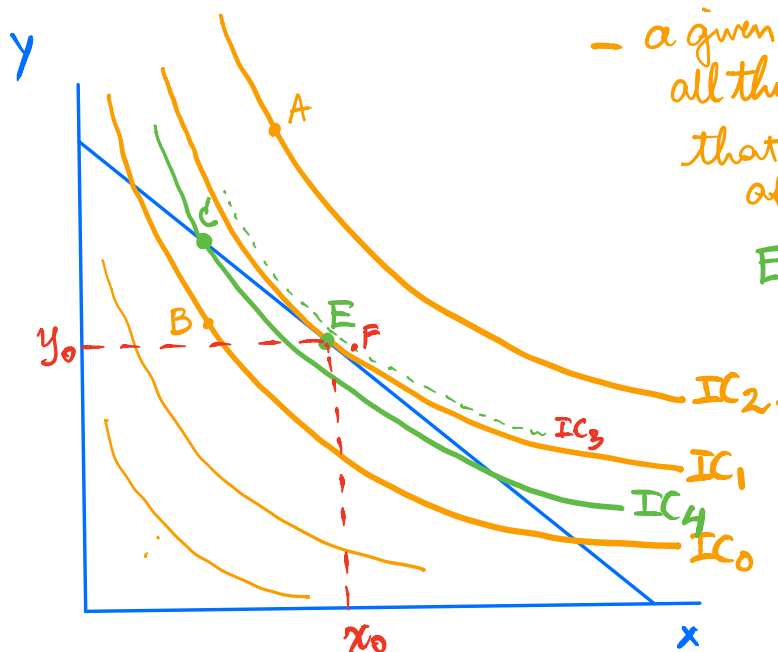


Consumer's Equilibrium = max satisfaction under budget constraint.

- a given Budget line gives all the possible bundles that the consumer can afford.

Equilibrium is where the consumer maximizes his satisfaction within the limitation of income.



E is the equilibrium point because

- 1) E is on the budget line. — E is affordable.
- 2) E is on the highest IC that the consumer can choose to consume.

F is on a higher IC₃ but it is not affordable — because it is above the budget line.

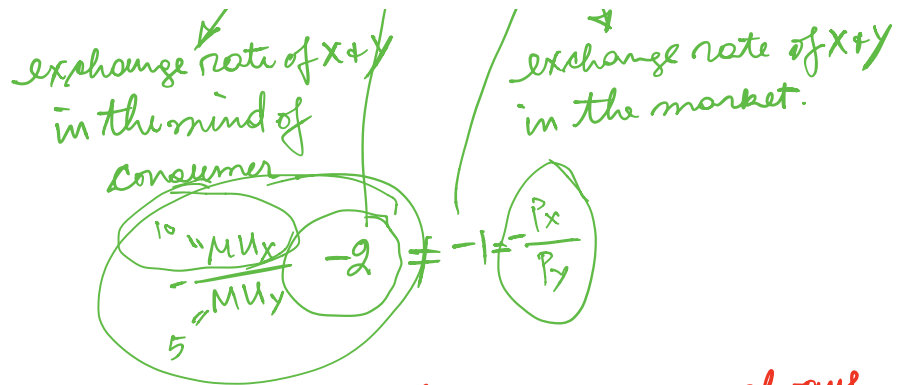
C is affordable because it is on the budget line

but C is on IC₄ which lower than IC₁ where point E is on. So C gives less satisfaction than E.

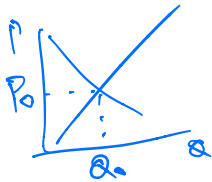
At E, IC₁ is tangent to the Budget line.

So slope of IC₁ at E = slope of Budget line.

$$-\frac{MU_x}{MU_y} = -\frac{P_x}{P_y}$$



i.e. If $\frac{MU_x}{MU_y} \neq \frac{P_x}{P_y}$, then the consumer can always attain more satisfaction by exchanging more (or less) of X for less (more) of Y.



Equilibrium Conditions for consumption problem.

The consumer has equilibrium at $E = (x_0, y_0)$

- if
- 1) $P_x x_0 + P_y y_0 = I \Leftrightarrow E$ is on the budget line.
 - 2) at E, $MRS = \frac{MU_x}{MU_y} = -\frac{P_x}{P_y} \Leftrightarrow$ slope of IC = slope of Budget line.

(or) equivalently.

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} \Leftrightarrow$$

$$MU_x = 10, MU_y = 5$$

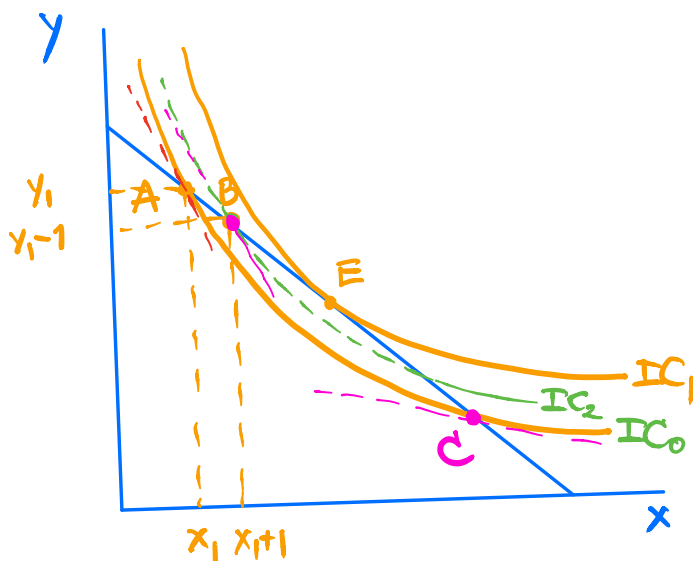
$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

$$\frac{10}{P_x} = \frac{5}{P_y} \Rightarrow$$

the last baht spent on X gives the marginal utility equal to that spent on Y.

at E, price of X must double price of Y.

Another explanation for equilibrium being at E



Let $P_x = P_y$. so

Budget line has slope = -1

At A, $\frac{MU_x}{MU_y} = 3$

$\frac{P_x}{P_y} = 1.$

The consumer can have
1 more of X for } to B.
1 less of Y.

B is on a higher IC_2 than IC_0 .

But at B, slope of $IC_2 \neq$ slope of Budget line.

$\therefore$ B is also not the equilibrium
the consumer can get higher satisfaction
by consuming more of X and less of Y
until he reaches E where slope of $IC_1 =$ slope
of Budget line.