Revision Notes

Class - 12 Macroeconomics

Chapter 2- National Income Accounting

IMPORTANT TERMINOLOGY

Goods:

- In economics, goods are products and resources that meet people's needs and demands. A good can be a physical object, a man-made object, a service, or a mix of the three that can command a market price.

Types of goods:

a. Consumption Goods:

- Consumption goods are items that are utilised directly to satisfy human demands. Consumption goods support the core goal of an economy, which is to sustain the consumption of the economy's entire population.
- These are not used in the manufacturing of other goods.
- Consumption products, often known as final goods, are intended for final consumption.
- For instance, a television, a pen, or a pair of shoes.

b. Capital Goods:

- Capital goods are goods used by one business to assist another in the production of consumer goods.
- Capital goods can not be easily transformed into cash.
- They are long-lasting and do not degrade easily.

- Equipment, machinery, buildings, computers, are some common examples of capital goods.

c. Final Goods:

- Final goods are commodities produced by a corporation for subsequent consumption by the consumer.
- These commodities satisfy a consumer's demands or desires.

d. Intermediate Goods:

- Intermediate goods are utilised in the production of finished goods or consumer goods.
- They can also be considered to act as inputs in other commodities and to comprise the final goods as ingredients.

Investment:

- An investment is an asset or object purchased with the intention of earning income or increasing in value.
- When a person buys a good as an investment, the intention is not to consume the good but rather to use it to build wealth in the future.

Gross Investment:

- A company's capital investment before depreciation is referred to as its gross investment or gross capital investment.
- The absolute investment value made by the company in purchasing assets each year is shown by gross investment.

Net investment:

- It is defined as gross investment minus depreciation on existing capital. Net investment, in a nutshell, is the increase in productive stock.

  Net investment = Gross Investment – Depreciation

Depreciation:

- Depreciation, in economic terms, is a way of dividing the cost of a tangible or physical asset over its usable life or life expectancy. Depreciation is a measurement of how much of the value of an asset has been diminished.

Capital formation:

- Capital formation is the process of gradually increasing the stock of capital over time.

Factor Cost:

- These are the earnings obtained by the owners of factors of production in exchange for providing factor services to the producer.

Basic Prices:

- The basic price is the amount a producer receives from a purchaser for a unit of a thing or service provided as output, less any tax due and any subsidy due on that unit as a result of its production or sale.

  Basic price = Factor cost + Production taxes – Production subsidy

Market Prices:

- The market price of a commodity is the price at which it is sold on the open market. It comprises the costs of production such as wages, rent, interest, input prices, profit, and so on.

- It also includes government-imposed levies and government-provided producer subsidies.

  Market price = Basic price + Product taxes – Product subsidy

Transfer Payments:

- Transfer payment refers to payment received without the provision of any service or goods in exchange.
- These are one-time payments with no expectation of a return. These are unearned incomes for recipients.
- These are given to you for free, with no need to make any current or future payments in exchange.
- Transfer payments are essentially government welfare expenditures.

Stock Variable:

- A stock variable is a variable that is measured at a certain point in time.
- Stock does not have a temporal dimension.
- It influences the flow.
- Wealth, capital, etc are examples.

Flow Variable:

- A flow is a quantity that is measured over a specific timeframe.
- Flows are thus described in terms of a given period, such as hours, days, weeks, months, or years.
- It has a time dimension to it.

Leakage:

- In the context of a circular flow of income model, leakage is an economic term that characterizes capital or money that escapes an economy or system.
- It lowers aggregate demand and income levels.
- For example, taxes, savings, and imports.

Injection:

- When funds are added to an economy from sources other than people and enterprises, this is referred to as an injection.
- It raises aggregate demand as well as income levels.
- Injections can come from a variety of sources, including government spending, investment, and exports.

Consumer Price Index:

- The consumer price index (CPI) reflects variations in the overall level of prices of products and services that a reference population obtains, consumes, or pays for consumption across time.

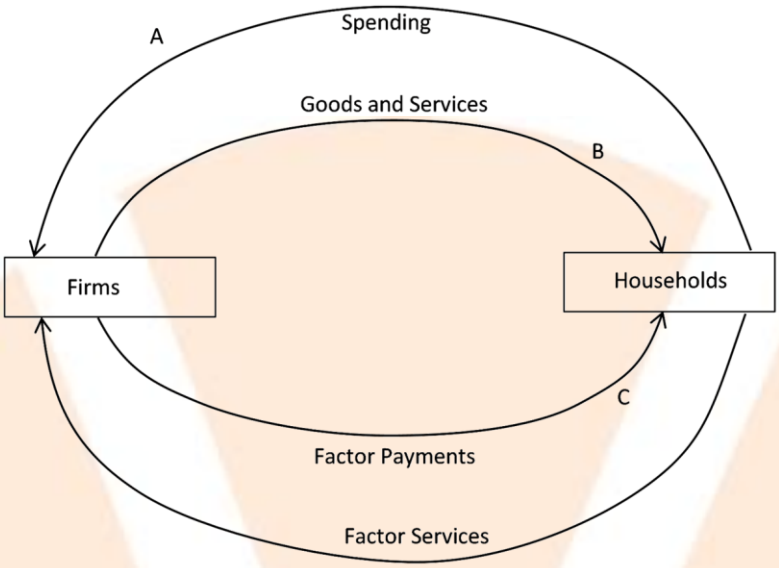
Wholesale Price Index:

- A wholesale price index (WPI) is an indicator that monitors and tracks changes in the price of products before they reach the retail level.

CIRCULAR FLOW OF INCOME

- The continual flow of commodities and services, revenue, and expenditure in an economy is referred to as the circular flow.

- It depicts the circular redistribution of revenue between the manufacturing unit and households.



ECONOMIC TERRITORY

- The geographical territory managed by a government constitutes a country's economic territory.
- People, goods, and capital may freely circulate inside this zone.
- The economic territory encompasses not just land but also national air space, territorial waters, and natural oil and gas resources in international waters.

Scope of Economic Territory:

- Territorial seas and airspace are examples of political boundaries.
- Residents' ships and aircraft that travel between two or more countries.
- Embassies, consulates, military bases, and other international institutions.
- Residents operating fishing vessels, oil and gas rigs in foreign waters.

NORMAL RESIDENTS OF A COUNTRY

- A person or entity that regularly dwells in a country and has its centre of economic interest in that country is referred to as a normal resident of that country.

Exceptions for Normal Residents of a country:

- Diplomats and embassy officials from other countries.
- People who work for international organisations such as WHO, IMF, UNESCO, and others are treated as normal citizens of the country to which they belong.
- Commercial travellers, tourists, students, and so on.

AGGREGATES OF NATIONAL INCOME

1. Gross Domestic Product at Market Price (GDP_{MP})

- It is the market value of all final products and services generated by all manufacturing units located on a country's domestic territory within an accounting year.
- Gross domestic product at market prices equals the sum of all resident producers' gross values added at market prices plus taxes and fewer import subsidies.

$$GDP_{MP} = \text{Net domestic product at Factor Cost } (NDP_{FC}) + \text{Depreciation} + \text{Net Indirect Tax}$$

or,

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

2. Gross Domestic Product at Factor Cost (GDP_{FC})

- It is the total worth of all final goods and services produced within a country's domestic territory excluding net indirect taxation.

$$GDP_{FC} = GDP_{MP} - \text{Indirect tax} + \text{Subsidy, or } GDP_{FC} = GDP_{MP} - NIT$$

or

GDP_{FC}= Compensation of Employees + Rent + Interest + Profit + Depreciation

3. Net Domestic Product at Market Price (NDP_{MP})

- It is the depreciation-free market value of final goods and services produced in the country's domestic area within a year.
- Hence, it is the monetary worth of all final goods and services produced within a country's domestic territory within an accounting year, excluding depreciation.

$$NDP_{MP} = GDP_{MP} - \text{Depreciation}$$

4. Net Domestic Product at Factor Cost (NDP_{FC})/ Domestic Income:

- It is the factor income received by owners of factors of production for providing factor services in domestic territory throughout a fiscal year.
- It is the total worth of all finished goods and services excluding depreciation and net indirect tax.
- Thus, it is equivalent to the sum of all factor incomes (compensation of employees, rent, interest, profit, and mixed income of self-employed) created in the country's domestic area.

$$NDP_{FC} = GDP_{MP} \text{ n Depreciation n Indirect tax} + \text{Subsidy or}$$

NDP_{FC}= Compensation of Employees + Rent + Interest + Profit

5. Net National Product at Factor Cost or National Income (NNP_{FC})/ National Income:

- It is the aggregate of all factor earnings earned by ordinary people of a country in the form of wages. During an accounting year, rent, interest, and profit are calculated.

- It is the sum of all factor incomes earned by ordinary citizens of a nation throughout an accounting year, including employee pay, rent, interest, and profit.

$NNP_{FC} = NDP_{FC} + \text{Factor income earned by normal residents from abroad}$

nFactor payments made to abroad.OR$NNP_{FC} = NDP_{FC} + NFIA = \text{National Income}$

6. Gross National Product at Market Price (GNP_{MP})

- It is the market value of all finished goods and services generated by a country's normal citizens (both domestically and overseas) throughout an accounting year.

$GNP_{MP}(MNP_{FC}) = GDP_{MP} + NFIA$ Or $GNP_{MP} = NNP_{FC} + Dep + NIT$

7. Net National Product at Market Price (NNP_{MP})

- It is the sum of the factor incomes earned by normal citizens of a country throughout an accounting year, including net indirect taxes.

$NNP_{MP} = NNP_{FC} + \text{Indirect tax} - \text{Subsidy}$

Or

$NNP_{MP} = NDP_{MP} + \text{Net factor income from; abroad}$

8. Gross National Product at Factor Cost (GNP_{FC})

- It is the sum of a country's normal people's factor earnings over the course of an accounting year, plus depreciation.

$GNP_{FC} = NNP_{FC} + \text{Depreciation, or}\backslash\backslash GNP_{FC} = GDP_{FC} + NFIA$

9. National Income at Current Prices:

- When products and services generated by ordinary inhabitants within and outside of a country in a year are evaluated at the current year's values, i.e., current prices, this is referred to as national income at current prices. I
- It is also referred to as nominal national income.

  Y = Q x P

  Here,

  Y = National income at current prices.

  Q = Quantity of goods and services produced in an accounting year.

  P = Prices of goods and services during the current accounting year.

10. National Income at Constant Prices:

- National Income at Constant Prices refers to the worth of products and services produced by ordinary inhabitants within and outside of a country in a given year at a constant price, i.e., the base year's price.
- It is also referred to as actual national income.

  Y' = Q x P'

  Here,

  Y' = National income at constant prices.

  Q = Quantity of goods and services produced during an accounting year.

  P' = Prices of goods and services prevailing during the base year.

11. GVA at Market Prices:

- Production and product taxes are included in GVA at market prices, whereas production and product subsidies are excluded.

  GVA at market price = GDP at market prices

12. GVA at basic prices:

- GVA at basic prices will exclude production subsidies available on the commodity and incorporate production taxes.

  GVA at basic prices = GVA_{MP} - Net Production Taxes

13. GVA at factor cost:

- GVA at factor cost does not contain any taxes or subsidies.

  GVA at factor cost = GVA at basic prices - Net Production Taxes

GDP AND WELFARE:

GDP:

- It is a measure of the economic value of all final goods and services produced within a specific time period, which is typically annually or quarterly.
- A greater GDP suggests that more products and services are produced. It indicates the increased availability of goods and services, but this does not always imply that people were better off throughout the year.

  GDP is classified into two categories-

  - **Real GDP:**

    Real gross domestic product (real GDP) is an inflation-adjusted estimate of the value of all goods and services generated by an economy each year. It is also known as "constant-price" or "inflation-corrected" or "GDP at constant prices".

    It is exclusively affected by changes in physical output, not by changes in the price level. It's referred to as a true indication of economic advancement.

    $$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Deflator}}$$

  - **Nominal GDP:**

    The products and services produced by all producing units in a country's domestic territory during an accounting year and valued at the current year's

prices or current prices are referred to as nominal GDP or GDP at current prices.

Changes in both physical output and the price level have an impact on it. It is not regarded as a reliable indicator of economic advancement.

Nominal GDP = Real GDP x GDP Deflator

Conversion of Nominal GDP into Real GDP

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{Price Index}} \text{ x } 100$$

GDP Deflator:

- The nominal-to-real GDP ratio is a well-known price index. This is known as the GDP Deflator.
- Thus,

  If GDP denotes nominal GDP and

  gdp denotes real GDP,

  then;

  $$\text{GDP Deflator} = \frac{\text{GDP}}{\text{gdp}}$$

  The deflator is also expressed in percentage terms. In this scenario,

  $$\text{GDP Deflator} = \frac{\text{GDP}}{\text{gdp}} \times 100$$

Welfare:

- People's material well-being is referred to as welfare. It is determined by a variety of economic elements such as national income, consumption level,

product quality, etc, as well as non-economic factors such as environmental pollution, law, and order, and so on.

- Economic welfare refers to welfare that is dependent on economic variables, whereas non-economic welfare refers to welfare that is dependent on non-economic elements. Social welfare is defined as the sum of economic and non-economic well-being.
- Thus, GDP and welfare are directly associated, however, this relationship is incomplete because of the following limitation:

Some limitation of per capita real GDP as an indicator of economic welfare:

- The exclusion of non-market transactions
- Externalities are not included in GDP but have an impact on wellbeing.
- GDP does not accurately reflect the quality of economic development.
- Not all products make contributions to economic welfare.
- Some products may have a detrimental impact.
- Inflation may create the impression of a decline.

METHODS OF CALCULATING NATIONAL INCOME

a. Product Method/ Value Added Method:

It refers to a firm's production activities that add value to raw materials (intermediate goods). Alternatively, value added is defined as an enterprise's contribution to the present flow of products and services. To put it another way, the term "value added" is used to describe a company's net contribution.

As a result,

Value added of a firm = Value of Output– Value of intermediate goods used by the firm.

Here,

Value of output:

- An enterprise's output is the commodities and services it produces during an accounting year. The market worth of all goods and services generated by a firm throughout an accounting year is referred to as the value of output.

  Value of Output = Quantity of output x Price

  Or

  $$\text{Value of output} = \text{Sales} + \Delta\text{Stock}$$

Change in stock

- It is calculated as;

  $$\Delta\text{Stock} = \text{Closing Stock} - \text{Opening Stock}$$

Intermediate Consumption:

- It refers to the value of non-factor inputs or raw material which is used in the process of production.

b. Expenditure Method:

It is believed that the value of domestic income is equal to the total sum of expenditures on the purchase of final products and services produced throughout an accounting year within an economy.

- **Consumption Expenditure:** The expenditure by households, individuals, etc on final goods and services.
- **Government Expenditure:** The expenditure by the government on final goods and services.
- **Investment Expenditure:** The expenditure on the purchase of the goods that would be used for further production. It includes fixed investment (on plant, machinery etc) and inventory investment (includes change in stock).
- **Net exports:** The difference between exports(X) and imports(M).

Formula

$GDP_{Mp} = C + I + G + (X – M)$

Here,

C = consumer spending on different goods and services,

I = investments made by businesses, and on capital goods,

G = government's spending on goods and services provided to the public,

X = exports, and

M = imports.

c. Income Method:

- The income method is a real estate estimating methodology that divides the capitalization tariff or price by the net operating income of the rental payments.
- This calculation is used by investors to evaluate assets depending on their profitability.
- It is also called factor payment method, as in this the calculation of national income is through factor incomes.

Classification of Factor Incomes

- **Compensation of Employees**: It comprises salary and wages earned in return for the services and talents you give in the production of goods and services. Travel allowances, bonuses, lodging allowances, and medical expenses are also included. It includes,
  - Wages and salaries
  - Payment in kind
  - Pension
  - Employers contribution
- **Operating Surplus:** It includes.

- **Rent** is the amount of money paid for the use of land. When determining income, rent only relates to the money obtained from the use of any land. Rent paid for the use of machinery and other equipment is not included in the calculation of rent.
- **Interest** is the cost one pays for borrowing money. This now covers the interest paid when a business obtains a loan for an investment.
- **Profit,** it includes dividends, profit tax, undistributed profits.

- **Mixed Income:** The income of self-employed professionals, farming units, and sole proprietorships is referred to as mixed income.

Formula

National Income (NNPFC) = Net Domestic Product at Factor Cost (NDPFC) + Net Factor

Note: NDPFC = Rent + Compensation + Interest + Profit + Mixed income.

Problem of Double Counting:

When computing national income, the problem of double counting arises. The national income estimates become muddled when double accounting occurs in the calculation of national income.

Methods to avoid the problem of double counting:

- Only the value of finished goods should be counted (final output method).
- Only the value added that equals the value of output less intermediary consumption should be counted (Value added method).

Private Income:

Private income is the estimated income of all factors and transfers to the private sector, both within and outside the country.

Private Income = Factor income from net domestic product accruing to the private sector + National debt interest + Net factor income from abroad + Current transfers from government + Other net transfers from the rest of the world.

Personal Income:

The term "personal income" refers to the sum of money received by all people or households in a certain country. Personal income comprises remuneration from a variety of sources, such as salaries, wages, and so on.

Personal income (PI) ≡ NI n Undistributed profits n Net interest payments made by households nCorporate tax + Transfer payments to the households from the government and firms

Note: NI stands for National Income

Personal Disposable Income:

Disposable income, also known as personal disposable income, is the amount of money available for household consumption, savings, and spending after deducting income taxes.

Personal Disposable Income (PDI) ≡ PI n Personal tax payments n Non tax payments