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Exercise 3
Keynesian Cross and the Multiplier

1. The Keynesian consumption function assumes that $0 < MPC < 1$; what is the basis for such assumption?
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.
3. Let the saving function be $S = -150 + 0.35Y$. Find and draw the consumption function.
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.

5. In the Keynesian Cross Model, suppose that aggregate output is greater than aggregate expenditure. Explain the adjustment process towards the equilibrium.
6. Let $C = 60 + 0.6Y$ and $I = 20$. Find the equilibrium output with the saving/investment 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.
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.
9. How is the investment multiplier related to MPC? Explain the intuition behind such relationship. (Hint: Question 9)
10. What is the Paradox of Thrift? Explain it with diagram.

Pimpitcha 0812

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

$C = a + by$

$\text{MPC} : \frac{\Delta C}{\Delta Y}$

• all amount of consumption depended on income

0<MPC<1 blc you consumption not more than 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.

$Y = C + I$

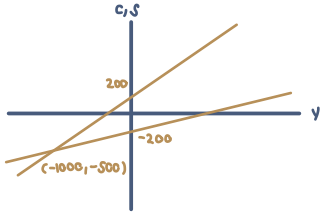
$C = 200 + 0.7Y \rightarrow$ consumption

$Y = C + S$

$S = Y - C$

$S = Y - 200 - 0.7Y$

$S = -200 + 0.3Y \rightarrow$ saving

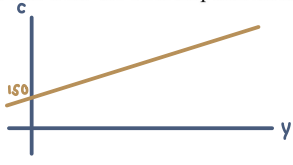


3. Let the saving function be S = -150 + 0.35Y. Find and draw the consumption function.

$Y = C + S$

$Y = C - 150 + 0.35Y$

$C = 150 + 0.65Y$



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. 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. MPS↑ MPC↓ AE↓ Y^*↓
- The government decides to raise tax. T↑ AE↓ Y^*↓

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

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

surplus

Adjustment process → cutback production → moving the economic towards eqbm.

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

$Y = C + S$

$S = Y - C$

$S = Y - 60 - 0.6Y$

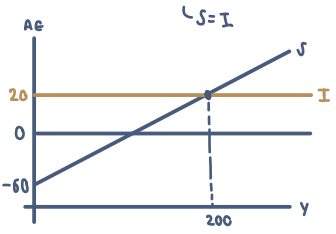
$S = -60 + 0.4Y$

$S = I$

$0.4Y - 60 = 20$

$Y = \frac{80}{0.4}$

$Y^* = 200$



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.

$S = I$

$-60 + 0.4Y = 20$

$0.4Y = 80$

$Y^* = 200$

if I increase by 20

$S = I + 20$

$-60 + 0.4Y = 40$

$0.4Y = 100$

$Y^* = 250$ [new]

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

$= \frac{50}{20}$

$= 2.5$ #

∴ 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.

when money injected, firm have more money to operate their business. This mean 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.

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

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

when MPC increase, it give higher investment multiplier.

explain: when there is expenditure, firm receive more money and produce more for demand. Therefore, when firm receive more fund, they can use it to buy new machines or pay to labors. Labors have more money, so their MPC is increase. Thus, there are more money in circular flow, and increase size of multiplier.

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

- Paradox of thrift stats that increase in autonomous saving leads to decrease in aggregate demand. Therefore, aggregate output decrease.