to pt y

AB → M, P_x, P_y

AC → M, P_x', P_y ($P_x > P_x'$) → AC

DF → M, P_x', P_y

Movement from pt z to pt y
$(x_h x_b) \rightarrow$ income effect.

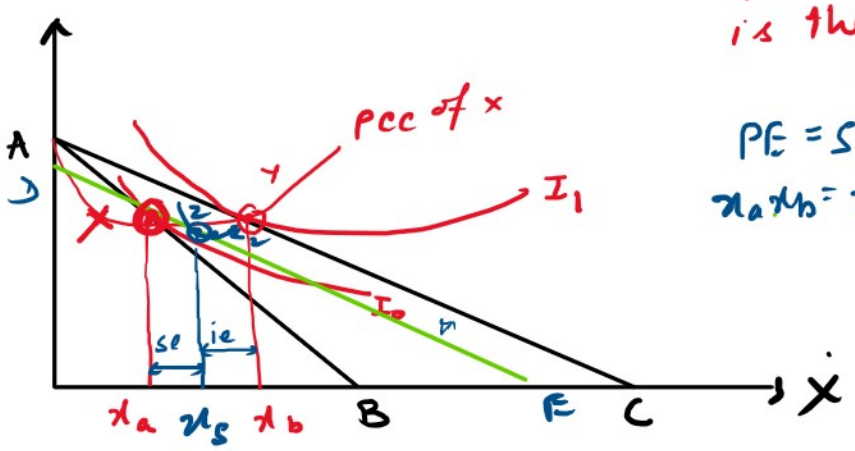
$x_a x_h + x_h x_b = x_a x_b$
(SE + IE = PE)

DE $\rightarrow M_1, P_x', P_y$
$(M > M_1) \rightarrow$ DE
$\therefore (P_x > P_x') \rightarrow$ DE

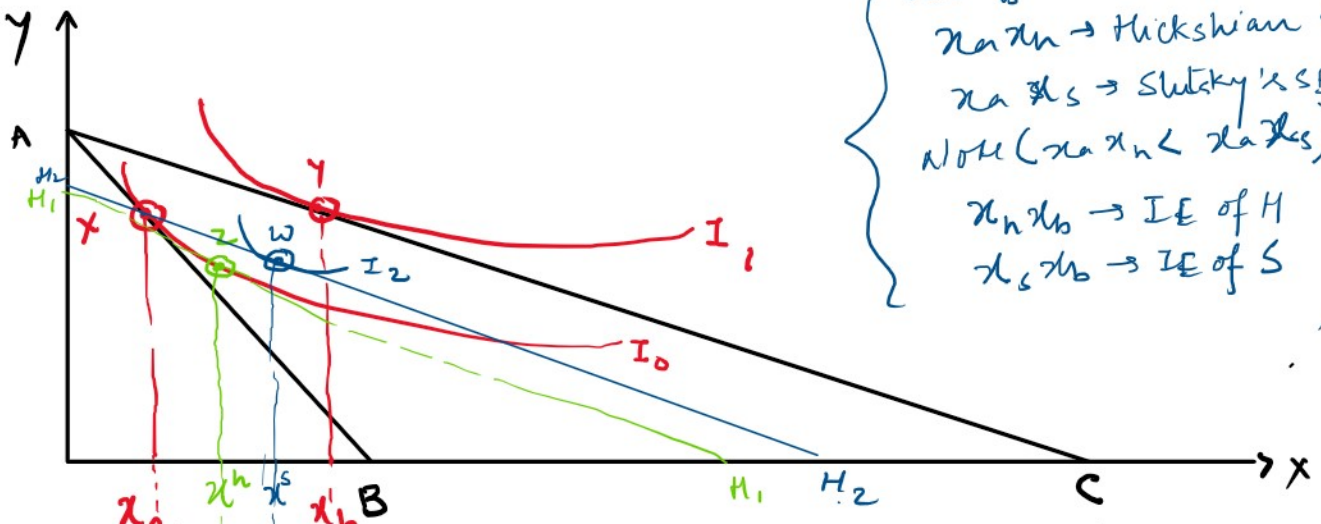
Slutsky's Approach

movement from pt x to y is the price effect.

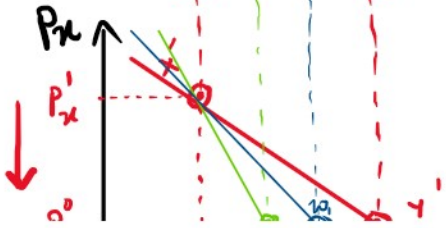
PE = SE + IE
$x_a x_b = x_a x_s + x_s x_b$



Comparison between Hick's and Slutsky's Approach



$x_a x_b \rightarrow$ PE
$x_a x_h \rightarrow$ Hickshian SE
$x_a x_s \rightarrow$ Slutsky's SE
Note $(x_a x_h < x_a x_s)$
$x_h x_b \rightarrow$ IE of H
$x_s x_b \rightarrow$ IE of S



$D^M \rightarrow$ Marshallian / Ordinary Demand.
$D^H \rightarrow$ Hickshian / compensated Demand
$D^S \rightarrow$ Slutsky / compensated Demand.

In the lower part of the diagram we have drawn the demand curves due to change in price from P_x' to P_x^0. D^M is the flattest one and the compensated demand curve D^H is the steepest.

From diag it is clear that ordinary demand curve is more elastic than compensated demand curves.

This is so because when we construct the Marshallian or Ordinary demand curve for a normal good there exists both SE & IE and both effects work in same direction to increase the quantity demanded when price level falls.

But in case of compensated demand curve (both Hicks & Slutsky), since Income effect is taken away from the consumer there exists no income effect but only SE.

As a result change in quantity will be [illegible] ordinary

As a result change in quantity ... less than that in case of ordinary demand.