1. The Keynesian consumption function assumes that 0 < MPC < 1; what is the basis for such assumption?

$$C = a + by$$

a = autonomous comsumption = ก.บริโภคขั้นต่ำ

$b = MPC = \frac{dc}{dy}$: when income increases by 1 unit, consumption increases by less than 1 unit.

$$0 < MPC < 1$$

- $0 < MPC$ income ↑ ⟶ Consume ↑ [Positive Relationship]
- $MPC < 1$ According to the keynesian theory of consumption, increasing their consumption depends on an increase in their income, but not as much as the increase in their income.

2. Assume a CLOSED economy with NO government. Let the autonomous consumption be 200 and MPS be 0.3. Draw and write equations for both saving and consumption functions.

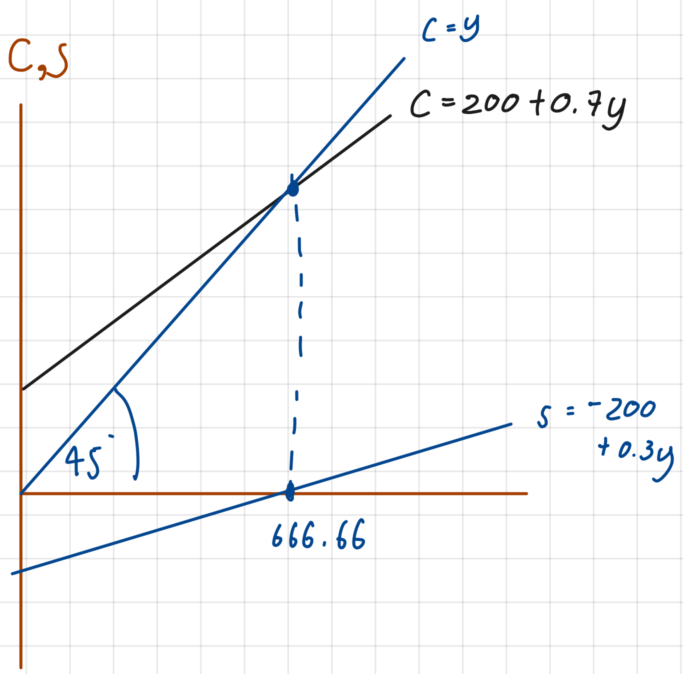
$$C = 200 + MPC \cdot y$$

$$MPC + MPS = 1$$

$$MPC + 0.3 = 1$$

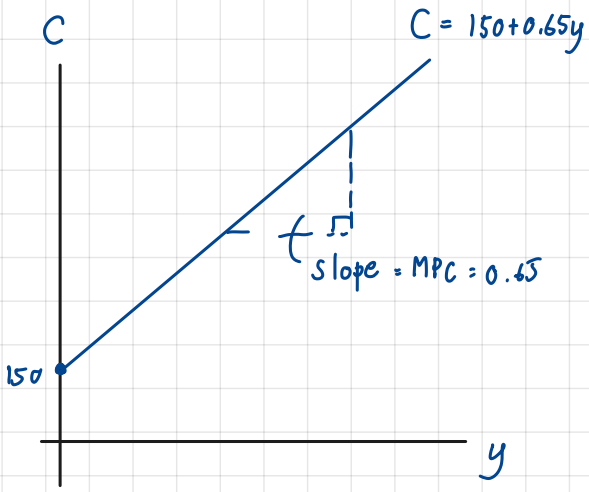
$$\therefore MPC = 0.7$$

$$C = 200 + 0.7y$$
$$S = -200 + 0.3y$$



3. Let the saving function be S = -150 + 0.35Y. Find and draw the consumption function.

$$C = y - S$$
$$C = y - [-150 + 0.35y]$$
$$C = y + 150 - 0.35y$$
$$C = 150 + 0.65y$$



Aggregate expenditure = C + I + G + [X - M]

4. How do the followings affect the AE graph (i.e. explain how the graph changes) and the equilibrium output?

1. All firm managers decide to buy fewer machines.
2. The government decides to build more roads.
3. The citizens decide to save more at all income levels. C↓
4. The citizens decide to save larger proportion of income. MPC, MPS
5. The government decides to raise tax.

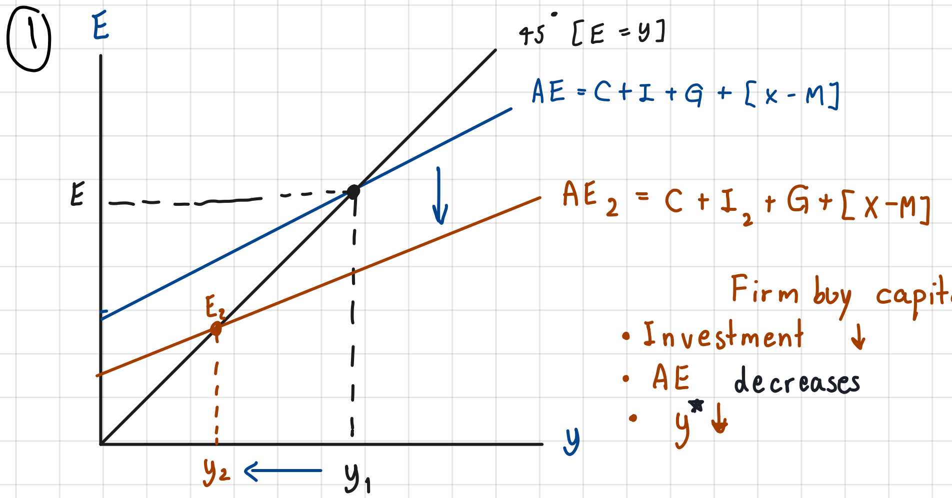
ข้อ4 ไม่เหมือนกับข้อ3

ถ้า MPS↑ → MPC↓ → C↓

[ลดลงแบบ rotate เพราะ MPC คือ slope ของ C และ AE

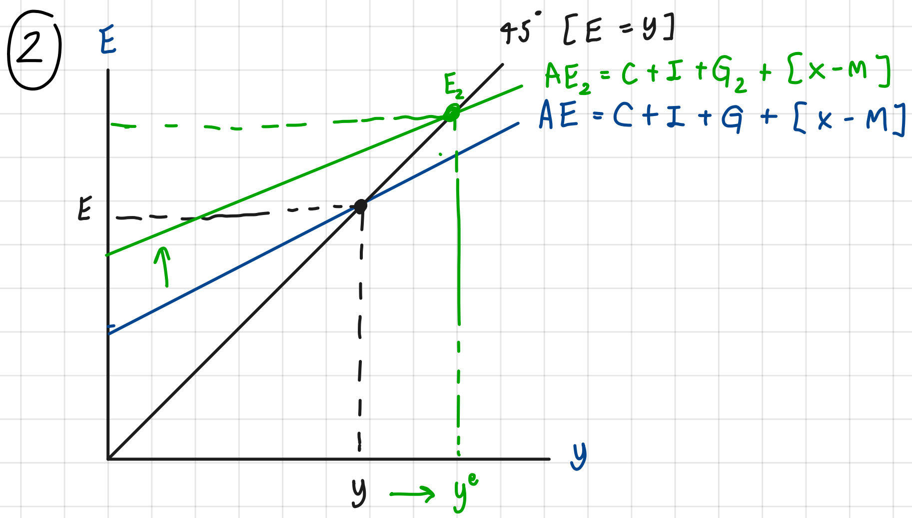
autonomous ไม่ depend on income

(1)



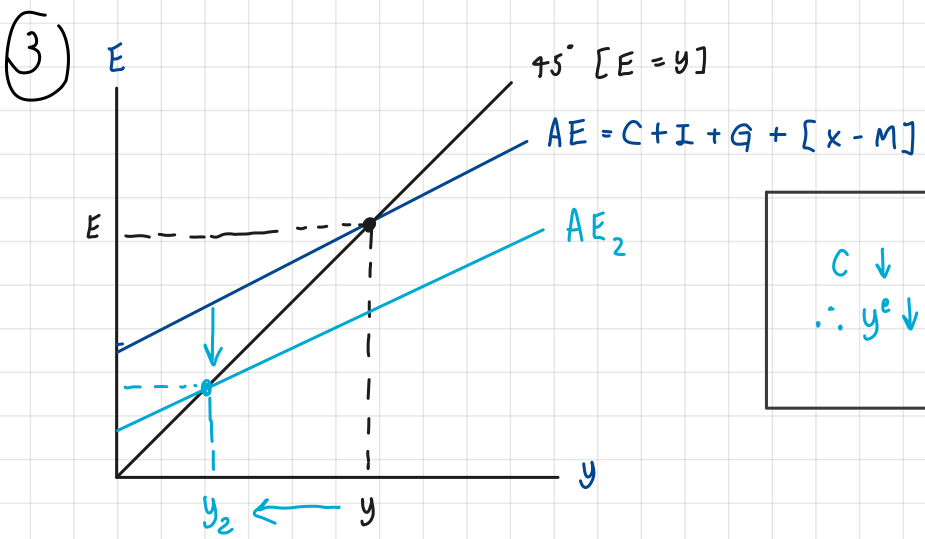
Firm buy capital ↓
• Investment ↓
• AE decreases
• y* ↓

(2)



Government spending ↑
∴ Equilibrium output ↑
[ye, y*]

(3)



C ↓
∴ ye ↓

Aggregate expenditure = C + I + G + [X - M]

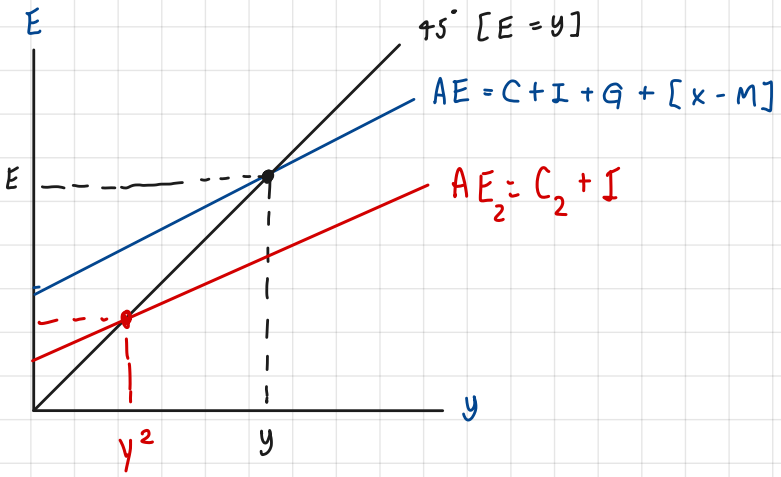
4. How do the followings affect the AE graph (i.e. explain how the graph changes) and the equilibrium output?

- All firm managers decide to buy fewer machines.
- The government decides to build more roads.
- The citizens decide to save more at all income levels.

④ The citizens decide to save larger proportion of income.

⑤ The government decides to raise tax.

④



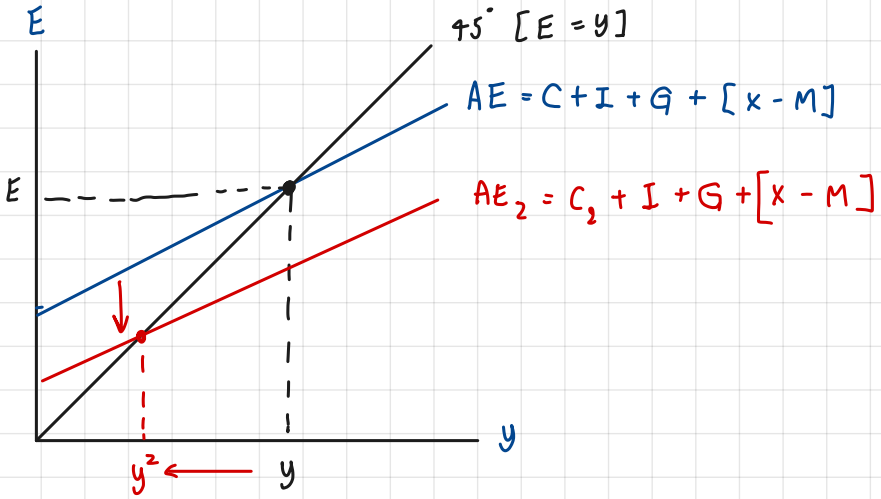
C↓

y^e↓

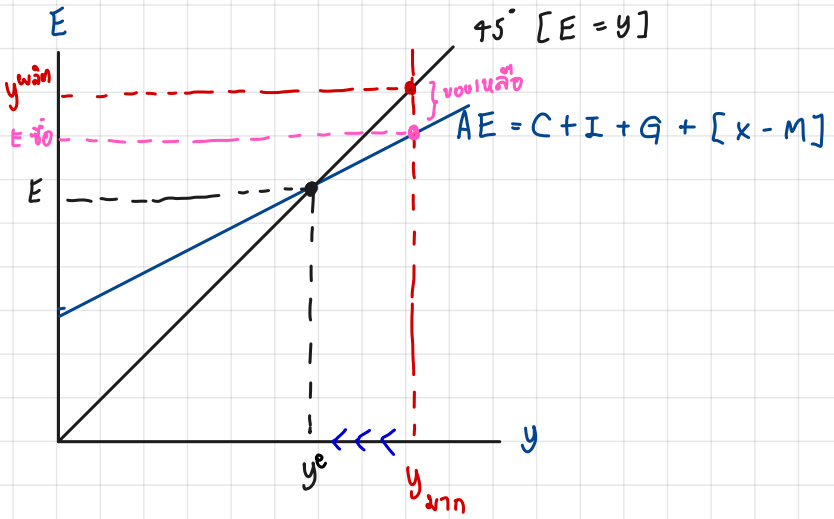
T↑ → Disposible Income ↓ → C↓

→ AE↓

⑤



5. In the Keynesian Cross Model, suppose that aggregate output is greater than aggregate expenditure. Explain the adjustment process towards the equilibrium.



When Aggregate output more than aggregate expenditure, we will have surplus. Inventories will increase, this is a signal that will encourage firms to decrease their product and thus a move towards equilibrium.

6. Let C = 60 + 0.6Y and I = 20. Find the equilibrium output <u>with the saving/investment approach</u>.

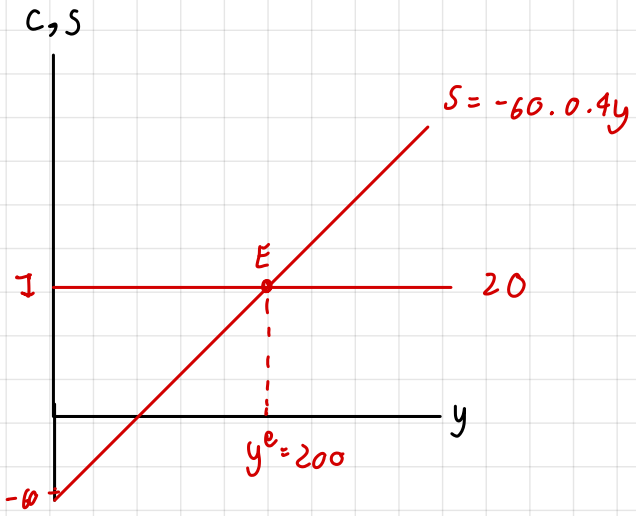
$S = -60 + 0.4y$

$I = 20$

$S = I$

$-60 + 0.4y = 20$

$y^e = 200$



approach.

7. Let S = -60 + 0.4Y and I = 20. Find the equilibrium output with the standard approach. Now, suppose I increases by 20. Find the new equilibrium and the investment multiplier.

- Standard approach

$AE = C + I + G + [X - M]$

$AE = [60 + 0.6y] + 20$

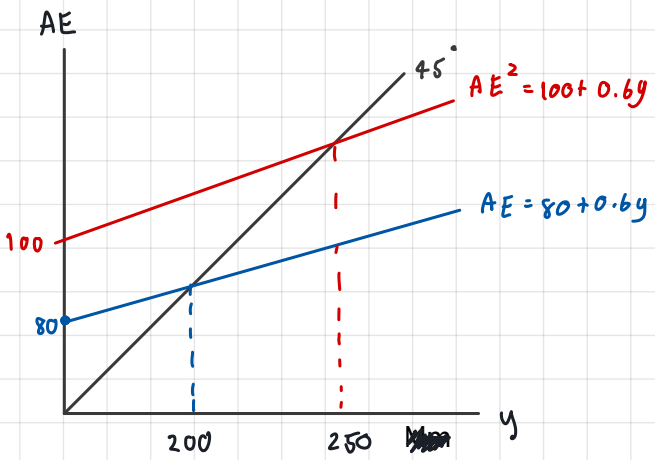
$AE = 80 + 0.6y$

$y = AE$ [at equilibrium]

$y = 80 + 0.6y$

$0.4y = 80$

$y^* = 200$



$I_{new} = 20 + 20 = 40$

New $AE = 60 + 0.6y + 40$

$AE = 100 + 0.6y$

$y_{New} = AE_{NEW}$

$y_{New} = 100 + 0.6y$

$0.4y = 100$

$\therefore y^* = 250$

New equailibrium = 250

Investment multiplier

$$\text{Investment Multiplier} = \frac{\Delta Y}{\Delta I}$$

$$= \frac{y_2 - y_1}{I_2 - I_1}$$

$$= \frac{250 - 200}{40 - 20} = \frac{50}{20} = 2.5$$

∴ When investment increases by 1 unit, the aggregate output will increase 2.5 units.

8. With the multiplier effect, an injection of money (for example, investment) can lead to a greater proportional increase in output. Explain how this can happen.

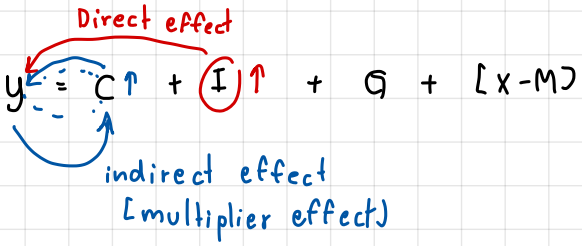
Standard approach : $y = AE$

$AE = C + I + G + [x - M]$

$\therefore$ equilibrium

$y = C + I + G + [x - M]$

$I \uparrow \longrightarrow y \uparrow$



- when money injected, firm have more money to operate their business. this means firm can buy more machine, hire more labor. So, there are more money in flow of income, labor have more income

- one man's spending is another man's income. When the multiplier effect of investment increase, it also make a greater propotional of output increase

9. How is the investment multiplier related to MPC? Explain the intuition behind such relationship. (Hint: Question 9)

- When MPC is larger, giving higher investment multiplier, it will lead to larger flow

  - Large MPC

    $I\uparrow \longrightarrow AE\uparrow$ (a lot) $\longrightarrow y\uparrow$ (a lot)

    ∴ when investment increases, the output (income) will increase a lot. People will spend alot because of receiving higher income, and then others will receive a lot too. These will make the economy growing a lot.

  - Small MPC

    $I\uparrow \longrightarrow y\uparrow \longrightarrow S\uparrow \longrightarrow C\uparrow$ (a little bit) $\longrightarrow AE\uparrow$ (a little bit) $\longrightarrow y\uparrow$ (a little bit)

    ∴ when investment increase, the output (income) also increases. Although people receive a lot of income, people spend less and try to save a lot, thus decreasing the aggregate output (income).

Investment multiplier $= \frac{\Delta y}{\Delta I}$ or $\frac{1}{1-MPC}$

Large MPC $\longrightarrow$ smaller divisor $\longrightarrow$ a larger multiplier

10. What is the Paradox of Thrift? Explain it with diagram.

$S\uparrow \rightarrow C\downarrow \rightarrow AE\downarrow \rightarrow Y^{*}\downarrow$

- When people save their money more which is leakage, people will spend less. when people spend less, others' income will fall, producing less goods and services in the economy. Now people have lower income, and then they can save less.

- Paradox of thrift states that incresing in autonomous saving leads to decrease in aggregate output [income].