Exercise 3

Keynesian Cross and the Multiplier

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

MPC = proportion of income that we use to consume depend on income

it need to between 0 and 1

Ex. income = 10,000 Baht

mpc = 0.6

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

$C = C_0 + C_1 Y$

$= 200 + C_1 Y$

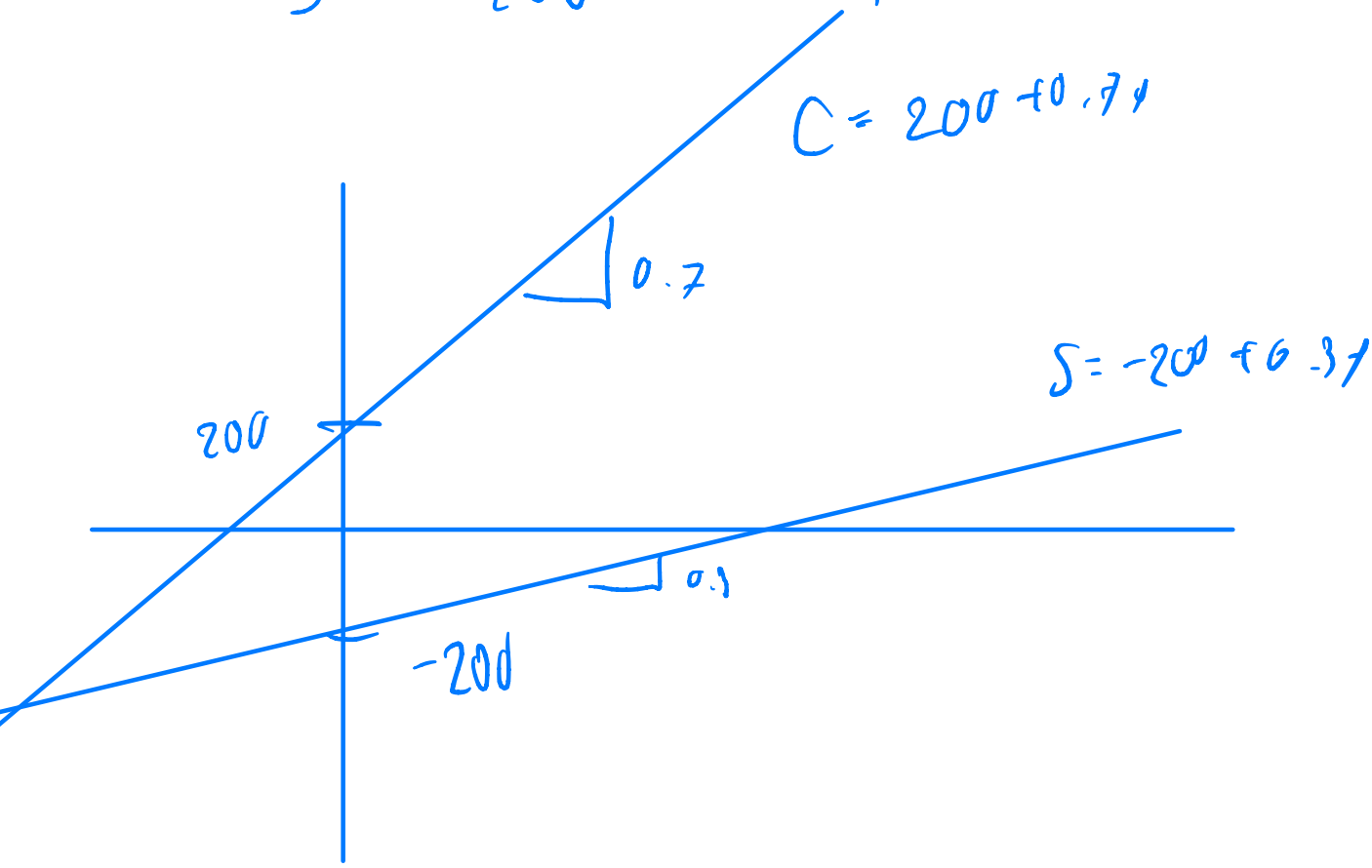
$= 200 + 0.7Y$

$Y = S + C$

$S = Y - C$

$S = Y - (200 + 0.7Y)$

$S = -200 + (0.3)Y$



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

$S = Y - (C_0 + C_1 Y)$

$S = -C_0 + (Y - C_1 Y)$

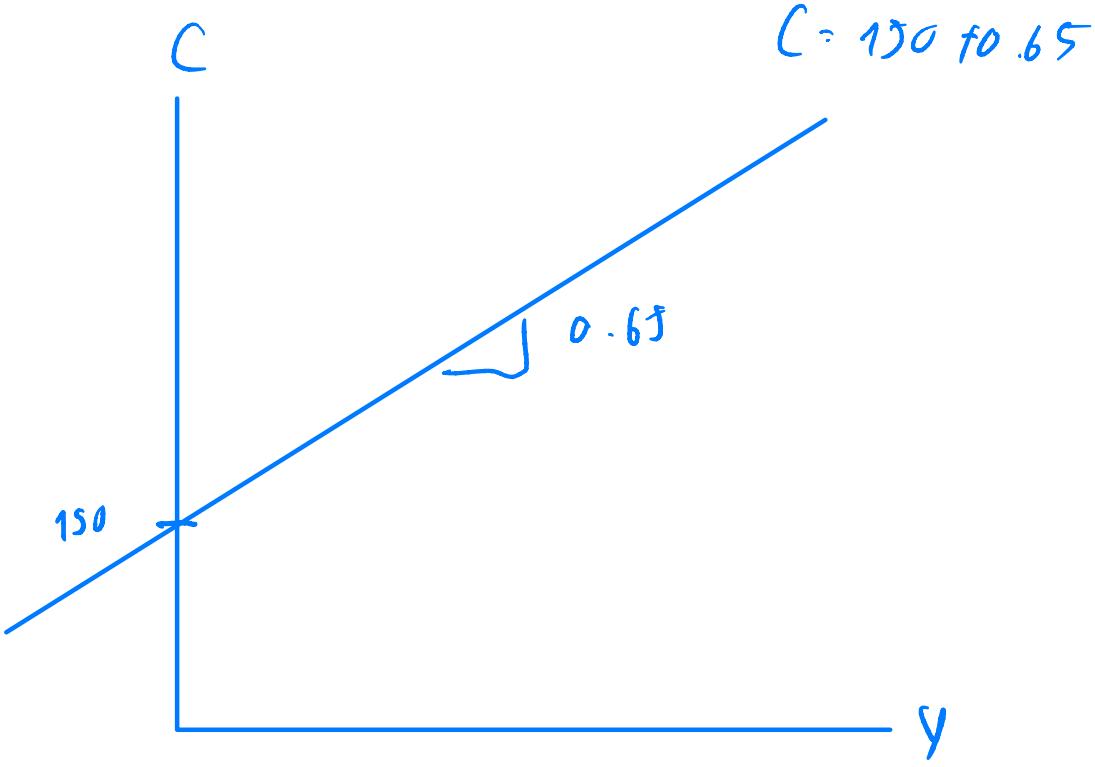
$S = -C_0 + (1 - C_1) Y$

$S = -150 + 0.35Y$

$-C_0 = -150$ $\qquad C_1 = 1 - 0.35$

$C_0 = 150$ $\qquad = 0.65$

$\rightarrow C = 150 + 0.65 Y$



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. = I ↓ → AE ↓ Y ↓
- The government decides to build more roads. G ↑ → AE ↑ Y ↑
- The citizens decide to save more at all income levels. S ↑ → AE ↓ Y ↓
- The citizens decide to save larger proportion of income. (paradox of shift) MPS ↑ MPC ↓ → AE ↓ Y ↓
- The government decides to raise tax. T ↑ → AE ↓ Y ↓

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

If it is aggregate output is higher than aggregat expenaiture is mean that we have a surplus this mean that the company need to reduce the production to make it move toward the equilibrium

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

$Y = C + S$

$S = Y - C$

$S = Y - 60 + 0.6Y$

$S = 0.4Y - 60$

$S = I$

$0.4Y - 60 = 20$

$0.4Y = 80$

$Y = 200$

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

$S = I$

$0.4Y - 60 = 20$

$0.4Y = 80$

$Y^* = 200$

$S = I$

$0.4Y - 60 = 40$

$0.4Y = 100$

$Y^* = 250$

Investment multiplier $= \frac{\Delta Y^*}{\Delta I}$

$= \frac{50}{20} = 2.5$

Increase in I 1 units = increase in output by 2.5 units

Increase in I 20 units = increase in output by 50 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.

when money injected, firm have more money to operate their business. This means firm can buy more machine hire more labor. Therefore, there are more money in flow of income, labor have more income and increase in output.

multiplier is ratio of the change in the equilibrium output to the exogenous variable. this can lead to the lager portion when the slope of AE (MPC-MPM) is low because the denominator will low and make the multiplier high For example slope of ae : 0.9

$\frac{1}{1-0.9} = 10$ this mean exogenous variable increase by 1 unit the output increase by 10 units

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

$$\text{Formular} = \frac{1}{1 - \text{slope of AE}}$$

MPC MPM

↑

This mean higher the number ≤
higher demonitor = higher out come

For example

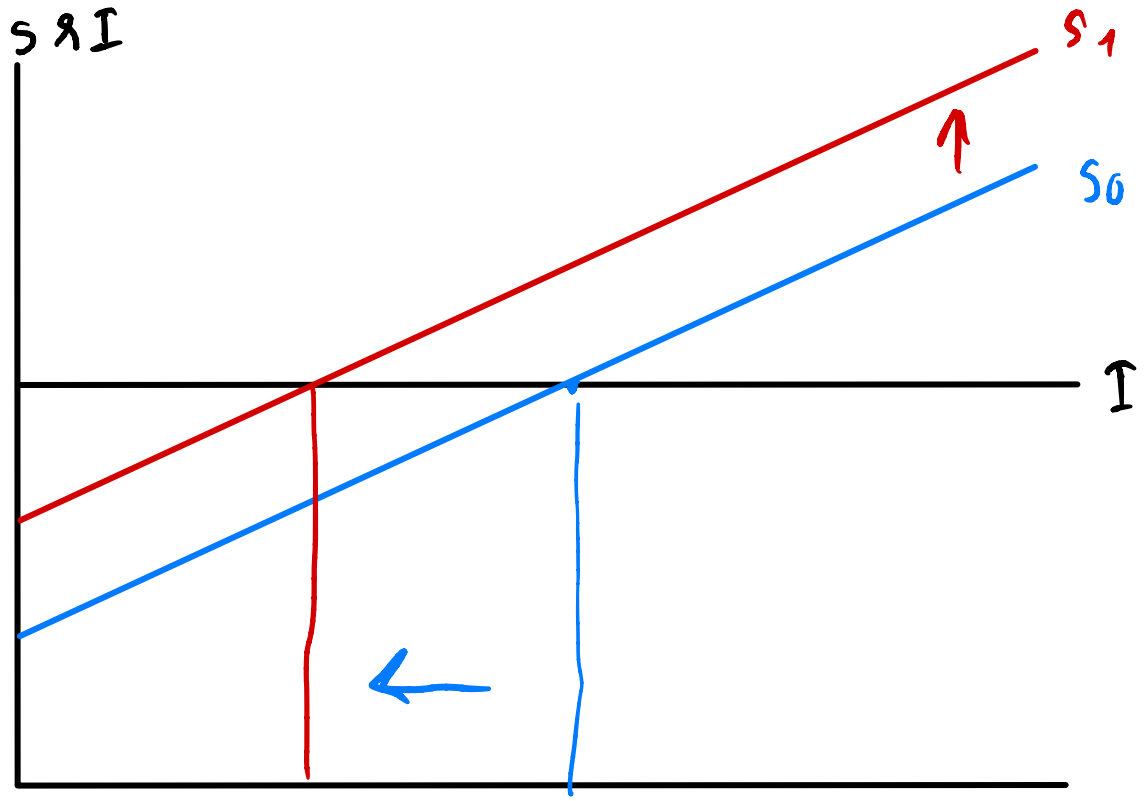
$$\frac{1}{1-0.8} = \frac{1}{0.2} = 5$$

this mean exogenous variable ↑
1 unit =
output ↑
5 units

$$\frac{1}{1-0.2} = \frac{1}{0.8} = 1.25$$

this mean exogenous variable ↑
1 unit =
output ↑
1.25 units

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



Paradox of shift is when people saving more money it lead to decrease in the AE and Y