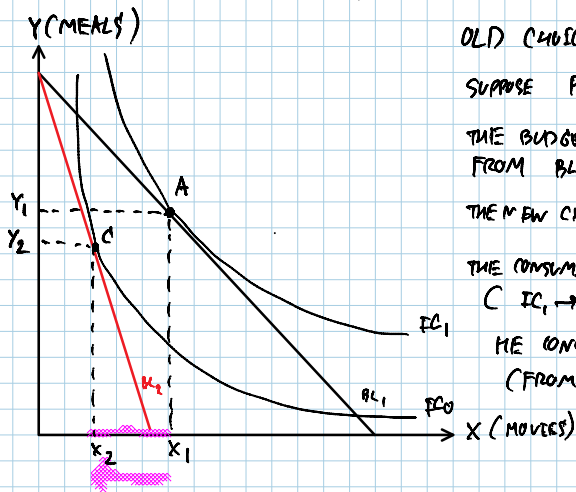


# EFFECT OF CHANGE IN PRICE ON A CONSUMER'S CHOICE



OLD CHOICE :  $A(x_1, y_1)$   
 SUPPOSE  $P_x$  RISES...  
 THE BUDGET LINE ROTATES INWARD FROM  $BL_1$  TO  $BL_2$   
 THE NEW CHOICE IS AT  $C(x_2, y_2)$   
 THE CONSUMER IS NOW WORSE OFF. (IC<sub>1</sub> → IC<sub>0</sub>).  
 HE CONSUMES LESS ON MOVIES (FROM  $x_1$  TO  $x_2$ )

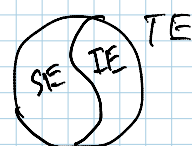
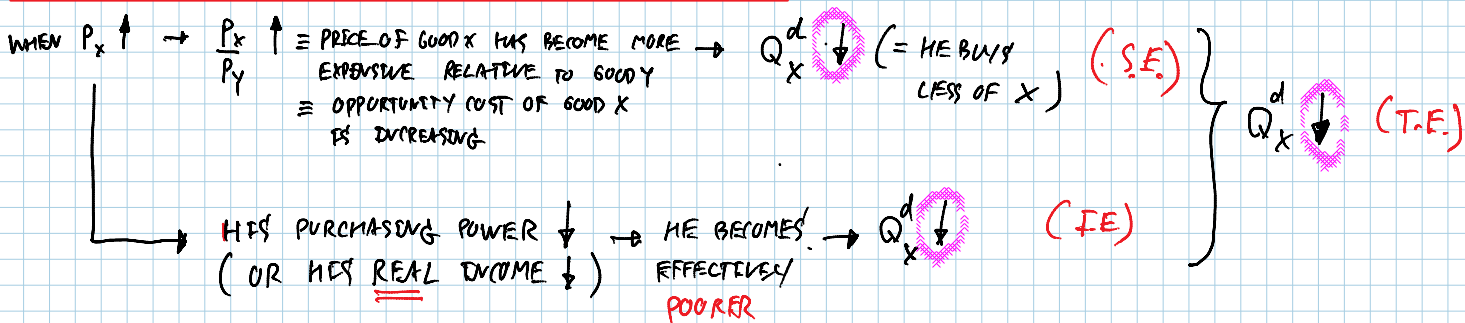
THE REDUCTION IN QUANTITY CONSUMED ON GOOD X FROM  $x_1$  TO  $x_2$  RESULTING FROM AN INCREASE IN  $P_x$  IS CALLED "TOTAL EFFECT" (OF A PRICE CHANGE)

Q: WHEN  $P_x$  RISES, WHY DOES HE LOWER HIS CONSUMPTION ON GOOD X?

A: IT IS BECAUSE SUBSTITUTION EFFECT AND INCOME EFFECT!

LET'S DISCUSS IN MORE DETAILS...

$$\text{TOTAL EFFECT (T.E.)} = \text{SUBSTITUTION EFFECT (S.E.)} + \text{INCOME EFFECT (I.E.)}$$



FORMAL DEFINITION

SUBSTITUTION EFFECT = CHANGE IN QUANTITY DEMANDED (PURCHASED) (CONSUMED) DUE TO THE FACT THAT RELATIVE PRICE BET. THE TWO GOODS CHANGES, HOLDING UTILITY CONSTANT (OR HOLDING REAL INCOME CONSTANT)

REAL INCOME CONSTANT)

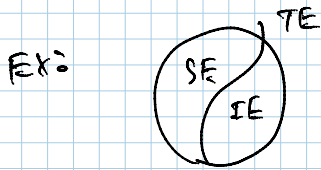
INCOME EFFECT

⊥

= CHANGE IN QUANTITY DEMANDED DUE TO THE FACT THAT

PURCHASING POWER HAS CHANGED  
WHEN HE FACES W/ THE NEW RELATIVE PRICE.

NOW, WE WOULD LIKE TO "DECOMPOSE" OR "BREAK DOWN" T.E. INTO S.E. AND I.E. IN THE PICTURE ABOVE.



LET'S SAY  $P_x \uparrow$  FROM 100 TO 200

B/F:  $Q_x = 10$

NF:  $Q'_x = 5$

$\Delta Q_x = 5 - 10 = -5 \rightarrow$  THIS IS TOTAL EFFECT (T.E).

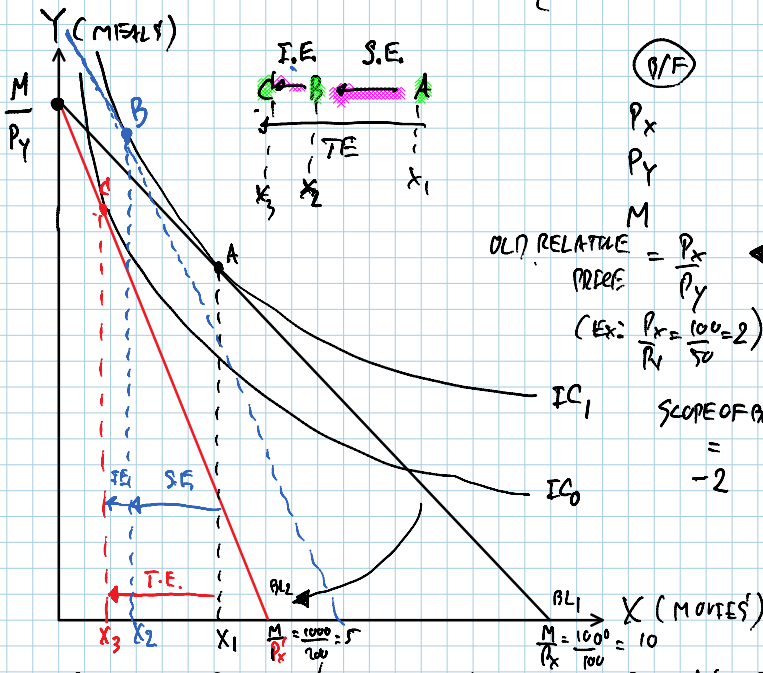
$$\Delta Q_x = \Delta Q_{x, \text{via S.E.}} + \Delta Q_{x, \text{via I.E.}}$$

$$(-5) = (\quad) + (\quad)$$

$$-3 \quad -2$$

$$-4 \quad -1$$

$$-2 \quad -3$$



(B/F)

$P_x$   
 $P_y$   
 $M$   
OLD RELATIVE PRICE =  $\frac{P_x}{P_y}$   
(EX:  $\frac{P_x}{P_y} = \frac{100}{50} = 2$ )  
SCOPE OF  $BL_1$   
= -2

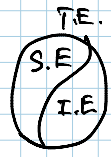
(A/F)

WHERE  $P'_x > P_x$   
 $P'_x$   
 $P_y$   
 $M$   
NEW RELATIVE PRICE =  $\frac{P'_x}{P_y}$   
(EX:  $\frac{P'_x}{P_y} = \frac{200}{50} = 4$ )  
SCOPE OF  $BL_2$   
= -4 !

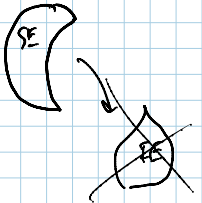
SUPPOSE  $P_x$  RISES, THE BUDGET LINE SWINGS FROM  $BL_1$  TO  $BL_2$ . THE NEW CHOICE IS AT BASKET C WHERE HE CONSUMES LESS OF GOOD X [THIS IS "TOTAL EFFECT" (OF AN INCREASE IN  $P_x$ )] NOTICE THAT HIS UTILITY LEVEL REDUCES. (NOW HE IS ON

A LOWER IC, NAMELY  $IC_0$ )

TO "BREAK DOWN" THE TOTAL EFFECT INTO TWO SEPARATE EFFECTS: S.E. & I.E., WE ASK THE FOLLOWING QUESTION?



TASK HERE: IN ORDER TO SEE "PURE SUBSTITUTION EFFECT":  $\Delta Q_x$  DUE TO  $\Delta \frac{P_x}{P_y}$ , WE MUST GET RID OF INCOME EFFECT (OR ELIMINATE)



HOW TO ELIMINATE I.E.? HERE IT IS...

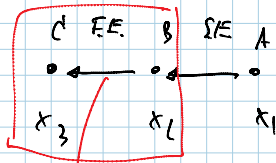
WE ASK "IN FACING W/ NEW RELATIVE PRICE ( $\frac{P_x'}{P_y}$ ), HOW MUCH INCOME DOES HE NEEDS IN ORDER TO GET BACK TO THE ORIGINAL UTILITY LEVEL (= ON THE ORIGINAL IC)?"

TO DO THIS, WE HAVE TO CONSTRUCT "AN IMAGINARY BUDGET LINE WHICH IS PARALLEL TO THE NEW BL AND TANGENT TO THE OLD IC."

FRANK,  $\Rightarrow$  MICROECONOMICS AND BEHAVIOR

# ABOVE IS S.E. AND I.E. DECOMPOSITION WHEN GOOD X IS A NORMAL GOOD. THERE, YOU SEE THAT S.E. AND I.E. WORK IN THE SAME DIRECTION, I.E.

WHEN  $P_x \uparrow$ , VIA S.E., THE BUYER BUYS LESS OF X,  $Q_x \downarrow$   
 , VIA I.E., THE BUYER BUYS LESS OF X,  $Q_x \downarrow$

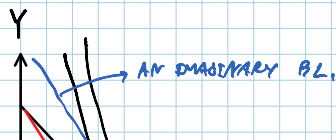


WHEN X IS A NORMAL GOOD

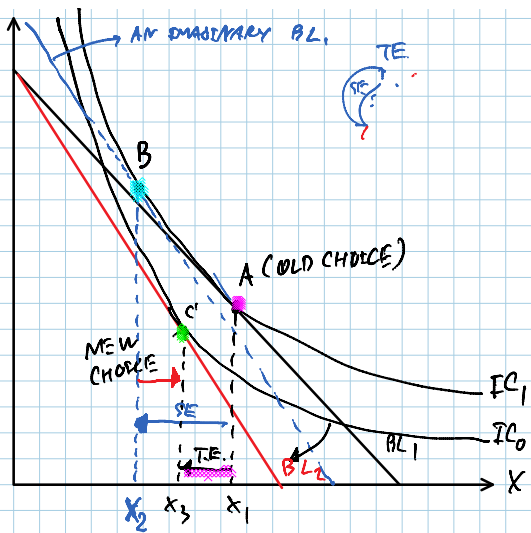
WHEN REAL INCOME FALLS, HE BUYS LESS OF X.

CASE 2 WHEN GOOD X IS AN INFERIOR GOOD.

INFERIOR GOOD: WHEN YOUR "REAL" INCOME  $\uparrow$ , QUANTITY FOR GOOD X DEMAND  $\downarrow$   
 AND WHEN YOUR "REAL" INCOME  $\downarrow$ , QUANTITY FOR GOOD X DEMAND  $\uparrow$   
 (= PURCHASING POWER)



SUPPOSE  $P_x$  RESES.



SUPPOSE  $P_x$  RISES.

RESULT #1: PL ROTATES INWARD FROM  $BL_1$  TO  $BL_2$

RESULT #2: BASKET C IS A NEW CHOICE. HE BUYS LESS OF X IN RESPONSE TO AN INCREASE IN  $P_x$

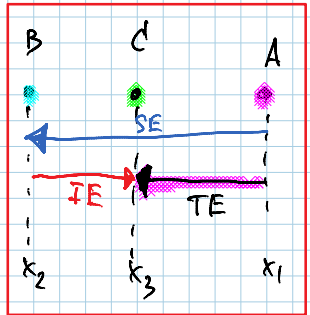
RESULT #3 (S.E. & I.E): SE AND IE WORK AGAINST EACH OTHER:

VIE S.E,  $Q_x^d \downarrow$

VIE I.E,  $Q_x^d \uparrow$  ( $\because$  X IS AN INFERIOR GOOD)

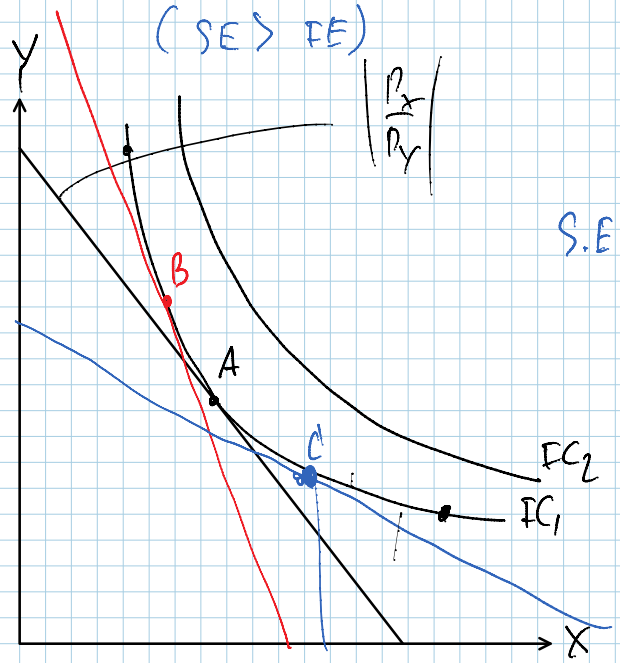
OBSERVE THAT  $SE > IE$ .

So, AT THE END, HE BUYS LESS OF X.



WHEN X IS AN INFERIOR GOOD: SE DOMINATES IE. ( $SE > IE$ )

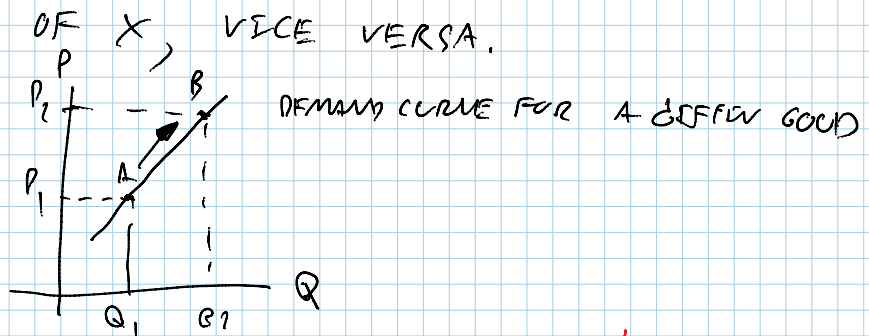
SPECIAL NOTE  
ON SE



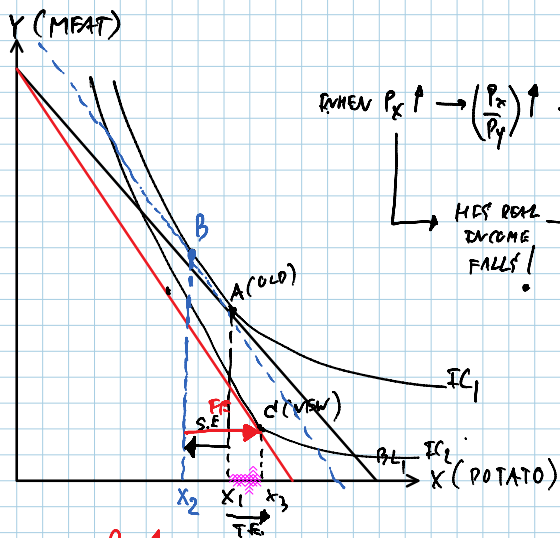
S.E  $\Rightarrow \Delta Q_x^d$  WHEN RELATIVE PRICE CHANGES, HOLDING U CONSTANT

CASE 3 WHEN X IS A GIFFEN GOOD.

GIFFEN GOOD: X IS A GIFFEN GOOD IF AN INCREASE IN  $P_x$  CAUSES A BUYER TO BUY MORE



RESULT LAW OF DEMAND IS VIOLATED!

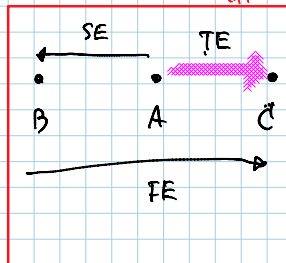


WHEN  $P_x \uparrow \rightarrow \left(\frac{P_x}{P_y}\right) \uparrow \rightarrow$  BUY LESS OF X:  $Q_x^d \downarrow$

HIS REAL INCOME FALLS!  $\rightarrow$  BECOME POORER  $\rightarrow$  BUY MORE OF X  $Q_x^d \uparrow$

X IS A GIFFEN

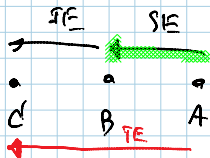
WHEN  $IE > SE$   
( $\downarrow Q_x$ ) ( $\downarrow Q_x$ )  
HE BUYS MORE OF X AT THE END.



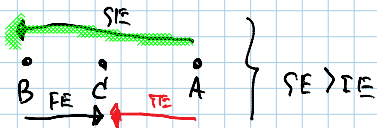
WHEN X IS A GIFFEN OR WE CAN CALL SUPER INFERIOR GOOD.

WHEN  $P_x \uparrow$

① X IS NORMAL



② X IS INFERIOR



③ X IS SUPER INFERIOR GOOD

