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Assignment 3

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

Consumption function : $C = C_0 + C_1 Y$

C_1 = MPC = Proportion of income that we use to consume

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.

Income = Saving + Consumption

MPS + MPC = 1

0.3 + MPC = 1

MPC = 1 - 0.3

MPC = 0.7

Consumption

$C = C_0 + C_1 Y$

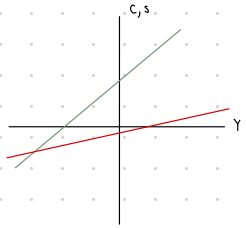
$C = 200 + 0.7Y$

Saving

$Y = S + C \rightarrow S = Y - C$

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

$S = -200 + 0.3Y$



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

Saving function : $S = Y - (C_0 + C_1 Y)$

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

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

$S = -150 + 0.35Y$

$\therefore C_0 = 150$, $C_1 = 1 - 0.35$

$C_1 = 0.65$

$\hookrightarrow C = C_0 + C_1 Y \rightarrow C = 150 + 0.65Y$

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

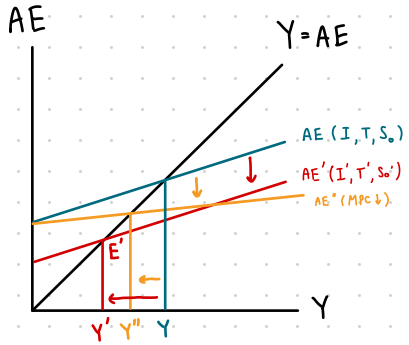
① - All firm managers decide to buy fewer machines. $I \downarrow$, $AE \downarrow$, $Y^* \downarrow$

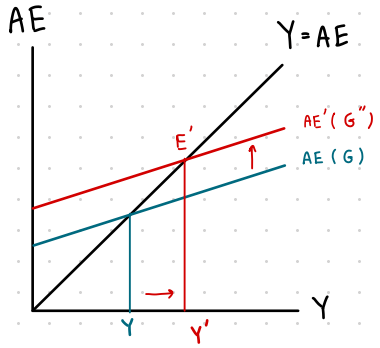
② - The government decides to build more roads. $G \uparrow$, $AE \uparrow$, $Y^* \uparrow$

③ - The citizens decide to save more at all income levels. $S \uparrow$, $AE \downarrow$, $Y^* \downarrow$

④ - The citizens decide to save larger proportion of income. $MPS \uparrow$, $MPC \downarrow$, $AE \downarrow$, $Y^* \downarrow$

⑤ - The government decides to raise tax. $T \uparrow$, $AE \downarrow$, $Y^* \downarrow$



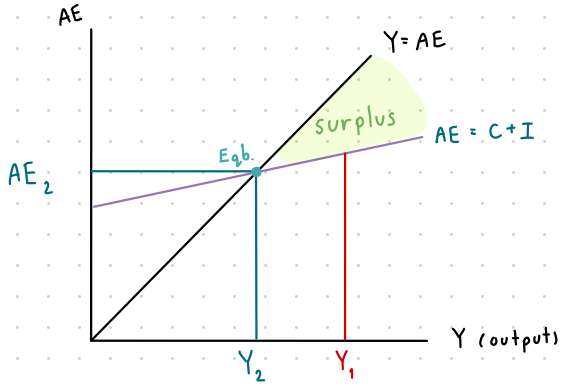


③ not depended on $Y \rightarrow S_0 \uparrow$

④ $MPS \uparrow$; $MPC + MPS = 1 \rightarrow MPS \uparrow + MPC \downarrow = 1$

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

Y > AE (Supply > demand)

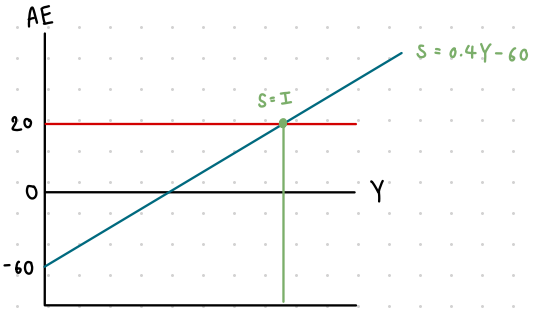


output > income = inventories will accumulate → business need to cut back their production → Y_1 moves to Y_2

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 with the standard approach. Now, suppose I increases by 20. Find the new equilibrium and the investment multiplier.

$S = I$

$0.4Y - 60 = 20$

$0.4Y = 80$

$Y^* = 200$

I increase 20

$0.4Y - 60 = 40$

$0.4Y = 100$

$Y^* = 250$

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

$\Delta Y^* = 250 - 200 = 50$

$\Delta I = 40 - 20 = 20$

$= \frac{50}{20}$

$= 2.5$ Ans:

∴ When I increase by 1, output will increase by 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.

Firm buy more machine, hire more labor → more money in flow → labor have more income, input increase.

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

multiplier : $\frac{\Delta Y}{\Delta I} = \frac{1}{1 - \text{slope of AE}}$

$= \frac{1}{1 - MPC}$

When MPC ↑ → investment multiplier ↑

According to the circular flow, firm have more money + produce more. Labor have more money → MPC ↑. So, circular flow receive more money → multiplier ↑ → output change

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

Paradox of Thrift is a increase in efforts to save have caused a drop in income but no overall change in saving