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## PROBLEM SET I

EE212 — Principles of Macroeconomics

Semester 2/2018

Total mark: 20 points

Due date: Friday 7 February 2020 **before midnight** to jenmana@econ.tu.ac.th.

For any late submission, one point will be deducted per half an hour.

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: Macroeconomic concepts (2 points)

Answer to these questions in **a few sentences**.

1. What does GDP per capita measure?
2. Why are we interested in real GDP?
3. What is the discouraged-worker effect? How does it affect the unemployment rate?
4. What is transfer payment? and why is it not included in the GDP?
5. Using market exchange rates, per capita income in Switzerland exceeds that in Canada, but when PPP rates are used the situation is reversed. Why?

- 1) GDP per capital measure how the country's economic output from the GDP divided total of population.
- 2) Because the real GDP tracks the total value of goods and services, calculating the quantities but using constant prices. Also the real GDP is easier to compare.
- 3) The effect of discouraged-worker is people don't have motivation, passion the find jobs anymore. Therefore, this affect to the unemployment rate.
- 4.) Transfer payments are the money that received by individuals and that is neither compensation for goods /services currently supplied nor income from investment.  
Transfer payments are excluded in computing GDP because there is no exchange.

5) (Note) MEK: use for calculated the rate of the currency based on central bank. (Switzerland > Canada)

PPP: use for calculated and differentiate the rate of the currency into standard living. (Canada > Switzerland)

In MEK, Switzerland exchange rate is more than Canada, but if we use PPP, Canada will have more exchange rate than Switzerland. Moreover, eventhough the rate in currency is higher, but if we convert into the standard living price, we will see that which country earned more or pay more.

## Problem II: flows in a closed economy (5 points)

Assume that the circular flow of a closed economy is described by the figure below.

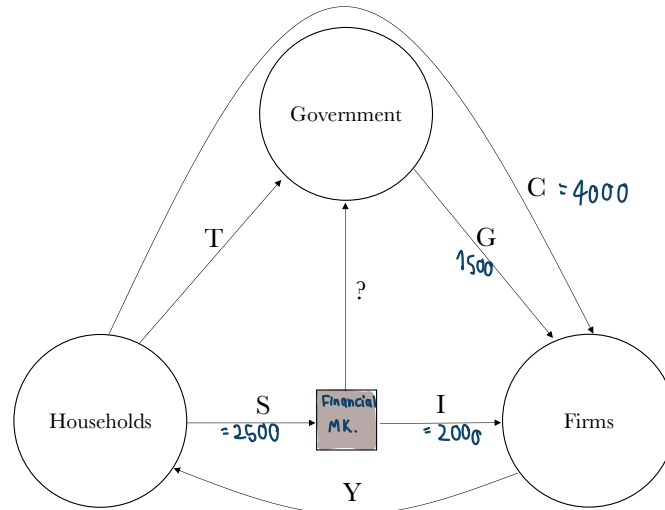
$$GDP = C + I + G + (X - M)$$

$$Y = C + I + G$$

$$= S + T + M$$

$$= I + G + X$$

$$* S = Y - C$$



Note  $Y = 4000 + 2500 = 6500 \text{ \#}$

$$T = 3500 - 2000 = 1500 \text{ \#}$$

$$GDP = C + I + G = 4000 + 2000 + 1500 = 7500$$

Suppose that in period, household consumption ( $C$ ) is 4,000, and they save ( $S$ ) 2,500. The firms invest ( $I$ ) 2,000, and government spends ( $G$ ) 1,500.

A) Find the values for the rest ( $T$  and  $Y$ ), include the question mark. What market is the box, and how can we interpret the question mark. Then write out the identity function of the GDP by using the consumption and income approach. (1 point)

B) We still consider the same close economy, but now we introduce firms' ability to **immediately** self-finance, designated by  $P$ . We also introduce compensation of employees,  $W$ , and paid dividends  $D$ . Reconfigure the circular flow above (scan them for submission).

We now assume that  $C = 4000$ ,  $I = 2000$ ,  $G = 1500$ ,  $W = 4800$ ,  $D = 1800$ ,  $T = 1000$ . Estimate the missing elements of the circular flow. What is the GDP?

Write out the same two identity functions for the GDP as before, but using the new variables. What is the aggregate profit in the economy. (2 points)

Tip:  $Y$ , household income, is replaced.

A)  $T = 1500$     $Y = 6500$

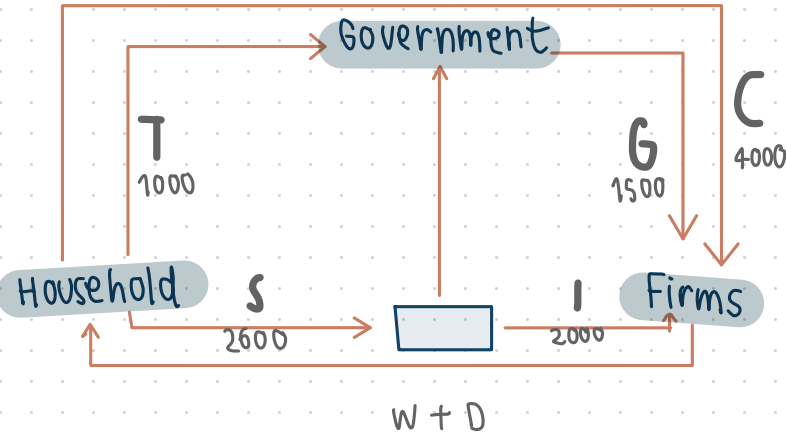
▶ The market in the box is Financial Market

▶  $? =$  lend the money to government for running country.  $= S - I = 2500 - 2000 = 500$

▶  $GDP = 7500$

10) The following table shows the income flows between the household and firms, Government and firms, and between the household and Government. The total income of the household is 4800, of the firms is 6600, and of the Government is 1500. Calculate the amount of the saving, investment, and government expenditure. What is the amount of the profit of the firms?

Fig. 1. Income flows between the household, firms, and Government.



$$\begin{aligned}
 \triangleright S &= Y - C \\
 &= (W + D) - C \\
 &= 4800 + 1800 - 4000 \\
 &= 2600 \text{ #}
 \end{aligned}$$

$$\begin{aligned}
 \triangleright Y &= (W + D) \\
 &= 4800 + 1800 \\
 &= 6600 \text{ #}
 \end{aligned}$$

$\triangleright$  Let  $p = \text{profit}$

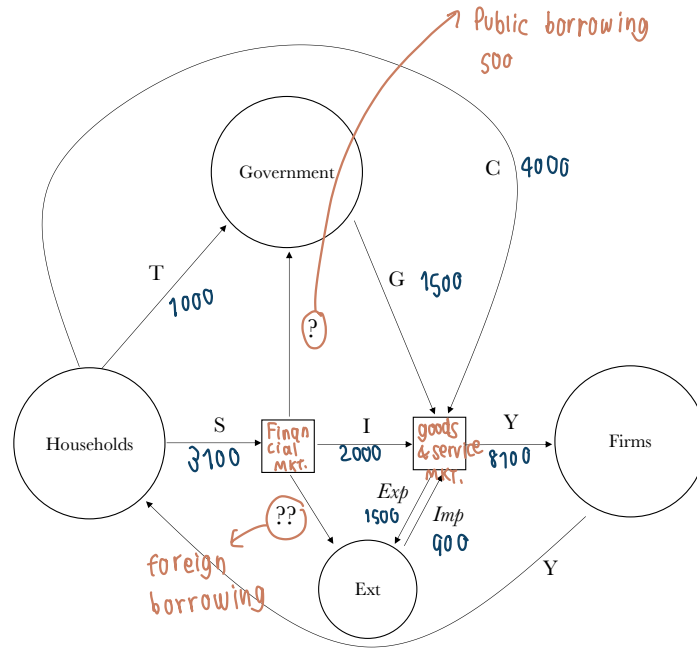
$$\text{so } GDP = Y = W + D + p$$

$$7500 = 6600 + p$$

$$p = 900 \text{ #}$$

$$\begin{aligned}
 \triangleright GDP &= C + I + G \\
 &= 4000 + 2000 + 1500 \\
 &= 7500 \text{ #}
 \end{aligned}$$

C) Now, we consider an open economy characterised by the circular flow below.



We know that  $Y = 8100, C = 4000, I = 2000, G = 1500, T = 1000, Exp = 1500$ . Determine the values of the other aggregates. What are the budget balance, the trade balance, aggregate savings? Interpret these results. Is such a situation sustainable? Is it condemnable? (2 points)

$$Y = C + I + G + (X - M)$$

$$8100 = 4000 + 2000 + 1500 + (1500 - M)$$

$$8100 = 9000 - M$$

$$M = 900 \text{ \#}$$

$$S + T + M = G + I + X$$

$$S + 1000 + 900 = 1500 + 2000 + 1500$$

$$S = 3100 \text{ \#}$$

### Budget Balance

(difference btw tax rev. & gov spending)

$$= T - G$$

$$= 1000 - 1500$$

$$= -500 \text{ \# (negative)}$$

► Budget deficit #

$$\text{Trade Balance} = X - M = 1500 - 900 = 600 \text{ (positive)}$$

► Country is trade surplus.

\* Trade surplus : export > import.

### Aggregate saving

(saving-investment balance)

$$= \text{National Saving} - \text{National Investment}$$

$$= 3100 - 2000$$

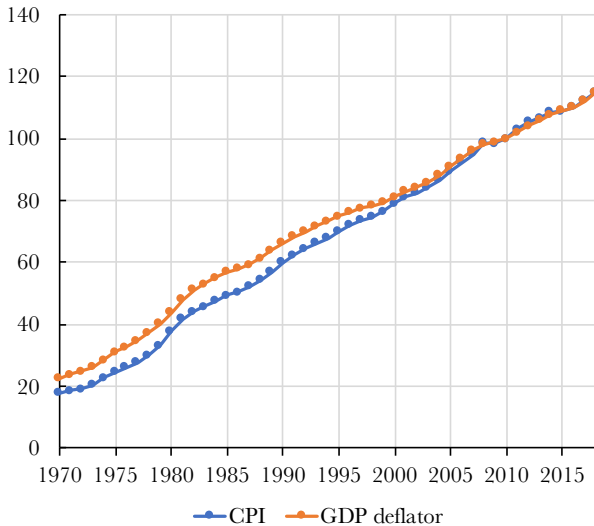
$$= 1100$$

\*  $S > I$ , level of income will fall.

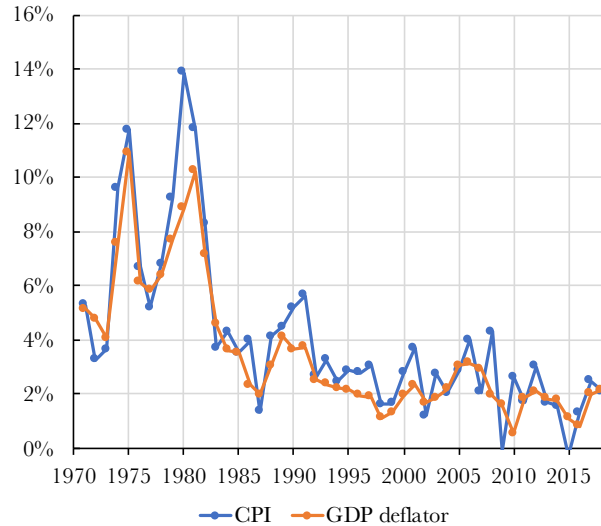
### Problem III: The CPI and The GDP Deflator (6 points)

- The nominal GDP per capita of Thailand in 2000 and 2018 are 80,534 baht and 235,010 baht respectively. Given that the GDP deflator = 100 only in 2010, and equals to 73.49 and 116.59 in 2000 and 2018 respectively, calculate the real GDP per capita of Thailand in the year 2000 and 2018. What is the base year? What is the cumulative price increase between 2000 and 2018? between 2010 and 2018? (2 points)
- Based on the figure below for the US, the main difference in the evolution of the series for the CPI and the GDP deflator takes place in 1974-75 and 1979-1982.

(a) Values of CPI and GDP deflator



(b) Inflation calculated based on CPI and GDP deflator



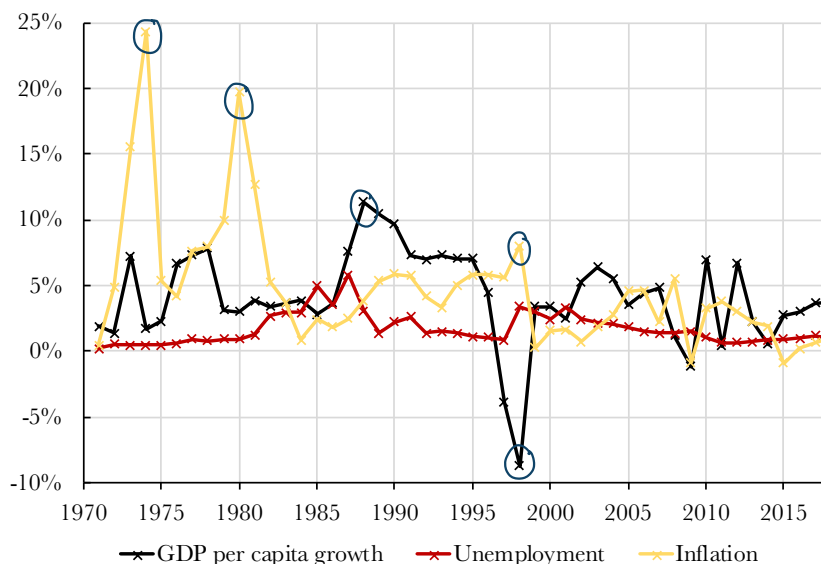
Source: Lecturer's calculation based on world bank data.

What could explain this pattern? (2 point)

Hint: think about the likely impact of an oil crisis on the price of imported goods and, in particular, on your own transport and fuel bills.

- Write a short summary on the evolution of inflation, unemployment, and the real GDP per capita growth rate over the same period based on the figure below. (2 points)

Figure 2: Real GDP per capita growth rate, unemployment, and inflation in Thailand, 1970-2018



3. The nominal GDP per capita of Thailand in 2000 and 2018 are 4,200 baht and 23,010 baht respectively. Given that the GDP deflator is 73.49 in 2010 and equals to 73.49 and 116.59 in 2000 and 2018 respectively, calculate the real GDP per capita of Thailand in the year 2000 and 2018. What is the base year? What is the cumulative price increase between 2000 and 2010? between 2010 and 2018? (2 points)

	Nominal GDP	GDP inflator	Real GDP
2000	80,534	73.49	A
2010	B	C	D
2018	235,010	116.59	E

$$* \text{ deflator} = \frac{\text{nominal}}{\text{real}} \times 100$$

\* Based year is 2010, cumulative price ↑

$$\therefore A = 109,584.98$$

$$B = 149,115.50$$

$$C = 100$$

$$D = 149,115.50$$

$$E = 201,569.60 \quad \#$$

$$\triangleright 2000 = 73.49 = \frac{80534}{A} \times 100$$

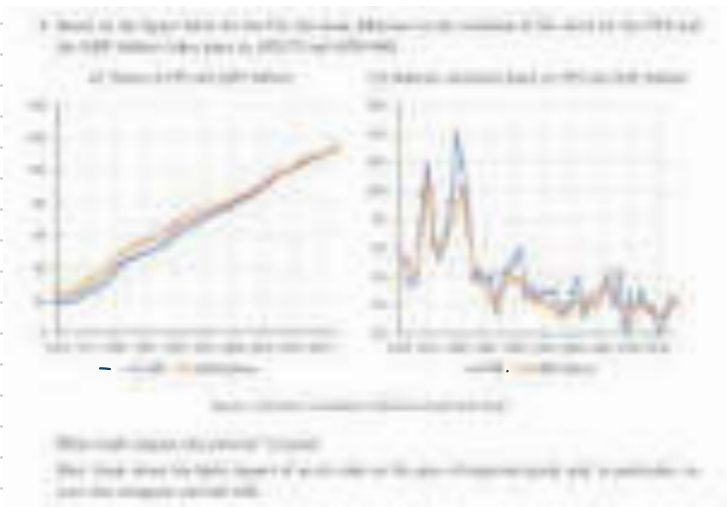
$$\triangleright 2018 = 116.59 = \frac{235010}{E} \times 100$$

$$\triangleright 2010 = \frac{10958.98}{73.49} = \frac{D}{100}$$

$$D = 149,115.50$$

$$* B \text{ will equal to } D : \frac{149115.50}{B} \times 100 = 100 \quad (C)$$

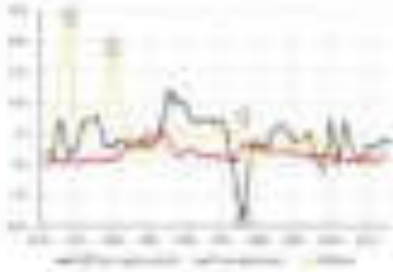
$$B = 149,115.50$$



The given line graph data on the evolution for CPI and GDP in the US from 1970-2015. It shows that in the year 1974-1975 and 1979-1982 are inflation rate because of the economic crisis which make GDP recession.

In 1974-1975, There are many wars like Vietnam war, Oil price is rise, and stock is crash. For instance, Yom Kippur wars in 1973 affected to USA economics because OPEC didn't export the oil to USA so in 1974 there're inflation rate in USA. Also USA didn't have oil enough.

This leading the event in 1979-1982, when oil price is grows it still have oil crisis, and it also affect to energy crisis, high inflation and unemployment.



**1974** : It's occurred between Vietnamese War. Thailand was supported from USA and many investment from foreigners.

Therefore, Thailand economy is growth up , inflation increased but GDP decreased.

**1980, 1981** : In 1980, Economic crisis occurred because of conflict in the army. After that, New prime minister of Thailand, Prem Tinsulanonda. The prime minister help us accelerating economic growth. This make GDP rising along the time that he still run the country,

**1987** : At first, Thai stock market is high. In that year, foreigners invests a lot in Thailand until "Black Monday" occurred then the stock market crash.

**1997** : Financial crisis " Tom Yum Kung " which causing from crash in stock and real-estate. People's salaries were cut in half , jobs were lost. This make GDP decline.

# 1970-2018

- ▶ Thailand's unemployment rate is always lower than 5%.
- ▶ The years that GDP is highest is between 1985-1990 at 10% and the lowest is between 1995-2000 at -10%.
- ▶ The inflation in Thailand is highest in 1970-1975 at 25% and the lowest is in 2015.

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## Problem IV: Short essays of 500 words each (7 points).

Must: cite your sources.

1. What is Thailand's definition of unemployment rate? How has Thai unemployment evolved since 2001? Based on your interpretation of the article, what is the biggest problem in the Thai labour market, and how should we try to fix it? Any reference to the other mandatory reading written by Bruno Jetin in 2012, "*Distribution of income, labour productivity, and competitiveness: is the Thai labour regime sustainable?*", is welcomed and will be awarded.
2. Based on the "*Against Economics*" article, the author – David Graeber, an American anthropologist at the London School of Economics – said:

*"Economic theory as it exists increasingly resembles a shed full of broken tools."*

What does he mean by this? Give one example amongst many that the author used to support his argument. Do you agree with the article and why?

Note: I will allow  $\pm 20$  words for each of the essays.

1

The International Labour Organization defines the unemployed as all persons who are without work, work less than an hour per week, no job, looking for a job also people who work for family business without compensation and work less than 15 hours per week.

In 2001, Thailand's unemployment rate was evolved by compared with the former year than an unemployment rate increased and reach at 34. But from the overall image, Thailand's unemployment declined and still ridiculously low because of the structural problem.

For the past few years, there're still have the biggest problem in the Labor market. That is because some people have uncertain jobs, many workers in the agricultural sector are self-employed and they are not in the social security system.

The other reason for this problem is some workers in the agricultural sector is underemployed. Due to the average working hours of the agricultural sector. Moreover, some workers have given up seeking jobs and are therefore excluded from the labour force. Some of them have attempted the job many times before they give up, causing the mismatch skill, mismatch educations, or mismatch fields of study. This higher unemployment rate also reflects the failure of the Thai education system to train graduates with skills required to meet industry standards and demands.

From this problem, we can see that the unemployed in Thailand is high so we should fix the problem by following these 3 dimensions.

First, labour market confidence, such as business employment outlook which represents confidence among employers. Second, employers' behaviour, such as the number of workers who work more than 50 hours per week. More workers working overtime imply a higher demand for labour and signal tightness in the labour market. The last one is labour market utilization, such as the number of unemployed workers without job experiences. This reflects whether the labour force is fully utilized.

Cite:

[https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyComittee/MPR/BOX\\_MRP/BOXMPR\\_EN\\_March2019\\_01.pdf](https://www.bot.or.th/English/MonetaryPolicy/MonetPolicyComittee/MPR/BOX_MRP/BOXMPR_EN_March2019_01.pdf)

<https://www.hrinasia.com/news/increasing-unemployment-in-thailand-owing-to-lack-of-new-investments-in-the-country/>

<https://hal.archives-ouvertes.fr/hal-01484216/document>

<https://www.todayonline.com/world/thailand-has-one-worlds-lowest-unemployment-rates>

[https://www.bot.or.th/Thai/MonetaryPolicy/EconomicConditions/AnnualReport/AnnualReport/econ\\_annual01.pdf](https://www.bot.or.th/Thai/MonetaryPolicy/EconomicConditions/AnnualReport/AnnualReport/econ_annual01.pdf)

<https://www.bangkokpost.com/learning/work/466226/why-thailand-unemployment-rate-is-ridiculously-low>

2

“Economic theory as it exists increasingly resembles a shed full of broken tools.” -David Graeber

This article refers to the fact that there are no useful insights here, but fundamentally the existing discipline is designed to solve another century's problems. The problem of how to determine the optimal distribution of work and resources to create high levels of economic growth is simply not the same problem we are now facing.

Nowadays, We live in a different economy, it is different from the past. Since the world has changed, The unemployment rate, inflation has changed. Economics teaches us that the primary economic role of government is to guarantee price stability. Falling unemployment no longer drives up wages. Since the 2008 recession, central banks have been printing money in an attempt to create inflation and compel the rich to do something useful with their money, and have been large. However, inflation is kept at bay through the coordinated action of the government and central bankers, the market should find its “natural rate of unemployment,” and investors, taking advantage.

Moreover, Economics can be disproved because it is a theory, not law. In the past, economic will adjust by itself and economics don't have marginal cost in classical theory, but nowadays, the government takes action in policy to intervene in the price and economy.

Due to the article, I agree with this articles but I think that not all of some of tools still useful. Also, I think the economist is not good to predict the future because theory updates all the time. Moreover, the world has changed, nowadays it is different from the past and the world still moving forward and develop maybe in one day economist will discover the new theory and maybe that is better than now.

Cite:

<https://larspsyll.wordpress.com/2019/11/15/the-past-and-future-of-economics/>

<https://www.nybooks.com/articles/2019/12/05/against-economics/>

<http://www.smart-development.org/news/2019/11/25/against-economics>

<https://jewishjournal.com/newsroom/money/the-problem-with-economics/>

<https://news.ycombinator.com/item?id=21551796>