Naphat Klathichusak
No. 6304640672

National Output and National Income

1. Is the following a stock or flow variable?

2.1 Inventories stock	2.2 Change in Inventories flow
2.3 Money Supply flow	2.4 Change in Money Supply flow
2.5 National Income flow	2.6 Expenditure flow
2.7 Wealth flow	2.8 Population stock
2.9 Capital stock	2.10 Interest flow

2. What is the difference between GDP and GNP? When looking at the US and China, which country do you expect to have higher GNP? Why?

GDP (Gross Domestic Product) - GDP is counts that the country can produce the product. [Higher GDP = Higher quality of life]

GNP (Gross National product) - GNP is counts that the citizen can produce the product.

US China

I think US is higher than China because if we looking at company in US such as Apply, Amazon, Microsoft, Baidu etc. Some company produce their product in china.

3. The canned apple has 5 stages of production as follows. Find the value added of each stage and the GDP value of the canned apple.

Stages of Production	Value of Sales	Value Added
Growing Apple	12	12
Pickling	15	3
Canning	18	3
Shipping	20	2
Retail Sale	22	2

∴ GDP of the canned apple = 22

4. What is Transfer Payment? Why is it not included in GDP?

Transfer Payment is a one-way payment to a persor. It isn't included in GDP because it doesn't produce good & service.

5. Why are we interested in Real GDP? Explain with examples. Is there a problem associated with Real GDP?

Real GDP is adjust for a price change (inflation/deflation)

The problem of using real GDP are

① After change of economic structure, it should not use real GDP to calculate. The base year should be updated

② when price rises, people will buy less of product fixing price completely remove how the typical market responds to price change

6. Suppose 2018 is the base year. What can we say about Real GDP, Nominal GDP, and GDP Deflator of 2018?

Real GDP $(P_{2018} \times Q_{2018})$

Nominal GDP $(P_{2018} \times Q_{2018})$

$$\text{GDP Inflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

7. Explain three limitations of the GDP concept.

3 limitations

① Inequality - GDP doesn't tell about the distribution of output among individual in society

② Informal GDP - GDP doesn't count unreported income.

③ Externality - GDP doesn't count the cost/benefit on third party.

8. In 2018, Kingdom Asgard made the following transactions. Using the expenditure approach, identify which component of GDP is affected by each transaction, and calculate the 2018 GDP. AE = C + I + G + (X - M)

- The citizens bought 8 new cars, each worth 50$. consumption = 8 × 50 = 400
- The citizens bought 4 new houses, each worth 150$. Investment = 4 × 150 = 600
- The citizens grew rice for their own consumption. The rice was worth 500$. doesn't calculate in GDP because of own consumption
- The firms bought 6 used machines, each worth 50$. Doesn't calculate in GDP because of second hand used.
- The firms bought 8 car parts, each worth 25$. Doesn't calculate in GDP because of intermediate goods
- The government bought 4 new computers, each worth 50$. G = 50 × 4 = 200
- The government paid 1000$ to the poor as welfare payment. Doesn't calculate in GDP because of transfer payment.
- The citizens bought 10 imported ships, each worth 100$. M = 10 × 100 = 1000
- The firms sold 4 planes abroad, each worth 200$. X = 4 × 200 = 800

9. Suppose that there are three goods in the economy – goods A, B, and C. Calculate Nominal GDP, Real GDP, and GDP Deflator when 2012 is the base year. Also, calculate the annual inflation rate from 2014 to 2015.

Year	Price of A	Quantity of A	Price of B	Quantity of B	Price of C	Quantity of C
2012	1	3	2	3	3	3
2013	3	1	4	2	1	4
2014	2	2	3	4	2	1
2015	4	4	1	1	4	2

Year	Nominal GDP	Real GDP	GDP Deflator
2012	(1×3)+(2×3)+(3×3)=18	(1×3)+(2×3)+(3×3)=18	100%
2013	(3×1)+(4×2)+(1×4)=15	(1×1)+(2×2)+(3×4)=17	88.24%
2014	(2×2)+(3×4)+(2×1)=18	(1×2)+(2×4)+(3×1)=13	138.46%
2015	(4×4)+(1×1)+(4×2)=25	(1×4)+(2×1)+(3×2)=12	208.33%

Cal Annual inflation rate = $\frac{208.33 - 138.46}{138.46} \times 100$

= 50.46%

10. Using the table below, calculate GNP and NNP.

	Billions of Dollars
GDP	8000
Receipts of factor income from the rest of the world	250
Payments of factor income to the rest of the world	300
Depreciation	900
Indirect taxes minus subsidies	500
Corporate profits minus dividends	500
Social insurance payments	700
Personal interest income received from the government and consumers	300
Transfer payments to persons	1100
Personal taxes	1000

NFFI

DEP

Cal GNP = GDP + NFFI

= 8000 + (250 − 300)

= 7950

NNP = GNP − depreciation

= 7950 − 900

= 7050

11. Using the table below, Calculate the following items.

11.1 Gross domestic investment = Net investment − depreciation = 784 − 168 = 616

11.2 GDP, using the expenditure approach C + I + G + (X − M) = 2203.2 + 952 + 716.8 + (212.8 − 235.2) = 3849.6

11.3 GNP = GDP + NFFI = 3849.6 + 35.2 − 68.8 = 3816

11.4 NNP = GNP − depreciation = 3816 − 168 = 3648

11.3 National Income, using the income approach NI = W + R + Corporate Profit + Non corporate profit + Interest + (Indirect tax − subsidy)

(Do not worry if NNP and NI differ greatly.) NI = 1407.7 + 34.1 + 257.6 + 173.9 + 182.2 + 593.6 − 44.8

NI = 2604.3

Table 6.5

Depreciation	168.0
Compensation of employees	1,407.7
Corporate profits	257.6
Dividends	78.4
Exports	212.8
Government purchases	716.8
Imports	235.2
Indirect taxes	593.6
Net interest income	182.2
Net private domestic investment	784.0
Personal consumption expenditures	2,203.2
Personal interest income	112.0
Receipts of factor income from the rest of the world	35.2
Personal taxes	627.2
Proprietor's income	173.9
Payments of factor income to the rest of the world	68.8
Rental income	34.1
Social insurance payments	380.8
Subsidies	44.8
Transfer payments	504.0

12. In a simple economy, suppose that all income is either compensation of employees or profits. Suppose also that there are no indirect taxes. Calculate GDP from the table below. Show that the expenditure approach and the income approach add up to the same figure.

(Hints: (1) NNP + Depreciation = GNP, (2) NFFI = 0, and (3) NI = NNP)

Consumption	9500
Investment	3000
Depreciation	1750
Profits	2400
Exports	850
Compensation of employees	11500
Government purchases	3200
Direct taxes	1200
Saving	1600
Imports	900

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

$GDP = 9500 + 3000 + 3200 + (850 - 900)$

$GDP = 15,650$

$NNP = NI = \text{Compensations of employees} + \text{profits}$

$= 11,500 + 2400 = 13,900$

$GDP = NNP + \text{depreciation}$

$= 13,900 + 1750 = 15,650$