

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 : August 29, 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 higher than Gross National Product (GNP). (For example, GDP of a country is 120 million dollars and GNP is 100 million dollars.)

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2. Find the latest statistical GDP and GNP data for Thailand from the internet. Which one is higher, Thailand's GDP or Thailand's GNP?

Thailand's GDP for 20.... is equal to

Thailand's GNP for 20.... is equal to.....

According to the data, Thailand's GDP in 20... is (higher or lower) than Thailand's GNP in 20....

Source:

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

$$C = c_0 + c_1 Y$$

$$I = i_0 + i_1 Y$$

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

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

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

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

Goods	2005			2013		
	P	Q	$P_t Q_t$	P	Q	$P_t Q_t$
A (Apples)	40	125	6,000	60	100	6,000
B(Bananas)	100	50	5,000	80	75	6,000
total			11,000			12,000

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

2005 = base year

$$\begin{aligned}
rGDP^{2005} &= \sum_i P_i \dots Q_i \dots \\
&= (\dots \times \dots) + (\dots \times \dots) \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
rGDP^{2013} &= \sum_i P_i \dots Q_i \dots \\
&= (\dots \times \dots) + (\dots \times \dots) \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
GDP \text{ deflator}_{2005} &= \frac{GDP_{20\dots}}{\text{real GDP}_{20\dots}} \times 100 \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
GDP \text{ deflator}_{2013} &= \frac{GDP_{20\dots}}{\text{real GDP}_{20\dots}} \times 100 \\
&= \dots
\end{aligned}$$

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

2013 = base year

$$\begin{aligned}
rGDP^{2005} &= \sum_i P_i \dots Q_i \dots \\
&= (\dots \times \dots) + (\dots \times \dots) \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
rGDP^{2013} &= \sum_i P_i \dots Q_i \dots \\
&= (\dots \times \dots) + (\dots \times \dots) \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
GDP \text{ deflator}_{2005} &= \frac{GDP_{20\dots}}{\text{real GDP}_{20\dots}} \times 100 \\
&= \dots
\end{aligned}$$

$$\begin{aligned}
GDP \text{ deflator}_{2013} &= \frac{GDP_{20\dots}}{\text{real GDP}_{20\dots}} \times 100 \\
&= \dots
\end{aligned}$$

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

t	GDP (2009's Price) $\sum_i P_{i,2009} Q_{i,t}$ unit: \$	GDP (2010's Price) $\sum_i P_{i,2010} Q_{i,t}$ unit: \$	GDP (2011's Price) $\sum_i P_{i,2011} Q_{i,t}$ unit: \$	GDP (2012's Price) $\sum_i P_{i,2012} Q_{i,t}$ unit: \$
2009	100	105	115	125
2010	104	110	120	130
2011	110	122	125	140
2012	120	130	145	160

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

Direct Index (DI)

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

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

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

Chain Index (CI)

$$CI_{2010} = \dots\dots\dots$$

$$CI_{2011} = \dots\dots\dots$$

$$CI_{2012} = \dots\dots\dots$$

Chain Volume Measure (GDP)

$$CVMGDP_{2010} = \dots\dots\dots$$

$$CVMGDP_{2011} = \dots\dots\dots$$

$$CVMGDP_{2012} = \dots\dots\dots$$