MACROECONOMIC ANALYSIS

Unit—I Subject Code; P18ECC102

Definition: Macroeconomics is the branch of economics that studies the behavior and performance of an economy as a whole. It focuses on the aggregate changes in the economy such as unemployment, growth rate, gross domestic product and inflation.

Macroeconomics is that specialized field of economics which focuses on the overall economy. It works on the aggregate value of the various individual units, to determine its more substantial impact on the whole nation. All the prominent reforms and policies are based on this concept.

Concepts covered under Macroeconomics

- **A Capitalist Nation:** A capitalist country is distinguished by sub-urbanised and voluntary conclusions for economic planning instead of the consolidated political practices. Below mentioned are a few aspects of a capitalist financial structure (Economy) that would provide a better intuition into the concept. Attributes of a capitalist nation **:**
    - Liberty of customers to pick between goods and services.
    - The privilege of individuals to set up a business to supply goods and services.
    - There is finite interference of the government.
    - Market forces regulate the distribution of goods.
- **Investment expenditure:** As the name says it all, it is the money consumed towards charges to create investments. In other words, it is the money that the decisive role in macroeconomic pursuit for business cycles and economic enhancement in the long run. In short, investment expenditure is proficient of creating additional income and fosters employment in a nation.
    - The below mentioned are the types of Investments :
        - Autonomous Investment
        - Financial Investment
        - Real Investment
        - Gross Investment

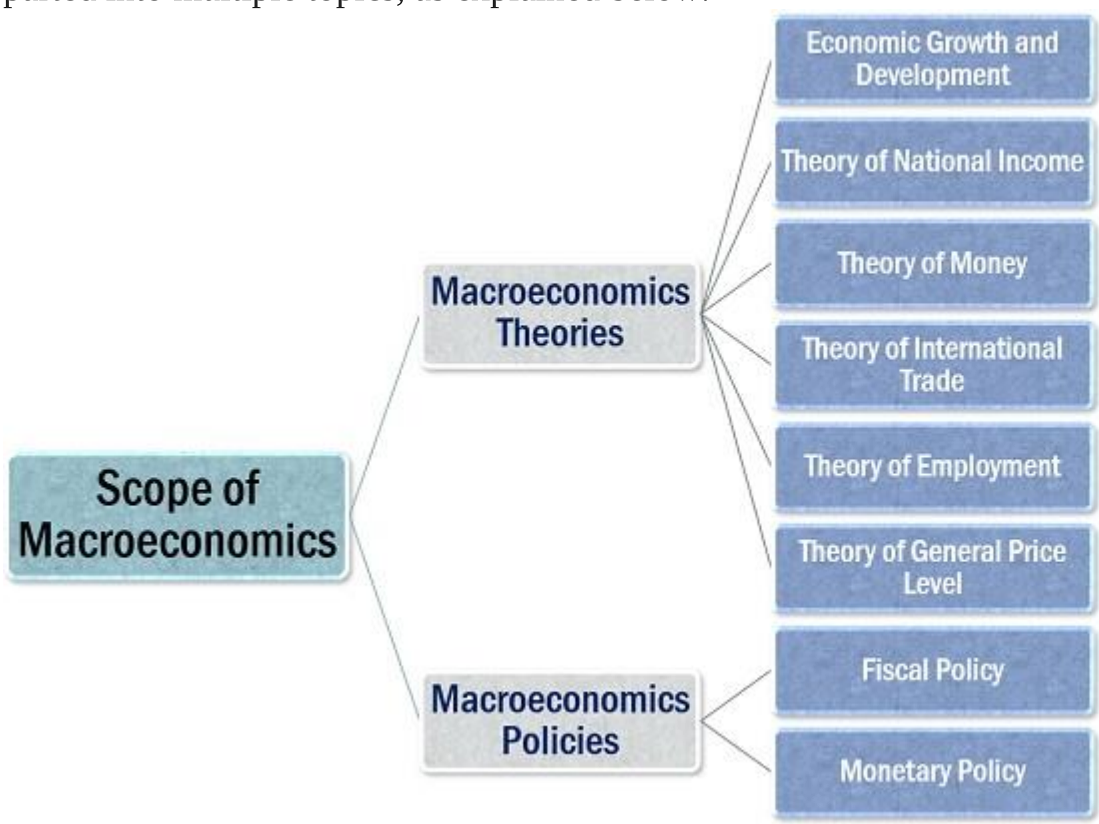
  - Net Investment

- **Revenue:** Revenue is the total income of an entity through sale of goods and proffering its services to the customers. Revenue can be operating or non-operating. The significance of revenue and its acknowledgements is better comprehended if we are well aware of the aspects that are contemplated while deciding the GDP. The index of the economic health of a nation is measured through the GDP (gross domestic product).

Scope of Macroeconomics

Macroeconomics is a vital field of study for the economists, government, financial bodies and researchers to analyze the general national issues and economic well-being of a country.

Macroeconomics widely cover two major fundamentals which are further sub-parted into multiple topics, as explained below:



Macroeconomics Theories

Government, as we know, is the regulatory body of a nation, it considers the various aspects which are crucial and impacts the lives of the citizens.

There are six significant theories under macroeconomics:

Economic Growth and Development: The status of a country's economy can be evaluated in terms of the per capita real income, as studied under macroeconomics.

Theory of National Income: It covers the various topics related to the evaluation of national income, including the income, expenditure and budgeting.

Theory of Money: Macroeconomics analyzes the functions of the reserve bank in the economy, the inflow and outflow of money, along with its impact on the employment level.

Theory of International Trade: It is a field of study that enlightens upon the export and import of goods or services. In brief, it determines the impact of cross-border trade and duty charged, on the economy.

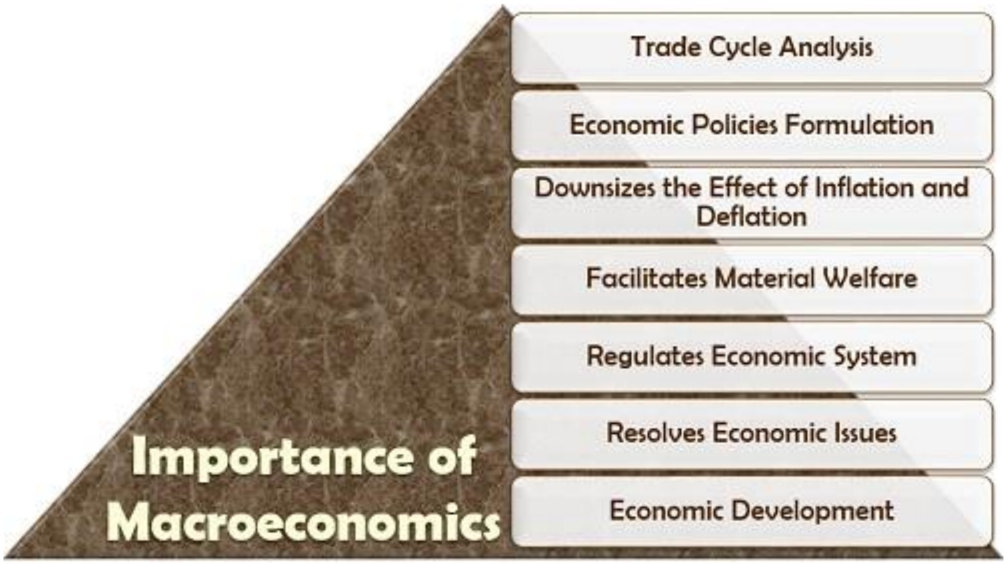
Theory of Employment: This stream of macroeconomics helps to figures out the level of unemployment and prevailing employment conditions in the country. Also, to know how it affects the supply, demand, savings, consumption, expenditure behavior.

Theory of General Price Level: The most important of all is the analysis of product pricing and how these price levels fluctuate because of inflation or deflation.

Importance of Macroeconomics

The answer is macroeconomics is a vital concept that considers the whole nation and works for the welfare of the economy.

Let us now find out its other significance:



Trade Cycle Analysis

It is beneficial for timing the economic fluctuations to avoid or be prepared for any financial crises or adverse situations.

Economic Policies Formulation

Framing of the monetary and fiscal policies majorly depends upon the study of prevailing macroeconomic conditions in the country.

Downsizes the Effect of Inflation and Deflation

Macroeconomics also helps the government and the financial bodies to be prepared for the situations of economic instability.

Facilitates Material Welfare

This stream of economics gives a broader perspective of social or national issues. Therefore, the ones who look forward to contributing to the welfare of society needs to study macroeconomics.

Regulates Economic System

It ensures or keeps a check over the proper functioning of the country's economy and actual position.

Resolves Economic Issues

The analysis of macroeconomics theories and issues helps the economists and the government to figure out the causes and possible solutions of such macro-level problems.

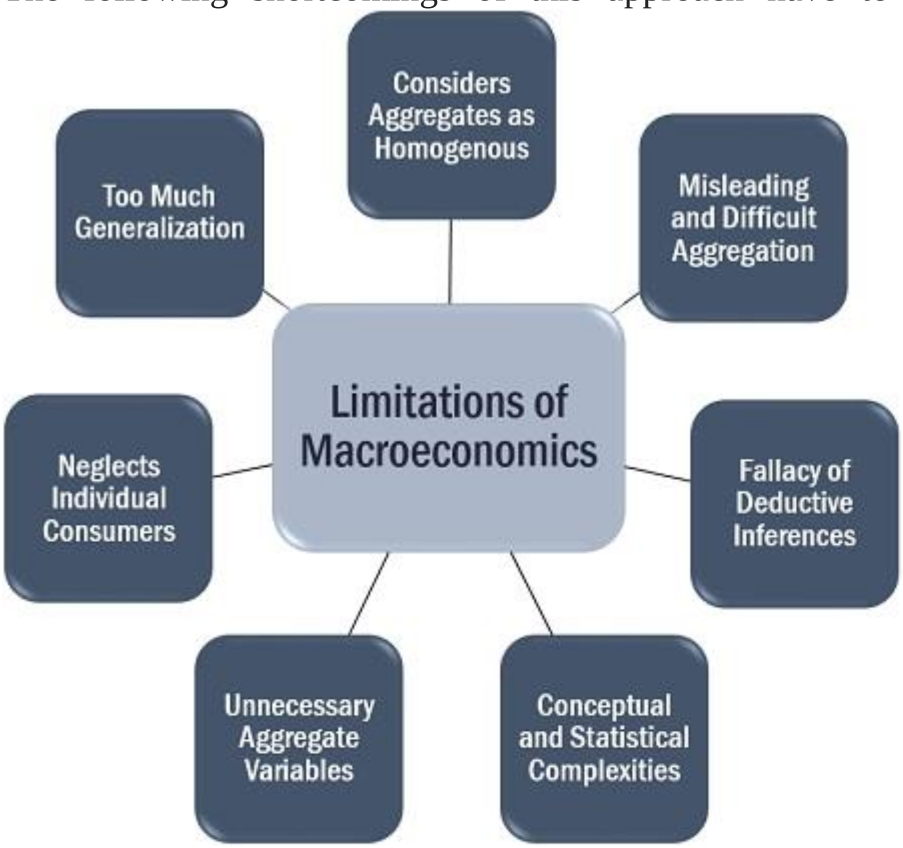
Economic Development

Dealing with different economic conditions by making use of macroeconomics research, opens up the way towards the country's growth.

Limitations of Macroeconomics

Why do some economists criticize macroeconomics?

The following shortcomings of this approach have to lead to its criticism:



- **Considers Aggregates as Homogenous**: The individual data may not be similar in structure or composition. Thus, when such single figures are compiled to get an aggregate value, it may not seem to be that useful.

- **Misleading**: The extensive application of the macroeconomics measures seems to be irrelevant when aimed at 100% results.
- **Fallacy of Deductive Inferences**: Macroeconomics function on aggregate values. But, the interpretation of the individual activities may not be the same as compared to the conclusion drawn on a mass level.
- **Conceptual and Statistical Complexities**: When the individual data have different units, its aggregation becomes arduous and holds no significance.
- **Unnecessary Aggregate Variables**: When the individual elements need to be examined separately, the aggregate values cannot be used for the purpose.
- **Neglects Individual Consumers**: The concept of macroeconomics overlooks the importance of the individual unit or consumer since the fundamental is to make use of the aggregates.
- **Too Much Generalization**: The conclusion derived from the aggregation of the data, is generally taken to be true for all the individuals.

Circular Flow Model

The circular flow model demonstrates how money moves through society. Money flows from producers to workers as wages and flows back to producers as payment for products.

- The circular flow model demonstrates how money moves from producers to households and back again in an endless loop.
- The models can be made more complex to include additions to the money supply, like exports, and leakages from the money supply, like imports.
- When all of these factors are totaled, the result is a nation's gross domestic product or the national income.

The circular flow means the unending flows of production of goods and services, income and expenditure in an economy. It shows the redistribution of income in a circular manner between the production unit and households.

These are **Land, Labour, Capital** and **Entrepreneurship**

- The contribution made by fixed natural resources (called **‘**land’), payment for which is called ‘rent’
- The contribution made by a human worker (labour), payment for which is called **‘**wage’**.**
- The contribution made by capital, payment for which is called **‘**interest’**.**
- The contribution made by entrepreneurship, payment for which is ‘profit’.
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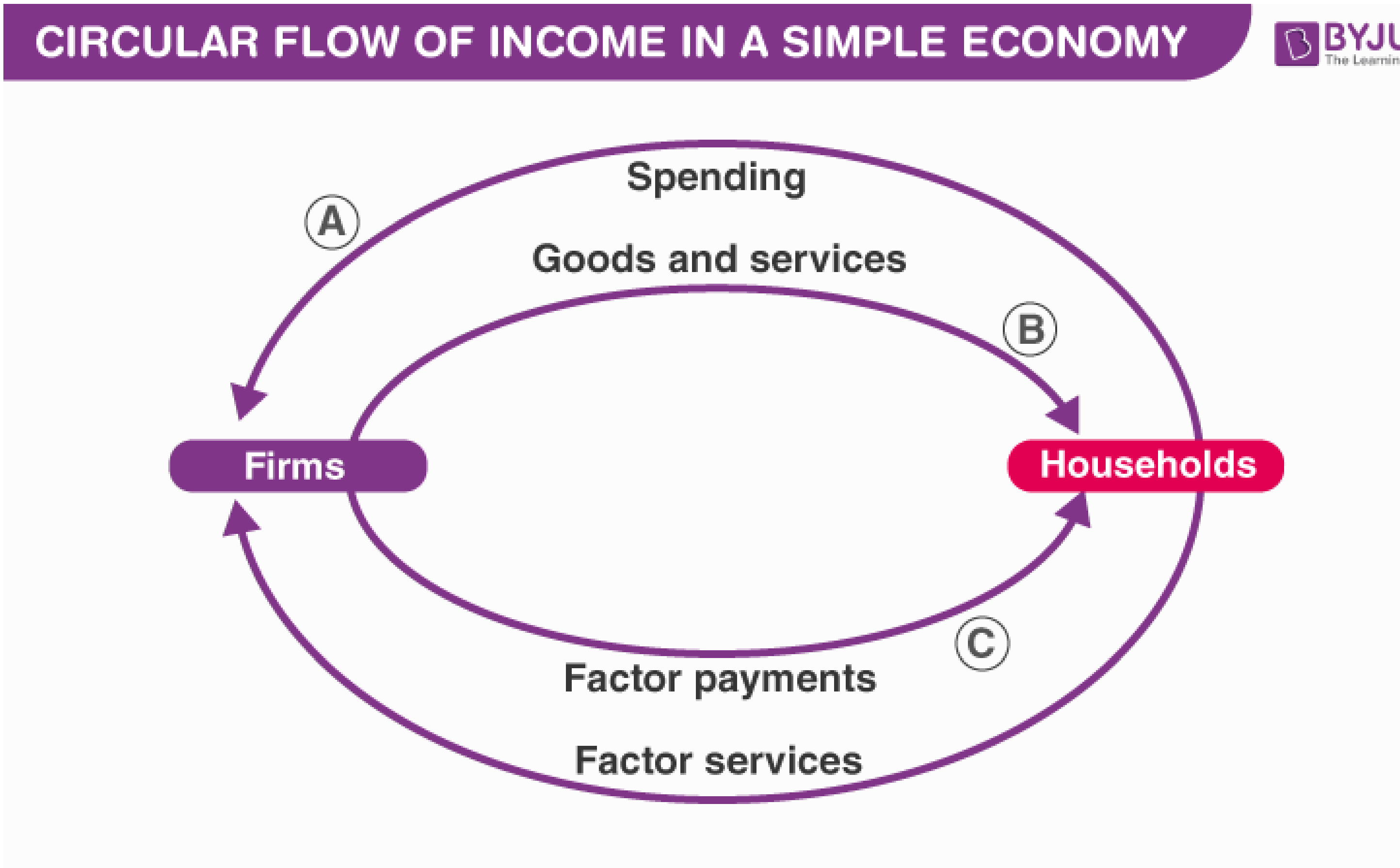
Circular Flow of Income in Two Sector Economy

It is defined as the flow of payments and receipts for goods, services and factor services between household and firm sector of the economy.



Explanation:

- The outer loop of the diagram shows the flow of factor services from households to firms and the corresponding flow of factor payments from firms to households.
- The inner loop shows the flow of goods and services from firms to households and the corresponding flow of consumption expenditure from households to the firm.
- The entire amount of money, which is paid by firms as factor payments, is paid back by the factor owners to the firms.

National Income Definition

There are two National Income Definition

- Traditional Definition
- Modern Definition

Traditional Definition

According to Marshall: "The labor and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds. This is the true net annual income or revenue of the country or national dividend."

The definition as laid down by Marshall is being criticized on the following grounds.

Due to the varied category of goods and services, a correct estimation is very difficult.

There is a chance of double counting, hence National Income cannot be estimated correctly.

For example, a product runs in the supply from the producer to distributor to wholesaler to retailer and then to the ultimate consumer. If on every movement commodity is taken into consideration then the value of National Income increases.

Also, one other reason is that there are products which are produced but not marketed.

Simon Kuznets defines national income as "the net output of commodities and services flowing during the year from the country's productive system in the hands of the ultimate consumers."

Modern National Income definition

- GDP
- GNP

Gross Domestic Product

The total value of goods produced and services rendered within a country during a year is its Gross Domestic Product.

Further, GDP is calculated at market price and is defined as GDP at market prices. Different constituents of GDP are:

1. Wages and salaries
2. Rent
3. Interest
4. Undistributed profits
5. Mixed-income
6. Direct taxes
7. Dividend
8. Depreciation

Gross National Product

For calculation of GNP, we need to collect and assess the data from all productive activities, such as agricultural produce, wood, minerals, commodities, the contributions to production by transport, communications, insurance companies, professions such (as lawyers, doctors, teachers, etc). At market prices.

It also includes net income arising in a country from abroad. Four main constituents of GNP are:

1. Consumer goods and services
2. Gross private domestic income
3. Goods produced or services rendered
4. Income arising from abroad.

GDP and GNP on the basis of Market Price and Factor Cost

a) **Market Price**

The Actual transacted price including indirect taxes such as GST, Customs duty etc. Such taxes tend to raise the prices of goods and services in the economy.

b) **Factor Cost**

It Includes the cost of factors of production e.g. interest on capital, wages to labor, rent for land profit to the stakeholders. Thus services provided by service providers and goods sold by the producer is equal to revenue price.

Concept of National Income

National income means the value of goods and services produced by a country during a financial year. Thus, it is the net result of all economic activities of any country during a period of one year and is valued in terms of money. National income is an uncertain term and is often used interchangeably with the national dividend, national output, and national expenditure. We can understand this concept by understanding the national income definition.

The National Income is the total amount of income accruing to a country from economic activities in a years' time. It includes payments made to all resources either in the form of wages, interest, rent, and profits.

The progress of a country can be determined by the growth of the national income of the country

Measurement of National Income

National income is the value of the aggregate output of the different sectors during a certain time period. In other words, it is the flow of goods and services produced in an economy in a particular year. Thus, the measurement of National Income becomes important.

There are three ways of measuring the National Income of a country. They are from the income side, the output side and the expenditure side. Thus, we can classify these perspectives into the following methods of measurement of National Income.

Methods of Calculating National Income

There are three known methods by which national income is determined, and these are:

1. Product Method
2. Expenditure Method
3. Income Method
4. Value Added Method

1. Product Method

Under this method, we add the values of output produced or services rendered by the different sectors of the economy during the year in order to calculate the National Income.

In this method, we include only the value added by each firm in the production process in the output figure.

Hence, we use the value-added method. The value-added output of all the sectors of the economy is the GNP at factor cost.

However, this method is unscientific as it adds the value of only those goods and services that are sold in the market or are available for sale in the market.

2. Expenditure Method

This method measures the total domestic expenditure of the economy. It consists of two elements, viz. Consumption expenditure and Investment expenditure.

Consumption expenditure includes consumption expenditure of the household sector on goods and services and consumption outlays of the business sector and public authorities.

Investment expenditure refers to the expenditure on the making of fixed capital such as Plant and Machinery, buildings, etc.

The expenditure method of calculating national income focuses on the expenditures. Now expenditure refers to all the purchases made by residents, government, or business enterprises. The expenditure method takes the following elements into consideration:

- Purchase of consumer goods and services by residents and households (C)
- Government expenditure on goods and services (G)
- Business enterprises' expenditure on capital goods and stocks (I)
- Net exports (exports-imports) (NX)

Hence, according to the expenditure method:

National Income = C + G + I + NX

However, the expenditure method excludes expenditure on second-hand goods and purchase of shares and bonds.

3. Income Method

Under this method, we add all the incomes from employment and ownership of assets before taxation received from all the production activities in an economy.

Thus, it is also the Factor Income method. We also need to add the undistributed profits of the private sector and the trading surplus of the public sector corporations.

However, we need to exclude items not arising from productive activities such as sickness benefits, interest on the national debt, etc.

The income method of calculating national income takes into account the income generated from the basic factors of production. These include the land, labor, capital, and organization. And in addition to income accrued from these factors of production, another important component of income is mixed income. Now let's discuss all these components in detail.

Rent from Land

Rent is the money you pay for the use of land. While calculating income, rent refers only to the income earned from using any land. Rent paid for the use of machinery and other equipment is not accounted for as rent.

Now in addition to rent, another form of income is royalty. Royalty is the amount you pay to an individual or a company in exchange for the use of assets such as coal or gas.

Compensation for Labor

Compensation includes salaries and wages that you earn in exchange for the services and skills that you provide for producing goods and services. It also includes travel allowances, bonuses, accommodation allowances, and medical reimbursements.

In addition to wages and salaries, another important component of compensation is remuneration in the form of social security schemes such as insurance, pensions, provident funds.

Interest on Capital

Interest refers to the charges you pay for using borrowed capital. Now, this includes the interest paid when a company takes a loan for an investment. Similarly, when a family invests in a property or a house, they take a loan from a bank and pay an interest for the same while repaying the loan over a period of time. However, while calculating national income, economists consider only the interest paid by production units.

Profits by Organizations

Profits refer to the money that organizations make while producing goods and services. Now companies distribute the profits they make by paying income tax to the government and dividends to shareholders. And the amount that is left over after paying tax and dividends is called undistributed profit.

Mixed Income

Mixed income refers to the income of the self-employed individuals, farming units, and sole proprietorships. Now, if you consider all these components of income, national income can be represented as follows:

National Income = Rent + Compensation + Interest + Profit + Mixed income

When economists calculated national income, they divide the production units into different sectors. Then they calculate the income for each sector and then derive the total national income. However, while computing national income using the income approach, economists exclude transfer payments such as gifts and donations and profits from the sale of pre-owned goods. They also exclude income from the sale of shares and debentures.

4. Value Added Method

The value-added method of calculating national income focuses on the value added to a product at each stage of production. To calculate the national income using this method, we will have to first calculate the net value added at factor cost (NVA_{FC}). And to calculate the (NVA_{FC}), we will have to deduct the net indirect taxes.

Usually, this method involves dividing the economy into various industries such as agriculture, fishing, transport, communication, and so on. Then by calculating the value added ((NVA_{FC}) at each stage, we can derive the national income. Now since this method concentrates on the net value added by each component, we would need to exclude or subtract the following elements from the output of each enterprise:

- Consumption of raw materials
- Consumption of capital
- Net indirect taxes

Now if we add the NVA_{FC} of all enterprises of an industry, we get the net value added at factor cost for that industry. And by adding the NVA_{FC} of all industries, we get the net domestic product at factor cost, which is represented as NDP_{FC}. And to this, if we add the net factor income from abroad, we get the national income.

Hence, according to the value-added method:

National Income = (NDP_{FC}) + Net factor income from abroad.

Circular Flow of Income and Expenditure-Three Sector Economy

.In the circular flow model three sector economy, government intervention has also been accounted for, although it is still assumed to be a closed economy where the income flow is not influenced by any foreign sector. Besides the income and expenditure of the households and business firms, government purchases or expenditures and taxation also come into play. Here, government purchases are injections into the circular flow, while, taxation is a leakage.

Firstly, considering the flow of income and expenditure between household sector and the government, household sector pays income tax and commodity tax to the government. On the other hand, the government also makes transfer payments to the household sector in the form of various benefits and services like pension funds, relief, sickness benefits, health, education, and other services.

The flow of income and expenditure between the business sector and the government is similar. Business firms pay taxes to the government, the government, on the other hand, provides subsidies, makes transfer payments, and pays for the goods and services it purchases from the business sector.

As stated earlier, taxes paid by the household and the business sector are the leakages from the circular flow. This decreases not only the consumption and savings of the household sector but also investments and production of the business sector decrease.

However, the government offsets the leakages by buying services from the household sector, and goods and services from the business sector. This leads to an equilibrium in the circular flow as the level of demand meets the level of supply in the economy.
A part of the income earned by the government is saved and deposited in the capital market. The government also takes loans from the capital market either to meet the current expenditure or to invest in different projects.

If the government spends all its income received in the form of taxes, it flows back to the household and business sector in the form of subsidies and other government expenditures. This leads to the continuous circular flow of national income within the economy.

Circular Flow of Income in a Four-Sector Economy

Circular Flow of Income in a Four-Sector Economy

Circular flow of income in a four-sector economy consists of households, firms, government and foreign sector.

Household Sector:

Households provide factor services to firms, government and foreign sector.

In return, it receives factor payments. Households also receive transfer payments from the government and the foreign sector.

Households spend their income on:

(i) Payment for goods and services purchased from firms;

(ii) Tax payments to government;

(iii) Payments for imports.

Firms:

Firms receive revenue from households, government and the foreign sector for sale of their goods and services. Firms also receive subsidies from the government.

Firm makes payments for:

(i) Factor services to households;

(ii) Taxes to the government;

(iii) Imports to the foreign sector.

Government:

Government receives revenue from firms, households and the foreign sector for sale of goods and services, taxes, fees, etc. Government makes factor payments to households and also spends money on transfer payments and subsidies.

Foreign Sector:

Foreign sector receives revenue from firms, households and government for export of goods and services. It makes payments for import of goods and services from firms and the government. It also makes payment for the factor services to the households.

The savings of households, firms and the government sector get accumulated in the financial market. Financial market invests money by lending out money to households, firms and the government. The inflows of money in the financial market are equal to outflows of money. It makes the circular flow of income complete and continuous. The circular flow of income in a four-sector economy is shown

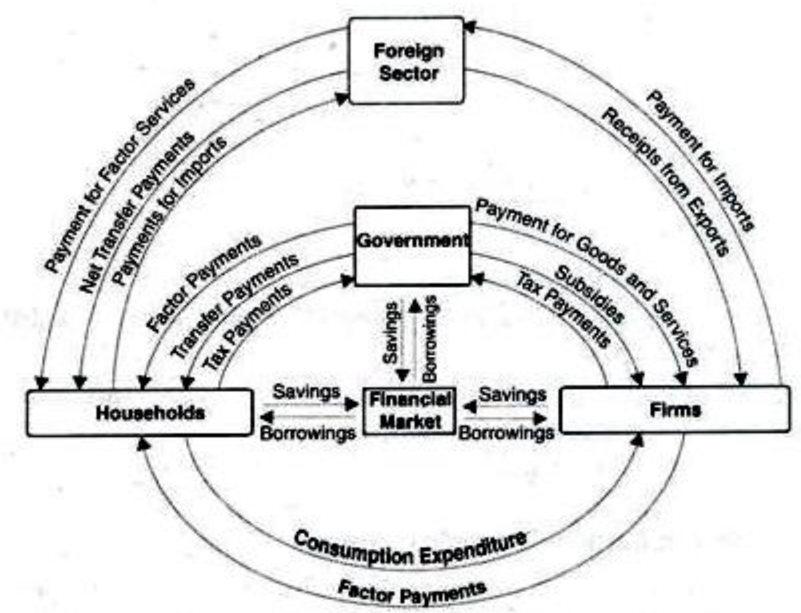


Fig. 1.7

Importance of the Circular Flow OF INCOME:

The concept of the circular flow gives a clear-cut picture of the economy. We can know whether the economy is working efficiently or whether there is any disturbance in its smooth functioning. As such, the circular flow is of immense significance for studying the functioning of the economy and for helping the government in formulating policy measures.

1. Study of Problems of Disequilibrium

It is with the help of circular flow that the problems of disequilibrium and the restoration of equilibrium can be studied.

2. Effects of Leakages and Inflows:

The role of leakages enables us to study their effects on the national economy. For example, imports are a leakage out of the circular flow of income because they are payments made to a foreign country. To stop this leakage, government should adopt appropriate measures so as to increase exports and decrease imports.

3. Link between Producers and Consumers:

The circular flow establishes a link between producers and consumers. It is through income that producers buy the services of the factors of production with which the latter, in turn, purchase goods from the producers.

4. Creates a Network of Markets:

As a corollary to the above point, the linking of producers and consumers through the circular flow of income and expenditure has created a network of markets for different goods and services where problems relating to their sale and purchase are automatically solved.

5. Inflationary and Deflationary Tendencies:

Leakages or injections in the circular flow disturb the smooth functioning of the economy. For example, saving is a leakage out of the expenditure stream. If saving increases, this depresses the circular flow of income. This tends to reduce employment, income and prices, thereby leading to a deflationary process in the economy. On the other hand, consumption tends to increase employment, income, output and prices that lead to inflationary tendencies.

6. Basis of the Multiplier:

Again, if leakages exceed injections in the circular flow, the total income becomes less than the total output. This leads to a cumulative decline in employment, income, output, and prices over time. On the other hand, if injections into the circular flow exceed leakages, the income is increased in the economy.

7. Importance of Monetary Policy:

The study of circular flow also highlights the importance of monetary policy to bring about the equality of saving and investment in the economy. Figure 2 shows that the equality between saving and investment comes about through the credit or capital market.

The credit market itself is controlled by the government through monetary policy. When saving exceeds investment or investment exceeds saving, money and credit policies help to stimulate or retard investment spending. This is how a fall or rise in prices is also controlled.

8. Importance of Fiscal Policy:

The circular flow of income and expenditure points toward the importance of fiscal policy. For national income to be in equilibrium desired saving plus taxes (S+T) must equal desired investment plus government spending (I + G). S+ T represents leakages from the spending stream which must be offset by injections of I + G into the income stream. If S + T exceed I + G, government should adopt such fiscal measures as reduction in taxes and spending more itself. On the contrary.

If I + G exceed S+T, the government should adjust its revenue and expenditure by encouraging saving and tax revenue. Thus the circular flow of income and expenditure tells us about the importance of compensatory fiscal policy.

9. Importance of Trade Policies:

Similarly, imports are leakages in the circular flow of money because they are payments made to a foreign country. To stop it, the government adopts such measures as to increase exports and decrease imports. Thus the circular flow points toward the importance of adopting export promotion and import control policies.

10. Basis of Flow of Funds Accounts:

The circular flow helps in calculating national income on the basis of the flow of funds accounts. The flow of funds accounts are concerned with all transactions in the economy that are accomplished by money transfers.