

Answer of Exercise 2

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1. 2.1. Inventories is stock variable.

2.2. Changes in inventories is flow variable.

2.3. Money supply is stock variable.

2.4. Changes in money supply is flow variable.

2.5. National incomes is flow variable.

2.6 Expenditure is flow variable.

2.7 Wealth is stock variable.

2.8 Population is stock variable.

2.9 Capital is stock variable.

2.10. Interest is flow variable.

2. The different between GDP and GNP is that GDP measures the output produced within a country whereas GNP measures the output produced by a nation's citizens, regardless where it is produced. Between U.S and China, China has higher GNP because China has larger population

3. Find the value added :

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

4. Transfer payment is the transaction in which money or goods change hands but no goods or service is produced. Transfer payment does not include in GDP because nothing is produced from those transactions.

5. Because Real GDP has adjusted to the change of inflation or any price changes by fixing prices at same base year. For example, to calculate GDP in 2020, price in 2019 is used to multiply with Q in 2020. The problem associated with GDP could be base year data due to lack

of doing survey.

6. If 2018 is the base year, Real GDP₂₀₁₉ equal to Nominal GDP₂₀₁₈, and GDP deflator of 2018 = 100.

7. Three limitation of the GDP concept are:

- GDP does not reflect on crime rates. If crime level goes down, society or social welfare is getting better, but it does not count in GDP.
- Informal Economy: Illegal goods and services are not counted in GDP as well.
- Production for own consumption, such as domestic works, babysitter, are not included in GDP as well.

8. The citizen bought 8 new cars, each worth 50\$.

↳ This affects individual consumption (C).

The citizen bought 4 new houses, each worth 150\$

↳ This affects investment (I)

The citizens grew rice for their own consumption. The rice was worth 500\$

↳ This does not affect GDP.

The firms bought 6 used machines, each worth 50\$.

↳ This does not affect GDP.

The firms bought 8 car parts, each worth 25\$.

↳ This does not affect GDP.

The governments bought 4 new computers, each worth 50\$.

↳ This affects government spending G

The government paid 1,000\$ to the poor as welfare payment.

↳ This does not affect GDP

The citizen bought 10 imported ships, each worth 100\$

↳ This affects export (X).

The firms sold 4 planes abroad, each worth 200\$

↳ This affects import (I).

Calculate GDP in 2018 :

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

$$GDP_{2018} = 50 \times 8 + 150 \times 4 + 50 \times 4 + (4 \times 200 - 10 \times 100) = 1000\$$$

9. Calculate Nominal GDP, Real GDP, GDP Deflator, and annual Inflation rate.

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	Inflation rate
2012	15	15	100	
2013	15	17	88.24	-11.76%
2014	18	13	138.46	56.91%
2015	25	12	208.33	33.54%

10. Calculate GNP and NNP.

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

$$GNP = GDP - NFFI$$

$$= 8000 - (250 - 300) = \underline{\underline{\$7950 B}}$$

$$NNP = GNP - \text{Depreciation}$$

$$= 7950 - 900 = \underline{\underline{\$7050 B}}$$

11.

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

Calculate following items :

$$11.1 \text{ Gross domestic investment} = \text{Net private domestic investment} + \text{depreciation}$$

$$= 784 + 168 = \underline{952}$$

$$11.2 \text{ . GDP} = C + I + G + (X - M)$$

$$2,203.2 + 952 + 716.8 + (212.8 - 235.2) = 3849.6$$

$$11.3 \text{ . GNP} = \text{GDP} + \text{NFFI}$$

$$= 3849.6 + (35.2 - 68.8) = 3816.3$$

$$11.4 \text{ . NNP} = \text{GNP} - \text{Depreciation}$$

$$= 3816.3 - 168 = 3,648.3$$

11.5. National income

Compensation of employees	1,407.7
Proprietors' income	173.9
Rental incomes	34.1
Corporate profits	257.6
Net interest	182.2
Indirect taxes minus subsidies	548.8
<u>NI</u>	<u>2,604.3</u>

12. Calculate GDP by expenditure approach:

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

$$= 9500 + 3000 + 3200 + (850 - 900) = 15,650$$

Calculate GDP by income approach:

$$\text{Since } GDP = GNP - NFFI$$

$$\text{and } NFFI = 0$$

$$\therefore GNP = GDP$$

$$\text{Since } GNP = NNP + \text{Depreciation}$$

$$\Rightarrow GDP = NNP + \text{Depreciation}$$

$$= 11500 + 2400 + 1750 = 15,650$$

Both GDP calculated by expenditure approach and income approach = 15,650