

$$TE = SE + IE$$

WHEN  $P_x \uparrow \rightarrow \frac{P_x}{P_y} \uparrow \rightarrow$  BUY LESS OF X ( $Q_x^d \downarrow$ ) [SE] AND MORE OF Y ( $Q_y^d \uparrow$ )  
 $\downarrow$  HFS REAL INCOME  $\downarrow \rightarrow$  MAKES HIM POORER  $\rightarrow Q_x^d \downarrow$  [IE]

$$\Delta Q_{x,TE}^d = \Delta Q_{x,SEA}^d + \Delta Q_{x,IEA}^d$$

EX: WHEN  $P_x \uparrow$ , ORIGINALLY HE BUYS  $X = 10$  UNITS. NOW WITH HIGHER PRICE OF X, HE BUYS ONLY = 7 UNITS

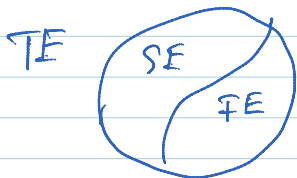
$$\Delta Q_{x,TE}^d = 7 - 10 = -3$$

WE WANT TO KNOW MORE ABOUT  $\Delta Q_{x,SE}^d = ?$  (-1)

$\Delta Q_{x,IE}^d = ?$  (-2)

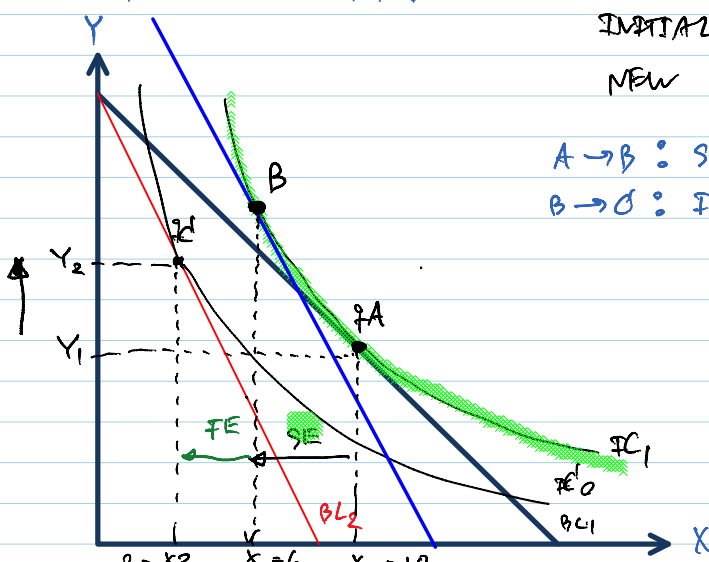
$$-3 = \begin{matrix} SE(-1) \\ FE(-2) \end{matrix}$$

SO, WE HAVE TO "DECOMPOSE" THE TWO-COMBINED EFFECT INTO TWO SEPARATED EFFECTS  $\left\{ \begin{matrix} SE \\ IE \end{matrix} \right.$



TASK: TO SEE SE, YOU HAVE TO GET RID OF IE.

LET'S DO IT.



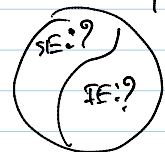
INITIAL EQUILIBRIUM:  $A(x_1, y_1)$

NEW EQUILIBRIUM:  $C(x_2, y_2)$

$A \rightarrow B$  : SE

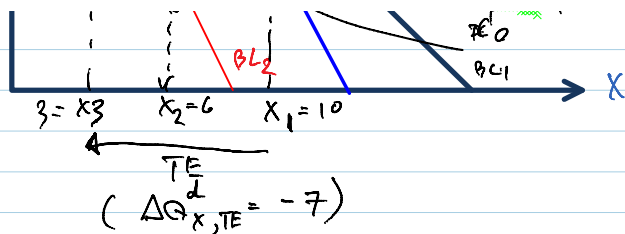
$B \rightarrow C$  : IE

TE: -7



LAST WAGE:  $\frac{P_x}{P_y}$

THIS WAGE:  $\frac{P_x}{P_y}$



THIS WPE:  $\frac{1}{P_x}$   
 $\frac{P_y}{P_x} > P_x$   
 WHERE

SUBSTITUTION EFFECT :

CHANGE IN  $Q_x^d$  DUE TO THE CHANGE IN RELATIVE PRICE ( $\frac{P_x}{P_y}$ ), HOLDING UTILITY CONSTANT.

INCOME EFFECT :

CHANGE IN  $Q_x^d$  DUE TO THE CHANGE IN REAL INCOME, HOLDING RELATIVE PRICE CONSTANT.

NOTE • THE BLUE LINE WE CONSTRUCT IS CALLED

"IMAGINARY BUDGET LINE" OR "HYPOTHETICAL BUDGET LINE"

- WE USE IT FOR A SPECIFIC PURPOSE IN THAT WE WANT TO "SEPARATE" SE FROM IE!

(ROBERT H. FRANK)

- CONSIDER MOVEMENT FROM A  $\rightarrow$  B (SUBSTITUTION EFFECT)

INTERPRETATION IS THE FOLLOWING :

YOU CAN SEE THAT AT THE NEW RELATIVE PRICE, EVEN THIS GUY "WERE TO" HAVE ENOUGH MONEY TO GET BACK TO HIS ORIGINAL IC, HE WILL NOT CHOOSE BASKET A BUT INSTEAD HE CHOOSES BASKET B, WHICH IMPLIES THAT, HE BUYS LESS OF NOW RELATIVELY MORE EXPENSIVE GOOD (X) AND MORE OF NOW RELATIVELY CHEAPER GOOD (Y).

THIS IS "SUBSTITUTION EFFECT" !!!

- CONSIDER MOVEMENT FROM B TO C (INCOME OR REAL INCOME EFFECT)

UNFORTUNATELY, HIS PURCHASING POWER REDUCES DUE TO THE FACT THAT  $P_x$  INCREASES. ☹️

SO, HE IS NOW POORER AND THEN HE BUYS LESS OF GOOD X FROM B  $\rightarrow$  C ( $X_2 \rightarrow X_3$ )

↓  
DUE TO INCOME EFFECT