

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

MPC is ratio between change in consumption to change in income
 MPC is ratio between change in

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.

consumption function

$$C = a + by$$

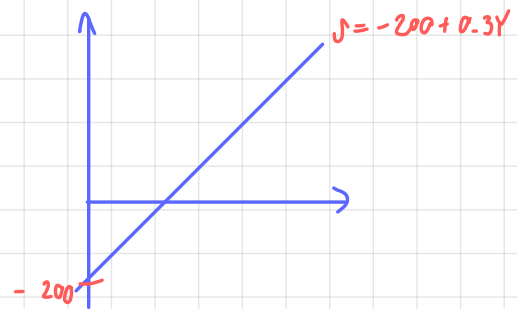
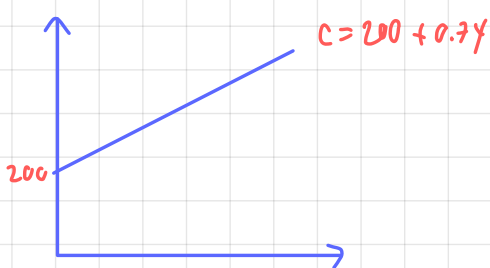
$$C = 200 + 0.7Y$$

saving function

$$S = Y - C$$

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

$$S = 0.3Y - 200$$



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

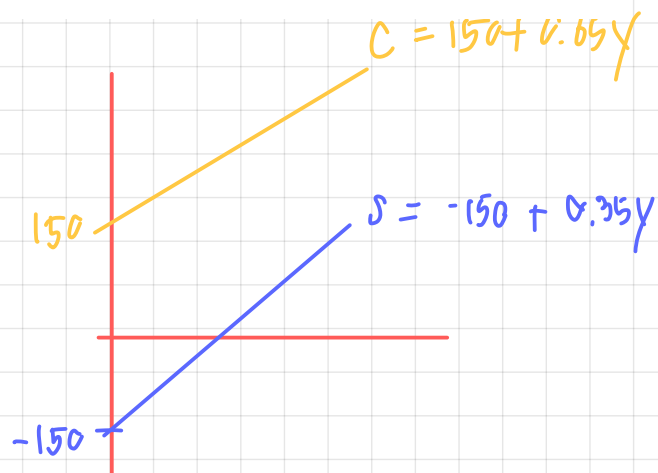
$$S = -150 + 0.35Y$$

$$S = Y - C$$

$$C = Y - S$$

$$C = Y + 150 - 0.35Y$$

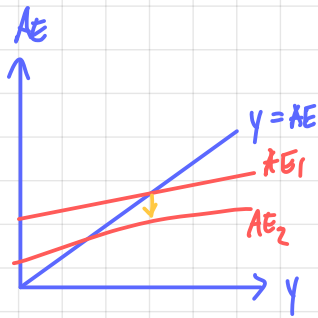
$$C = 150 + 0.65Y$$



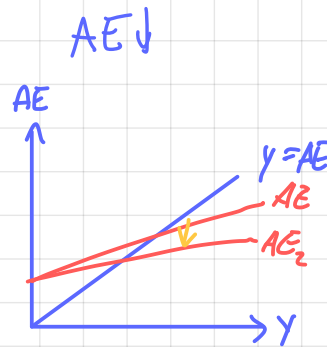
4. How do the followings affect the AE graph (i.e. explain how the graph changes) and the equilibrium output?

- 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.
- The citizens decide to save larger proportion of income.
- The government decides to raise tax.

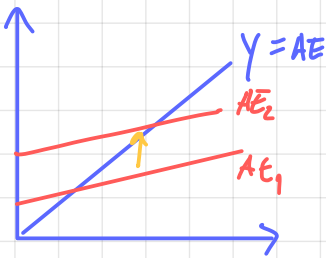
① $I \downarrow$ $AE \downarrow$



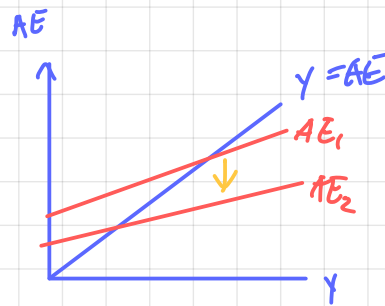
④



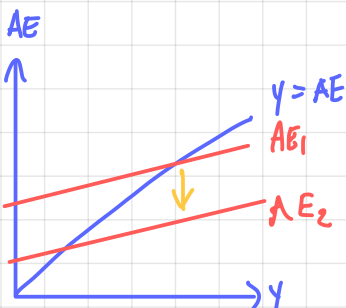
② $Y \uparrow$ $AE \uparrow$



⑤ $T \uparrow$ $CD \downarrow$ $AE \downarrow$



③ $AE \downarrow$



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

When $Y > AE$, there will be a lot of inventories. Thus the firms will reduce production to adjust to the equilibrium

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

$$\begin{array}{l|l}
 S = I \quad ; \quad \text{leakage} = \text{injection} & S = I \\
 S = Y - C & 0.4Y - 60 = 20 \\
 = Y - (60 + 0.6Y) & 0.4Y = 80 \\
 = 0.4Y - 60 & Y^* = 200 \quad *
 \end{array}$$

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.

$$\begin{array}{l|l}
 Y = C + I & I \uparrow 20 \quad ; \quad Y = 0.6Y + 60 + 40 \\
 Y = C + S & Y^* = 250 \quad * \\
 Y = C - 60 + 0.4Y & \text{change in } Y = 50 \\
 C = 0.6Y + 60 & \text{change in } I = 20 \quad \frac{\Delta Y}{\Delta I}, \frac{50}{20} = 2.5 \quad *
 \end{array}$$

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.

$$I \uparrow \Rightarrow AE \uparrow \Rightarrow Y \uparrow$$

$$1 = MPC + MPS$$

$$MPC = 0.8$$



$$MPC = 0.5$$



When people spend more money, there are more money in the economy.

So the firms will produce more leading to increase in AE.

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

$$\text{investment multiplier } m = \frac{1}{1 - MPC}$$

$$MPC = 0.5 ; m = \frac{1}{1 - 0.5} = 2$$

$$MPC = 0.8 ; m = \frac{1}{1 - 0.8} = 5$$

When MPC increase, it gives higher investment multiplier. Then, it leads to increase in aggregate demand. So, the economy will grow.

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

The paradox states that increasing in autonomous saving leads to decrease in aggregate demand (expenditure), then decrease in aggregate output ($S \uparrow \Rightarrow AE \downarrow, Y \downarrow$)

