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## PROBLEM SET II

EE212 — Principles of Macroeconomics

Semester 2/2019-2020

Total mark: 20 points

Due date: Saturday 29 February 2020 **before midnight** to jenmana@econ.tu.ac.th.

Any late submission **will not** be graded.

Please submit in pdf form, and not word document.

Dear students,

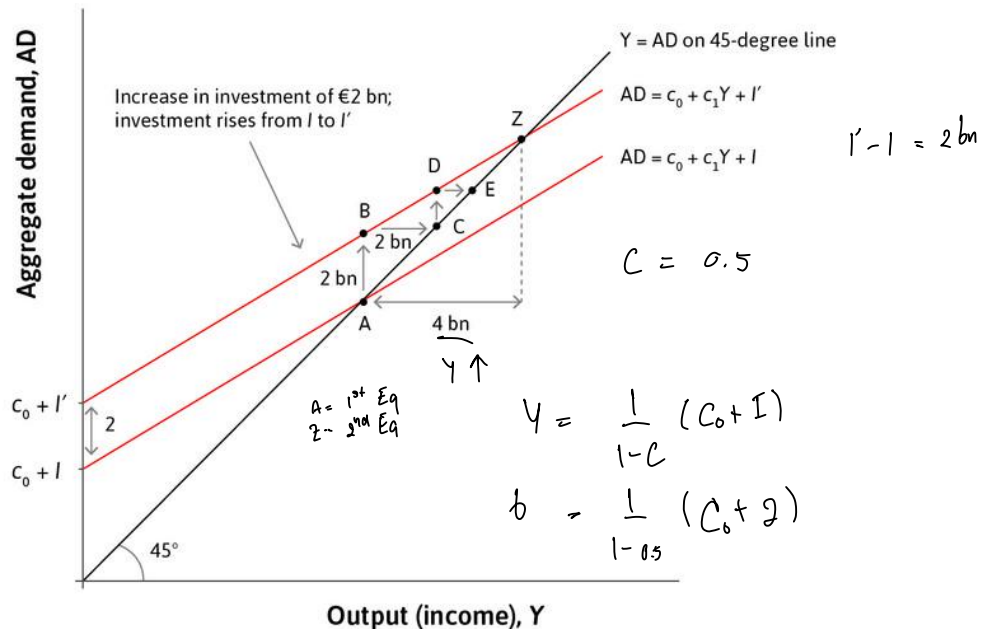
Two weeks are given to complete this assignment. As mentioned, we will have four problem sets, each making up 5% of your total grade (20% in total). These will be challenging, and will demand you to revisit the topics that have been mentioned so far in class, as well as to read the mandatory readings.

**Reminder on academic policy:** I encourage you all to work together and exchange ideas out of class. However, I also encourage you all as university scholars to start independently critically approach a topic, a question, or a challenge that will be posed in this class, as well as the future ones.

I expect your independent completion of the short essays, as it would be obvious if they are not your own ideas. Plagiarism and cheating will be treated with disciplinary actions. Thammasat University, our faculty, and I take academic integrity extremely seriously.

## Problem I: Short answers (5 points)

1. "The Keynesian multiplier is always great than 1 if  $T = 0$  and  $G = 0$ ." True or false? Why?
2. "There is no private savings at the Keynesian equilibrium." True or false? Why?
3. Let's say there is **no government spending** and **taxes**, and **no imports** and **exports**. The consumption function is given by  $C = c_0 + c_1 Y$ , and  $I$  (investment) is given. The economy is graphically visualised as below:



There is a \$2 billion increase in investment. The marginal propensity to consume is 0.5. Which of the following statement is correct? (multiple correct answers may be possible)

- (A) The new goods market equilibrium after the investment increase is  $E$ .
  - (B) **Aggregate demand increases by a total of \$2 billion  $\times$  0.5 = \$1 billion due to the increase in investment.**
  - (C) The multiplier is 2.
  - (D) The distance between  $C$  and  $D$  is three-quarters the distance between  $A$  and  $B$  (\$1.5 billion).
4. The Keynesian multiplier says that an increase in investment or government spending can lead to an even higher increase in total output. Explain how with intuition how it works, and how does it relate to the MPC.
  5. The fiscal (government spendign) multiplier tends to be high during a recession, but they tend to be low (perhaps even lower than one) during an expansion. How could we explain this phenomenon?

## Problem I

1.) True because when we partial derivative by  $G$  and  $T$  from the equation  $Y^* = \frac{1}{1-c} (C_0 - cT + I + G + (x-m))$   
we'll get  $\frac{\partial Y}{\partial G} = \frac{1}{1-c}$  and  $\frac{\partial Y}{\partial T} = \frac{-c}{1-c}$  but  $T$  and  $G$  equal to zero. It means that  $T$  and  $G$

are constant so when we partial derivative constant it's greater than 1

At equilibrium

2.) False because due to the equation  $Y = C + S$  when  $C$  is consumption and  $S$  is saving  
and  $Y = AE = C + I$  with the same factor we can conclude that  
 $Y = AE = C + I < C + S$  which means that private saving or  $S$  is included in the equation

3.) c. The multiplier = 2

$$\text{From } MPC + MPS = 1$$

$$0.5 + MPS = 1$$

$$\therefore MPS = 0.5$$

$$\therefore \frac{1}{MPC} = \frac{1}{0.5} = 2$$

\* This statement is true Ans

a. This statement is false, The new equilibrium is 2, the point when the graph hits the 45° line.

b. From  $AD = C + I + G + (x - m)$ ;  $G = 0$   $x - m = 0$

$$AD = C + I$$

$$\therefore AD = Y$$

d) from Keynes increase in investment or Government spending would boost the economy by when Government spends more money would increase

in employment with increase in employment people would earn money and when people have more money they tend to spend more

when they spend the firm would earn more than they would order more from the supplier then so on. these are called the multiplier effect.

4) MPC or Marginal Propose to Consume is when people tend to buy stuff for example earn 100\$/month people might use up money for 40%

of the 100\$, in that case  $MPC = \frac{40}{100} = 0.4$  if people earn more money ex. 200\$/month people might spend more than 40%

so the MPC would go higher.

5) During recession economy is slowing down people would save more than spend so government must spend more in order to boost the economy but during expansion if the government still keep spend like in the recession time it would cost higher inflation so the government must try to balance their spending.

## Problem II: The Keynesian Cross in a small closed and open economy (10 points)

Assume that, in a closed economy:

$$C = 500 + 0.5Y_D$$

$$I = 100$$

$$T = 80$$

$$G = 200$$

- (0.5 point) Solve for (i) equilibrium consumption; (ii) “planned” aggregate expenditure (aggregate demand); (iii) disposable income. Characterise the equilibrium.
- (0.5 point) Graph – with proper labels – the equilibrium output and expenditure
- (1 point) Solve for the equilibrium private savings and public savings.
- (1 point) Calculate the Keynesian multiplier, as well as the autonomous spending. What do they mean?
- (1 point) It is election year, and the incumbent government increases their government spending from 200 to 300. Find the new equilibrium demand, output, consumption, and disposable income. How much does each increase? Graph these changes. Why would the government want to do this?

Now let’s consider a small open economy where the exchange rate and interest rate are pegged on the US.

$$C = c_0 + c_1(Y - T)$$

$$I = d_0 + d_1Y - d_2r$$

$$M = m_1Y$$

$$X = x_1Y^W$$

Let  $r$  be the exogenous interest rate, and  $Y^W$  the level of foreign outputs.  $G$  is exogenous.

- (1 point) All coefficients (e.g.  $c_1, d_1, d_2$ ) are positive. According to your understanding, what is  $d_1$  and  $d_2$ ? What are the reasons for the signs before them (plus or minus)?
- (3 points) What is the effect of lower government spending ( $G \downarrow$ ) on the budget balance,  $G - T = G - tY$ ? Assuming that  $(1 - c_1(1 - t) - d_1 + m_1) < 1$ , and the linear tax rate  $t$  is constant.
- (2 points) Suppose that the government is budget balanced – given by  $G = T = tY$ . Find the equilibrium output in this economy. How does the equilibrium output change when foreign output increases?  
*Tip: replace  $G$  and  $T$  by  $tY$ .*

## Problem II

1)  $Y = AE = C + I + G$

$$Y = 500 + 0.5Y_D + 100 + 200$$

$$Y = 500 + 0.5(Y - 80) + 100 + 200$$

$$Y = 500 + 0.5Y - 40 + 100 + 200$$

$$Y - 0.5Y = 500 - 40 + 100 + 200$$

$$0.5Y = 760$$

$$Y = 1520$$

from  $Y_D = Y - 80 = Y = 1520$

$$= 1520 - 80$$

$$Y_D = 1440$$

from  $C = C_0 + c(Y - T)$

$$\therefore C = 500 + 0.5(Y - 80)$$

$$= 500 + 0.5(1520 - 80)$$

$$C = 1,220$$

$$\therefore \text{(i) } C = 1220$$

$$\text{(ii) } AE = 1520$$

$$\text{(iii) } Y_D = 1440$$

Ans

5.)  $Y = AE = C + I + B$

$$G \uparrow \text{ from } 200 \text{ to } 300$$

$$Y = 500 + 0.5Y_D + 100 + 300$$

$$Y = 500 + 0.5(Y - T) + 100 + 300$$

$$Y = 500 + 0.5(Y - 80) + 100 + 300$$

$$= 900 + 0.5Y - 40$$

$$0.5Y = 860$$

$$Y = 1720$$

from  $Y_D = Y - T$

$$= 1720 - 80$$

$$= 1640$$

New equilibrium

- demand (AE) increase by  $1720 - 1520 = 200$
- Output (Y) increase by  $1720 - 1520 = 200$
- Consumption increase by  $1320 - 1220 = 100$
- Disposable income ( $Y_D$ ) increase by  $1640 - 1440 = 200$

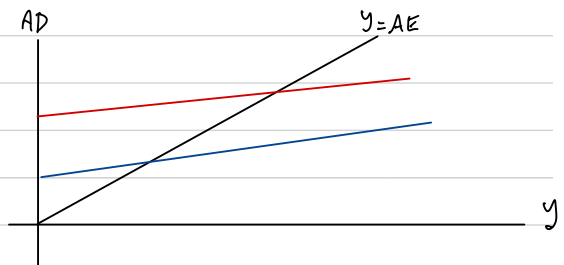
from  $C = 500 + 0.5Y_D$

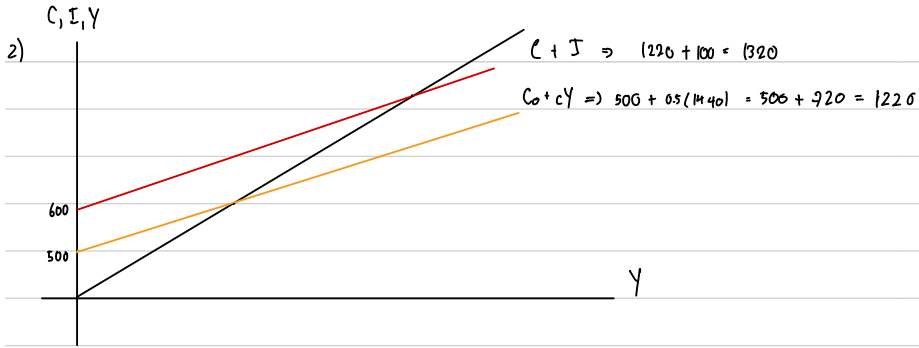
$$= 500 + 0.5(Y - T)$$

$$= 500 + 0.5(1720 - 80)$$

$$= 500 + 820$$

$$C = 1,320$$





3)

$$S = Y - C$$

$$= Y - C_0 + cY_d$$

$$= 1720 - 500 + 0.5(1440)$$

$$= 1720 - 500 + 720$$

$$= 1720 - 1270$$

$$S = 450$$

Private and Public savings 450 Ans

4.) Multiplier ;  $\frac{\Delta Y}{\Delta I} = \frac{1}{1-c}$

$$= \frac{1}{1-0.5}$$

$$= \frac{1}{0.5}$$

$$= 2.$$

The multiplier is 2 Ans

$$\begin{aligned}
 6.) \quad AE &= C + I + G + \overset{\text{Exo.}}{\beta}(X - M) \\
 &= C_0 + \beta(Y - T) + (d_0 + d_1 Y - d_2 r) + (\alpha Y^* - m_1 Y)
 \end{aligned}$$

According to the equation  $d_1$  is the constant that completely no idea about it as same as  $d_2$  I also have absolutely no idea. What is the question but I think their relation positive and negative is about the something that relative to rate of interest that is my opinion

7.) The effect of lower government spending as the multiplier effect but decreasing so if government spending is lower so the effect would be decreasing

$$(1 - c, (1 - t) - d, m_1) < 1 \quad \text{and multiplier is } \frac{1}{(1 - c, (1 - t) - d, m_1)}$$

$$8.) \quad G = T = Y^*$$

$$Y^* = C_0 + c \cdot Y - C + Y + d_0 + d_1 Y - d_2 r - m_1 Y^* + G$$

$$T = G = Y^* ; \quad C_0 + c \cdot Y + Y - C + Y + d_0 + d_1 Y - d_2 r - m_1 Y^* = Y^*$$

$Y^*$  would increase when foreign output increase

## Problem IV: “*you shall earn your bread in sweat*” (5 points)

Based on your mandatory reading written by Michal Kalecki in 1943, titled *Political Aspects of Full Employment*, consider the text below.

The referenced work asked a perplexing question. “*The entrepreneurs in the slump are longing for a boom; why do they not gladly accept the synthetic boom which the government is able to offer them?*” Summarise the main reasons given.

My question is this. Does the same phenomenon (existence of political obstacles from capitalists against full-employment economic policy) happens in Thailand? If not, explain; and if so, do the same reasons apply? Are there any other reasons you think are more accurate?

*word count: 600 words ( $\pm 20$  words are allowed)*

From the quote "The entrepreneurs in the slump are longing for a boom; why do they not gladly accept the synthetic boom which the government is able to offer them?". In the text given, They are many supports this idea such as government intervention, political policy, Capitalism, Socialism.

First we will summarize about government intervention.

From the political view, we can make full employment by many ways such as increase government spending by government loan to private sectors to increase employment due to government loan. In addition we could also invest in public places (i.e. Schools, Highways, Public hospital etc.). With such thing like this we can increase employment rate very fast but not sustainable. But we can boost the economy in the short-run. In contrast with such a boost in a short amount of time also caused inflation as well. For the reason is people have higher demand but the supply still stay the same. The price will be higher. Or money that we have in our hand will have less purchasing power due to other people have a lot of money as well.

The next reason that the author has given is the difference approach by difference economic system such as capitalism and socialism. In socialism system employment would not be choose freely. People would get employed from the government. People also work for the government and all revenue would not own directly from the revenue but total revenue would send in to the government and we will get the money from the government. It is the difference from capitalism. In capitalism we employed by ourselves i.e. get a job via interview, internship, self-employed, etc.. We would make a product to sell, or work for the other firm and get salary according to the contract. The government earn vis taxation. This is the difference between capitalism and socialism.

As the question given that due to Thailand political situation today do we have the same phenomenon as in the article "Political Aspects of Full Employment". In my opinion Thailand does not have quite those situation in the present time. Due to our government has a lot of doubt by the opposition party that military general would be able to run our economic system fluently and correctly. As the head of Economic division but he has no economic background. He came from CRMA or Chulachomkiao Royal Military Academy which also have Bachelor's degree as well but not in economics but given as Engineering degree. So that people in the congress having no-confidence debate. The reason that opposite party have a debate. That top 1% of Thai people have gain wealth since Gen. Prayuth Chan-ocha was Prime minister of Thailand and Minister of Defense. Gen. Prayuth had gave the 1% or the multi millionaire many government contract that government will lost money. Still Gen. Prayuth still sign those contract in exchange for some money donate via offshore accounts in The British Virgin island. With that bribe the top 1% can get long term government contract such as Queen Sirikit National Convention Center Contract for 50 years in rent. Which government lose almost 10 billion baht in revenue. With that reasons which just an example of how the government of prime minister Gen. Prayuth Chan O Cha had failed Thailand's economy.

In conclusion, The article have an interesting topic but with the short amount of time and the complexity of the article. This is a summarize of the article and my opinion of wether Thailand are facing the same problem or not. And how can I gave the reason which supports my thoughts.