BEC1116
Principles of Economics

National Income

Definition of National Income

National income is the aggregate of various types of income received by individuals within an economic system in their capacity as owners of the factors of production over a given period of time.

Therefore, national income arises only when the economic system engages in the production of goods and services.

Calculation of National Income

1. Product Approach

This approach calculates national income by using the real value of all final goods and services produced within the country's economic system during a given period of time.

2. Income Approach

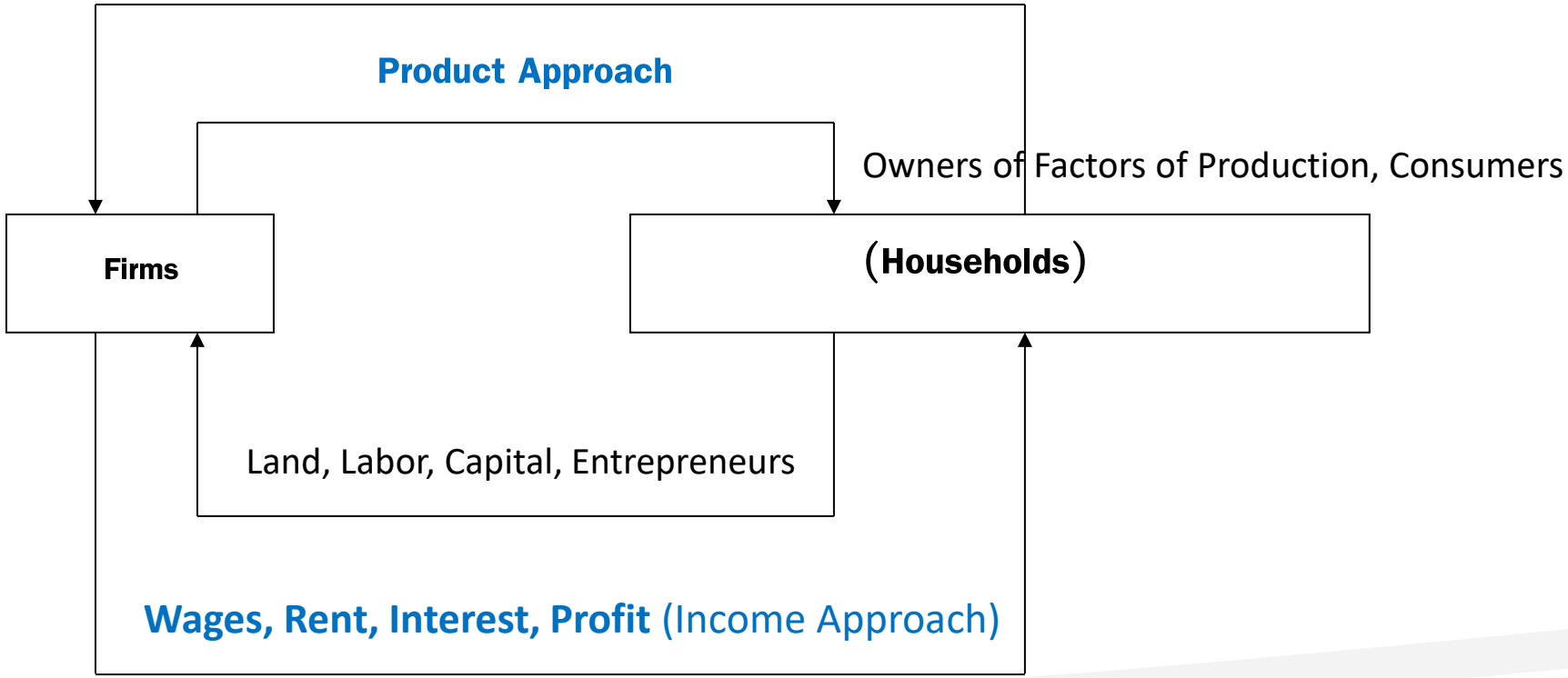
This approach calculates national income by summing all incomes received by the owners of factors of production during a given period of time.

3. Expenditure Approach

This approach calculates national income by using the total expenditure incurred by economic units in purchasing goods and services.

Circular Flow in the Economic System

Expenditure on the Purchase of Goods and Services



1. Calculation of National Income by the Product Approach

Consists of

1. **Gross Domestic Product at Market Price** (GDP at market price)
2. **Gross National Product at Market Price** (GNP at market price: GNP at mkp)
3. **Net National Product at Market Price** (NNP at market price: NNP at mkp)
4. **Net National Product at Factor Cost** (NNP at factor cost: NNP at fc), or **National Income** (NI)

Calculation of National Income by the Product Approach

- I. Calculated from the value of final goods and services traded in the market
- II. Calculation based on value added

Calculation of GDP from the Value of Final Goods and Services

1. Goods and services included in the calculation must be priced items that are exchanged in the domestic market, with money serving as the medium of exchange.

$$\text{Value} = \text{Price} \times \text{Quantity}$$

2. The goods and services included must be final goods and services.

3. Goods and services must be produced within the territorial boundaries of the country, regardless of the ownership of the factors of production.

4. The value refers to the value of goods and services before deducting depreciation or wear and tear of capital goods used in production.

Problems Arising from the Calculation of GDP

- A problem that arises from using the value of final goods and services is double counting. Therefore, the value added approach is used.

Value added = Value of output sold – Value of inputs purchased

- Thailand applies the principle of calculating GDP based on the value added of each production sector.

II. Value Added Approach

- **Final goods and services** are goods and services produced and delivered directly to consumers.
- **Intermediate goods** are goods produced for use in producing other goods in subsequent stages.
- **Value added** is the difference between the value of goods and services produced and the value of production costs.

Value added = Value of output at each stage – Value of intermediate goods

Product Approach

By the Office of the National Economic and Social Development Council (NESDC)

There are a total of 16 production sectors, as follows

1. Agriculture, hunting, and forestry
2. Fishing
3. Mining and quarrying
4. Manufacturing, comprising 22 sub-industries
5. Electricity, water supply, and gas production
6. Construction
7. Wholesale and retail trade; repair of motor vehicles, motorcycles, personal goods, and household goods
8. Hotels and restaurants

Product Approach

By the Office of the National Economic and Social Development Council (NESDC)

9. Transportation, storage, and communication
10. Financial intermediation
11. Real estate, renting, and business activities
12. Public administration and defence; compulsory social security
13. Education
14. Health and social work activities
15. Other community, social, and personal service activities
16. Private household employees

A. Gross Domestic Product (GDP)

Gross Domestic Product (GDP at Market Price) refers to the total value of final goods and services that a country can produce within a given period, measured at market prices.

It is the aggregation of the value of final goods and services, which refers to goods and services that are produced and are not used as inputs in further production, except for consumption.

B. Gross National Product (GNP)

- **Gross National Product at Market Price (GNP at mkp)** refers to the value of goods and services that a nation produces within a given period, measured at market prices.

GNP at market price = GDP at market price + Net factor income from abroad

B. Gross National Product (GNP)

- **Net factor income from abroad** means the value of goods and services that a nation produces within a given period, measured at market prices.

Net factor income from abroad = income earned by nationals of the country from abroad – income earned by foreigners within the country

C. Net National Product (NNP)

- **Net National Product at market price (NNP at mkp)** means the value of goods and services that a nation produces within a given period, measured at market prices, after deducting depreciation of capital goods.

NNP at mkp = GNP at mkp – depreciation of capital
(Capital Consumption Allowance: CCA)

Net National Product (NNP)

• **Capital Consumption Allowance (CCA)** consists of:

I. Depreciation

II. Depreciation of production tools and equipment

III. Accidental damage to assets

NNP = GNP – CCA

Indicates how much a country can increase its net production each year.

D. Net National Product at Factor Cost (NNP at fc)

Net National Product at Factor Cost (NNP at fc)
or **National Income (NI)**

Refers to the value of final goods and services produced by a nation within a given period, calculated at factor cost.

Factor cost = Market price – Indirect taxes – Business profits + Subsidies

NNP at fc = NNP at mkp – Indirect taxes – Business profits + Subsidies

NNP at fc = NI (National Income)

2. Income Approach

- **National Income (NI)** refers to the total income from various types earned within the economic system by owning factors of production over a given period. Such returns include **wages (Wage)**, **rent (Rent)**, **interest (Interest)**, and **profit (Profit)**.
- **National Income (NI)** is the aggregation of different types of income received by individuals as owners of factors of production within a given period of time.

NI = Wage + Rent + Interest + Profit

B. Personal Income

- Total personal income before personal income tax is deducted.

PI = NI – Retained earnings – Personal income tax + Transfer payments

Transfer payments are incomes that do not arise from production but are transfers of purchasing power from one person to another, such as government assistance payments, welfare benefits, unemployment compensation, donations, and inheritances.

C. Disposable Income

- Personal income received after deducting personal income tax.

DI = PI – Personal income tax

- Disposable income (DI) indicates an individual's purchasing power and ability to spend.

D. Per Capita Income

- Per capita income is the average income of individuals in a country. It is calculated by dividing national income by the total population of the country. Important measures of per capita income include:

D.1 Gross National Product per capita (per capita GNP)
D.2 National Income per capita (per capita NI)

D.1 Per Capita Gross National Product
(Per Capita GNP)

- Per capita gross national product (Per Capita GNP) is obtained by dividing the gross national product (GNP) by the total population.

Per Capita Income = GDP / Population

- Per capita gross national product is used as an indicator of the average productive capacity of the population in a country.

D.2 Per Capita National Income

- Per capita national income (Per Capita NI) is obtained by dividing national income (NI) by the total population.

Per Capita NI = NI / Population

- Per capita national income is used as an indicator of the economic status of each country and as a measure reflecting the standard of living of the population in a country relative to other countries.

3. Expenditure Approach

This is a method of calculating national income by summing household expenditures on final goods and services over a period of 1 year.

The expenditure components included are:

1. Personal consumption expenditures (Personal Consumption Expenditures: C)

2. Expenditures on domestic investment (Gross Private Investment: I)

3. Government expenditure on goods and services (Government Expenditure: G)

4. Net exports (Net Export: X – M)

When the above components are summed, GDP at market prices (GDP at mkp) is obtained, which can then be used to calculate national income.

3. Expenditure Calculation

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

whereas

C	=	Consumption
I	=	Investment
G	=	Government Expenditure/ Government Spending
X	=	Exports
M	=	Imports

Real Gross Domestic Product
(Real GDP)

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

where	Real GDP	Real Gross Domestic Product
	Nominal GDP	Nominal Gross Domestic Product
	GDP Deflator	GDP Deflator = Gross Domestic Product Price Index

Nominal GDP & Real GDP

- Nominal Gross Domestic Product (Nominal GDP) refers to the monetary value of domestic output, calculated at current market prices at that time.

  Therefore, changes in Nominal GDP from one year to another reflect both changes in the quantity of output produced and changes in the price level.
- Real Gross Domestic Product (Real GDP) refers to the value of domestic output calculated using market prices from a specific base year.
- This indicates that Real GDP is a more appropriate measure for representing a country's productive capacity and income, or for comparing economic conditions over time, than Nominal GDP, because the effects of price changes have been eliminated.

Real Gross Domestic Product (Real GDP)

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

Consumer Price Index: CPI

tool used to measure changes in the price level of goods and services that consumers generally pay for.

The difference between the GDP deflator and CPI is as follows:

GDP deflator measures the price level of goods and services produced within the country.

CPI measures the price level of goods and services that consumers generally pay for.

GDP and Social Welfare (Limitations of Using GDP)

- GDP is the total value of output that an economic system produces during a given period of time.
- Social Welfare refers to the level of well-being of people in society. Part of it can be measured by the amount of income (or goods) available to satisfy needs and generate happiness; however, happiness also depends on other factors.
- People differ in their ability to access output or resources. Therefore, output may be concentrated among higher-income consumers, while some individuals may consume little or nothing.
- GDP does not take income distribution into account.
- GDP does not take into account the environmental impacts of production.
- Gross domestic product per capita (GDP per capita) cannot be used as a complete measure of human welfare.

Benefits of Studying National Income

- Helps understand the country's economic situation, since income is an indicator of the rate of economic growth.
- Used to compare the standard of living of the population, such as whether the price level of goods changes over time.
- Serves as a measure of the success of government policies and is used in planning and formulating future policies.
- Helps understand the economic structure of the country, identifying sources of income and areas of expenditure.
- Used to compare levels of economic development and standards of living with other countries.

Limitations of National Income

- Does not include all final goods that are actually produced
- Does not take leisure and rest into account
- Problem of double counting
- Measures only the quantity of goods
- Does not show income distribution
- Does not consider social impacts resulting from production