Topic 3 Exercise

Ratiyakorn Damrongsak
6404640952

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

Why $0 < MPC < 1$?

we can't spend > income.
or when $Y \uparrow 1$, C_1 will $\uparrow$ less than 1

Consumption function → $C = C_0 + C_1 Y$ (C_1 = MPC)

MPC : Proportion of income that we use to consume
(amount of consumption depended on income

2. Assume a CLOSED economy with NO government. Let the autonomous consumption (C_0) be 200 and MPS be 0.3. Draw and write equations for both saving and consumption functions.

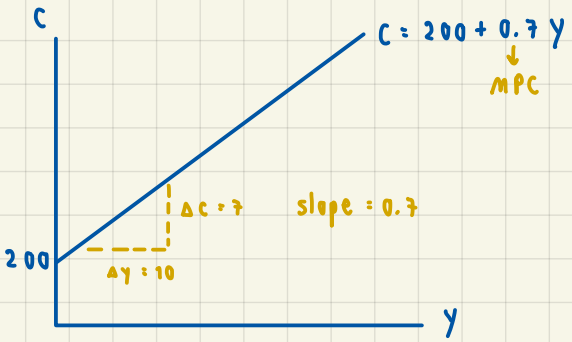
from MPC + MPS = 1

$\therefore$ MPC = 1 - 0.3 = 0.7

MPC : slope of consumption function

$C = C_0 + C_1 Y$

$C = 200 + 0.7Y$ ✓



from $y = s + c$

$s = y - c$

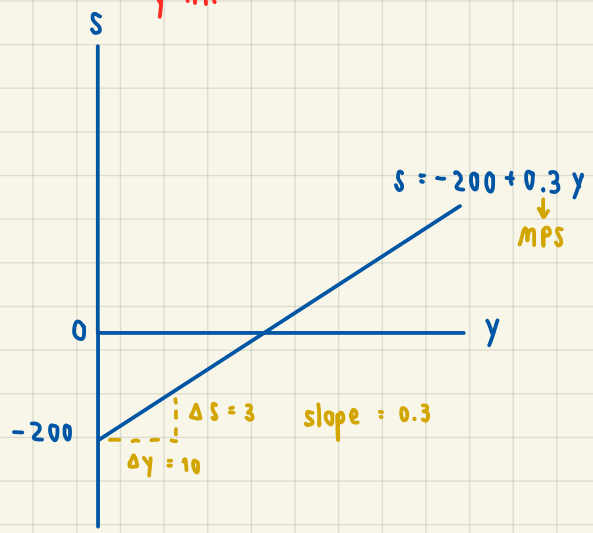
$s = y - (200 + 0.7y)$

$s = y - 200 - 0.7y$

$s = -200 + 0.3y$

$S = -200 + 0.3Y$ → saving functions ✓

y-int



หาจุดตัด C & S ⇒ ฝั่ง C = S แก้สมการ

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

from $S = -150 + 0.35Y$

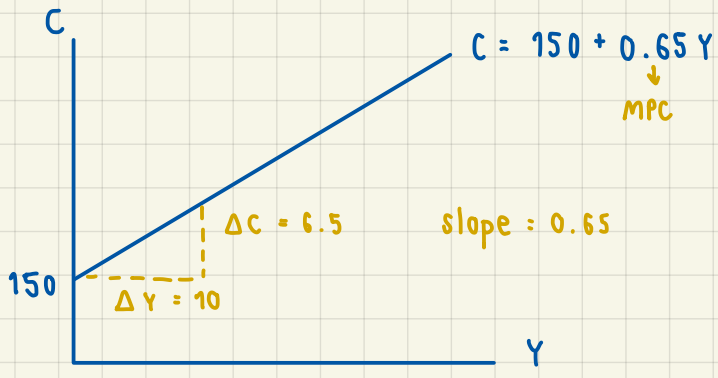
$C = Y - S$

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

$C = Y + 150 - 0.35Y$

$C = 150 + (1 - 0.35)Y$

$C = 150 + 0.65Y$ ✓



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

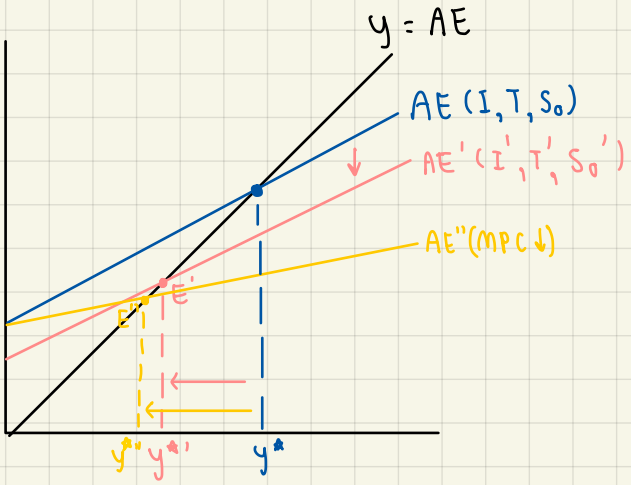
- All firm managers decide to buy fewer machines. $I \downarrow \rightarrow AE \downarrow \rightarrow y^* \downarrow$
- The government decides to build more roads. $G \uparrow \rightarrow AE \uparrow \rightarrow y^* \uparrow$
- The citizens decide to save more at all income levels. ($S_0 \uparrow$ ไม่ว่า Income เท่าไหร่) $S_0 \uparrow \rightarrow AE \downarrow \rightarrow y^* \downarrow$
- The citizens decide to save larger proportion of income. (S_1 or MPS ↑) $y \downarrow \rightarrow AE \downarrow \rightarrow y^* \downarrow$
- The government decides to raise tax. $T \uparrow \rightarrow AE \downarrow \rightarrow y^* \downarrow$

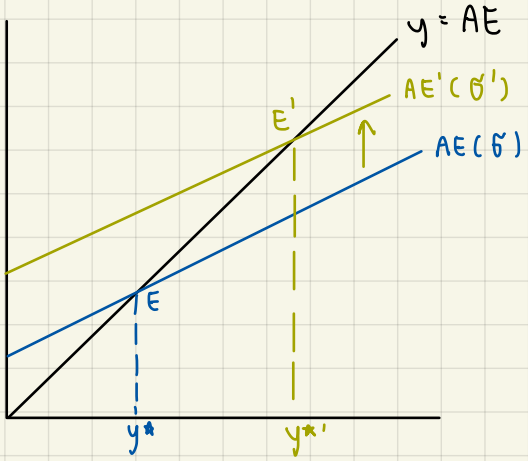
$\rightarrow I = S + C \rightarrow S \uparrow, C \downarrow$

$MPS + MPC = 1 \rightarrow MPS \uparrow, MPC \downarrow$

overall C ↓ ; $C = C_0 + C_1 y$; C_1 = MPC

slope of AE ∴ ลดลง



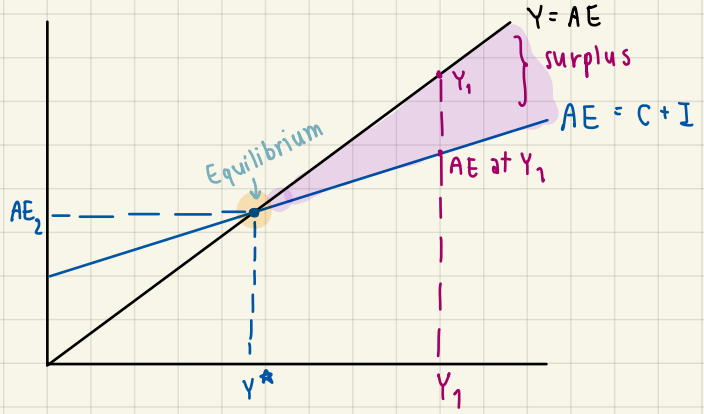


* save more at all income → Not depend on Y → S_0 ↑
* save more proportion of income → MPS ↑

$y > AE$

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

when $y > AE$, surplus happen ✓



In this case, aggregate output is more than aggregate expenditure, inventories will accumulate. Business need to slow down production to adjust Y_1 to Y^*

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

↳ S = I

Find S

$Y = S + C$

$S = Y - C$

$S = Y - (60 + 0.6Y)$

$S = Y - 60 - 0.6Y$

$S = -60 + 0.4Y$

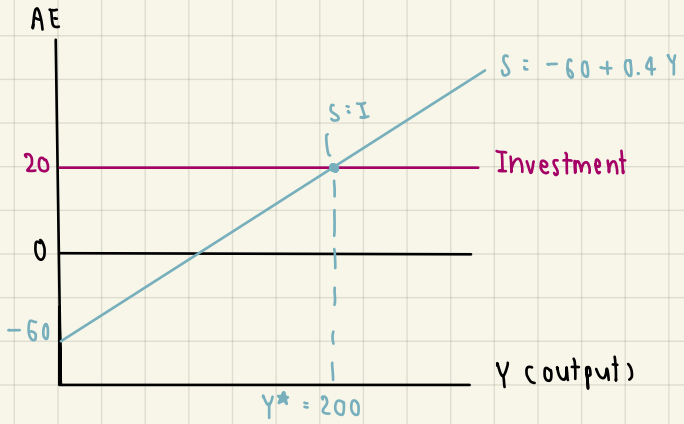
$S = I$

$-60 + 0.4Y = 20$

$0.4Y = 80$

$Y = \frac{80}{0.4} = 200$

$Y^* = 200$



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.

$S = I$

$-60 + 0.4Y = 20$

$0.4Y = 80$

$Y^* = 200$

If I increase by 20

$-60 + 0.4Y = 40$

$0.4Y = 100$

$Y^* = 250$

↳ new eqbm output.

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

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

∴ when I ↑ by 1 unit, output will ↑ by 2.5 units.

If I ↑ by 20 units, output will increase by 50 units.

OR find C

$Y = S + C$

$C = Y - S$

$C = Y - (-60 + 0.4Y)$

$C = Y + 60 - 0.4Y$

$C = 60 + 0.6Y$

$AE = C + I$

$AE = 60 + 0.6Y + 40$

$AE = 0.6Y + 100$

↳ slope of AE

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

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

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.

key concept ⇒ someone's expenditure = the another's income.

e.g. firm buy 5 computers —(computers price)→ computers shop —(noodle price)→ noodle shop —(wage)→ HH 1, HH 2

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

from { when MPC ↑, investment multiplier ↑

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

- This mean when ppl spend a lot of money (high MPC), others will receive a lot of money as their incomes. ↓
- They will spend a lot too, many will receive a lot.
- The economy will grow a lot ↓

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

ppl want to increase S_0 → more leakages → ppl will spend less ↓

ppl can save less ← incomes in the economy fall ← less C & S produced in economy

paradox