Student ID.....

EE312 Macroeconomics, 2/2013(Sec. 046402)

Problem Sets 1 : Ch.1 Introduction and Ch 2. Measurement

Please submit at the BE office, 5th floor department of Economics building.
Deadline of submission : February 5, 2014, before 15.00 hrs.
Late submission will not be accepted.

1. For a country, give a brief reason why Gross Domestic Product(GDP) is greater than Gross National Product (GNP).

   .....

   .....

   .....

2. Find the statistical GDP and GNP data (at current price, nominal GDP) for Thailand in 2012 from the internet. Which one is higher, Thailand's GDP or Thailand's GNP?

   Thailand's GDP for 2012 is equal to .....(billion, million million). Thailand's GNP for 2012 is equal to.....(billion, million million)

   According to the data, Thailand's GDP in 2012 is ..... (higher or lower) than Thailand's GNP in 2012.

   Source: .....

3. Exogenous variables and Endogenous variables. Consider a closed economy described by the following equations(DAE model);

   $$\begin{aligned} C &= c_0 + c_1 Y \\ I &= i_0 + i_1 Y \end{aligned}$$

   Equilibrium is defined where $Y = C + I$. At equilibrium, $Y = \dfrac{1}{(1 - c_1 - i_1)}(c_0 + i_0)$.

   (a) What are the exogenous variables in this model? (underline: C, I, Y, c_0, c_1, i_0, i_1).

   (b) What are the endogenous varibales in this model?(underline: C, I, Y, c_0, c_1, i_0, i_1).

4. Identify which constituent part(s) of GDP (if any) the following items belong.

	C	I	G	NX	Not counted in GDP
C.P. pay Bht. 2,000 million to expand its plant (C.P. is a large company in Thailand)		√			
You buy some heroin for your personal use					√ (illegal activities)
You buy Bht1,000 rice to cook at home					
You buy 100 shares of PTT (PTT is a Thai oil and gas company registed in the Stock Exchange of Thailand)					
The government pays salary to government officers					
The government pays social benefits to old people					
You buy Bht.100,000 of a French handbag					
You buy a sofa at a garage sale* "A garage sale is an informal, irregularly scheduled event for the sale of used goods by private individuals".					

5. Consider the following economy that is producing onlygoods A (apples) and goods B (bananas). Prices and quantities for 2005 and 2013 are displayed in the following table:

Goods	2005			2013		
	P	Q	P_tQ_t	P	Q	P_tQ_t
A (Apples)	50	100	5,000	60	50	3,000
B(Bananas)	100	50	5,000	90	100	90,000
total			10,000			12,000

(a) Calculate the Nominal GDP, the Real GDP (using 2005 prices) and the GDP deflator in each year;

2005 = base year

$$rGDP^{2005} = \sum_i P_i^{\cdots\cdots} Q_i^{\cdots\cdots}$$

$$= \text{.....}$$

$$rGDP^{2013} = \sum_i P_i^{\cdots\cdots} Q_i^{\cdots\cdots}$$

$$= (\text{.....} \times \text{.....}) + (\text{.....} \times \text{.....})$$

$$= \text{.....}$$

$$GDP \text{ deflator}_{2005} = \frac{\text{GDP}_{20\ldots}}{\text{real GDP}_{20\ldots.}} \times 100$$

$$= \text{.....}$$

$$GDP \text{ deflator}_{2013} = \frac{\text{GDP}_{20\ldots}}{\text{real GDP}_{20\ldots.}} \times 100$$

$$= \text{.....}$$

(b) Calculate the Nominal GDP, the Real GDP (using 2013 prices) and the GDP deflator in each year;

2013 = base year

$$rGDP^{2005} = \sum_i P_i^{\cdots\cdots} Q_i^{\cdots\cdots}$$

$$= (\text{.....} \times \text{.....}) + (\text{.....} \times \text{.....})$$

$$= \text{.....}$$

$$rGDP^{2013} = \sum_i P_i^{\cdots\cdots} Q_i^{\cdots\cdots}$$

$$= \text{.....}$$

$$GDP \text{ deflator}_{2005} = \frac{\text{GDP}_{20\ldots}}{\text{real GDP}_{20\ldots.}} \times 100$$

$$= \text{.....}$$

$$GDP \text{ deflator}_{2013} = \frac{\text{GDP}_{20\ldots}}{\text{real GDP}_{20\ldots.}} \times 100$$

$$= \text{.....}$$

6. Chain-Volume-Measure GDP - CVM. Given the following infomation, calculate CVM GDP in 2009, 2010, 2011 and 2012. The base year is **20**09. Show how to calculate.

t	GDP (2009's Price) $\sum_i P_{i,2010}Q_{i,t}$ unit: \$	GDP (2010's Price) $\sum_i P_{i,2011}Q_{i,t}$ unit: \$	GDP (2011's Price) $\sum_i P_{i,2012}Q_{i,t}$ unit: \$	GDP (2012's Price) $\sum_i P_{i,2012}Q_{i,t}$ unit: \$
2009	100	108	115	125
2010	105	110	120	130
2011	110	121	125	140
2012	120	130	150	160

*Note : The numbers in the table may not be very realistic. The main idea is just to understand the CVM method.

CVM GDP 2009 = nominal GDP 2009 = real GDP (2009's price) = ...

Direct Index (DI)

$$DI_{2010} = \frac{\sum_i P^{20....} \times Q^{20....}}{\sum_i P^{20....} \times Q^{20....}} = ...$$

$$DI_{2011} = \frac{\sum_i P^{20....} \times Q^{20....}}{\sum_i P^{20....} \times Q^{20....}} = ...$$

$$DI_{2012} = \frac{\sum_i P^{20....} \times Q^{20....}}{\sum_i P^{20....} \times Q^{20....}} = ...$$

Chain Index (CI)

$CI_{2010} = ...DI_{2010}$ .....= .....

$CI_{2011} =$ .....

$CI_{2012} =$ .....

Chain Volume Measure (GDP)

CVM$GDP_{2010} = ...GDP2009....\times ...CI_{2010}... =$ .....×.....

CVM$GDP_{2011} = ...GDP20.....\times ...CI_{20...}... =$ .....×.....

CVM$GDP_{2012} = ...GDP20.....\times ...CI_{20...}... =$ .....×.....