

Sittha Kanyasakul

6304641456

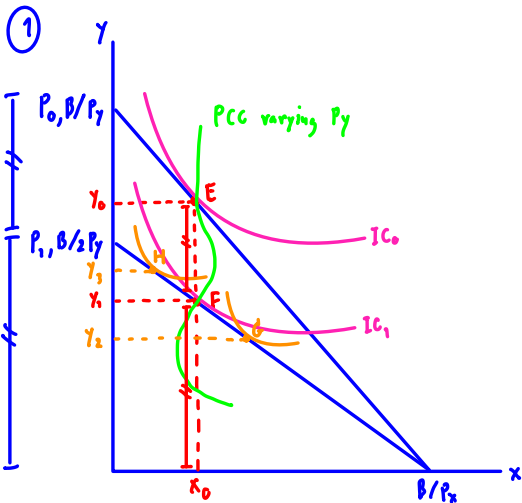
#1 Demonstrate how PCC with varying price P_y , (P_x and Income are fixed) can give us the price elasticity of Y to be equal to, less than, or greater than 1 in absolute value

#2

7. A college student has two options for meals: eating at the dining hall for \$6 per meal, or eating a Cup O' Soup for \$1.50 per meal. Her weekly food budget is \$60. $6x + 1.5y = 60$
- Draw the budget constraint showing the trade-off between dining-hall meals and Cups O' Soup. Assuming that she spends equal amounts on both goods, draw an indifference curve showing the optimum choice. Label the optimum as point A.
 - Suppose the price of a Cup O' Soup now rises to \$2. Using your diagram from [part \(a\)](#), show the consequences of this change in price. Assume that our student now spends only 30 percent of her income on dining-hall meals. Label the new optimum as point B.
 - What happened to the quantity of Cups O' Soup consumed as a result of this price change? What does this result say about the income and substitution effects? Explain.
 - Use points A and B to draw a demand curve for Cup O' Soup. What is this type of good called?

#3

11. Economist George Stigler once wrote that, according to consumer theory, "if consumers do not buy less of a commodity when their incomes rise, they will surely buy less when the price of the commodity rises." Explain this statement using the concepts of income and substitution effects.



Calculate the price elasticity of y :

$$|\eta_y| = \frac{\% \Delta Y}{\% \Delta P_y} = 1$$

$$\% \Delta P_y = \frac{\Delta P_y}{\frac{1}{2} P_y} = \frac{P_y}{\frac{1}{2} P_y} = \frac{2}{1}$$

$$\% \Delta Y = \frac{Y_0 - Y_1}{Y_0} = -\frac{1}{3}$$

$$\therefore \eta_y = \frac{-1/3}{2/1} = -\frac{1}{2}$$

$$|\eta_y| = |-1/2| = \frac{1}{2} \text{ (from E to F)}$$

$$|\eta_y| = \frac{\% \Delta Y}{\% \Delta P_y} > 1 \text{ (from E to G)}$$

$$|\eta_y| = \frac{\% \Delta Y}{\% \Delta P_y} < 1 \text{ (from E to H)}$$

$$P_0 = P_y$$

$$P_1 = 2P_y$$

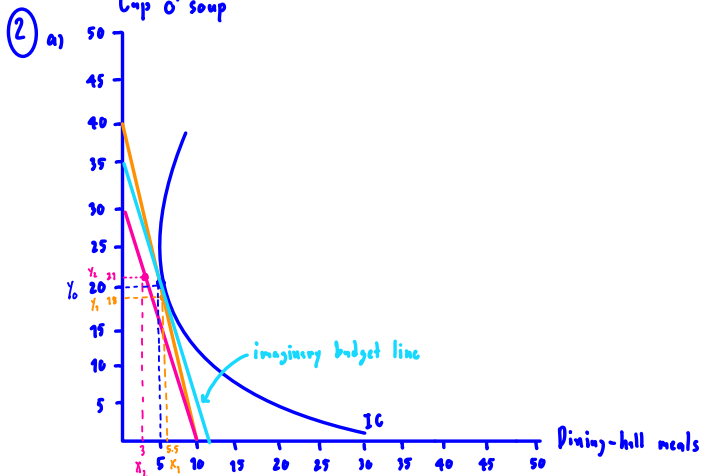
$$\Delta P_y = P_1 - P_0 = 2P_y - P_y = P_y$$

$$\frac{P_1 + P_0}{2} = \frac{2P_y + P_y}{2} = \frac{3}{2} P_y$$

$$Y_1 = \frac{Y_0}{2}, Y_0$$

$$\Delta Y = Y_1 - Y_0 = \frac{Y_0}{2} - Y_0 = -\frac{Y_0}{2}$$

$$\frac{Y_1 + Y_0}{2} = \frac{Y_0/2 + Y_0}{2} = \frac{3}{4} Y_0$$



$$6x + 1.5y = 60$$

$$\text{if } y = 0 \quad \text{if } x = 0$$

$$6x = 60 \quad 1.5y = 60$$

$$x = 10 \quad y = 40$$

$$\text{spend equally: } \frac{60}{2} = 30$$

$$6x = 30 \quad 1.5y = 30$$

$$x = 5 \quad y = 20$$

b) $P_y = 1.5 \rightarrow P'_y = 2$

$$0.5(60) = 18$$

$$6x = 18 \quad 2y = 42$$

$$x = 3 \quad y = 21$$

$$6x + 2y = 60$$

$$\text{if } y = 0 \quad \text{if } x = 0$$

$$6x = 60 \quad 2y = 60$$

$$x = 10 \quad y = 30$$

c) As a result of price change, the consumption of Cup O' Soup increased by 1

The result of substitution effect:

$$\text{S.E.} \begin{cases} \Delta x = x_1 - x_0 = 5.5 - 5 = 0.5 > 0 \\ \Delta y = y_1 - y_0 = 19 - 20 = -1 < 0 \end{cases}$$

The result of income effect:

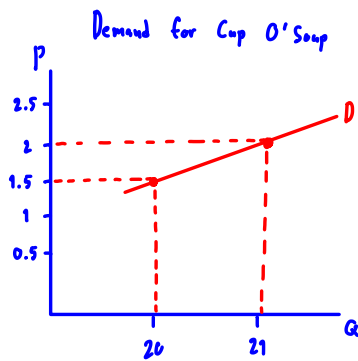
$$\text{I.E.} \begin{cases} \Delta x = x_2 - x_1 = 3 - 5.5 = -2.5 < 0 \\ \Delta y = y_2 - y_1 = 21 - 19 = 2 > 0 \end{cases}$$

$$\text{Total Effect} = \text{T.E.} = \text{S.E.} + \text{I.E.}$$

$$\text{T.E.} \begin{cases} \Delta x = (x_1 - x_0) + (x_2 - x_1) = x_2 - x_0 = 3 - 5 = -2 < 0 \\ \Delta y = (y_1 - y_0) + (y_2 - y_1) = y_2 - y_0 = 21 - 20 = 1 > 0 \end{cases}$$

$\therefore$ The consumption of x decreases and y increases when real income decreases

d)



(Q, P)

old 20 1.5

new 21 2

$\therefore$ The demand curve has positive slope which violates the Law of Demand

This means Cup O'soup must be a Giffen good.

③ a change in income affects the consumer's choice

when income increases but the purchase of good doesn't decrease = normal good

a change of price can cause 2 effects

1. substitution effect

2. income effect

- if the price of goods increases the substitution effect makes consumer buy less of good (consumers consume the cheaper goods)

- If the price of goods increases, the consumers consume less of good (less purchasing power)

$\therefore$ both effects cause consumers to consume less of goods