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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?

MPC is a ratio between change in consumption to change in income. if income increase, consumption will increase but not more than 1.

MPC = Proportion of income that we use to consume

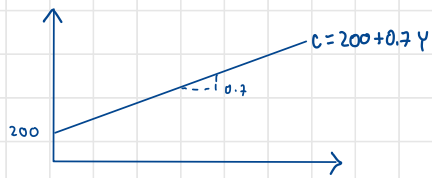
MPC < 1 because you can't spend more than your income

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.

MPC = 1 - MPS
(slope)

Consumption function → $C = 200 + 0.7Y$

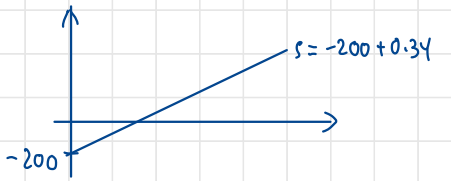
; MPC = 1 - 0.3
= 0.7



Saving function → $S = Y - C$

$S = Y - 200 - 0.7Y$

$S = -200 + 0.3Y$

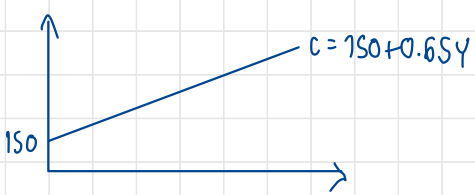


3. Let the saving function be S = -150 + 0.35Y. Find and draw the consumption function.

$S = Y - C$

$-150 + 0.35Y = Y - C$

$C = 150 + 0.65Y$

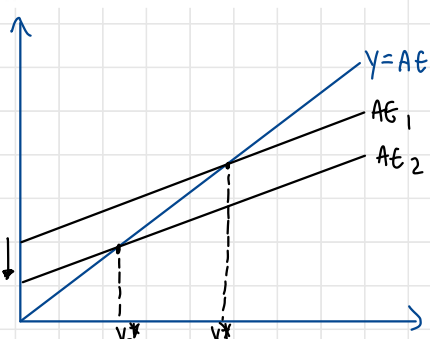


4. How do the followings affect the AE graph (i.e. explain how the graph changes) and the equilibrium output?

- All firm managers decide to buy fewer machines.

Investment ↓ , AE ↓

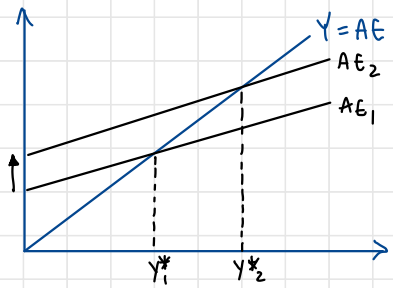
∴ decrease in equilibrium output



- The government decides to build more roads.

Government spending ↑, AE ↑

∴ increase in equilibrium output



(no matter how income is it)

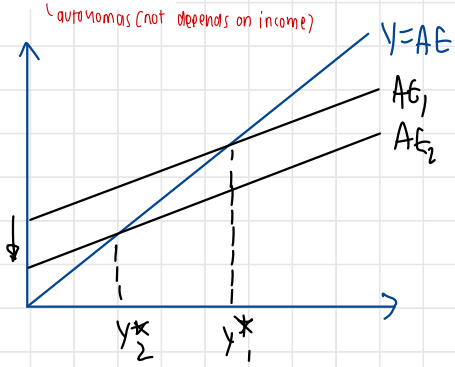
- The citizens decide to save more at all income levels.

(autonomous (not depends on income))

$S = Y - C$

Consumption ↓, AE ↓

∴ decrease in equilibrium output



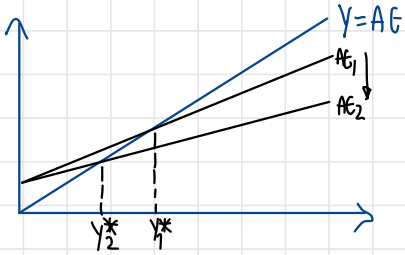
MPS

- The citizens decide to save larger proportion of income.

$C = a + bY$ (slope)

save ↑ consumption ↓ AE ↓

∴ decrease in equilibrium output

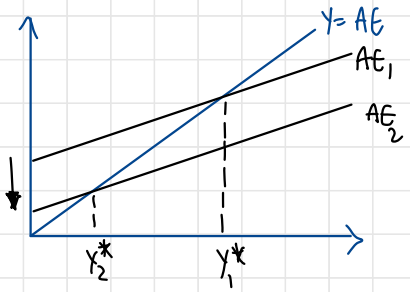


- The government decides to raise tax.

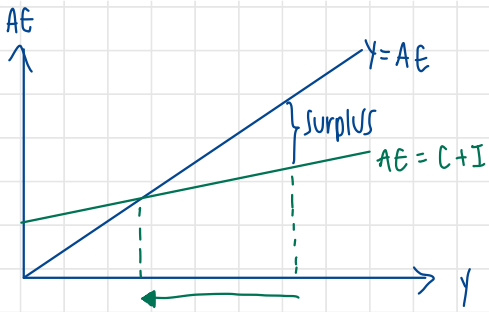
$C = a + bY$

tax ↑ consumption ↓ AE ↓

∴ decrease in equilibrium output



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



aggregate output is greater than aggregate expenditure means the firm produced more than demand. Therefore firms should cut their production.

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

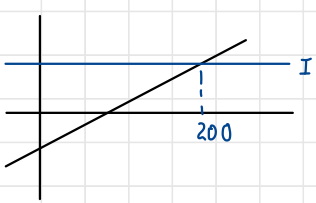
S=I, constant

$S = I$, $S = Y - C$

$20 = Y - 60 - 0.6Y$

$80 = 0.4Y$

$Y^* = 200$



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.

$AE = C + I$

$= (Y - S) + I$

$= Y + 60 - 0.4Y + 20$

$Y = 80 + 0.6Y$

$Y_1^* = 200$

Suppose I ↑ 20;

$80 + 0.6Y + 20$

$Y = 100 + 0.6Y$

$0.4Y = 100$

$Y_2^* = 250$

multiplier is $\frac{\Delta Y}{\Delta I} = \frac{50}{20} = 2.5$

∴ when I increase by 1, Y (output) will increase by 2.5

or investment multiplier $= \frac{1}{1 - \text{slope of AE}}$

$= \frac{1}{1-0.6} = 2.5$

investment / gov. spending / export

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.

because one's man spending is another man's income, and when income is higher, demand is also higher. thus, number of output will increase.

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

investment multiplier = $\frac{1}{1 - MPC}$ → when MPC is high, investment multiplier also high

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

Paradox of Thrift occurs when the result is contradic from whet you expected. for example, people save more → they will be leakage → ppl spend less → Goods & services are produced less → income in economy fall → you can save less