



CA INTER

Economics For Finance

Changes & New Additions in
ICAI May 2021 Study Material

DETERMINATION OF NATIONAL INCOME

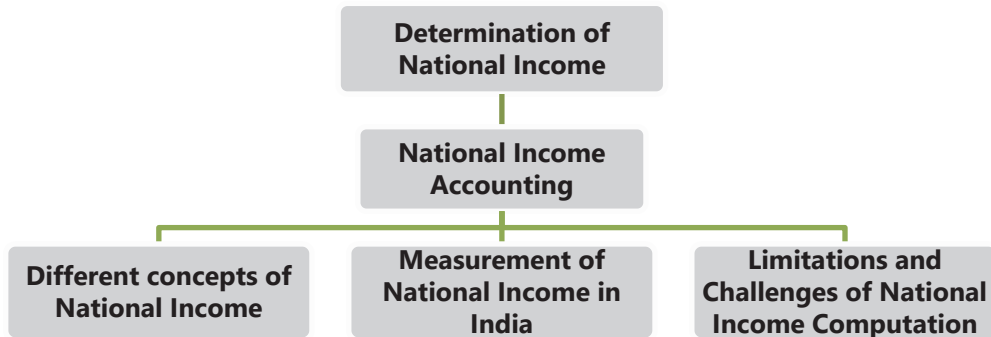


UNIT I: NATIONAL INCOME ACCOUNTING

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Define national income
- Explain the usefulness and significance of national income estimates
- Differentiate among the various concepts of national income
- Describe the different methods of calculation of national income
- Outline measurement of national income in India
- Describe the system of regional accounts in India
- Identify the challenges involved in national income computation.

UNIT OVERVIEW**1.1 INTRODUCTION**

The performance of an economy depends on the output of goods and services produced by it. Just as there are accounting conventions which measure the performance of business, there are conventions for measuring and analyzing the economic performance of a nation. National Income Accounting, pioneered by the Nobel prize-winning economists Simon Kuznets and Richard Stone, is one such measure. National income is an important macroeconomic aggregate forming the basis of modern macroeconomic analysis and provides detailed measures of the value and composition of national output and incomes generated in the production of that output.

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National Income is defined as the net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad. According to the Central Statistical Organisation (CSO) 'National income is the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'.

**1.2 USEFULNESS AND SIGNIFICANCE OF NATIONAL INCOME ESTIMATES**

National income accounts are fundamental aggregate statistics in macroeconomic analysis and are extremely useful, especially for the emerging and transition economies.

1. National income accounts provide a comprehensive, conceptual and accounting framework for analyzing and evaluating the short-run performance of an economy. The level of national income indicates the level of economic activity and economic development as well as aggregate demand for goods and services of a country.
2. The distribution pattern of national income determines the pattern of demand for goods and services and enables businesses to forecast the future demand for their products.
3. Economic welfare depends to a considerable extent on the magnitude and distribution of national income, size of per capita income and the growth of these over time.
4. The estimates of national income show the composition and structure of national income in terms of different sectors of the economy, the periodical variations in them and the broad sectoral shifts in an economy over time. It is also possible to make temporal and spatial comparisons of the trend and speed of economic progress and development. Using this information, the government can fix various sector-specific development targets for different sectors of the economy and formulate suitable development plans and policies to increase growth rates.
5. National income statistics also provide a quantitative basis for macroeconomic modelling and analysis, for assessing and choosing economic policies and for objective statement as well as evaluation of governments' economic policies. These figures often influence popular and political judgments about the relative success of economic programmes.
6. National income estimates throw light on income distribution and the possible inequality in the distribution among different categories of income earners. It is also possible to make comparisons of structural statistics, such as ratios of investment, taxes, or government expenditures to GDP.
7. International comparisons in respect of incomes and living standards assist in determining eligibility for loans, and/or other funds or conditions under which such loans, and/ or funds are made available. The national income data are also useful to determine the share of nation's contributions to various international bodies.
8. Combined with financial and monetary data, national income data provides a guide to make policies for growth and inflation.

9. National income or a relevant component of it is an indispensable variable considered in economic forecasting and to make projections about the future development trends of the economy.



1.3 DIFFERENT CONCEPTS OF NATIONAL INCOME

The basic concepts and definitions of the terms used in national accounts largely follow those given in the UN System of National Accounts (SNA) developed by United Nations to provide a comprehensive, conceptual and accounting framework for compiling and reporting macroeconomic statistics for analysing and evaluating the performance of an economy. Each of these concepts has a specific meaning, use and method of measurement.

National income accounts have three sides: a product side, an expenditure side and an income side. The product side measures production based on concept of value added. The expenditure side looks at the final sales of goods and services, whereas the income side measures the distribution of the proceeds from sales to different factors of production. Accordingly, national income is a measure of the total flow of 'earnings of the factor-owners' which they receive through the production of goods and services. Thus, national income is the sum total of all the incomes accruing over a specified period to the residents of a country and consists of wages, salaries, profits, rent and interest.

On the product side there are two widely reported measures of overall production namely, Gross Domestic Product (GDP) and Gross National Product (GNP).

1.3.1 Gross Domestic Product (GDP_{MP})

Gross domestic product (GDP) is a measure of the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country during a given time period. It is the sum total of 'value added' by all producing units in the domestic territory and includes value added by current production by foreign residents or foreign-owned firms. The term 'gross' implies that GDP is measured 'gross' of depreciation. Domestic refers to 'the geographic confines' of a country. For example, if a Chinese citizen works temporarily in India, her production is part of the Indian GDP. If an Indian citizen owns a factory in another country, for e.g. Germany, the production at her factory is not part of India's GDP. However, GDP excludes transfer payments,

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financial transactions and non-reported output generated through illegal transactions such as narcotics and gambling.

Gross Domestic Product (GDP) is in fact Gross Domestic Product at market prices (GDP_{MP}) because the value of goods and services is determined by the common measuring unit of money or it is evaluated at market prices. Money enables us to measure and find the aggregate of different types of products expressed in different units of measurement by converting them in terms of Rupees, say tonnes of wheat may, thus, be added with millions of apples and with value of services such as airplane journeys.

$$GDP_{MP} = \text{Value of Output in the Domestic Territory} - \text{Value of Intermediate Consumption}$$

$$GDP_{MP} = \sum \text{Value Added}$$

While learning about national income, there are a few important points which one needs to bear in mind:

- (i) The value of only final goods and services or only the value added by the production process would be included in GDP. Final goods refer to those goods which are used either for consumption or for investment. They are neither resold nor undergo further transformation in the process of production. The distinction between intermediate goods and final goods is made on the basis of end use: if the good is for consumption or investment, then it is a final good. By 'value added' we mean the difference between value of output and purchase of intermediate goods. Value added represents the contribution of labour and capital to the production process.
- (ii) Intermediate goods refer to those goods which are used either for resale or for further production in the same year. They do not end up in final consumption, and are not capital goods either. They have derived demand. Intermediate goods are used up in the same year; if they remain for more than one year, then they are treated as final goods. Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital. Intermediate goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting. The intermediate goods or services may be either transformed or used up by the

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production process. For example, the value of flour used in making bread would not be counted as it will be included while bread is counted. This is because flour is an intermediate good in bread making process. Similarly, if we include the value of an automobile in GDP, we should not be including the value of the tyres separately.

- (iii) Gross Domestic Product (GDP) is a measure of production activity. GDP covers all production activities recognized by SNA called the 'production boundary'. The production boundary covers production of almost all goods and services classified in the National Industrial Classification (NIC). Production of agriculture, forestry and fishing which are used for own consumption of producers is also included in the production boundary. Thus, Gross Domestic Product (GDP) of any nation represents the sum total of gross value added (GVA) (i.e, without discounting for capital consumption or depreciation) in all the sectors of that economy during the said year.
- (iv) Economic activities, as distinguished from non-economic activities, include all human activities which create goods and services that are exchanged in a market and valued at market price. Non-economic activities are those which produce goods and services, but since these are not exchanged in a market transaction they do not command any market value; for e.g. hobbies, housekeeping and child rearing services of home makers and services of family members that are done out of love and affection.
- (v) National income is a 'flow' measure of output per time period—for example, per year—and includes only those goods and services produced in the current period i.e. produced during the time interval under consideration. The value of market transactions such as exchange of goods which already exist or are previously produced, do not enter into the calculation of national income. Therefore, the value of assets such as stocks and bonds which are exchanged during the pertinent period are not included in national income as these do not directly involve current production of goods and services. However, the value of services that accompany the sale and purchase (e.g. fees paid to real estate agents and lawyers) represent current production and, therefore, is included in national income.
- (vi) An important point to remember is that two types of goods used in the production process are counted in GDP namely, capital goods (business plant and equipment purchases) and inventory investment—the net change

in inventories of final goods awaiting sale or of materials used in the production which may be positive or negative. Inventories are treated as capital. Additions to inventory stocks of final goods and materials belong to GDP because they are currently produced output.

The national income in real terms when available by industry of origin, give a measure of the structural changes in the pattern of production in the country which is vital for economic analysis.

1.3.2 Nominal GDP verses Real GDP: GDP at Current and Constant prices

When GDP is estimated on the basis of current year's market prices, it is called 'nominal GDP' or 'GDP at current prices'. For example, GDP of year 2020-21 may be measured using prices of 2020-21. Nominal GDP changes from year to year for two reasons. First, the amount of goods and services produced changes, and second, market prices change. Changes in GDP due to changes in prices fail to correctly explain the performance of the economy in producing goods and services.

Therefore, for making comparisons of GDP at different points of time, we need to compute real GDP. Real GDP is calculated in such a way that the goods and services produced in a particular year are evaluated at some constant set of prices or constant prices. In other words, it is calculated using the prices of a selected 'base year'. For example, if 2011-12 is selected as the base year, then real GDP for 2020-21 will be calculated by taking the quantities of all goods and services produced in 2020-21 and multiplying them by their 2011-12 prices. Thus, real GDP or GDP at constant prices refers to the total money value of the final goods and services produced within the domestic territory of a country during an accounting year, estimated using base year prices. Real GDP is an inflation-adjusted measure and is not affected by changes in prices; it changes only when there is change in the amount of output produced in the economy. Real GDP is a better measure of economic well being as it shows the true picture of the change in production of an economy.

The calculation of real GDP gives us a useful measure of inflation known as GDP deflator. The GDP deflator is the ratio of nominal GDP in a given year to real GDP of that year.

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

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The GDP deflator, as the name implies, can be used to 'deflate' or take inflation out of GDP. In other words, the GDP deflator is a price index used to convert nominal GDP to real GDP

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

The deflator measures the change in prices that has occurred between the base year and the current year. In other words, it measures the current level of prices relative to the level of prices in the base year. For example, in 2019 if the nominal GDP is 6,000 billion and real GDP is 3,500 billion, the GDP deflator is 171.43. Since nominal GDP and real GDP must be the same in the base year, the deflator for the base year is always 100.

New Addition

As you know, inflation is a closely monitored aspect of macroeconomic performance and a significant variable guiding macroeconomic policy. Using the GDP deflator, the inflation rate between two consecutive years can be computed using the following procedure:

$$\text{Inflation rate in year 2} = \frac{\text{GDP deflator in year 2} - \text{GDP deflator in year 1}}{\text{GDP deflator in year 1}} \times 100$$

For example, if the GDP deflator in 2020 increased to 240 from 171 in 2019,

$$\text{Inflation rate in year 2} = \frac{240 - 171}{171} \times 100 = 40.35 \text{ percent}$$

Numerical Illustrations

Illustration 1 New Addition

Find out GDP deflator? Interpret it

Years	Nominal GDP	(In Billion Rs.)	
		Real GDP	GDP Deflator
2014	500	500	100
2015	800	650	123.08
2016	1150	800	143.75
2017	1300	950	136.84
2018	1550	1190	130.25
2019	1700	1240	137.10

Solution

Notice that we use 2014 (base year) prices to compute real GDP of subsequent years. Real GDP has risen over the years from 500 billion in 2014 to 1240 billion in 2019. This indicates that the increase is attributable to an increase in quantities produced because the prices are held constant at base year. A deflator above 100 is an indication of price levels being higher as compared to the base year. From years 2015 through 2019, we find that price levels are higher than that of the base year, the highest being in the year 2016. If the GDP deflator is greater than 100, then nominal GDP is greater than real GDP. If the GDP deflator next year is less than the GDP deflator this year, then the price level has fallen; if it is greater, price levels have increased.

Illustration 2 **New Addition**

The nominal and real GDP respectively of a country in a particular year are ₹ 3000 Crores and ₹ 4700 Crores respectively. Calculate GDP deflator and comment on the level of prices of the year in comparison with the base year.

Solution

Nominal GDP = ₹ 3000 Crores

Real GDP = ₹ 4700 Crores

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

$$\frac{3000}{4700} \times 100 = 63.83$$

The price level has fallen since GDP deflator is less than 100 at 63.83.

Illustration 3 **New Addition**

Find nominal GDP if real GDP = 450 and price index = 120

Solution

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

$$\text{Nominal GDP} = 450 \times \frac{120}{100} = 540$$

Illustration 4 **New Addition**

Suppose nominal GDP of a country in year 2010 is given at ₹ 600 Crores and price index is given as base year 2010 is 100. Now let the nominal GDP increases to ₹ 1200 Crores in year 2018 and price index rises to 110, find out real GDP?

Solution

$$\begin{aligned} \text{Real GDP} &= \text{Nominal GDP} \times \frac{100}{\text{Price index}} \\ &= 1200 \times \frac{100}{110} = 1090.9 \text{ Crores} \end{aligned}$$

1.3.3 Gross National Product (GNP)

Gross National Product (GNP) is a measure of the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country by normal residents during an accounting year including net factor incomes from abroad. It is the total income earned by a nation's permanent residents (called nationals). It differs from GDP by including income that our citizens earn abroad and excluding income that foreigners earn here. In the example given in 1.3.1 above, the Chinese citizen's production is part of the Indian GDP, but it is not part of Indian GNP. (It is part of China's GNP).

New Addition

Gross National Product (GNP) is evaluated at market prices and therefore it is in fact Gross National Product at market prices (GNP_{MP}).

GNP_{MP} = GDP_{MP} + Factor income earned by the domestic factors of production employed in the rest of the world - Factor income earned by the factors of production of the rest of the world employed in the domestic territory.

New Addition

$$\text{GNP}_{\text{MP}} = \text{GDP}_{\text{MP}} + \text{Net Factor Income from Abroad}$$

$$\text{GDP}_{\text{MP}} = \text{GNP}_{\text{MP}} - \text{Net Factor Income from Abroad (NFIA)}$$

NFIA is the difference between the aggregate amount that a country's citizens and companies earn abroad, and the aggregate amount that foreign citizens and overseas companies earn in that country.

$$\text{NFIA} = \text{Net compensation of employees} + \text{Net income from property and entrepreneurship} + \text{Net retained earnings}$$

New Addition

If Net Factor Income from Abroad is positive, then GNP_{MP} would be greater than GDP_{MP} .

You might have noticed that the distinction between 'national' and 'domestic' is net factor income from abroad.

$$\text{National} = \text{Domestic} + \text{Net Factor Income from Abroad}$$

The two concepts GDP and GNP differ in their treatment of international transactions. The term 'national' refers to normal residents of a country who may be within or outside the domestic territory of a country and is a broader concept compared to the term 'domestic'. For example, GNP includes earnings of Indian corporations overseas and Indian residents working overseas; but GDP does not include these. In other words, GDP excludes net factor income from abroad. Conversely, GDP includes earnings from current production in India that accrue to foreign residents or foreign-owned firms; GNP excludes those items. For instance, profits earned in India by X Company, a foreign-owned firm, would be included in GDP but not in GNP. Similarly, profits earned by Company Y, an Indian company in UK would be excluded from GDP, but included in GNP.

1.3.4 Net Domestic Product at market prices (NDP_{MP})

Net domestic product at market prices (NDP_{MP}) is a measure of the market value of all final economic goods and services, produced within the domestic territory of a country by its normal residents and non-residents during an accounting year less depreciation. The portion of the capital stock used up in the process of production or depreciation must be subtracted from final sales because depreciation represents capital consumption and therefore a cost of production.

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

As you are aware, the basis of distinction between 'gross' and 'net' is depreciation or consumption of fixed capital.

$$\text{Gross} = \text{Net} + \text{Depreciation} \text{ or } \text{Net} = \text{Gross} - \text{Depreciation}$$

1.3.5 Net National Product at Market Prices (NNP_{MP})

Net National Product at Market Prices (NNP_{MP}) is a measure of the market value of all final economic goods and services, produced by normal residents within the

domestic territory of a country including Net Factor Income from Abroad during an accounting year excluding depreciation.

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

$$\text{NNP}_{\text{MP}} = \text{NDP}_{\text{MP}} + \text{Net Factor Income from Abroad}$$

$$\text{NNP}_{\text{MP}} = \text{GDP}_{\text{MP}} + \text{Net Factor Income from Abroad} - \text{Depreciation}$$

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

The production and income approach (which we will discuss later in this unit) measure the domestic product as the cost paid to the factors of production. Therefore, it is known as 'domestic product at factor cost'. GDP at factor cost is called so because it represents the total cost of factors viz. labour capital, land and entrepreneurship.

At this stage, we need to clearly understand the difference between the concepts: 'market price' and 'factor cost.' In addition to factor cost, the market value of the goods and services will include indirect taxes and subsidies such as:

- Production taxes or subsidies that are paid or received in relation to production and are independent of the volume of actual production. Examples of production taxes are land revenues, stamps and registration fees and tax on profession, factory license fee, taxes to be paid to the local authorities, pollution tax etc. Examples of production subsidies are subsidies to railways, subsidies to village and small industries.
- Product taxes or subsidies that are paid or received on per unit of product. Examples of product taxes are excise duties, sales tax, service tax and import export duties. Examples of product subsidies are food, petroleum and fertilizer subsidies.

Change

The market price will be lower by the amount of subsidies on products and production which the government pays to the producer. Hence, the market value of final expenditure would exceed the total obtained at factor cost by the amount of product and production taxes reduced by the value of similar kinds of subsidies. Direct taxes do not have the same effect since they do not impinge directly on transactions but are levied directly on the incomes. For example, if the factor cost of a unit of good X is ₹ 50/, indirect taxes amount to ₹ 15/per unit and the government gives a subsidy of ₹ 10/per unit, then market price will be ₹ 55/-

Thus, we find that the basis of distinction between market price and factor cost is net indirect taxes (i.e., Indirect taxes - Subsidies).

$$\begin{aligned}\text{Market Price} &= \text{Factor Cost} + \text{Net Indirect Taxes} \\ &= \text{Factor Cost} + \text{Indirect Taxes} - \text{Subsidies}\end{aligned}$$

$$\begin{aligned}\text{Factor Cost} &= \text{Market Price} - \text{Net Indirect Taxes} \\ &= \text{Market Price} - \text{Indirect Taxes} + \text{Subsidies}\end{aligned}$$

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

$$\begin{aligned}&= GDP_{MP} - \text{Indirect Taxes} + \text{Subsidies} \\ &= \text{Compensation of employees} \\ &+ \text{Operating Surplus (rent + interest+ profit)} \\ &+ \text{Mixed Income of Self- employed} \\ &+ \text{Depreciation}\end{aligned}$$

1.3.7 Net Domestic Product at Factor Cost (NDP_{FC})

Net Domestic Product at Factor Cost (NDP_{FC}) is defined as the total factor incomes earned by the factors of production. In other words, it is sum of domestic factor incomes or domestic income net of depreciation.

As mentioned above, market price includes indirect taxes imposed by government. We have to deduct indirect taxes and add the subsidies in order to calculate that part of domestic product which actually accrues to the factors of production. The measure that we obtain so is called Net Domestic Product at factor cost.

$$\begin{aligned}NDP_{FC} &= NDP_{MP} - \text{Net Indirect Taxes} \\ &= \text{Compensation of employees} \\ &+ \text{Operating Surplus (rent + interest+ profit)} \\ &+ \text{Mixed Income of Self- employed}\end{aligned}$$

1.3.8 Net National Product at Factor Cost (NNP_{FC}) or National Income

National Income is defined as the factor income accruing to the normal residents of the country during a year. It is the sum of domestic factor income and net factor income from abroad. In other words, national income is the value of factor income generated within the country plus factor income from abroad in an accounting year.

$NNP_{FC} = \text{National Income} = \text{FID (factor income earned in domestic territory)} + \text{NFIA.}$

If NFIA is positive, then national income will be greater than domestic factor incomes.

1.3.9 Per Capita Income

The GDP per capita is a measure of a country's economic output per person. It is obtained by dividing the country's gross domestic product, adjusted by inflation, by the total population. It serves as an indicator of the standard of living of a country.

1.3.10 Personal Income

While national income is income earned by factors of production, Personal Income is the income received by the household sector including Non-Profit Institutions Serving Households. Thus, national income is a measure of income earned and personal income is a measure of actual current income receipts of persons from all sources which may or may not be earned from productive activities during a given period of time. In other words, it is the income 'actually paid out' to the household sector, but not necessarily earned. Examples of this include transfer payments such as social security benefits, unemployment compensation, welfare payments etc. Individuals also contribute income which they do not actually receive; for example, undistributed corporate profits and the contribution of employers to social security. Personal income excludes retained earnings, indirect business taxes, corporate income taxes and contributions towards social security. Households receive interest payments from the firms and governments; they also make interest payments to firms and governments. As such, the net interest paid by households to firms and government is also deducted from national income. Personal income forms the basis for consumption expenditures and is derived from national income as follows:

New
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$PI = NI + \text{income received but not earned} - \text{income earned but not received.}$

$PI = NI - \text{Undistributed profits} - \text{Net interest payments made by households} - \text{Corporate Tax} + \text{Transfer Payments to the households from firms and government.}$

An important point to remember is that national income is not the sum of personal incomes because personal income includes transfer payments (eg. pension) which are excluded from national income. Further, not all national income accrues to individuals as their personal income.

1.3.11 Disposable Personal Income (DI)

Disposable personal income is a measure of amount of money in the hands of the individuals that is available for their consumption or savings. Disposable personal income is derived from personal income by subtracting the direct taxes paid by individuals and other compulsory payments made to the government.

change

$DI = PI - \text{Personal Income Taxes} - \text{Non tax payments}$

Apart from the above aggregates, a few other aggregates are reported in India. These reflect the amount of goods and services the domestic economy has at its disposal. Two more concepts need to be understood, namely:

New Addition

1. Net National Disposable Income

Net National Disposable Income (NNDI) = Net National Income + other net current transfers from the rest of the world (Receipts less payments)

Net National Disposable Income (NNDI) = NNI + net taxes on income and wealth receivable from abroad + net social contributions and benefits receivable from abroad.

2. Gross National Disposable Income (GNDI) = NNDI + CFC = GNI + other net current transfers from the rest of the world (Receipts less payments)

(Other Current Transfers refer to current transfers other than the primary incomes)

(For a detailed explanation of concepts please refer 'Glossary of Main Terms' Apr 1, 2020 - National Accounts Statistics-Sources & Methods, 2007, MOSPI)

Domestic Income may be categorized into:

1. Income from domestic product accruing to the public sector which includes income from property and entrepreneurship accruing to government administrative departments and savings of non-departmental enterprises.
2. Income from domestic product accruing to private sector = NDP_{FC} - Income from property and entrepreneurship accruing to government administrative departments - Savings of non-departmental enterprises.

1.3.12 Private Income

Private income is a measure of the income (both factor income and transfer income) which accrues to private sector from all sources within and outside the country.

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

Numerical Illustrations**Illustration 5****New Addition**

From the following data, calculate NNP_{FC} , NNP_{MP} , GNP_{MP} and GDP_{MP} .

Items	₹ in Crores
Operating surplus	2000
Mixed income of self-employed	1100
Rent	550
Profit	800
Net indirect tax	450
Consumption of fixed capital	400
Net factor income from abroad	-50
Compensation of employees	1000

Solution

$GDP_{MP} = \text{Compensation of employees} + \text{mixed income of self-employed} + \text{operating surplus} + \text{depreciation} + \text{net indirect taxes}$

(Note: operating surplus = rent+ profit + interest)

$$= 1000 + 1100 + 2000 + 400 + 450 = 4950$$

$$GNP_{MP} = GDP_{MP} + NFIA = 4950 + (-50) = 4900$$

$$NNP_{MP} = GNP_{MP} - \text{consumption of fixed capital} = 4900 - 400 = 4500$$

$$NNP_{FC} \text{ or NI} = NNP_{MP} - NIT = 4500 - 450 = 4050 \text{ Crores}$$

Illustration 6

New Addition

From the following data, estimate National Income and Personal Income.

Items	₹ . in Crores
Net national product at market price	1,891
Income from property and entrepreneurship accruing to government administrative departments	45
Indirect taxes	175
Subsidies	30
Saving of non-departmental enterprises	10
Interest on National debt	15
Current transfers from government	35
Current transfers from rest of the world	20
Saving of private corporate sector	25
Corporate profit tax	25

Solution

National Income = Net national product at market price – Indirect taxes + Subsidies

$$= 1,891 - 175 + 30 = 1746 \text{ crores}$$

Personal Income = National income – Income from property and entrepreneurship accruing to government administrative departments – Saving of non-departmental enterprises +

$$\begin{aligned}
 & \text{National debt interest} + \text{Current transfers from} \\
 & \text{government} + \text{Current transfers from rest of the world} - \\
 & \text{Saving of private corporate sector} - \text{Corporate profit tax} \\
 = & 1746 - 45 - 10 + 15 + 35 + 20 - 25 - 25 \\
 = & 1711 \text{ Crores}
 \end{aligned}$$

Illustration 7 **New Addition**

Calculate the aggregate value of depreciation when the GDP at market price of a country in a particular year was ₹ 1,100 Crores. Net Factor Income from Abroad was ₹ 100 Crores. The value of Indirect taxes – Subsidies was ₹ 150 Crores and National Income was ₹ 850 Crores.

Solution

Given

$GDP_{MP} = 1100$ Crores, $NFIA = 100$ Crores, $NIT = 150$ Crores, $NNP_{FC} = 850$ Crores

$$\therefore GDP_{FC} = GDP_{MP} - NIT = 1100 - 150 = 950$$

$$GNP_{FC} = GDP_{FC} + NFIA = 950 + 100 = 1050$$

$$NNP_{FC} = GNP_{FC} - \text{Depreciation}$$

$$850 = 1050 - \text{Depreciation}$$

$$\text{Depreciation} = 1050 - 850 = 200 \text{ Crores.}$$

Illustration 8 **New Addition**

On basis of following information, calculate NNP at market price and Disposable personal income

Items	₹ in Crores
NDP at factor cost	14900
Income from domestic product accruing to government	150
Interest on National debt	170
Transfer payment by government	60
Net private donation from abroad	30
Net factor income from abroad	80
Indirect taxes	335

Direct taxes	100
Subsidies	262
Taxes on corporate profits	222
Undistributed profits of corporations	105

Solution

NNP at Market price = NNP at factor cost + indirect tax - subsidies

Where NNP at factor cost = $NDP_{FC} + NFIA$
 = $14900 + 80 = 14980$

Therefore, $NNP_{MP} = \text{Therefore, } NNP_{MP} = 14980 + 335 - 262 = 15053$

Disposable personal income (DI) = PI - Personal income tax

PI = NI + income received but not earned - income earned but not received
 = $14980 + 170 + 60 + 30 - 150 - 222 - 105 = 14763$

Therefore, $DI = 14763 - 100 = 14663$ Crores

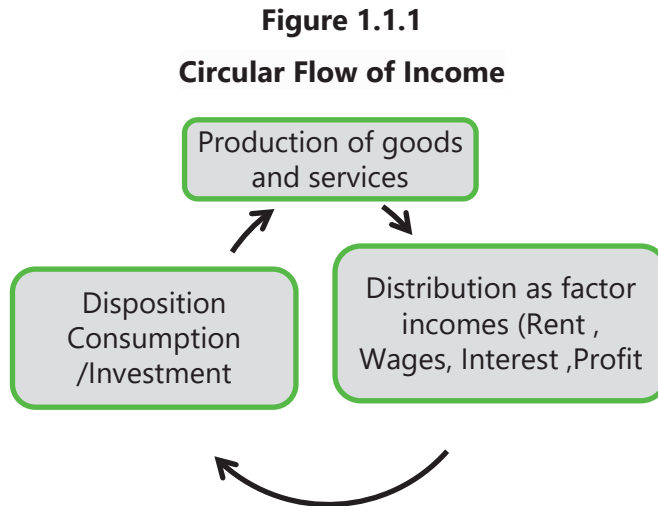
1.4 MEASUREMENT OF NATIONAL INCOME IN INDIA

National Accounts Statistics (NAS) in India are compiled by National Accounts Division in the Central Statistics Office, Ministry of Statistics and Programme Implementation (MOSPI). Annual as well as quarterly estimates are published. This publication is the key source-material for all macroeconomic data of the country. As per the mandate of the Fiscal Responsibility and Budget Management Act 2003, the Ministry of Finance uses the GDP numbers (at current prices) to determine the fiscal targets.

The Ministry of Statistics and Programme Implementation has released the new series of national accounts, revising the base year from 2004-05 to 2011-12. In the revision of National Accounts statistics done by Central Statistical Organization (CSO) in January 2015, it was decided that sector-wise estimates of Gross Value Added (GVA) will now be given at *basic prices* instead of at *factor cost*. In simple terms, for any commodity the 'basic price' is the amount receivable by the producer from the purchaser for a unit of a product minus any *tax on the product* plus any *subsidy on the product*.

1.4.1 The Circular Flow of Income

Circular flow of income refers to the continuous circulation of production, income generation and expenditure involving different sectors of the economy. There are three different interlinked phases in a circular flow of income, namely: production, distribution and disposition as can be seen from the following figure.



- (i) In the production phase, firms produce goods and services with the help of factor services.
- (ii) In the income or distribution phase, the flow of factor incomes in the form of rent, wages, interest and profits from firms to the households occurs
- (iii) In the expenditure or disposition phase, the income received by different factors of production is spent on consumption goods and services and investment goods. This expenditure leads to further production of goods and services and sustains the circular flow.

These processes of production, distribution and disposition keep going on simultaneously and enable us to look at national income from three different angles namely: as a flow of production or value added, as a flow of income and as a flow of expenditure. Each of these different ways of looking at national income suggests a different method of calculation and requires a different set of data. The details in respect of what is measured and what data are required for all three methods mentioned above are given in the following table.

Table 1.1.1

Data requirements and Outcomes of Different Methods of National Income Calculation

Method	Data required	What is measured
Phase of Output: Value added method (Product Method)	The sum of net values added by all the producing enterprises of the country	Contribution of production units
Phase of income : Income Method	Total factor incomes generated in the production of goods and services	Relative contribution of factor owners
Phase of disposition: Expenditure method	Sum of expenditures of the three spending units in the economy, namely, government, consumer households, and producing enterprises	Flow of consumption and investment expenditures

Corresponding to the three phases, there are three methods of measuring national income. They are: Value Added Method (alternatively known as Product Method); Income Method; and Expenditure Method.

1.4.2 Value Added Method or Product Method

Product Method or Value Added Method is also called Industrial Origin Method or Net Output Method. National income by value added method is the sum total of net value added at factor cost across all producing units of the economy. The value added method measures the contribution of each producing enterprise in the domestic territory of the country in an accounting year and entails consolidation of production of each industry less intermediate purchases from all other industries. This method of measurement shows the unduplicated contribution by each industry to the total output. This method involves the following steps:

Step1. Identifying the producing enterprises and classifying them into different sectors according to the nature of their activities

All the producing enterprises are broadly classified into three main sectors namely:

- (i) Primary sector,
- (ii) Secondary sector, and
- (iii) Tertiary sector or service sector

These sectors are further divided into sub-sectors and each sub-sector is further divided into commodity group or service-group.

Step 2. Estimating the gross value added (GVA_{MP}) by each producing enterprise (This is the same as GDP_{MP})

$$\begin{aligned} \text{Gross value added (GVA}_{MP}) &= \text{Value of output} - \text{Intermediate consumption} \\ &= (\text{Sales} + \text{change in stock}) - \text{Intermediate consumption} \end{aligned}$$

New Addition

While calculating the value added, we are actually finding value of production of the firm. Production of the firm = Value added + intermediate consumption. (Note that imports are included in the value of intermediate consumption if total purchases are given. If domestic purchases are specifically mentioned, then imports will also be added. Also, sales include exports, if domestic sales are separately mentioned, exports need to be added)

Step 3. Estimation of National income

For each individual unit, Net value added is found out.

$$\sum (GVA_{MP}) - \text{Depreciation} = \text{Net value added (NVA}_{MP})$$

Adding the net value-added by all the units in one sub-sector, we get the net value-added by the sub-sector. By adding net value-added or net products of all the sub-sectors of a sector, we get the value-added or net product of that sector. For the economy as a whole, we add the net products contributed by each sector to get Net Domestic Product. We subtract net indirect taxes and add net factor income from abroad to get national income.

$$\text{Net value added (NVA}_{MP}) - \text{Net Indirect taxes} = \text{Net Domestic Product (NVA}_{FC})$$

$$\text{Net Domestic Product (NVA}_{FC}) + (\text{NFIA}) = \text{National Income (NNP}_{FC})$$

The values of the following items are also included:

- (i) Own account production of fixed assets by government, enterprises and households.
- (ii) Imputed value of production of goods for self- consumption, and Change
- (iii) Imputed rent of owner occupied houses.
- (iv) Change in stock(inventory) New Addition

1.4.3 Income Method

Production is carried out by the combined effort of all factors of production. The factors are paid factor incomes for the services rendered. In other words, whatever is produced by a producing unit is distributed among the factors of production for their services.

Under Factor Income Method, also called Factor Payment Method or Distributed Share Method, national income is calculated by summation of factor incomes paid out by all production units within the domestic territory of a country as wages and salaries, rent, interest, and profit. By definition, it includes factor payments to both residents and non- residents.

Thus,

NDP_{FC} = Sum of factor incomes paid out by all production units within the domestic territory of a country

NNP_{FC} or National Income= Compensation of employees
+ Operating Surplus (rent + interest+ profit)
+ Mixed Income of Self- employed
+ Net Factor Income from Abroad

Only incomes earned by owners of primary factors of production are included in national income. Thus, while wages of labourers will be included, pensions of retired workers will be excluded from national income. Compensation of employees includes, apart from wages and salaries, bonus, dearness allowance, commission, employers' contribution to provident fund and imputed value of compensation in kind. Non-labour income includes rent (actual and imputed), royalty, interest on loans availed for productive services, dividends, undistributed profits of corporations

before taxes, and profits of unincorporated enterprises and of government enterprises.

(Note: Interest paid by government on public debt, interest on consumption loans and interest paid by one firm to another are excluded.)

$$\text{Profits} = \text{Corporate taxes} + \text{Dividend} + \text{Retained earnings}$$

While using income method, capital gains, windfall profits, transfer incomes and income from sale of second-hand goods and financial assets and payments out of past savings are not included. However, commissions, brokerages and imputed value of services provided by owners of production units will be included as these add to the current flow of goods and services.

New
Addition

Usually it is difficult to separate labour income from capital income because in many instances people provide both labour and capital services. Such is the case with self-employed people like lawyers, engineers, traders, proprietors etc. In economies where subsistence production and small commodity production is dominant, most of the incomes of people would be of mixed type. In sectors such as agriculture, trade, transport etc. in underdeveloped countries (including India), it is difficult to differentiate between the labour element and the capital element of incomes of the people. In order to overcome this difficulty a new category of incomes, called 'mixed income' is introduced which includes all those incomes which are difficult to separate.

1.4.4 Expenditure Method

In the expenditure approach, also called Income Disposal Approach, national income is the aggregate final expenditure in an economy during an accounting year.

$$\text{GDP}_{\text{MP}} = \sum \text{Final Expenditure}$$

New
Addition

In this approach to measuring GDP which considers the demand side of the products, we add up the value of the goods and services purchased by each type of final user mentioned below.

Change

1. Final Consumption Expenditure

(a) Private Final Consumption Expenditure (PFCE)

To measure this, the volume of final sales of goods and services to consumer households and non-profit institutions serving households acquired for consumption (not for use in production) are multiplied by market prices and then summation is done. It also includes the value of

primary products which are produced for own consumption by the households, payments for domestic services which one household renders to another, the net expenditure on foreign financial assets or net foreign investment. Land and residential buildings purchased or constructed by households are not part of PFCE. They are included in gross capital formation. Thus, only expenditure on final goods and services produced in the period for which national income is to be measured and net foreign investment are included in the expenditure method of calculating national income.

(b) Government Final Consumption Expenditure

Since the collective services provided by the governments such as defence, education, healthcare etc. are not sold in the market, the only way they can be valued in money terms is by adding up the money spent by the government in the production of these services. This total expenditure is treated as consumption expenditure of the government. Government expenditure on pensions, scholarships, unemployment allowance etc. should be excluded because these are transfer payments.

2. Gross Domestic Capital formation

Gross domestic fixed capital formation (Gross Investment) is that part of country's total expenditure which is not consumed but added to the nation's fixed tangible assets and stocks. It consists of the acquisition of fixed assets and the accumulation of stocks. The stock accumulation is in the form of changes in stock of raw materials, fuels, finished goods and semi-finished goods awaiting completion. Thus, gross investment includes final expenditure on machinery and equipment and own account production of machinery and equipment, expenditure on construction, expenditure on changes in inventories, and expenditure on the acquisition of valuables such as, jewellery and works of art.

New
Addition

3. Net Exports

Net exports are the difference between exports and imports of a country during the accounting year. It can be positive or negative.

How do we arrive at national income or NNP_{FC} using expenditure method? We first find the sum of final consumption expenditure, gross domestic capital formation and net exports. The resulting figure is gross domestic product at market price (GDP_{MP}). To this, we add the net factor income from abroad and obtain Gross National Product at market price (GNP_{MP}). Subtracting net indirect

taxes from GNP_{MP} , we get Gross National Product at factor cost (GNP_{FC}). National income or NNP_{FC} is obtained by subtracting depreciation from Gross national product at factor cost (GNP_{FC}).

Ideally, all the three methods of national income computation should arrive at the same figure. When national income of a country is measured separately using these methods, we get a three dimensional view of the economy. Each method of measuring GDP is subject to measurement errors and each method provides a check on the accuracy of the other methods. By calculating total output in several different ways and then trying to resolve the differences, we will be able to arrive at a more accurate measure than would be possible with one method alone. Moreover, different ways of measuring total output give us different insights into the structure of our economy.

Income method may be most suitable for developed economies where people properly file their income tax returns. With the growing facility in the use of the commodity flow method of estimating expenditures, an increasing proportion of the national income is being estimated by expenditure method. As a matter of fact, countries like India are unable to estimate their national income wholly by one method. Thus, in agricultural sector, net value added is estimated by the production method, in small scale sector net value added is estimated by the income method and in the construction sector net value added is estimated by the expenditure method.

Numerical Illustrations

Illustration 9

New
Addition

Calculate National Income by Value Added Method with the help of following data-

Particulars	₹ (in Crores)
Sales	700
Opening stock	500
Intermediate Consumption	350
Closing Stock	400
Net Factor Income from Abroad	30
Depreciation	150
Excise Tax	110
Subsidies	50

Solution

$$NVA_{(FC)} = GDP_{(MP)} - \text{Depreciation} + \text{NFIA} - \text{Net Indirect Tax}$$

Where $GVA_{(MP)} = \text{Value of output} - \text{intermediate consumption}$

$$\begin{aligned} \text{Value of Output} &= \text{Sales} + \text{change in stock} \\ &= 700 + (400 - 500) = 600 \end{aligned}$$

$$GVA_{(MP)} = 600 - 350 = 250$$

$$\begin{aligned} \text{Therefore NI} &= 250 - 150 + 30 - (110 - 50) \\ &= 70 \text{ Crores} \end{aligned}$$

Illustration 10

New Addition

Calculate the Operating Surplus with the help of following data-

Particulars	₹ in Crores
Sales	4000
Compensation of employees	800
Intermediate consumption	600
Rent	400
Interest	300
Net indirect tax	500
Consumption of Fixed Capital	200
Mixed Income	400

Solution

$$\begin{aligned} GVA_{MP} &= \text{Gross Value Output}_{MP} - \text{Intermediate consumption} \\ &= (\text{Sales} + \text{change in stock}) - \text{Intermediate consumption} \\ &= 4000 - 600 = 3400 \end{aligned}$$

$$GDP_{MP} = GVA_{MP} = 3400 \text{ Crores}$$

$$\begin{aligned} NDP_{MP} &= GDP_{MP} - \text{consumption of fixed capital} \\ &= 3400 - 200 \\ &= 3200 \text{ Crores} \end{aligned}$$

$$\begin{aligned} \text{NDP}_{\text{FC}} &= \text{NDP}_{\text{MP}} - \text{NIT} \\ &= 3200 - 500 = 2700 \text{ Crores} \end{aligned}$$

$$\begin{aligned} \text{NDP}_{\text{FC}} &= \text{Compensation of employees} + \text{Operating surplus} + \text{Mixed income} \\ 2700 &= 800 + \text{Operating Surplus} + 400 \end{aligned}$$

$$\text{Operating surplus} = 1500 \text{ Crores}$$

Illustration 11New
Addition

Calculate national income by value added method.

Particulars	(₹ in crores)
Value of output in primary sector	2000
Intermediate consumption of primary sector	200
Value of output of secondary sector	2800
Intermediate consumption of secondary sector	800
Value of output of tertiary sector	1600
Intermediate consumption of tertiary sector	600
Net factor income from abroad	-30
Net indirect taxes	300
Depreciation	470

Solution

$\text{GDP}_{\text{MP}} =$ (Value of output in primary sector - intermediate consumption of primary sector) + (value of output in secondary sector - intermediate consumption of secondary sector) + (value of output in tertiary sector - intermediate consumption of tertiary sector)

$$\begin{aligned} \text{Value of output in primary sector} &= 2000 \end{aligned}$$

$$\begin{aligned} - \text{Intermediate consumption of primary sector} &= 200 \end{aligned}$$

$$\begin{aligned} + \text{Value of output in secondary sector} &= 2800 \end{aligned}$$

$$\begin{aligned} - \text{Intermediate consumption in secondary sector} &= 800 \end{aligned}$$

$$\begin{aligned} + \text{Value of output in tertiary sector} &= 1600 \end{aligned}$$

$$\begin{aligned} - \text{Intermediate consumption of tertiary sector} &= 600 \end{aligned}$$

$$\text{GDP}_{\text{MP}} = \text{₹ 4800 Crores}$$

$$NNP_{FC} = GDP_{MP} + NFIA - NIT - \text{Depreciation}$$

$$NNP_{FC} = \text{National income} = 4800 + (-30) - 300 - 470 = \mathbf{4000 \text{ Crores}}$$

Illustration 12

New
Addition

Calculate Net Value Added by Factor Cost from the following data

Items	₹ in Crores
Purchase of materials	85
Sales	450
Depreciation	30
Opening stock	40
Closing stock	30
Excise tax	45
Intermediate consumption	200
Subsidies	15

Solution

$$\begin{aligned} GVA_{MP} &= \text{Sales} + \text{change in stock} - \text{Intermediate consumption} \\ &= 450 + (30 - 40) - 200 \\ &= 240 \text{ Crores} \end{aligned}$$

$$NVA_{MP} = GVA_{MP} - \text{Depreciation}$$

$$NVA_{MP} = 240 - 30 = 210 \text{ Crores}$$

$$NVA_{FC} = NVA_{MP} - (\text{indirect tax} - \text{subsidies})$$

$$= 210 - (45 - 15) = 180 \text{ Crores}$$

Illustration 13

New
Addition

Calculate NI with the help of Expenditure method and income method with the help of following data:

Items	₹ in Crores
Compensation of employees	1,200
Net factor income from Abroad	20

Net indirect taxes	120
Profit	800
Private final consumption expenditure	2,000
Net domestic capital formation	770
Consumption of fixed capital	130
Rent	400
Interest	620
Mixed income of self-employed	700
Net export	30
Govt. final consumption expenditure	1100
Operating surplus	1820
Employer's contribution to social security scheme	300

Solution

By Expenditure method

$$\begin{aligned} \text{GDP}_{\text{MP}} &= \text{Private final consumption expenditure} + \text{Government final} \\ &\quad \text{consumption expenditure} + \text{Gross domestic capital formation} \\ &\quad (\text{Net domestic capital formation} + \text{depreciation}) + \text{Net export} \\ &= 2000 + 1100 + (770 + 130) + 30 = 4030 \text{ Crores} \end{aligned}$$

$$\begin{aligned} \text{NNP}_{\text{FC}} \text{ or NI} &= \text{GDP}_{\text{MP}} - \text{depreciation} + \text{NFIA} - \text{NIT} \\ &= 4030 - 130 + 20 - 120 = 3800 \text{ Crores} \end{aligned}$$

By Income method

$$\begin{aligned} \text{NNP}_{\text{FC}} \text{ or NI} &= \text{compensation of employees} + \text{operating surplus} + \text{Mixed income} \\ &\quad \text{of self-employed} + \text{NFIA} \\ &= 1200 + 1820 + 700 + 20 = 3740 \text{ Crores} \end{aligned}$$

Illustration 14

New
Addition

From the following data calculate (a) Gross Domestic Product at Factor Cost, and (b) Gross Domestic Product at Market price

Items	₹ in Crores
Gross national product at factor cost	61,500
Net exports	(-) 50
Compensation of employees	3000
Rent	800
Interest	900
Profit	1,300
Net indirect taxes	300
Net domestic capital formation	800
Gross domestic capital formation	900
Factor income to abroad	80

Solution

(a) **GDP at factor cost** = NDP at factor cost + Depreciation
 = Compensation of employees+ Rent+ Interest+ Profit +Mixed income+ (Gross domestic capital formation - Net domestic capital formation)
 = ₹ 3,000 + ₹ 800 + ₹ 900 + ₹ 1,300 + (₹ 900 - ₹ 800)
 = ₹ 6100 Crores

(b) **Gross Domestic Product at Market Price**

= GDP at factor cost + Net Indirect taxes = ₹ 6100 + ₹ 300
 = 6400 Crores

Illustration 15

New Addition

Calculate NNP_{FC} by expenditure method with the help of following information-

Items	₹ in Crores
Private final consumption expenditure	10
Net Import	20
Public final consumption expenditure	05
Gross domestic fixed capital formation	350

Depreciation	30
Subsidy	100
Income paid to abroad	20
Change in stock	30
Net acquisition of valuables	10

Solution

Calculation of national income by expenditure method:

GDP_{MP} = Government final consumption expenditure (Public final consumption expenditure) + Private final consumption expenditure + Gross domestic capital formation (Gross domestic fixed capital formation + change stock + Net acquisition of valuables) + Net export (Note: As net import is 20, hence, net export is -20)

$$= 5 + 10 + [350 + 30 + 10] + (-20) = 5 + 10 + 390 - 20 = 385 \text{ Crores}$$

NNP_{FC} = GDP_{MP} – Depreciation + Net factor income from abroad (Income from abroad – Income paid to abroad) – Net Indirect tax (Indirect tax – subsidies)

$$= 385 - 30 + [0 - 20] - [0 - 100] = 385 - 30 - 20 + 100 = 435 \text{ Crores.}$$



1.5 THE SYSTEM OF REGIONAL ACCOUNTS IN INDIA

Regional accounts provide an integrated database on the innumerable transactions taking place in the regional economy and help decision making at the regional level. At present, practically all the states and union territories of India compute state income estimates and district level estimates. State Income or Net State Domestic Product (NSDP) is a measure in monetary terms of the volume of all goods and services produced in the state within a given period of time (generally a year) accounted without duplication. Per Capita State Income is obtained by dividing the NSDP (State Income) by the midyear projected population of the state.

The state level estimates are prepared by the State Income Units of the respective State Directorates of Economics and Statistics (DESS). The Central Statistical Organisation assists the States in the preparation of these estimates by rendering advice on conceptual and methodological problems. In the preparation of state income estimates, certain activities such as railways, communications, banking

and insurance and central government administration, that cut across state boundaries, and thus their economic contribution cannot be assigned to any one state directly are known as the 'Supra-regional sectors' of the economy. The estimates for these supra regional activities are compiled for the economy as a whole and allocated to the states on the basis of relevant indicators.



1.6 GDP AND WELFARE

New Section

Can the GDP of a country be taken as an index of welfare of people in that country? There are many reasons to dispute the validity of GDP as a perfect measure of well-being. In fact, GDP measures our ability to obtain many requirements to make our life better; yet leave out many important aspects which ensure good quality of life for all. GDP measures exclude the following which are critical for the overall wellbeing of citizens.

- (a) Income distributions and, therefore, GDP per capita is a completely inadequate measure of welfare. Countries may have significantly different income distributions and, consequently, different levels of overall well-being for the same level of per capita income.
- (b) Quality improvements in systems and processes due to technological as well as managerial innovations which reflect true growth in output from year to year.
- (c) Productions hidden from government authorities, either because those engaged in it are evading taxes or because it is illegal (drugs, gambling etc.).
- (d) Nonmarket production (with a few exceptions) and Non-economic contributors to well-being for example: health of a country's citizens, education levels, political participation, or other social and political factors that may significantly affect well-being levels.
- (e) The disutility of loss of leisure time. We know that, other things remaining the same, a country's GDP rises if the total hours of work increase.
- (f) Economic 'bads' for example: crime, pollution, traffic congestion etc which make us worse off.
- (g) The volunteer work and services rendered without remuneration undertaken in the economy, even though such work can contribute to social well-being as much as paid work.

- (h) Many things that contribute to our economic welfare such as, leisure time, fairness, gender equality, security of community feeling etc.,
- (i) Both positive and negative externalities which are external effects that do not form part of market transactions
- (j) The distinction between production that makes us better off and production that only prevents us from becoming worse off, for e.g. defence expenditures such as on police protection. Increased expenditure on police due to increase in crimes may increase GDP but these expenses only prevent us from becoming worse off. However, no reflection is made in national income of the negative impacts of higher crime rates. As another example, automobile accidents result in production of repairs, output of medical services, insurance, and legal services all of which are production included in GDP just as any other production.



1.7 LIMITATIONS AND CHALLENGES OF NATIONAL INCOME COMPUTATION

There are innumerable limitations and challenges in the computation of national income. The task is more complex in underdeveloped and developing countries. Following are the general dilemmas in measurement of national income.

There are many conceptual difficulties related to measurement which are difficult to resolve, such as:

- (a) lack of an agreed definition of national income,
- (b) accurate distinction between final goods and intermediate goods,
- (c) issue of transfer payments,
- (d) services of durable goods,
- (e) difficulty of incorporating distribution of income,
- (f) valuation of a new good at constant prices, and
- (g) valuation of government services

Other challenges relate to:

- (a) Inadequacy of data and lack of reliability of available data,
- (b) presence of non-monetised sector,

- (c) production for self-consumption,
- (d) absence of recording of incomes due to illiteracy and ignorance,
- (e) lack of proper occupational classification, and
- (f) accurate estimation of consumption of fixed capital

SUMMARY

- National income accounts are extremely useful for analyzing and evaluating the performance of an economy, knowing the composition and structure of the national income, income distribution, economic forecasting and for choosing economic policies and evaluating them.
- Gross domestic product (GDP_{MP}) is a measure of the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country during a given time period gross of depreciation.
- Capital goods (business plant and equipment purchases) and inventory investment—the net change in inventories of final goods awaiting sale or of materials used in the production are counted in GDP
- To eliminate the effect of prices, in addition to computing GDP in terms of current market prices, termed 'nominal GDP' or GDP at current prices, the national income accountants also calculate 'real GDP' or GDP at constant prices which is the value of domestic product in terms of constant prices of a chosen base year.
- $GNP_{MP} = GDP_{MP} + \text{Net Factor Income from Abroad}$
- $NDP_{MP} = GDP_{MP} - \text{Depreciation}$
- $NDP_{MP} = NNP_{MP} - \text{Net Factor Income from Abroad}$
- $NNP_{MP} = GNP_{MP} - \text{Depreciation}$
- $\text{Market Price} = \text{Factor Cost} + \text{Net Indirect Taxes} = \text{Factor Cost} + \text{Indirect Taxes} - \text{Subsidies}$
- $\text{Gross Domestic Product at Factor Cost (GDP}_{FC}) = GDP_{MP} - \text{Indirect Taxes} + \text{Subsidies}$
- $\text{Net Domestic Product at Factor Cost (NDP}_{FC})$ is defined as the total factor incomes earned by the factors of production.

- Net National Product at Factor Cost (NNP_{FC}) or National Income
- $NNP_{FC} = \text{National Income} = \text{FID (factor income earned in domestic territory)} + \text{NFIA}$.
- Personal income is a measure of the actual current income receipt of persons from all sources. Disposable Personal Income (DI) that is available for their consumption or savings $DI = PI - \text{Personal Income Taxes}$
- Circular flow of income refers to the continuous interlinked phases in circulation of production, income generation and expenditure involving different sectors of the economy.
- Product Method or Value Added Method is also called Industrial Origin Method or Net Output Method and entails the consolidation of the production of each industry less intermediate purchases from all other industries.
- Under income method, national income is calculated by summation of factor incomes paid out by all production units within the domestic territory of a country as wages and salaries, rent, interest, and profit. Transfer incomes are excluded.
- Under the expenditure approach, also called Income Disposal Approach, national income is the aggregate final expenditure in an economy during an accounting year composed of final consumption expenditure (private & government), gross domestic capital formation and net exports.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. The concept of 'resident unit' involved in the definition of GDP denotes
 - (a) A business enterprise which belongs to a citizen of India with production units solely situated in India
 - (b) The unit having predominant economic interest in the economic territory of the country for one year or more irrespective of the nationality or legal status
 - (c) A citizen household which had been living in India during the accounting year and one whose economic interests are solely in India

- (d) Households and business enterprises composed of citizens of India alone living in India during the accounting year
2. Read the following statements and answer the following question.
- I. Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production,
- II. Intermediate consumption excludes fixed assets whose consumption is recorded as consumption of fixed capital.
- (a) Only I is true
- (b) Both I and II are true
- (c) Only II is true
- (d) Neither I nor II is true
3. Gross Domestic Product (GDP) of any nation
- (a) excludes capital consumption and intermediate consumption
- (b) is inclusive of capital consumption or depreciation
- (c) is inclusive of indirect taxes but excludes subsidies
- (d) None of the above
4. Read the following statements
- I 'Value added' refers to the difference between value of output and purchase of intermediate goods.
- II. 'Value added' represents the contribution of labour and capital to the production process.
- (a) Statements I and II are incorrect
- (b) Statements I and II are correct
- (c) Statement I is correct and II is incorrect
- (d) Statement II is correct and I is incorrect
- 5.. Non-economic activities are
- (a) those activities whose value is excluded from national income calculation as it will involve double counting

- (b) those which produce goods and services, but since these are not exchanged in a market transaction they do not command any market value
 - (c) those which do not involve production of goods and services as they are meant to provide hobbies and leisure time activities
 - (d) those which result in production for self consumption and therefore not included in national income calculation
6. Which of the following does not enter into the calculation of national income?
- (a) Exchange of previously produced goods
 - (b) Exchange of second hand goods
 - (c) Exchange of stocks and bonds
 - (d) All the above
7. Which of the following enters into the calculation of national income?
- (a) The value of the services that accompany the sale
 - (b) Additions to inventory stocks of final goods and materials
 - (c) Stocks and bonds sold during the current year
 - (d) (a) and (b) above
8. Gross National Product at market prices GNP_{MP} is
- (a) $GDP_{MP} + \text{Net Factor Income from Abroad}$
 - (b) $GDP_{MP} - \text{Net Factor Income from Abroad}$
 - (c) $GDP_{MP} - \text{Depreciation}$
 - (d) $GDP_{MP} + \text{Net Indirect Taxes}$
9. Choose the correct statement
- (a) GNP includes earnings of Indian corporations overseas and Indian residents working overseas; but GDP does not include these
 - (b) $NNP_{FC} = \text{National Income} = \text{FID (factor income earned in domestic territory)} - \text{NFIA}$.
 - (c) Capital goods and inventory investment are excluded from computation of GDP

- (d) $NDP_{MP} = GDP_{MP} + \text{Depreciation}$
10. The basis of distinction between market price and factor cost is
- (a) net factor income from abroad
 - (b) net indirect taxes (i.e., Indirect taxes - Subsidies)
 - (c) net indirect taxes (i.e., Indirect taxes + Subsidies)
 - (d) depreciation (consumption of fixed capital)
11. If net factor income from abroad is positive, then
- (a) national income will be greater than domestic factor incomes.
 - (b) national income will be less than domestic factor incomes.
 - (c) net exports will be negative
 - (d) domestic factor incomes will be greater than national income
12. The GDP per capita is
- (a) a measure of a country's economic output per person
 - (b) actual current income receipts of persons
 - (c) national income divided by population
 - (d) (a) and (c) above
13. Which of the following is an example of transfer payment?
- (a) Old age pensions and family pensions
 - (b) Scholarships given to deserving diligent students.
 - (c) Compensation given for loss of property due to floods
 - (d) All the above
14. Mixed income of the self-employed means
- (a) net profits received by self-employed people
 - (b) outside wages received by self-employed people
 - (c) combined factor payments which are not distinguishable,
 - (d) wages due to non-economic activities

15. Which of the following is added to national income while calculating personal income?
- (a) Transfer payments to individuals
 - (b) Undistributed profits of corporate
 - (c) Transfer payments made to foreigners
 - (d) Mixed income of self employed

II Short Answer Type Questions

1. Define national income.
2. What function does the System of National accounts (SNA) serve?
3. Define GDP_{MP}.
4. What do you understand by 'value added'?
5. Distinguish between Intermediate goods and final goods.
6. Distinguish between non-economic activities and economic activities.
7. Distinguish between nominal GDP and real GDP.
8. Draw the basis of distinction between GDP current and constant prices.
9. What is the difference between 'national' and 'domestic'?
10. What do you understand by 'factor cost'?
11. Differentiate between 'taxes on production' and 'product taxes'.
12. Define 'mixed income of self- employed'
13. Define Per Capita Income.
14. How does Personal Income differ from Disposable Personal Income?
15. Define 'Private income' as used in India.
16. Illustrate the circular flow of income.
17. How do you arrive at 'gross value added'
18. What is meant by intermediate consumption?
19. How is production for self-consumption treated in national income accounts?
20. Define 'Net Factor Income from Abroad'.

21. What is meant by the term 'net exports'?

III Long Answer Type Questions

1. Define national income and explain the usefulness of national income estimates.
2. Describe the generally used concepts of national income.
3. What are the different methods of calculation of national income?
4. Explain the term Gross Domestic Product (GDP). How is it estimated?
5. Distinguish between GDP current and constant prices. What purpose does real GDP serve?
6. What is the difference between the concepts 'market price' and 'factor cost in national income accounting?
7. Illustrate the circular flow of income and describe its relevance for measurement of national income.
8. Explain Value Added Method as applied in national income accounting.
9. How is national income calculated under 'Income Method'?
10. Explain 'Expenditure Method' for calculation of national income?
11. Write notes on the system of regional accounts in India.
12. Explain with illustrations the limitations of national income computation?

13. Distinguish between Personal Income and Disposable personal income.

New Addition

14. How real GDP is better measure of economic well-being? Explain.

New Addition

IV Application Oriented Questions

1. Compute National income

Consumption	750
Investment	250
Government Purchases	100
Exports	100
Imports	200

2. Calculate Gross Domestic Product at market Prices (GDP_{MP}) and derive national income from the following data (in Crores of ₹)

Inventory Investment	100
Exports	200
Indirect taxes	100
Net factor income from abroad	- 50
Personal consumption expenditure	3500
Gross residential construction investment	300
Depreciation	50
Imports	100
Government purchases of goods and services	1000
Gross public investment	200
Gross business fixed investment	300

3. Find GDP_{MP} and GNP_{MP} from the following data (in Crores of ₹) using income method. Show that it is the same as that obtained by expenditure method.

Personal Consumption	7,314
Depreciation	800
Wages	6,508
Indirect Business Taxes	1,000
Interest	1,060
Domestic Investment	1,442
Government Expenditures	2,196
Rental Income	34
Corporate Profits	682
Exports	1,346
Net Factor Income from Abroad	40
Mixed Income	806
Imports	1,408

4. From, the following data calculate the Gross National Product at Market Price using Value Added method

	(₹ in Crores)
Value of output in primary sector	500
Net factor income from abroad	-20
Value of output in tertiary sector	700
Intermediate consumption in secondary sector	400
Value of output in secondary sector	900
Government Transfer Payments	600
Intermediate consumption in tertiary sector	300
Intermediate consumption in primary sector	250

5. Calculate 'Sales' from the following data :

New Addition

Particulars	₹ in Lakhs
Subsidies	200
Opening stock	100
Closing stock	600
Intermediate consumption	3,000
Consumption of fixed capital	700
Profit	750
Net value added at factor cost	2,000

6. Given the following data, determine the National Income of a country using expenditure method and income method:

New Addition

Particulars	₹ in Crores
Private Final Consumption Expenditure	1000
Government Final Consumption Expenditure	550
Compensation of Employees	600
Net Exports	-15

Net Indirect Taxes	60
Net Domestic Fixed Investment	385
Consumption of Fixed Capital Formation	65
Net Factor Income from Abroad	-10
Interest	310
Rent	200
Mixed Income of Self-Employed	350
Profit	400

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (b) 2. (b) 3. (b) 4. (b) 5. (b)
 6. (d) 7. (d) 8. (a) 9. (a) 10. (b)
 11. (a) 12. (d) 13. (d) 14. (c) 15. (a)

II Hints to Short Answer Type Questions

- The net value of all economic goods and services produced within the domestic territory of a country in an accounting year plus the net factor income from abroad/ the sum total of factor incomes generated by the normal residents of a country in the form of wages, rent, interest and profit in an accounting year'
- SNA, developed by United Nations, provide a comprehensive conceptual and accounting framework for compiling and reporting macroeconomic statistics for analysing and evaluating the performance of an economy.
- GDP_{MP} is the market value of all final economic goods and services, gross of depreciation, produced within the domestic territory of a country during a given time period.
- 'Value added' we mean the difference between value of output and purchase of intermediate goods.
- Intermediate goods used to produce other goods rather than being sold to final purchasers are not counted as it would involve double counting whereas final goods are those that meant for final consumption

6. Economic activities as distinguished from non-economic activities include all human activities which create goods and services that can be valued at market price. Non-economic activities are those which produce goods and service, but are not exchanged in a market transaction so they do not command any market value.
7. GDP in terms of current market prices, termed 'nominal GDP' or GDP at current prices, the national income accountants also calculate 'real GDP' or GDP at constant prices which is the value of domestic product in terms of constant prices of a chosen base year.
8. Refer Hint 7 above.
9. The term 'national' refers to normal residents of a country who may be within or outside the domestic territory of a country and is a broader concept compared to the term 'domestic' which refers to the domestic territory of the country.
10. $\text{Factor Cost} = \text{Market Price} - \text{Net Indirect Taxes} = \text{Market Price} - \text{Indirect Taxes} + \text{Subsidies}$
11. Product taxes are related to the quantum of production and are levied by the government on goods and services (These taxes are known as indirect taxes).

Taxes on production are taxes which are not related to quantum of production like factory, license fee, pollution tax etc.,
12. Mixed income includes all those incomes which are difficult to separate eg. labour income from capital income because people provide both labour and capital services.
13. The GDP per capita is a measure of a country's economic output per person. It is obtained by dividing the country's gross domestic product, adjusted by inflation, by the total population.
14. Personal income is a measure of the actual current income receipt of persons from all sources. Disposable personal income is what is available for their consumption or savings and is derived from personal income by subtracting the direct taxes paid by individuals and other compulsory payments made to the government.

15. National income plus the sum of government transfer payments and interest on national debt and subtracting the property income of government departments and profits of government enterprises.
16. Circular flow of income refers to the continuous circulation of production, income generation and expenditure involving different sectors of the economy, Illustrate with diagram.
17. Used in the process of production , not counted to avoid double counting
18. Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets whose consumption is recorded as consumption of fixed capital; the goods or services may be either transformed or used up by the production process.
19. Production for self consumption added under Value Added Method
20. The difference between the aggregate amount that a country's citizens and companies earn abroad, and the aggregate amount that foreign citizens and overseas companies earn in that country.
21. Net exports are the difference between exports and imports of a country during the accounting year. It can be positive or negative.

III Hints to Long Answer Type Questions

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Question

1. Expenditure Method: National income equals domestic spending

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

(C + I + G = 1100) plus exports (X = 100) less imports (M = 200). Y = **1000**

2. Expenditure Method

GDP_{MP} = Personal consumption expenditure + Gross Investment (Gross business fixed investment + inventory investment) + Gross residential construction investment + Gross public investment + Government purchases of goods and services + Net Exports (Exports-imports)

GNP_{MP} = GDP_{MP} + Net factor income from abroad

GNP_{MP} - Indirect Taxes = GNP_{FC}

GNP_{FC} - Depreciation = NNP_{FC} (National Income)

GDP _{MP} =	₹
Personal consumption expenditure	= 3500
+ Gross Investment	= 900
<i>which include(Gross Business fixed investment</i>	<i>= 300</i>
<i>Gross residential construction investment</i>	<i>= 300</i>
<i>Gross public investment</i>	<i>= 200</i>
<i>Inventory investment</i>	<i>= 100)</i>
+ Government purchases of goods and services	= 1000
+ Net exports <i>which include:</i>	= 100
<i>(Exports</i>	<i>= 200</i>
<i>Imports</i>	<i>= 100)</i>
GDP _{MP} =	= 5500 Crores
+Net Factor Income From Abroad	= -50
GNP _{MP} =	= 5450 Crores
-Indirect Taxes	= 100
GNP _{FC}	= 5350 Crores

- Depreciation	=	50
NNP _{FC} (National Income)	=	5300 Crores

3. Income Method

$GDP_{MP} = \text{Employee compensation (wages and salaries + employers' contribution towards social security schemes) + profits + rent + interest + mixed income + depreciation + net indirect taxes (Indirect taxes - subsidies)}$

$$GDP_{MP} = 6,508 + 34 + 1060 + 806 + 682 + 1,000 + 800 = \mathbf{10,890}$$

$$GNP_{MP} = GDP_{MP} + NFIA = 10,890 + 40 = \mathbf{10,930 \text{ Crores.}}$$

Expenditure Method

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

$$Y = 7314 + 1442 + 2196 + (1346 - 1408)$$

$$Y = (7314 + 1442 + 2196) - 62$$

$$\mathbf{GDP_{MP} = Y = 10890}$$

$$GNP_{MP} = GDP_{MP} + NFIA = 10,890 + 40 = \mathbf{10,930 \text{ Crores}}$$

4. $GDP_{MP} = (\text{Value of output in primary sector} - \text{intermediate consumption of primary sector}) + (\text{value of output in secondary sector} - \text{intermediate consumption of secondary sector}) + (\text{value of output in tertiary sector} - \text{intermediate consumption of tertiary sector})$

Value of output in primary sector	=	500
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- Intermediate consumption of primary sector	=	250
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+ Value of output in secondary sector	=	900
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- Intermediate consumption in secondary sector	=	400
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+ Value of output in tertiary sector	=	700
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- Intermediate consumption of tertiary sector	=	300
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GDP_{MP}	=	₹ 1150 Crores
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$$GNP_{MP} = GDP_{MP} + NFIA$$

$GNP_{MP} = 1150 - 20$	=	₹ 1130 Crores
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5. Net Value Added at factor cost = Sales + change in stocks - intermediate consumption- depreciation – NIT

$$2000 = \text{Sales} + 500 - 3000 - 700 - (-200)$$

$$\text{Sales} = 2000 - 500 + 3000 + 700 - 200 = 5000 \text{ lakhs}$$

6. **Expenditure Method formula:**

$$\text{NDP}_{\text{MP}} = \text{Private Final Consumption Expenditure} + \text{Net Domestic Fixed Investment} \\ + \text{Government final consumption expenditure} + \text{Net Exports} \\ (\text{Exports}-\text{imports})$$

$$\text{NNP}_{\text{MP}} = \text{NDP}_{\text{MP}} + \text{Net factor income from abroad}$$

$$\text{NNP}_{\text{MP}} - \text{Indirect Taxes} = \text{NNP}_{\text{FC}} = \text{National Income}$$

Income Method Formula:

$$\text{NDP}_{\text{FC}} = \text{Employee compensation} + \text{profits} + \text{rent} + \text{interest} + \text{mixed income}$$

$$\text{NNP}_{\text{FC}} = \text{NDP}_{\text{FC}} + \text{NFIA} = \text{National Income}$$

Particulars	₹ in crores
Expenditure Method	
Private Final Consumption Expenditure	1000
+Government Final Consumption Expenditure	+550
+Net Domestic fixed Investment	+385
+Net Exports	+(-15)
NDP@MP	= 1920
+Net Factor Income from Abroad	+(-10)
NNP@MP	= 1910
-Net Indirect Taxes	-60
NNP@FC	= 1850
Consumption of Fixed Capital	65

Income Method	
Compensation of Employees	600
Interest	+310
Rent	+200
Mixed Income of Self-Employed	+350
Profit	+400
NDP@FC	=1860
+Net Factor Income from Abroad	+(-10)
NNP@FC	= 1850

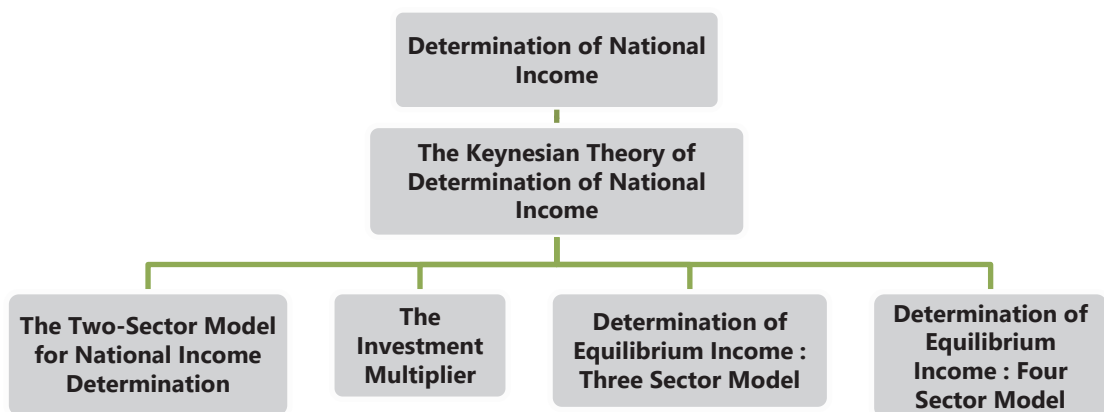
UNIT II: THE KEYNESIAN THEORY OF DETERMINATION OF NATIONAL INCOME

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Define Keynes' concept of equilibrium aggregate income
- Describe the components of aggregate expenditure in two, three and four sector economy models
- Explain national income determination in two, three and four sector economy models
- Illustrate the functioning of multiplier, and
- Outline the changes in equilibrium aggregate income on account of changes in its determinants

UNIT OVERVIEW





2.1 INTRODUCTION

In the previous unit on National Income Accounting, we have come across terms such as consumption, investment and total output of final goods and services (GDP). These macroeconomic variables were used in the accounting sense, representing actual values of these items in a certain year. These actual or accounting values are 'ex post' (realized) measures of these items. Thus, aggregate consumption (C) denotes what people have actually consumed and GDP is what is actually produced. These variables can also be defined in 'ex-ante' (anticipated) terms or in terms of what is intended or planned. In the theoretical model of the economy which we plan to discuss in this unit, the 'ex ante' values of these variables are our primary concern. Therefore, the term 'consumption' would indicate what people in an economy plan to consume and 'investment' would denote planned investment. If we want to predict what the equilibrium value of output or GDP is, we need to know what quantities of final goods people plan to demand and supply.

New
Addition

In this unit, we shall focus on two issues namely, the factors that determine the level of national income and the determination of equilibrium aggregate income and output in an economy. A comprehensive theory to explain these phenomena was first put forward by the British economist John Maynard Keynes in his masterpiece 'The General Theory of Employment Interest and Money' published in 1936. Before the 'General Theory' by Keynes, economists could not explain how economic depressions happen, or what to do about them. The classical economists maintained that the economy is self-regulating and is always capable of automatically achieving equilibrium at the 'natural level' of real GDP or output, which is the level of real GDP that is obtained when the economy's resources are fully employed. While circumstances arise from time to time that cause the economy to fall below or to exceed the natural level of real GDP, wage and price flexibility will bring the economy back to the natural level of real GDP. If an excess in the labour force (unemployment) or products exist, the wage or price of these will adjust to absorb the excess. According to them, there will be no involuntary unemployment.

New
Addition

Keynes' theory of determination of equilibrium real GDP, employment and prices focuses on the relationship between aggregate income and aggregate expenditure. There is a difference between equilibrium income (the level toward which the economy gravitates in the short run) and potential income (the level of income that the economy is technically capable of producing, without generating

New
Addition

accelerating inflation). Keynes argued that markets would not automatically lead to full-employment equilibrium and the resulting natural level of real GDP. The economy could settle in equilibrium at any level of unemployment. Keynesians believe that prices and wages are not so flexible; they are sticky, especially downward. The stickiness of prices and wages in the downward direction prevents the economy's resources from being fully employed and thereby prevents the economy from returning to the natural level of real GDP. Therefore, output will remain at less than the full employment level as long as there is insufficient spending in the economy. This was precisely what was happening during the great depression.

The Keynesian theory of income determination is presented in three models:

- (i) The two-sector model consisting of the household and the business sectors,
- (ii) The three-sector model consisting of household, business and government sectors, and
- (iii) The four-sector model consisting of household, business, government and foreign sectors

Before we attempt to explain the determination of income in each of the above models, it is pertinent that we understand the concept of circular flow in an economy which explains the functioning of an economy.



2.2 CIRCULAR FLOW IN A SIMPLE TWO-SECTOR MODEL

Concept of circular flow

New
Addition

The circular flow of income is a process where the national income and expenditure of an economy flow in a circular manner continuously through time. Savings, expenditures, exports and imports are various components of circular flow of income which are shown in the figure in the form of currents and cross currents in such a manner that national income equals national expenditure.

Initially, we consider a hypothetical simple two-sector economy. Even though an economy of this kind does not exist in reality, it provides a simple and convenient basis for understanding the Keynesian theory of income determination. The simple two sector economy model assumes that there are only two sectors in the economy viz., households and firms, with only consumption and investment outlays. Households own all factors of production and they sell their factor

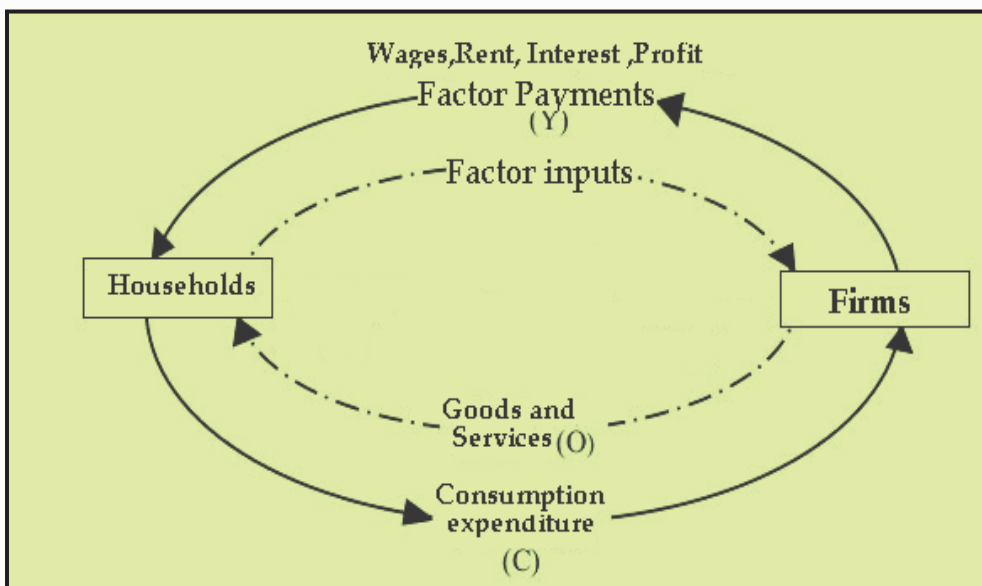
services to earn factor incomes which are entirely spent to consume all final goods and services produced by business firms. The business firms are assumed to hire factors of production from the households; they produce and sell goods and services to the households and they do not save. There are no corporations, corporate savings or retained earnings. The total income produced, Y , accrues to the households and equals their disposable personal income Y_d i.e., $Y = Y_d$.

All prices (including factor prices), supply of capital and technology remain constant. The government sector does not exist and therefore, there are no taxes, government expenditure or transfer payments. The economy is a closed economy, i.e., foreign trade does not exist; there are no exports and imports and external inflows and outflows. All investment outlay is autonomous (not determined either by the level of income or the rate of interest); all investment is net and, therefore, national income equals the net national product.

In the figure 1.2.1, the circular flow of income and expenditure which presents the working of the two- sector economy is illustrated in a simple manner.

Figure 1.2.1

Circular Flow in a Two Sector Economy



The circular broken lines with arrows show factor and product flows and present 'real flows' and the continuous line with arrows show 'money flows' which are generated by real flows. These two circular flows-real flows and money flows-are

in opposite directions and the value of real flows equal the money flows because the factor payments are equal to household incomes. There are no injections into or leakages from the system. Since the whole of household income is spent on goods and services produced by firms, household expenditures equal the total receipts of firms which equal the value of output.

Factor Payments = Household Income = Household Expenditure = Total Receipts of Firms = Value of Output.

Before we go into the discussion on the equilibrium aggregate income and changes in it, we shall first try to understand the meaning of the term 'equilibrium' (defined as a state in which there is no tendency to change; or a position of rest). Equilibrium output occurs when the desired amount of output demanded by all the agents in the economy exactly equals the amount produced in a given time period. Logically, an economy can be said to be in equilibrium when the production plans of the firms and the expenditure plans of the households match.

Having understood the working of the two-sector model and the meaning of equilibrium output, we shall now have the formal presentation of the theory of income determination in a two-sector model which is the simplest representation of the key principles of Keynesian economics. In the theoretical model of the economy, the ex ante values of different variables should be our primary concern. Before we discuss the Keynesian theory of income determination, let us look at the basic concepts, definitions and functions used in his theory of income determination.

New Addition



2.3 BASIC CONCEPTS AND FUNCTIONS

Name Change

2.3.1 Aggregate Demand Function

New Addition

Aggregate demand (AD) is what economists call total planned expenditure. In a simple two-sector economy, the ex ante aggregate demand (AD) for final goods or aggregate expenditure consists of only two components:

- (i) Ex ante aggregate demand for consumer goods (C), and
- (ii) Ex ante aggregate demand for investment goods (I)

$$AD = C + I \quad (2.1)$$

Of the two components, consumption expenditure accounts for the highest proportion of the GDP. In a simple economy, the variable **I** is assumed to be

determined exogenously and constant in the short run. Therefore, the short-run aggregate demand function can be written as:

$$AD = C + \bar{I} \quad (2.2)$$

Where \bar{I} = constant investment.

From the equation (2.2), we can infer that, in the short run, AD depends largely on the aggregate consumption expenditure. We shall now go over to the discussion on consumption function.

2.3.2 The Consumption Function

Consumption function expresses the functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as:

$$C = f(Y) \quad (2.3)$$

When income is low, consumption expenditures of households will exceed their disposable income and households dissave i.e. they either borrow money or draw from their past savings to purchase consumption goods. If the disposable income increases, consumers will increase their planned expenditures and current consumption expenditures rise, but only by less than the increase in income.

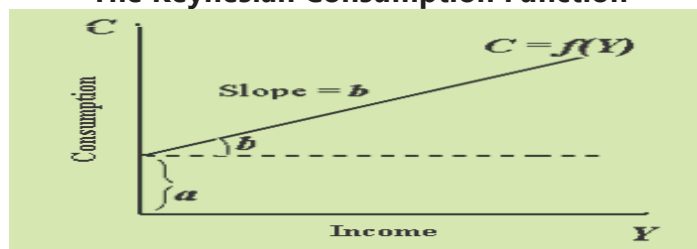
New
Addition

The specific form of consumption–income relationship termed the consumption function, proposed by Keynes is as follows:

$$C = a + bY \quad (2.4)$$

where C = aggregate consumption expenditure; Y = total disposable income; a is a constant term which denotes the (positive) value of consumption at zero level of disposable income; and the parameter b , the slope of the function, ($\Delta C / \Delta Y$) is the marginal propensity to consume (MPC) i.e. the increase in consumption per unit increase in disposable income.

Figure 1.2.2
The Keynesian Consumption Function



The consumption function shows the level of consumption (C) corresponding to each level of disposable income (Y) and is expressed through a linear consumption function, as shown by the line marked $C = f(Y)$ in figure 1.2.2.. The intercept for the consumption function, a , can be thought of as a measure of the effect on consumption of variables other than income, variables not explicitly included in this simple model.

The Keynesian assumption is that consumption increases with an increase in disposable income, but that the increase in consumption will be less than the increase in disposable income ($b < 1$). i.e. $0 < b < 1$. This fundamental relationship between income and consumption plays a crucial role in the Keynesian theory of income determination.

2.3.3 Marginal Propensity to Consume (MPC)

The consumption function is based on the assumption that there is a constant relationship between consumption and income, as denoted by constant b which is marginal propensity to consume. The concept of MPC describes the relationship between change in consumption (ΔC) and the change in income (ΔY). The value of the increment to consumer expenditure per unit of increment to income is termed the Marginal Propensity to Consume (MPC).

$$MPC = \frac{\Delta C}{\Delta Y} = b \quad (2.5)$$

Although the MPC is not necessarily constant for all changes in income (in fact, the MPC tends to decline at higher income levels), most analysis of consumption generally works with a constant MPC.

2.3.4 Average Propensity to Consume (APC)

Just as marginal propensity to consume, the average propensity to consume is a ratio of consumption defining income consumption relationship. The ratio of total consumption to total income is known as the average propensity to consume (APC).

$$APC = \frac{\text{Total Consumption}}{\text{Total Income}} = \frac{C}{Y} \quad (2.6)$$

The table below shows the relationship between income and consumption

Change

Table 1.2.1

Relationship between Income and Consumption

Income (Y) (₹ Crores)	Consumption (C)(₹ Crores)	Saving (₹ Crores)	APC (C/Y)	MPC (ΔC / ΔY)
0	50	-50	∞	-
100	125	-25	$125/100 = 1.25$	$75/100 = 0.75$
200	200	0	$200/200 = 1.00$	$75/100 = 0.75$
300	275	25	$275/300 = 0.92$	$75/100 = 0.75$
400	350	50	$350/400=0.88$	$75/100 = 0.75$
500	425	75	$425/500=0.85$	$75/100 = 0.75$

Note: The conventional Keynesian MPC is assumed to have a constant value less than 1.00 and usually greater than 0.50:

APC is calculated at various income levels. It is obvious that the proportion of income spent on consumption decreases as income increases. What happens to the rest of the income that is not spent on consumption? If it is not spent, it must be saved because income is either spent or saved; there are no other uses to which it can be put. Thus, just as consumption, saving is a function of disposable income: $S=f(Y)$.

2.3.5 The Saving Function

Saving is also a function of disposable income. The saving function shows the functional relationship between national income (= disposable income in two sector model) and saving.

$$S = f(Y)$$

This can be illustrated with the following table and diagram.

Table 1.2.2

Relationship between Income, Consumption and Saving

Disposable Income (Yd) (₹ Crores)	Consumption (C) (₹ Crores)	Saving (S) (₹ Crores)
0	20	-20
60	70	-10

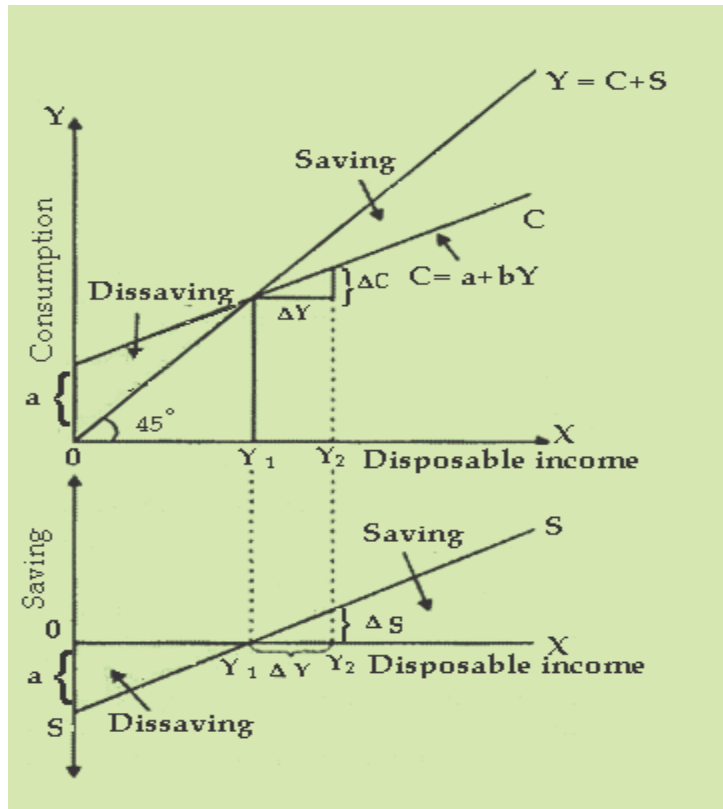
New
Addition

120	120	0
180	170	10
240	220	20

New Addition

Figure 1.2.3.

The Consumption and Saving Function



In figure 1.2.3, the consumption and saving functions are graphed. The saving function shows the level of saving (S) at each level of disposable income (Y). The saving curve has a negative intercept (-a) on Y axis and its magnitude is the same as the positive intercept of the consumption curve. We know that consumption at zero level of income is positive (equal to a), and as such there should be dissaving also of the same magnitude. By definition, national income $Y = C + S$, which shows that disposable income is, by definition, consumption plus saving. Therefore, $S = Y - C$. When national income is equal to Y_1 , $C=Y_1$ and saving curve

crosses X axis. Thus, when we represent the theory of the consumption-income relationship, it also implicitly establishes the saving-income relationship.

2.3.6 The Marginal Propensity to Save (MPS)

The slope of the saving function is the marginal propensity to save. If one-unit increase in disposable income leads to an increase of 'b' units in consumption, the remainder (1 - b) is the increase in saving. This increment to saving per unit increase in disposable income (1 - b) is called the marginal propensity to save (MPS). In other words, the marginal propensity to save is the increase in saving per unit increase in disposable income.

Saving is an increasing function of the level of income. In other words, saving increases as income rises.

New
Addition

$$MPS = \frac{\Delta S}{\Delta Y} = 1 - b \quad (2.7)$$

Marginal Propensity to Consume (MPC) is always less than unity, but greater than zero, i.e., $0 < b < 1$. Also, $MPC + MPS = 1$; we have $MPS > 0 < b < 1$. Thus, saving is an increasing function of the level of income because the marginal propensity to save (MPS) = $1 - b$ is positive, i.e. saving increase as income increases.

2.3.7 Average Propensity to Save (APS)

The ratio of total saving to total income is called average propensity to save (APS). Alternatively, it is that part of total income which is saved.

$$APS = \frac{\text{Total Saving}}{\text{Total Income}} = \frac{S}{Y} \quad (2.8)$$

2.3.8 Aggregate Supply:

New
Addition

Ex ante or planned aggregate supply is the total supply of goods and services which firms in a national economy plan on selling during a specific time period. It is equal to national income of the economy, which is either consumed or saved.

$$AS = C + S$$

Numerical Illustrations

New
Addition

Illustration 1

What will be the value of average propensity to save when -

- (i) $C = 200$ at $Y = 1,000$

(ii) $S = 450$ at $Y = 1,200$

Solution

(i) $APS = \frac{S}{Y}$; $S = Y - C = 1,000 - 200 = 800$. Therefore, $APS = \frac{S}{Y} = \frac{800}{1000} = 0.8$

(ii) When $S = 450$ and $Y = 1,200$; $APS = \frac{S}{Y} = 450/1200 = 0.375$

2.4 THE TWO-SECTOR MODEL OF NATIONAL INCOME DETERMINATION

In this section, we shall describe the two-sector model of determination of equilibrium levels of output and income in its formal form using the aggregate demand function and the aggregate supply function. We shall also have a brief discussion on the leakages – Injections model is alternatively known as the saving-investment model. The equilibrium level of income and output in the Keynesian framework is that level at which aggregate demand (C + I) and aggregate supply (C + S) or output are equal. i.e.

Change

$$C + I = C + S$$

or

$$I = S \quad (2.9)$$

In a two sector economy, the aggregate demand (C + I) refers to the total spending in the economy i.e. it is the sum of demand for the consumer goods (C) and investment goods (I) by households and firms respectively. In figure 1.2.4, the aggregate demand curve is linear and positively sloped indicating that as the level of national income rises, the aggregate demand (or aggregate spending) in the economy also rises. The aggregate expenditure line is flatter than the 45-degree line because, as income rises, consumption also increases, but by less than the increase in income.

In the figure 1.2.4 below, the 45-degree line illustrates every single point at which planned aggregate expenditure, measured on the Y, or vertical axis, is equal to planned aggregate production, which is measured on the X, or horizontal axis. In other words, all points on the 45° line indicate that aggregate expenditure equal

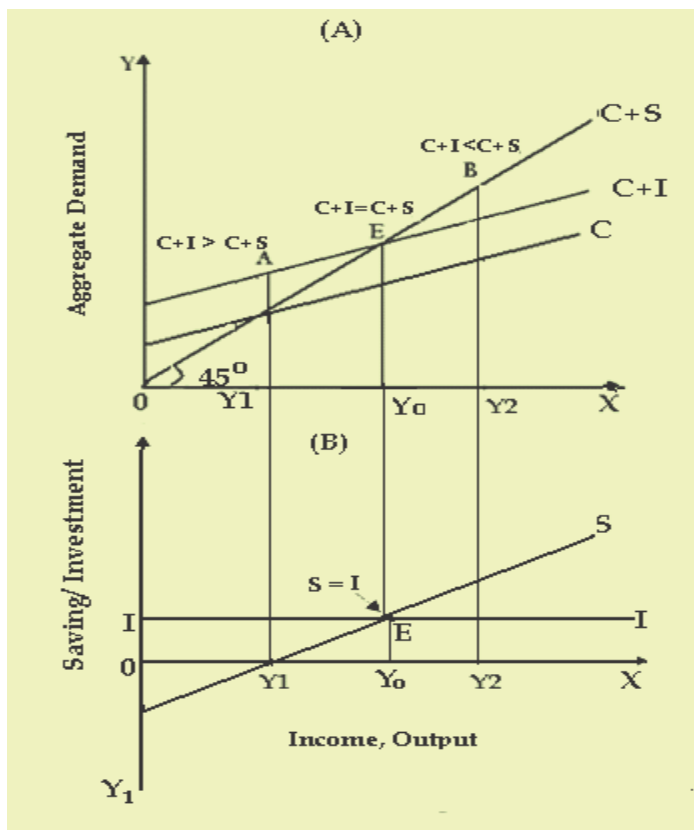
New Addition

aggregate output; i.e. $(C+I)$ is equal to Y or $(C+S)$. Therefore, the line maps out all possible equilibrium income levels.

For all points below the 45-degree line, planned aggregate expenditure is lesser than GDP and for all points above the 45-degree line; planned aggregate expenditure is greater than GDP. If an economy is operating on the 45-degree line, then the aggregate product market is in equilibrium. Ideally, we would like equilibrium to occur at potential GDP i.e. at the level of full employment. Only at point E and at the corresponding equilibrium levels of income and output Y_0 does aggregate demand exactly equals output. At that level of output and income, planned spending precisely matches production.

Figure 1.2.4

Determination of Equilibrium Income: Two Sector Model



You may bear in mind the basic point that according to Keynes, aggregate demand will not always be equal to aggregate supply. Aggregate demand

depends on the households' plan to consume and to save. Aggregate supply depends on the producers' plan to produce goods and services. In other words, aggregate supply represents aggregate value expected by business firms and aggregate demand represents their realized value. The expectations of businessmen are realized only when aggregate expenditure equals aggregate income. For the aggregate demand and the aggregate supply to be equal so that equilibrium is established, the households' plan must coincide with producers' plan. At equilibrium, expected value equals realized value. However, Keynes held the view that there is no reason to believe that:

- (i) consumers' consumption plan always coincides with producers' production plan, and
- (ii) that producers' plan to invest matches always with households plan to save.

Putting it differently, there is no reason for $C + I$ and $C + S$ to be always equal.

The figure above depicts the determination of equilibrium income. Income is measured along the horizontal axis and the components of aggregate demand, C and I , are measured along the vertical axis. The investment function (I) is shown in panel B of the figure, the $(C + I)$ or aggregate expenditure schedule which is obtained by adding the autonomous expenditure component namely investment to consumption spending at each level of income. Since the autonomous expenditure component (I) does not depend directly on income, the $(C + I)$ schedule lies above the consumption function by a constant amount. Equilibrium level of income is such that aggregate demand equals output (which in turn equals income). Only at point E and at the corresponding equilibrium levels of income and output (Y_0), does aggregate demand exactly equals output. At that level of output and income, planned spending precisely matches production. Once national income is determined, it will remain stable in the short run. As long as the economy is operating at less than its full-employment capacity, producers will produce any output along the 45-degree line that they believe purchasers will buy.

New
Addition

Our understanding of the equilibrium level of income would be better if we find out why the other points on the graph are not points of equilibrium. For example, consider a level of income below Y_0 , for example Y_1 , generates consumption as shown along the consumption function. When this level of consumption is added to the autonomous investment expenditure (I), the aggregate demand exceeds income; i.e. the $(C + I)$ schedule is above the 45° line. Equivalently, at all those levels, I' is greater than S , as can be seen in panel (B) of

the figure 1.2.4. The aggregate expenditures exceed aggregate output. Excess demand makes businesses to sell more than what they currently produce. The unexpected sales would draw down inventories and result in less inventory investment than business firms planned. They will react by hiring more workers and expanding production. This will increase the nation's aggregate income. It also follows that with demand outstripping production, desired investment will exceed actual investment.

Conversely, at levels of income above Y_0 , for example at Y_2 , output exceeds demand (the 45° line is above the $C + I$ schedule). The planned expenditures on goods and services are less than what business firms thought they would be; business firms would be unable to sell as much of their current output as they had expected. In fact, they have unintentionally made larger inventory investments than what they planned and their actual inventories would increase. Therefore, there will be a tendency for output to fall. This process continues till output reaches Y_0 , at which current production exactly matches planned aggregate spending and unintended inventory shortfall or accumulation are therefore equal to zero. At this point, consumers' plan matches with producers' plan and savers' plan matches with investors' plan. Consequently, there is no tendency for output to change.

Since $C + S = Y$, the national income equilibrium can be written as:

$$Y = C + I \quad (2.10)$$

Since at equilibrium $C = a + bY$, and I is constant at \bar{I} . By substituting $a + bY$ for C and \bar{I} for I in $Y = C + I$, the equilibrium level of national income can be expressed as:

New
Addition

$$Y = C + I$$

$$Y = a + bY + \bar{I}$$

$$Y - bY = a + \bar{I}$$

$$Y(1-b) = a + \bar{I}$$

$$Y = \frac{a + \bar{I}}{1 - b} = \frac{1}{1 - b} (a + \bar{I}); \text{ and}$$

New
Addition

$$C = a + b Y$$

$$C = a + b \left[\frac{1}{1-b} \right] (a + \bar{I})$$

$$C = a + \frac{b}{1-b} (a + \bar{I})$$

New
Addition

Now, we shall move to the leakages –injections approach or the savings and investment approach. In a two-sector circular flow model, we now introduce financial markets and savings and investment which they facilitate. A leakage is referred to as an outflow of income from the circular flow model. Leakages are that part of the income which is not used to purchase goods and services or what households withdraw from the circular flow. The act of saving by households is called a leakage from the circular flow model because the income is not spent on goods and services produced by firms, and it will reduce the velocity of the circular flow. An injection is an inflow of income to the circular flow. Due to an injection of income in the circular flow, the volume of income increases. Investment is an injection into the circular flow. The circular flow will be balanced and therefore in equilibrium when the injections are equal to the leakages. If at any time, intended saving is greater than intended investment, this would mean that people are spending lesser volume of money on consumption. As a result, the inventories of goods will pile up. Consequently, the firms would decrease their production which would lead to a fall in output and income of the household. If the leakages are greater than the injections, then national income will fall, while if injections are greater than leakages, national income will rise. The national income will be in equilibrium only when intended saving is equal to intended investment.

New
Addition

The equality between saving and investment can be seen directly from the identities in national income accounting. Since income is either spent or saved, $Y = C + S$. Without government and foreign trade, aggregate demand equals consumption plus investment, $Y = C + I$. Putting the two together, we have $C + S = C + I$, or $S = I$. This last equation indicates that equilibrium can be achieved by equating injections I with leakages S .

The saving schedule S slopes upward because saving varies positively with income. In equilibrium, planned investment equals saving. Therefore,

corresponding to this income, the saving schedule (S) intersects the horizontal investment schedule (I). This intersection is shown in panel (B) of figure 1.2.4.

Without government and foreign trade, the vertical distance between the aggregate demand ($C+I$) and consumption line (C) in the figure is equal to planned investment spending, I . You may also find that the vertical distance between the consumption schedule and the 45° line also measures saving ($S = Y - C$) at each level of income. **Equilibrium is found at the intersection of the saving line and the investment line.** At the equilibrium level of income (at point E in panel B), the two vertical distances are equal. Thus, at the equilibrium level of income, ex ante saving equals ex ante investment. By contrast, above the equilibrium level of income, Y_0 , saving (the distance between 45° line and the consumption schedule) exceeds planned investment, while below Y_0 level of income, planned investment exceeds saving. **If there is any deviation from equilibrium, i.e. planned saving is not equal to planned investment, the process of readjustment will bring the economy back to equilibrium.**

2.4.1 Equilibrium with Unemployment or Inflation

New
Addition

An important point to remember is that Keynesian equilibrium with equality of planned aggregate expenditures and output need not take place at full employment. If the aggregate expenditure line intersects the 45-degree line at the level of potential GDP, then there is full employment equilibrium. There is no recession, and unemployment is at the natural rate. But there is no guarantee that the equilibrium will occur at the potential GDP level of output. The economy can settle at any equilibrium which might be higher or lower than the full employment equilibrium.

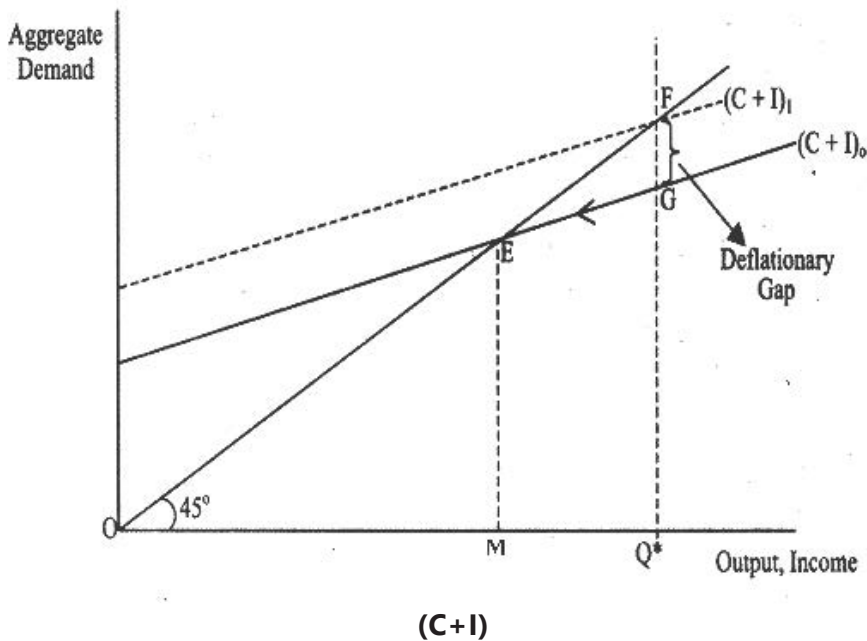
(i) Deflationary Gap

New
Addition

If the aggregate demand is for an amount of output less than the full employment level of output, then we say there is deficient demand. Deficient demand gives rise to a 'deflationary gap' or 'recessionary gap'. Recessionary gap also known as 'contractionary gap' arises in the Keynesian model of the macro economy when the equilibrium level of aggregate production achieved in the short-run falls short of what could be produced at full employment. Recessionary gap occurs when the economy is in a business-cycle contraction or recession.

Figure 1.2.5
Deficient Demand - Deflationary Gap

New Addition



In figure 1.2.5, OQ^* is the full employment level of output. For the economy to be at full employment equilibrium, aggregate demand should be Q^*F . If the aggregate demand is Q^*G , it represents a situation of deficient demand. The resulting deflationary gap is FG . Firms will experience unplanned build-up of inventories of unsold goods and they will respond by cutting production and employment leading to decrease in output and income until the under-employment equilibrium is reached at E .

New Addition

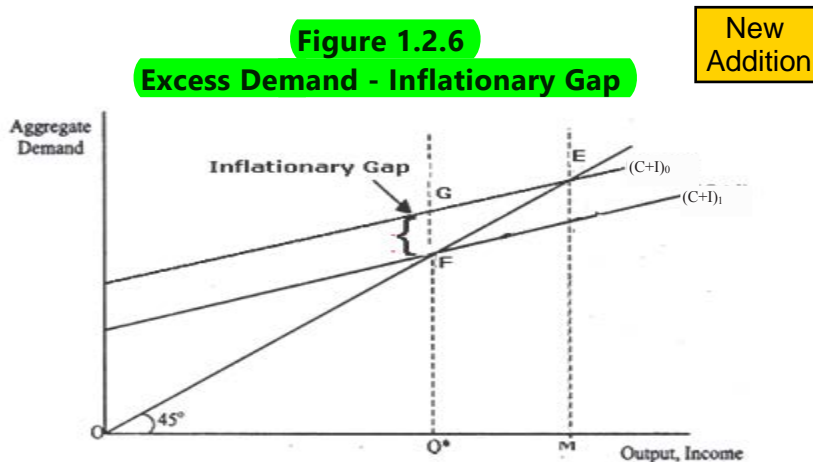
Deflationary gap is thus a measure of the extent of deficiency of aggregate demand and it causes the economy's income, output and employment to decline, thus pushing the economy to under-employment equilibrium. The macro-equilibrium occurs at a level of GDP less than potential GDP; thus, there is cyclical unemployment i.e. rate of unemployment is higher than the natural rate. (Demand deficient unemployment is the same as cyclical unemployment)

(ii) Inflationary Gap

New Addition

If the aggregate demand is for an amount of output greater than the full employment level of output, then we say there is excess demand. Excess demand gives rise to 'inflationary gap' which is the amount by which actual aggregate

demand exceeds the level of aggregate demand required to establish the full employment equilibrium. This is the sort of gap that tends to occur during a business-cycle expansion and sets in motion forces that will cause demand pull inflation.



In figure 1.2.6, the economy will be at full employment equilibrium at F with OQ^* full employment level of output and income. Suppose the aggregate demand is for Q^*G , there is excess demand and the resulting inflationary gap FG . The real output will be constant, but the rise in the price level will cause an increase in the nominal output until the new equilibrium is reached at point E. Point E is an equilibrium point because the aggregate demand ME is equal to output OM . At the new equilibrium, real output, real income and employment will be the same; nominal output and income has increased due to inflation.

In the Keynesian model, neither wages nor interest rates will decline in the face of abnormally high unemployment and excess capacity. Therefore, output will remain at less than the full employment rate as long as there is insufficient spending in the economy. Keynes argued that this was precisely what was happening during the Great Depression.

Numerical Illustrations

New Addition

Illustration 2

Calculate marginal propensity to consume and marginal propensity to save from the following data about an economy which is in equilibrium:

National income = 2500, Autonomous consumption expenditure = 300,
Investment expenditure = 100

Solution

$$Y = C + I$$

By putting the value we get, $2500 = C + 100$

$$C = 2500 - 100 = 2400$$

$$C = \bar{C} + bY$$

$$2400 = 300 + 2500b$$

$$2400 - 300 = 2500b$$

$$b = 0.84; \text{MPS} = 1 - \text{MPC} = 1 - 0.84 = 0.16$$

Illustration 3New
Addition

An economy is in equilibrium. Calculate national income from the following-

Autonomous consumption = 100; Marginal propensity to save = 0.2; Investment expenditure = 200

Solution

$$Y = C + I$$

$$Y = \bar{C} + \text{MPC}(Y) + I \quad \text{where } \text{MPC} = 1 - \text{MPS}$$

$$Y = 100 + 0.8Y + 200 = 300 + 0.8Y$$

$$Y - 0.8Y = 300$$

$$0.2Y = 300,$$

$$Y = 1500$$

Illustration 4New
Addition

Suppose the consumption of an economy is given by $C = 20 + 0.6Y$ and investment $I = 10 + 0.2Y$. What will be the equilibrium level of National Income?

Solution

$$Y = C + I = 20 + 0.6Y + 10 + 0.2Y$$

$$Y = 30 + 0.8Y$$

$$Y - 0.8Y = 30$$

$$Y = 150$$

Illustration 5New
Addition

Suppose the consumption function $C = 7 + 0.5Y$, Investment is ₹ 100, Find out equilibrium level of Income, consumption and saving?

Solution

Equilibrium Condition–

$$Y = C + I, \text{ Given } C = 7 + 0.5Y \text{ and } I = 100$$

$$\text{Therefore } Y = 7 + 0.5Y + 100$$

$$Y - 0.5Y = 107$$

$$Y = \frac{107}{0.5} = 214$$

$$Y = C + I$$

$$214 = C + 100$$

$$C = 114$$

$$S = Y - C = 100$$

Illustration 6New
Addition

If the consumption function is $C = 250 + 0.80 Y$ and $I = 300$. Find out equilibrium level of Y , C and S ?

Solution

$$Y = \frac{1}{1-b} (a + \bar{I}) \text{ or } Y = C + I$$

$$Y = \frac{1}{1-.80} (250 + 300) = \mathbf{2750}$$

$$C = a + \frac{b}{1-b} (a + \bar{I}) \text{ or } C = 250 + 0.80 Y$$

$$C = 250 + \mathbf{0.8(2750)} \quad \mathbf{C = 2450}$$

$$S = Y - C \text{ where } C = a + bY$$

$$S = Y - (a + bY)$$

$$S = -a + (1 - b) Y$$

$$= -250 + (1 - 0.80)2750 = 300$$

Or directly,

$$S = Y - C$$

$$S = 2750 - 2450 = 300.$$

Illustration 7New
Addition

If saving function $S = -10 + 0.2Y$ and autonomous investment $I = 50$ Crores. Find out the equilibrium level of income, consumption and if investment increases permanently by ₹ 5 Crores, what will be the new level of income and consumption?

Solution

$$S = I$$

$$-10 + 0.2Y = 50$$

$$0.2Y = 50 + 10$$

$$Y = 300 \text{ Crores}$$

$$C = Y - S$$

$$\text{Where } S = -10 + 0.2(300) = 50$$

$$C = 300 - 50 = 250 \text{ Crores}$$

With the increase in investment by ₹ 5 Crores, the new investment will become equal to ₹ 55 Crores.

$$S = I$$

$$-10 + 0.2Y = 55$$

$$Y = 325 \text{ Crores}$$

$$C = 270 \text{ Crores}$$

Illustration 8New
Addition

Given the empirical consumption function $C = 100 + 0.75Y$ and $I = 1000$, calculate equilibrium level of national income. What would be the consumption expenditure at equilibrium level national income?

Solution

$$C = 100 + 0.75Y \text{ and } I = 1000,$$

$$Y = C + I \text{ in equilibrium}$$

$$Y = 100 + 0.75Y + 1000 \Rightarrow Y = \frac{I}{1-0.75} (100+1000)$$

$$Y = \frac{1}{1-0.75} (1100) = 1/0.25(1100) = 4400.$$

$$Y = C + I; C = 4400 - 1000 = 3400$$

We shall now examine the nature of shift in aggregate demand curve and its effect on equilibrium level of national income.

- Given the intercept, a steeper aggregate demand function—as would be implied by a higher marginal propensity to consume—implies a higher level of equilibrium income.
- For a given marginal propensity to consume, a higher level of autonomous spending implies a higher equilibrium level of income.

Therefore, it may be inferred that a change in aggregate spending will shift the equilibrium from one point to another and a shift in the equilibrium will change the level of national income. An increase in aggregate spending makes the aggregate demand schedule shift upward. As a result, the equilibrium point would shift upward along the AS schedule causing an increase in the national income. Likewise, a fall in the aggregate spending causes a fall in the national income. This relationship between the aggregate spending and the national income is simple and straightforward.

The proposition put forth above tells us only the direction of change in the national income resulting from the change in the aggregate demand. It does not quantify the relationship between the two variables, i.e.; it does not tell us the magnitude of change in national income due to a given change in aggregate spending. The theory of investment multiplier provides answer to the above problem.

We will first graphically illustrate the change in the aggregate spending and the shift in the equilibrium. It will be followed by a simple model of the multiplier. We will finally discuss the limitations of the multiplier.

New
Addition



2.5 THE INVESTMENT MULTIPLIER

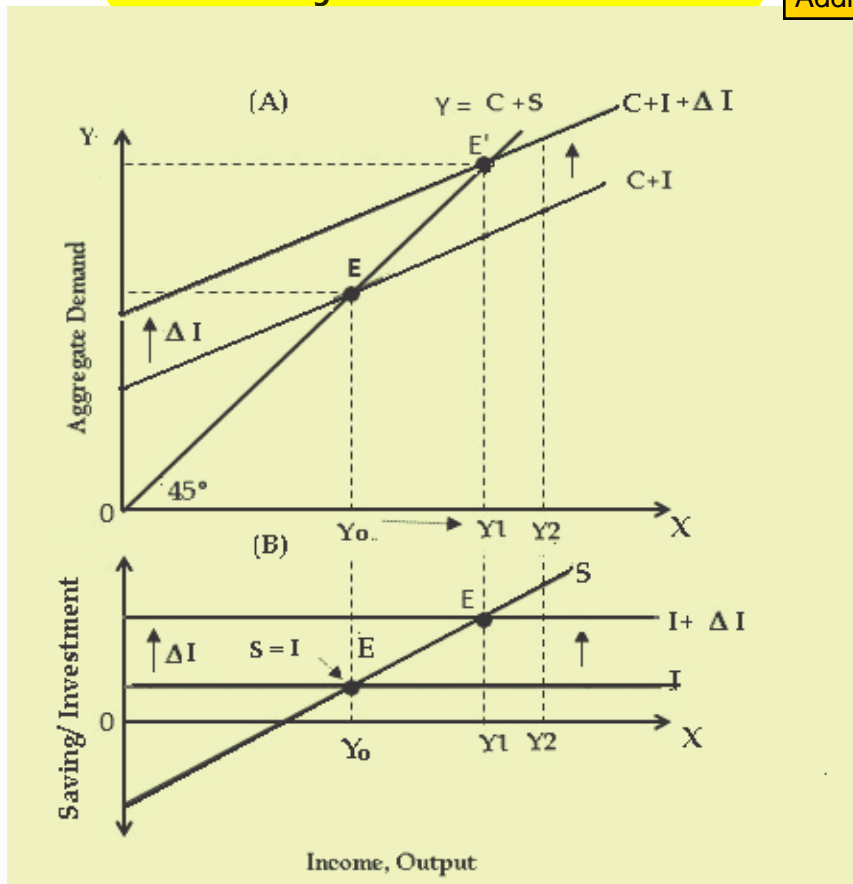
In our two-sector model, a change in aggregate demand may be caused by change in consumption expenditure or in business investment or in both. Since consumption expenditure is a stable function of income, changes in income are primarily from changes in the autonomous components of aggregate demand, especially from changes in the unstable investment component. We shall now examine the effect of an increase in investment (upward shift in the investment

New Addition

schedule) causing an upward shift in the aggregate demand function. But before this, let us know about the investment multiplier. It is a process of multiple increases in equilibrium income due to increase in investment and how much increase occurs depends upon the marginal propensity to consume. The process of increase in national income due to increase in investment is illustrated below.

Figure 1.2.7
Effect of Changes in Autonomous Investment

New Addition



In the figure 1.2.7, an increase in autonomous investment by ΔI shifts the aggregate demand schedule from $C+I$ to $C+I+\Delta I$. Correspondingly, the equilibrium shifts from E to E^1 and the equilibrium income increases more than proportionately from Y_0 to Y_1 . Why and how does this happen? This occurs due to the operation of the investment multiplier.

Multiplier refers to the phenomenon whereby a change in an injection of expenditure will lead to a proportionately larger change (or multiple changes) in

the equilibrium level of national income. The investment multiplier explains how many times the equilibrium aggregate income increases as a result of an increase in autonomous investment. When the level of investment increases by an amount say ΔI , the equilibrium level of income will increase by some multiple amounts, ΔY . The ratio of ΔY to ΔI is called the investment multiplier, k .

$$k = \frac{\Delta Y}{\Delta I} \quad (2.11)$$

The size of the multiplier effect is given by $\Delta Y = k \Delta I$.

For example, if a change in investment of ₹ 2000 million causes a change in national income of ₹ 6000 million, then the multiplier is $6000/2000 = 3$. Thus multiplier indicates the change in equilibrium national income for each rupee change in the desired autonomous investment. The value 3 in the above example tells us that for every ₹ 1 increase in desired autonomous investment expenditure, there will be ₹ 3 increase in equilibrium national income. Multiplier, therefore, expresses the relationship between an initial increment in autonomous investment and the resulting increase in equilibrium aggregate income. Since the increase in national income (ΔY) is the result of increase in investment (ΔI), the multiplier is called 'investment multiplier.'

The process behind the multiplier can be compared to the 'ripple effect' of water. Let us assume that the initial disturbance comes from a change in autonomous investment (ΔI) of 500 units. The economy being in equilibrium, an upward shift in aggregate demand leads to an increase in national income which in a two sector economy will be, by definition, distributed as factor incomes. There will be an equal increase in disposable income. Firms experience increased demand and as a response, their output increases. Assuming that MPC is 0.80, consumption expenditure increases by 400, resulting in increase in production. The process does not stop here; it will generate a second-round of increase in income. The process further continues as an autonomous rise in investment leads to induced increases in consumer demand as income increases.

We find at the end that the increase in equilibrium income per rupee increase in investment is:

$$\frac{\Delta Y}{\Delta I} = \frac{1}{1-MPC} = \frac{1}{MPS} \quad (2.12)$$

From the above, we find that the marginal propensity to consume (MPC) is the determinant of the value of the multiplier and that there exists a direct relationship between MPC and the value of multiplier. Higher the MPC more will be the value of the multiplier, and vice-versa. On the contrary, higher the MPS, lower will be the value of multiplier and vice-versa. The maximum value of multiplier is infinity when the value of MPC is 1 i.e. the economy decides to consume the whole of its additional income. We conclude that the value of the multiplier is the reciprocal of MPS.

For example, if the value of MPC is 0.75, then the value of the multiplier as per (2.11) is:

$$\frac{1}{1-MPC} = \frac{1}{0.25} = 4$$

Change

The multiplier concept is central to Keynes's theory because it explains how shifts in investment caused by changes in business expectations set off a process that causes not only investment but also consumption to vary. The multiplier shows how shocks to one sector are transmitted throughout the economy.

Increase in income due to increase in initial investment, does not go on endlessly. The process of income propagation slows down and ultimately comes to a halt. Causes responsible for the decline in income are called leakages. Income that is not spent on currently produced consumption goods and services may be regarded as having leaked out of income stream. If the increased income goes out of the cycle of consumption expenditure, there is a leakage from income stream which reduces the effect of multiplier. The more powerful these leakages are the smaller will be the value of multiplier. The leakages are caused due to:

1. progressive rates of taxation which result in no appreciable increase in consumption despite increase in income
2. high liquidity preference and idle saving or holding of cash balances and an equivalent fall in marginal propensity to consume
3. increased demand for consumer goods being met out of the existing stocks or through imports
4. additional income spent on purchasing existing wealth or purchase of government securities and shares from shareholders or bond holders

5. undistributed profits of corporations
6. part of increment in income used for payment of debts
7. case of full employment additional investment will only lead to inflation, and
8. scarcity of goods and services despite having high MPC

The MPC, on which the multiplier effect of increase in income depends, is high in under developed countries; but ironically the value of multiplier is low. Due to structural inadequacies, increase in consumption expenditure is not generally accompanied by increase in production. E.g. increased demand for industrial goods consequent on increased income does not lead to increase in their real output; rather prices tend to rise.

An important element of Keynesian models is that they relate to short-period equilibrium and contain no dynamic elements. There is nothing like Keynesian macro-economic dynamics. When a shock occurs, for example when there is a change in autonomous investment due to change in some variable, one equilibrium position can be compared with another as a matter of comparative statics. There is no link between one period and the next and no provision is made for an analysis of processes through time.

Numerical Illustrations

New
Addition

Illustration 9

In an economy investment expenditure is increased by ₹ 400 Crores and marginal propensity to consume is 0.8. Calculate the total increase in income and saving.

Solution

MPC = 0.8; $\Delta I = 400$ Crores

Multiplier (K) = $1 / 1 - MPC = 1 / 1 - 0.8 = 1 / 0.2 = 5$

MPS = $1 - MPC = 1 - 0.8 = 0.2$

Increase in income (ΔY) = $K \times \Delta I = 5 \times 400 = 2,000$ Crores

Increase in saving = $\Delta Y \times MPS = 2,000 \times 0.2 = 400$ Crores

Illustration 10

New
Addition

An increase in investment by 400 Crores leads to increase in national income by 1,600 Crores. Calculate marginal propensity to consume.

Solution

Increase in investment (ΔI) = 400 Crores

Increase in national income (ΔY) = 1,600 Crores

Multiplier (K) = $\Delta Y / \Delta I = K = 1,600 / 400 = 4$

We know, $K = 1 / 1 - MPC$

$$4 = 1 / 1 - MPC$$

$$\Rightarrow MPC = 0.75$$

Illustration 11

New Addition

In an economy, investment is increased by Rs 600 Crores. If the marginal propensity to consume is 0.6, calculate the total increase in income and consumption expenditure.

Solution

$MPC = 0.6$; $\Delta I = ₹ 600$ Crores

Multiplier (K) = $1 / 1 - MPC = 1 / 1 - 0.6 = 1 / 0.4 = 2.5$.

Increase in income (ΔY) = $K \times \Delta I = 2.5 \times ₹ 600$ Crores = ₹1,500 Crores

Increase in consumption (ΔC) = $\Delta Y \times MPC = ₹ 1,500$ Crores $\times 0.6 = ₹ 900$ Crores.

Illustration 12

New Addition

Suppose in a country investment increases by ₹ 100 Crores and consumption is given by $C = 10 + 0.6Y$ (where C = consumption and Y = income). How much increases will there take place in income?

Solution

$$\text{Multiplier} = k = \frac{1}{1 - MPC} \quad k = \frac{1}{1 - 0.6} = 2.5$$

Substituting the value of k and ΔI value in $\Delta Y = k\Delta I$

$$\Delta Y = 2.5 \times 100 = ₹ 250 \text{ Crores}$$

Thus, increase in investment by Rs 100 Crores will cause equilibrium income to rise by ₹ 250 Crores.

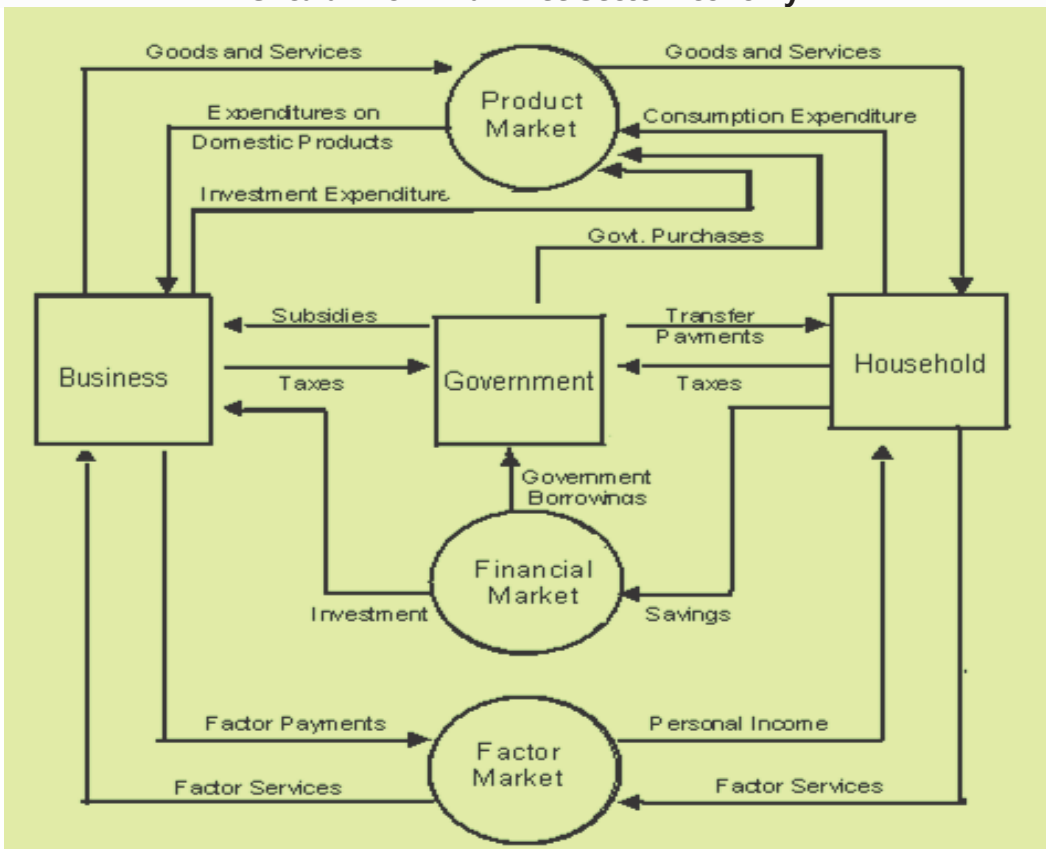
2.6 DETERMINATION OF EQUILIBRIUM INCOME: THREE SECTOR MODEL

Aggregate demand in the three sector model of closed economy (neglecting foreign trade) consists of three components namely, household consumption(C), desired business investment demand(I) and the government sector's demand for goods and services(G). Thus in equilibrium, we have

$$Y = C + I + G \quad (2.13)$$

Since there is no foreign sector, GDP and national income are equal. As prices are assumed to be fixed, all variables are real variables and all changes are in real terms. To help interpret these conditions, we turn to the flowchart below. Each of the variables in the model is a flow variable.

Figure 1.2.8
Circular Flow in a Three Sector Economy



The three-sector, three-market circular flow model which accounts for government intervention highlights the role played by the government sector. From the above flow chart, we can find that the government sector adds the following key flows to the model:

- i) Taxes on households and business sector to fund government purchases
- ii) Transfer payments to household sector and subsidy payments to the business sector
- iii) Government purchases goods and services from business sector and factors of production from household sector, and
- iv) Government borrowing in financial markets to finance the deficits occurring when taxes fall short of government purchases

However, unlike in the two sector model, the whole of national income does not return directly to the firms as demand for output. There are two flows out of the household sector in addition to consumption expenditure namely, saving flow and the flow of tax payments to the government. These are actually leakages. The saving leakage flows into financial markets, which means that the part of that is saved is held in the form of some financial asset (currency, bank deposits, bonds, equities, etc.). The tax flow goes to the government sector. The leakages which occur in household sector do not necessarily mean that the total demand must fall short of output. There are additional demands for output on the part of the business sector itself for investment and from the government sector. In terms of the circular flow, these are injections. The investment injection is shown as a flow from financial markets to the business sector. The purchasers of the investment goods, typically financed by borrowing, are actually the firms in the business sector themselves. Thus, the amount of investment in terms of money represents an equivalent flow of funds lent to the business sector.

The three-sector Keynesian model is commonly constructed assuming that government purchases are autonomous. This is not a realistic assumption, but it will simplify our analysis. Determination of income can also be explained with the help of aggregate demand and aggregate supply (figure 1.2.9)

$$AD = C + I + G$$

$$AS = C + S + T$$

New
Addition

The equilibrium national income is determined at a point where both aggregate demand and aggregate supply are equal, that is,

New
Addition

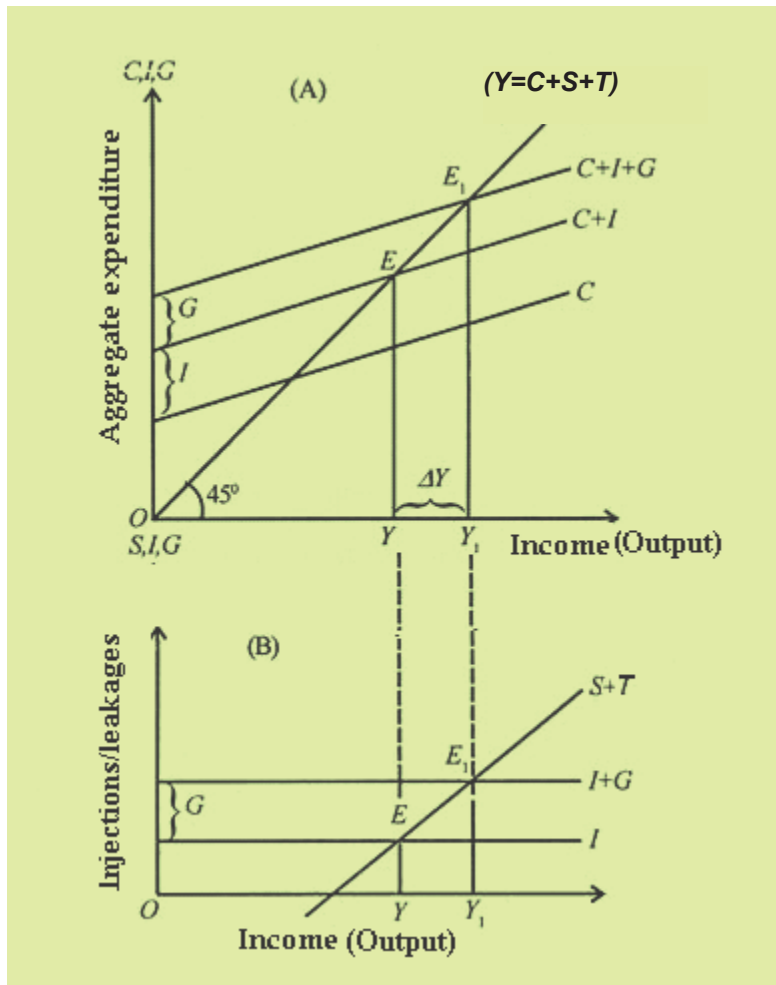
$$AD = Y = AS$$

$$C + I + G = Y = C + S + T$$

New
Addition

Figure 1.2.9

Determination of Equilibrium Income: Three Sector Model



The variables measured on the vertical axis are C , I and G . The autonomous expenditure components namely, investment and government spending do not directly depend on income and are exogenous variables determined by factors outside the model. You may observe that in panel B of the figure 1.2.9, the lines that plot these autonomous expenditure components are horizontal as their level

does not depend on Y . Therefore, $C + I + G$ schedule lies above the consumption function by a constant amount.

The line $S + T$ in the graph plots the value of savings plus taxes. This schedule slopes upwards because saving varies positively with income. Just as government spending, level of tax receipts (T) is decided by policy makers.

The equilibrium level of income is shown at the point E_1 where the $(C + I + G)$ schedule crosses the 45° line, and aggregate demand is therefore equal to income (Y). In equilibrium, it is also true that the $(S + T)$ schedule intersects the $(I + G)$ horizontal schedule.

We shall now see why other points on the graph are not points of equilibrium. Consider a level of income below Y_1 . We find that it generates consumption as shown along the consumption function. When this level of consumption is added to the autonomous expenditures $(I + G)$, aggregate demand exceeds income; the $(C + I + G)$ schedule is above the 45° line. Equivalently at this point $I + G$ is greater than $S + T$, as can be seen in panel B of the figure 1.2.9. With demand outstripping production, desired investments will exceed actual investment and there will be an unintended inventory shortfall and therefore a tendency for output to rise. Conversely, at levels of income above Y_1 , output will exceed demand; people are not willing to buy all that is produced. Excess inventories will accumulate, leading businesses to reduce their future production. Employment will subsequently decline and output will fall back to the equilibrium level. It is only at Y_1 that output is equal to aggregate demand; there is no unintended inventory shortfall or accumulation and, consequently, no tendency for output to change. An important thing to note is that the change in total spending, followed by changes in output and employment, is what will restore equilibrium in the Keynesian model, not changes in prices.

2.6.1 The Government Sector and Income Determination

New
Addition

We have seen above that the government influences the level of income through taxes, transfer payments, government purchases and government borrowing. A comprehensive discussion on the effect of government fiscal policy is beyond the scope of this unit; and therefore, we shall look into a few variables.

(i) Income Determination with Lump Sum Tax

New
Addition

We assume that the government imposes lump sum tax, i.e. taxes that do not depend on income, has a balanced budget ($G=T$) and also that there are no transfer payments. The consumption function is defined as –

$$C = a + b Y_d$$

Where $Y_d = Y - T$ (disposable income), $T =$ lump sum tax

$$Y = a + b (Y - T) + I + G$$

$$Y = \frac{1}{1-b} (a - bT + I + G)$$

New
Addition

Numerical Illustrations

New
Addition

Illustration 13

Suppose we have the following data about a simple economy:

$C = 10 + 0.75Y_d$, $I = 50$, $G = T = 20$ where C is consumption, I is investment, Y_d is disposable income, G is government expenditure and T is tax.

- Find out the equilibrium level of national income.
- What is the size of the multiplier?

Solution

- Since $G = T$, budget of the government is balanced

Substituting the values of C , I and G in Y we have

$$Y = C + I + G$$

$$Y = a + bY_d + I + G$$

$$Y = 10 + 0.75(Y - 20) + 50 + 20$$

$$Y = 10 + 0.75Y - 15 + 50 + 20$$

$$\text{or, } Y - 0.75Y = 65$$

$$\text{or, } Y(1 - 0.75) = 65$$

$$\text{or, } 0.25Y = 65$$

$$\text{or, } Y = 65 / .25 = 260$$

The equilibrium value of $Y = 260$

- The value of the multiplier is $= 1 / (1 - MPC) = 1 / (1 - b) = 1 / (1 - 0.75) = 1 / 0.25 = 4$

New
Addition**(ii) Income Determination with Lump Sum Tax and Transfer payments**

The consumption function is defined as –

$$C = a + b Y_d$$

Where $Y_d = Y - T + TR$ where T is a lump sum tax and TR is autonomous transfer payments

$$C = a + b (Y - T + TR)$$

$$Y = C + I + G$$

$$Y = a + b (Y - T + TR) + I + G$$

$$Y = a + bY - bT + bTR + I + G$$

$$Y - bY = a - bT + bTR + I + G$$

$$Y(1-b) = a - bT + bTR + I + G$$

$$Y = \frac{1}{1-b} (a - bT + bTR + I + G)$$

New
Addition**Illustration 14**New
Addition

Suppose the structural model of an economy is given –

$C = 100 + 0.75 Y_d$; $I = 200$, $G = T = 100$; $TR = 50$, find the equilibrium level of income?

Solution

$$Y = C + I + G$$

$$Y = 100 + 0.75 Y_d + 200 + 100$$

$$Y = 100 + 0.75(Y - 100 + 50) + 200 + 100$$

$$Y = 100 + 0.75Y - 75 + 37.5 + 200 + 100$$

$$Y = 1450$$

Or use $Y = \frac{1}{1-b} (a - bT + bTR + I + G)$ to calculate income.

(iii) Income Determination with tax as a function of IncomeNew
Addition

In (i) and (ii) above, we have analysed the effect of balanced budget with an autonomous lump sum tax. In reality, the tax system consists of both lump sum tax and proportional taxes. The tax function is defined as;

$$\text{Tax function } T = \bar{T} + t Y$$

Where \bar{T} = autonomous constant tax

t = income tax rate

T = total tax

The consumption function is

$$C = a + b Y_d$$

Where $Y_d = Y - T$ or $Y - \bar{T} - t Y$

$$C = a + b(Y - \bar{T} - t Y)$$

Therefore, the equilibrium level of national income can be measured as-

$$Y = C + I + G$$

$$Y = a + bY_d + I + G$$

$$Y = a + b(Y - \bar{T} - tY) + I + G$$

$$Y = a + bY - b\bar{T} - b t Y + I + G$$

$$Y - bY + b t Y = a - b\bar{T} + I + G$$

$$Y(1 - b + b t) = a - b\bar{T} + I + G$$

$$Y = \frac{1}{1 - b(1 - t)} (a - b\bar{T} + I + G)$$

Where $\frac{1}{1 - b(1 - t)}$ (represent the tax multiplier)

Illustration 15

New
Addition

For a closed economy, the following data is given –

Consumption $C = 75 + 0.5 (Y - T)$; Investment $I = 80$; Total tax $T = 25 + 0.1Y$;
Government expenditure $G = 100$.

- Find out equilibrium income?
- What is the value of multiplier?

Solution

$$a) Y = C + I + G$$

$$Y = 75 + 0.5(Y - 25 - 0.1Y) + 80 + 100$$

$$Y(1-0.5+0.05) = 75-12.5+80+100$$

$$Y = \frac{1}{1-0.5+0.05} (242.5)$$

$$Y = 440.91$$

$$b) \text{ Multiplier} = \frac{1}{1-b(1-t)} = 1/[1-0.5(1-0.1)] = 1.82$$

(iv) Income Determination with Tax (as a Function of Income), Government Expenditure and Transfer Payments

New
Addition

Here consumption function is written as $C = a + b(Y - \bar{T} - tY + TR)$

$$Y = a + b(Y - \bar{T} - tY + TR) + I + G$$

$$Y = \frac{1}{1-b(1-t)} (a - b\bar{T} + bTR + I + G)$$

Illustration 16

New
Addition

Suppose $C = 100 + 0.80(Y - T + TR)$; $I = 200$; $T = 25 + 0.1Y$; $TR = 50$; $G = 100$

Find out equilibrium level of Income?

Solution

$$Y = C + I + G$$

$$Y = 100 + 0.80(Y - T + TR) + I + G$$

$$Y = 100 + 0.80(Y - 25 - 0.1Y + 50) + 200 + 100$$

$$Y - 0.80Y + 0.08Y = 420$$

$$Y(1-0.8+0.08) = 420$$

$$Y = 1500$$



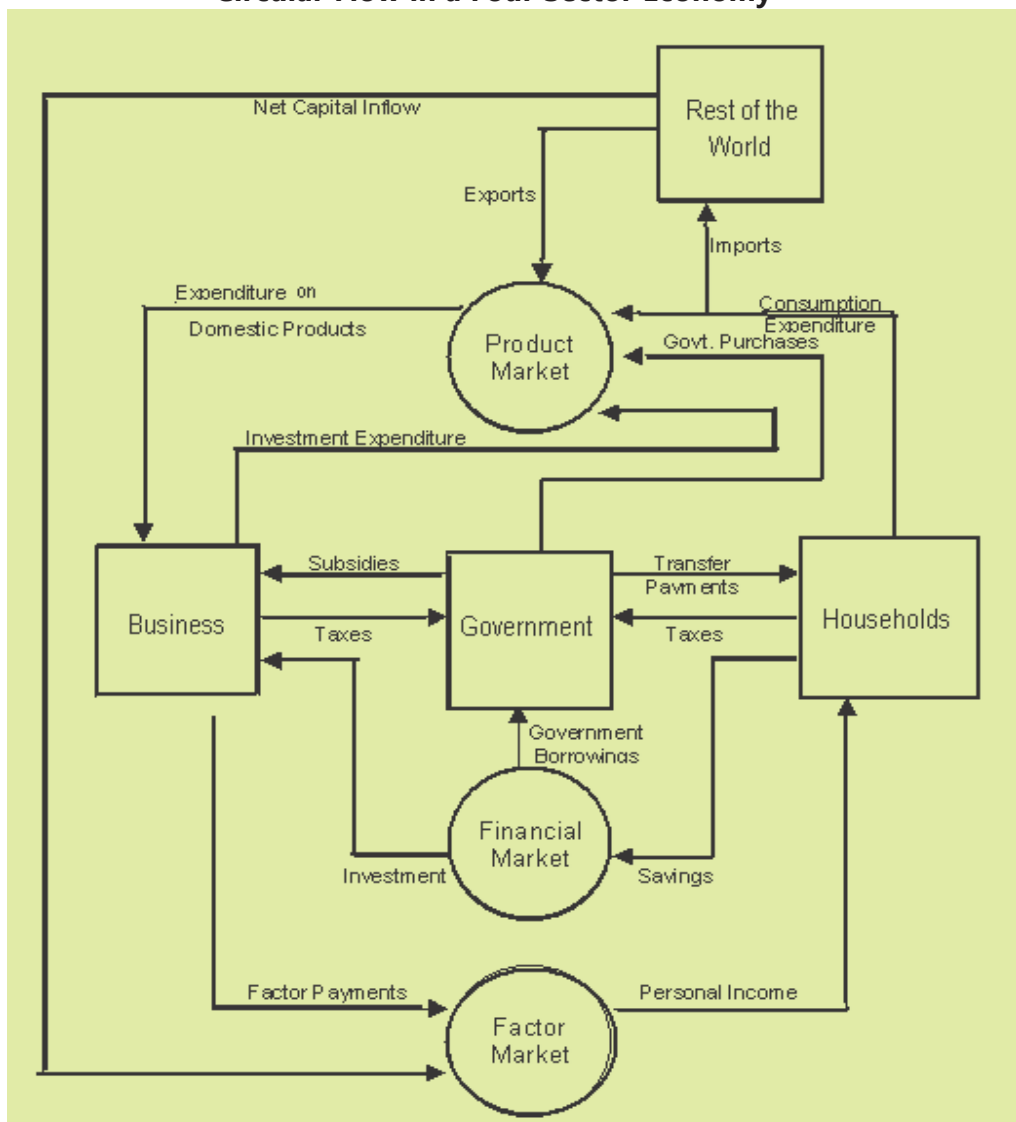
2.7 DETERMINATION OF EQUILIBRIUM INCOME: FOUR SECTOR MODEL

The four sector model includes all four macroeconomic sectors, the household sector, the business sector, the government sector, and the foreign sector. The foreign sector includes households, businesses, and governments that reside in

other countries. The following flowchart shows the circular flow in a four sector economy.

In the four sector model, there are three additional flows namely: exports, imports and net capital inflow which is the difference between capital outflow and capital inflow. The $C+I+G+(X-M)$ line indicates the aggregate demand or the total planned expenditures of consumers, investors, governments and foreigners (net exports) at each income level.

Figure 1.2.10
Circular Flow in a Four Sector Economy



In equilibrium, we have

$$Y = C + I + G + (X - M) \quad (2.14)$$

The domestic economy trades goods with the foreign sector through exports and imports. Exports are the injections in the national income, while imports act as leakages or outflows of national income. Exports represent foreign demand for domestic output and therefore, are part of aggregate demand. Since imports are not demands for domestic goods, we must subtract them from aggregate demand. The demand for imports has an autonomous component and is assumed to depend on income. Imports depend upon marginal propensity to import which is the increase in import demand per unit increase in GDP. The demand for exports depends on foreign income and is therefore exogenously determined and are autonomous. Imports are subtracted from exports to derive net exports, which is the foreign sector's contribution to aggregate expenditures. Since import has an autonomous component (\bar{M}) and is assumed to depend on income (Y) and marginal propensity to import (m), the import function is expressed as $M = \bar{M} + mY$. Marginal propensity to import $m = \Delta M / \Delta Y$ is assumed to be constant.

As noted above, the equilibrium level of national income is determined at the level at which the aggregate demand is equal to aggregate supply. As the aggregate demand in the four sector model is given in equation 2.14, the equilibrium condition is expressed as follows-

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

$$\text{Where } C = a + b(Y - T)$$

$$M = \bar{M} + mY$$

The equilibrium level of National Income can now be expressed by –

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

$$Y = a + b(Y - T) + I + G + X - \bar{M} - mY$$

$$Y - bY + mY = a - bT + I + G + X - \bar{M}$$

$$Y = \frac{1}{1 - b + m} (a - bT + I + G + X - \bar{M})$$

The economy being in equilibrium, suppose export of country increases by ΔX autonomously, all other factors remaining constant. By incorporating the increase in exports by ΔX , the equilibrium equation of the country can be expressed as

New
Addition

$$Y + \Delta Y = \frac{1}{1-b+m} (a - bT + I + G + X - \bar{M} + \Delta X) \text{ or}$$

$$Y + \Delta Y = \frac{1}{1-b+m} (a - bT + I + G + X - \bar{M}) + \frac{1}{1-b+m} \Delta X$$

$$\text{As, } Y = \frac{1}{1-b+m} (a - bT + I + G + X - \bar{M})$$

$$\text{We get, } Y + \Delta Y = Y + \frac{1}{1-b+m} \Delta X$$

$$\text{Subtracting } Y \text{ from both sides, we get } \Delta Y = \frac{1}{1-b+m} \Delta X$$

$$\text{By rearranging } \Delta Y = \frac{1}{1-b+m} \Delta X, \text{ we get}$$

$$\frac{\Delta Y}{\Delta X} = \frac{1}{1-b+m}$$

Or alternatively written as

$$\frac{\Delta Y}{\Delta X} = \frac{1}{1-(b-m)}$$

New
Addition

The term $\frac{1}{1-b+m}$ is known as foreign trade multiplier whose value is determined by marginal propensity to consume (b) and marginal propensity to import (m).

If in the model proportional income tax and government transfer payments are incorporated, then only the denominator of multiplier will change. If income tax is of form $T = \bar{T} + tY$ where \bar{T} is constant lump-sum, t is the proportion of income tax and $TR > 0$ and autonomous, then the four sector model can be expressed as:

New
Addition

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

$$\text{Where } C = a + b(Y - \bar{T} - tY + TR)$$

$$M = \bar{M} + mY.$$

The equilibrium level of National Income can now be expressed as:

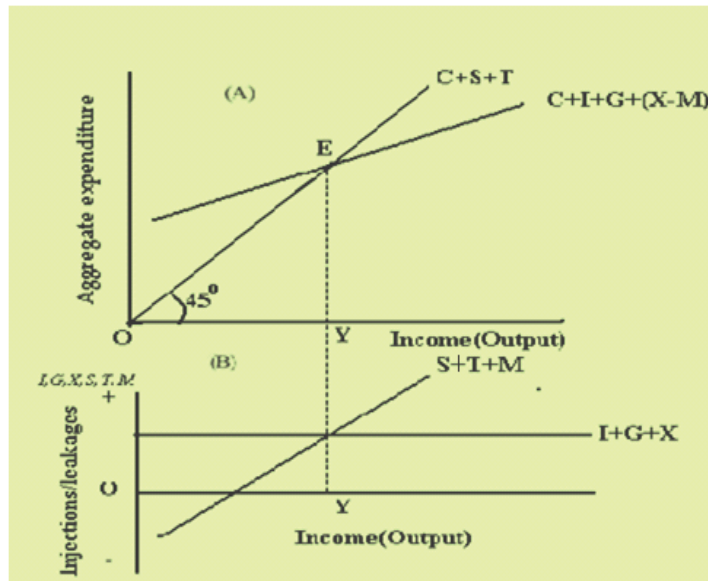
$$Y = \frac{1}{1-b(1-t)+m} (a - b\bar{T} + bTR + I + G + X - \bar{M})$$

New
Addition

With the help of figure 1.2.11, we shall explain income determination in the four sector model.

Figure 1.2.11

Determination of Equilibrium Income: Four Sector Model



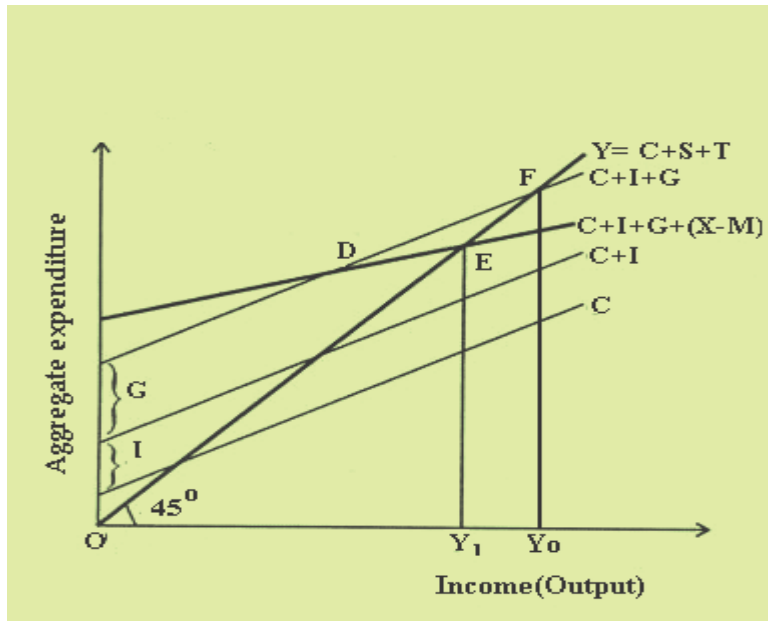
Equilibrium is identified as the intersection between the $C + I + G + (X - M)$ line and the 45-degree line. The equilibrium income is Y. From panel B, we find that the leakages ($S+T+M$) are equal to injections ($I+G+X$) only at equilibrium level of income.

We have seen above that only net exports ($X-M$) are incorporated into the four sector model of income determination. We know that injections increase the level of income and leakages decrease it. Therefore, if net exports are positive ($X > M$), there is net injection and national income increases. Conversely, if $X < M$, there is net withdrawal and national income decreases. The figure 1.2.12 depicts a case of $X < M$.

We find that when the foreign sector is included in the model (assuming $M > X$), the aggregate demand schedule $C+I+G$ shifts downward with equilibrium point shifting from F to E. The inclusion of foreign sector (with $M > X$) causes a reduction in national income from Y_0 to Y_1 . Nevertheless, when $X > M$, the aggregate demand schedule $C+I+G$ shifts upward causing an increase in national income. Learners may infer diagrammatic expressions for possible changes in equilibrium income for $X > M$ and $X = M$.

Figure 1.2.12

Effects on Income When Imports are Greater than Exports



We have seen in section 2.5 above that equilibrium income is expressed as a product of two terms: $\Delta Y = k \Delta I$; i.e. the level of autonomous investment expenditure and the investment multiplier. The autonomous expenditure multiplier in a four sector model includes the effects of foreign transactions and is stated as $\frac{1}{(1-b+m)}$ where 'm' is the propensity to import which is greater than zero. You may recall that the multiplier in a closed economy is $\frac{1}{(1-b)}$

The greater the value of 'm', the lower will be the autonomous expenditure multiplier. The more open an economy is to foreign trade, (the higher m is) the smaller will be the response of income to aggregate demand shocks, such as changes in government spending or autonomous changes in investment demand. A change in autonomous expenditures— for example, a change in investment spending,—will have a direct effect on income and an induced effect on consumption with a further effect on income. The higher the value of m, larger the proportion of this induced effect on demand for foreign, not domestic, consumer goods. Consequently, the induced effect on demand for domestic goods and, hence on domestic income will be smaller. The increase in imports per unit of income constitutes an additional leakage from the circular flow of (domestic)

income at each round of the multiplier process and reduces the value of the autonomous expenditure multiplier.

An increase in demand for exports of a country is an increase in aggregate demand for domestically produced output and will increase equilibrium income just as an increase in government spending or an autonomous increase in investment. In summary, an increase in the demand for a country's exports has an expansionary effect on equilibrium income, whereas an autonomous increase in imports has a contractionary effect on equilibrium income. However, this should not be interpreted to mean that exports are good and imports are harmful in their economic effects. Countries import goods that can be more efficiently produced abroad, and trade increases the overall efficiency of the worldwide allocation of resources. This forms the rationale for attempts to stimulate the domestic economy by promoting exports and restricting imports.

Numerical Illustration

Illustration 17

New
Addition

The consumption function is $C = 40 + 0.8Y_d$, $T = 0.1Y$, $I = 60$ Crores $G = 40$ Crores, $X = 58$ and $M = 0.05 Y$. Find out equilibrium level of income, Net Export, net export if export were to increase by 6.25.

Solution

$$C = 40 + 0.8Y_d$$

$$C = 40 + 0.8(Y - 0.1Y)$$

$$Y = C + I + G + (X - M) = 40 + 0.8(Y - 0.1Y) + 60 + 40 + (58 - 0.05Y)$$

$$Y = 40 + 0.8(0.9Y) + 60 + 40 + 58 - 0.05Y$$

$$Y - 0.72Y + 0.05Y = 198$$

$$Y(1 - 0.72 + 0.05) = 198$$

$$Y(0.33) = 198$$

$$Y = 198 / 0.33 = 600 \text{ Crores}$$

$$\text{Net Export} = X - M = 58 - 0.05Y$$

$$58 - 0.05(600) = 58 - 30 = 28$$

If exports increase by 6.25, then exports = 64.25

$$\text{Then, } Y = 40 + 0.8(Y - 0.1Y) + 60 + 40 + (64.25 - 0.05Y)$$

$$Y(1-0.72+0.05) = 204.5$$

$$Y(0.33) = 204.5$$

$$Y=204.5/0.33 = 619.697$$

$$\text{Then import} = .05 \times 619.697 = 30.98$$

$$\text{Net Export} = 64.25 - 30.98 = 33.27 \text{ Crores}$$

Thus, there is surplus in balance of trade as Net Exports are positive.

Illustration 18

New
Addition

An economy is characterised by the following equation-

$$\text{Consumption} \quad C = 60 + 0.9Y_d$$

$$\text{Investment} \quad I = 10$$

$$\text{Government expenditure} \quad G = 10$$

$$\text{Tax} \quad T = 0$$

$$\text{Exports} \quad X = 20$$

$$\text{Imports} \quad M = 10 + 0.05 Y$$

What is the equilibrium income?

Calculate trade balance and foreign trade multiplier.

Solution

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

$$= 60 + 0.9(Y - 0) + 10 + 10 + (20 - 10 - 0.05Y)$$

$$= 60 + 0.9 Y + 30 - 0.05 Y$$

$$Y = 600$$

$$\text{Trade Balance} = X - M = 20 - 10 - 0.05(600) = -20$$

Thus, trade balance in deficit.

$$\text{Foreign trade multiplier} = \frac{1}{1 - b + m} = \frac{1}{1 - 0.9 + 0.05} = 6.66$$

2.8 CONCLUSION

According to the Keynesian theory of income and employment, national income depends upon the aggregate effective demand. If the aggregate effective demand falls short of that output at which all those who are both able and willing to work are employed, it will result in unemployment in the economy. Consequently, there will be a gap between the economy's actual and optimum potential output. On the contrary, if the aggregate effective demand exceeds the economy's full employment output (production capacity), it will result in inflation. Nominal output will increase, but it simply reflects higher prices, rather than additional real output. It is not necessary that the equilibrium aggregate output will also be the full employment aggregate output. It is undesirable and a cause of great concern for the society and government if large number of people remains unemployed. In the absence of government policies to stabilize the economy, incomes will be unstable because of the instability of investment. Full employment could be maintained in a capitalist economy only if governments are willing to incur countercyclical budgetary deficits to offset the inbuilt tendency towards private over-saving. By making appropriate changes in government spending (G) and taxes, the government can counteract the effects of shifts in investment. Appropriate changes in fiscal policy by adjusting government expenditure and taxes could keep the autonomous expenditure constant even in the face of undesirable changes in the investment.

SUMMARY

- John Maynard Keynes in his masterpiece 'The General Theory of Employment Interest and Money' published in 1936 put forth a comprehensive theory to explain the determination of equilibrium aggregate income and output in an economy.
- The equilibrium analysis is best understood with a hypothetical simple two-sector economy which has only households and firms with all prices (including factor prices), supply of capital and technology constant; the total income produced Y , accrues to the households and equals their disposable personal income.
- The equilibrium output occurs when the desired amount of output demanded by all the agents in the economy exactly equals the amount produced in a given time period.

- In the two-sector economy aggregate demand (AD) or aggregate expenditure consists of only two components: aggregate demand for consumer goods and aggregate demand for investment goods, I being determined exogenously and constant in the short run.
- Consumption function expresses the functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as $C = f(Y)$. The specific form consumption function, proposed by Keynes $C = a + bY$
- The value of the increment to consumer expenditure per unit of increment to income (b) is termed the Marginal Propensity to Consume (MPC).
- The Keynesian assumption is that consumption increases with an increase in disposable income ($b > 0$), but that the increase in consumption will be less than the increase in disposable income ($b < 1$).
- The propensity to consume refers to the proportion of the total and the marginal incomes which people spend on consumer goods and services.
- The proportion or fraction of the total income consumed is called 'average propensity to consume' (APC) = $\frac{\text{Total Consumption}}{\text{Total Income}}$
- Since $Y = C + S$, consumption and saving functions are counterparts of each other. The condition for national income equilibrium can thus be expressed as $C + I = C + S$
- Changes in income are primarily from changes in the autonomous components of aggregate demand, especially from changes in the unstable investment component.
- The investment multiplier k is defined as the ratio of change in national income (ΔY) due to change in investment (ΔI)
- The marginal propensity to consume (MPC) is the determinant of the value of the multiplier. The higher the marginal propensity to consume (MPC) the greater is the value of the multiplier.
- The more powerful the leakages are, the smaller will be the value of multiplier.
- Aggregate demand in the three sector model of closed economy (neglecting foreign trade) consists of three components namely, household consumption (C), desired business investment demand (I) and the government sector's demand for goods and services (G).

- The government sector imposes taxes on households and business sector, effects transfer payments to household sector and subsidy payments to the business sector, purchases goods and services and borrow from financial markets.
- In equilibrium, it is also true that the (S + T) schedule intersects the (I + G) horizontal schedule.

- Taxes act as leakage from the economic system. Thus, tax multiplier when, $T = \bar{T} - tY$, is $\frac{1}{1-b(1-t)} < \frac{1}{(1-b)}$

New Addition

- The four sector model includes all four macroeconomic sectors, the household sector, the business sector, the government sector, and the foreign sector and in equilibrium, we have $Y = C + I + G + (X-M)$
- The domestic economy trades goods with the foreign sector through exports and imports.
- Imports are subtracted from exports to derive net exports, which is the foreign sector's contribution to aggregate expenditures. If net exports are positive ($X > M$), there is net injection and national income increases. Conversely, if $X < M$, there is net withdrawal and national income decreases.
- The autonomous expenditure multiplier in a four sector model includes the effects of foreign transactions and is stated as $\frac{1}{(1-b+m)}$ against $\frac{1}{(1-b)}$ in a closed economy.
- The greater the value of m , the lower will be the autonomous expenditure multiplier.
- An increase in the demand for exports of a country is an increase in aggregate demand for domestically produced output and will increase equilibrium income just as would an increase in government spending or an autonomous increase in investment.

TEST YOUR KNOWLEDGE

I Multiple Choice Questions

- In the Keynesian model, equilibrium aggregate output is determined by
 - aggregate demand
 - consumption function
 - the national demand for labor
 - the price level
- Keynes believed that an economy may attain equilibrium level of output
 - only at the full-employment level of output
 - below the full-employment level of output
 - only if prices were inflexible
 - a) and c) above
- According to Keynes, consumption expenditure is determined by
 - the level of interest rates
 - extent of government taxes and subsidies
 - disposable income
 - autonomous investment expenditure
- The marginal propensity to consume (MPC) can be defined as
 - a change in spending due to a change in income
 - a change in income that is saved after consumption
 - part of income that is spent on consumption.
 - part of income that is not saved.
- If the consumption function is expressed as $C = a + bY$ then b represents
 - autonomous consumer expenditure when income is zero
 - the marginal propensity to consume.
 - the expenditure multiplier when consumption is increased
 - part of disposable income

6. If the consumption function is expressed as $C = a + bY$ then a represents
- (a) autonomous consumer expenditure.
 - (b) the marginal propensity to consume.
 - (c) the consumption income relationship
 - (d) Non- linear consumption function
7. If the consumption function is $C = 20 + 0.5Y_d$, then an increase in disposable income by ` 100 will result in an increase in consumer expenditure by `-----
- (a) 25
 - (b) 70
 - (c) 50
 - (d) 100
8. If the autonomous consumption equals ` 2,000 and the marginal propensity to consume equals 0.8. If disposable income equals ` 10,000, then total consumption will be `-----
- (a) 8,000
 - (b) 6,000
 - (c) 10,000
 - (d) None of the above
9. In the Keynesian cross diagram, the point at which the aggregate demand function crosses the 45-degree line indicates the
- (a) level of full employment income.
 - (b) less than full employment level of income.
 - (c) equilibrium level of income which may or may not be full employment level of income
 - (d) autonomous level of income which may not be full employment level of income
10. In a closed economy, aggregate demand is the sum of
- (a) consumer expenditure, demand for exports and government spending.

- (b) consumer expenditure, planned investment spending and government spending.
 - (c) consumer expenditure, actual investment spending, government spending and net exports.
 - (d) consumer expenditure, planned investment spending, government spending, and net exports.
11. Under equation $C = a + by$, $b = 0.8$, what is the value of 2 sector expenditure multiplier?
- (a) 4
 - (b) 2
 - (c) 5
 - (d) 1

New
Addition

II Short Answer Type Questions

1. Define equilibrium output?
2. What are the components of aggregate expenditure in two sector economy?
3. Define consumption function?
4. Explain the concept of marginal propensity to consume?
5. Define average propensity to consume?
6. Distinguish between saving function and marginal propensity to save.
7. What is meant by autonomous expenditure?
8. What would happen if aggregate expenditures were to exceed the economy's production capacity?
9. Outline the relationship between marginal propensity to consume and multiplier.
10. What is the effect of income leakages on multiplier?
11. List out the components of aggregate demand in a three-sector economy?
12. What role does government play in a three-sector economy?
13. Define net exports?

14. How do imports affect investment multiplier?

15. Differentiate excess demand and deficient demand.

New
Addition

III Long Answer Type Questions

1. Explain Keynesian concept of equilibrium aggregate income? Illustrate your answer with appropriate diagrams.
2. Describe the circular flow in a simple two-sector model?
3. Explain the concept of investment multiplier? Give suitable examples?
4. Describe the components of aggregate expenditure in two, three and four sector economy models.
5. Explain national income determination in a two sector economy?
6. Distinguish between national income determination in three and four sector economy models?
7. Define multiplier. Explain the functioning of multiplier?
8. Outline the changes in equilibrium aggregate income on account of changes in its determinants?
9. Elucidate the relationship between consumption function and saving function?
10. Describe the rationale behind multiplier? Point out the factors that weaken the multiplier?
11. How do imports and exports with the rest of the world affect the level of income and output?

12. Define Inflationary gap and how it arises in an economy?

New
Addition

IV Application Oriented Question

1. In a two sector economy, the business sector produces 7000 units at an average price of ₹ 5.
 - (a) What is the money value of output?
 - (b) What is the money income of households?
 - (c) If households spend 80 percent of their income, what is the total consumer expenditure?
 - (d) What are the total money revenues received by the business sector?

- (e) What should happen to the level of output?
2. Assume that an economy's consumption function is specified by the equation $C = 500 + 0.80Y$.
- (a) What will be the consumption when disposable income (Y) is ₹ 4,000, ₹ 5,000, and ₹ 6,000?
- (b) Find saving when disposable income is ₹ 4,000, ₹ 5,000, and ₹ 6,000.
- (c) What amount of consumption for consumption function C is autonomous?
- (d) What amount is induced when disposable income is ₹ 4,000? ₹ 5,000? ₹ 6,000?
3. Find the value of the multiplier when
- (a) MPC is 0.2
- (b) MPC is 0.5
- (c) MPC is 0.8
4. For the linear consumption function is $C = 700 + 0.8Y$; I is ₹ 1200 and Net exports $X-M = 100$. Find equilibrium output?
5. **Suppose in an economy** New Addition
- $C = 100 + b(Y - 50 - tY)$; $I = 50$; $G = 50$; $X = 10$; $M = 5 + 0.1Y$; MPC (b) = 0.8; Proportional income tax rate (t) = 0.25
- (a) Find the equilibrium national income, foreign trade multiplier, equilibrium value of imports.
- (b) If equilibrium national income falls short of full employment income by ₹ 50, how much government should increase its expenditure to attain full – employment?
6. **Suppose the consumption function is $C=50+0.8Y_d$, $I=180$ crores, $G=190$, crores, $T=0.20Y$** New Addition
- (a) Find the equilibrium level of income.
- (b) Find the revenue from taxes at equilibrium. Is the government budget balanced?
- (c) Find the equilibrium level of income when investment increases by 120 crores.

7. Given the following equations:

$$C=50+0.6Y_d, I= 160, T =30, G =28, X-M = 20 -0.05 Y$$

- (a) Find the equilibrium level of income.
- (b) Find the net exports at equilibrium.
- (c) Find the income and net exports when investment increases to 195.

ANSWERS/ HINTS

Multiple Choice Type Questions

1. (a) 2. (b) 3. (c) 4. (a) 5. (b) 6. (a)
7. (c) 8. (c) 9. (c) 10. (b) 11. (c)

II Hints to Short Answer Type Questions

1. Equilibrium output occur when the desired amount of output demanded by all the agents in the economy exactly equals the amount produced in a given time period.
2. Only two components namely: aggregate demand for consumer goods (C), and aggregate demand for investment goods (I)
3. Functional relationship between aggregate consumption expenditure and aggregate disposable income, expressed as $C = f(Y)$;shows the level of consumption (C) corresponding to each level of disposable income (Y)
4. The value of the increment to consumer expenditure per unit of increment to income; termed b such that $0 < b < 1$.
5. The ratio of total consumption to total income i.e. $\frac{C}{Y}$
6. The saving function shows the level of saving (S) at each level of disposable Income(Y). The increment to saving per unit increase in disposable income $(1 - b)$ is called the marginal propensity to save.
7. Expenditures that do not vary with the level of income. They are determined by factors other than income such as business expectations and economic policy
8. Aggregate expenditures in excess of output lead to a higher price level once the economy reaches full employment. Nominal output will increase, but it merely reflects higher prices, rather than additional real output.

9. The marginal propensity to consume is the determinant of the value of the multiplier. The higher the (MPC) the greater is the value of the multiplier.
10. The more powerful the leakages are, the smaller will be the value of multiplier.
11. Three components namely, household consumption(C), desired business investment demand (I) and the government sector's demand for goods and services (G).
12. Imposes taxes on households and business sector, effects transfer payments to household sector and subsidy payments to the business sector, purchases goods and services and borrows from financial markets
13. The foreign sector's contribution to aggregate expenditures; derived by subtracting imports from exports **i.e. net exports.**
14. The greater the value of propensity to import m , the lower will be the autonomous expenditure multiplier.
15. If the aggregate demand is for an amount of output greater than the full employment level of output, then we say there is excess demand. Excess demand gives rise to 'inflationary gap'. On the other hand, If the aggregate demand is for an amount of output less than the full employment level of output, then we say there is deficient demand. Deficient demand gives rise to a 'deflationary gap' or 'recessionary gap'. Recessionary gap also known as 'contractionary gap'.

III Hints to Long Answer Type Questions

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1. (a) The money value of output equals total output times the average price per unit. The money value of output is $(7,000 \times 5) = ₹ 35,000$.
- (b) In a two sector economy, households receive an amount equal to the money value of output. Therefore, the money income of households is the same as the money value of output i.e ₹ 35,000.
- (c) Total spending by households $(₹ 35,000 \times 0.8)$ i.e. ₹ 28,000.
- (d) The total money revenues received by the business sector is equal to aggregate spending by households i.e. ₹ 28,000.
- (e) The business sector makes payments of ₹ 35,000 to produce output, whereas the households purchase only output worth ₹ 28,000 of what is produced. Therefore, the business sector has unsold inventories valued at ₹ 7,000. They should be expected to decrease output.

2. (a) Consumption for each level of disposable income is found by substituting the specified disposable income level into the consumption equation.

Thus, for $Y = ₹ 4,000$, $C = ₹ 500 + 0.80(₹ 4,000) = ₹ 500 + ₹ 3,200 = ₹ 3,700$.

Likewise C is ₹ 4,500 when $Y = ₹ 5,000$, and ₹ 5,300 when $Y = ₹ 6,000$.

- (b) Saving is the difference between disposable income and consumption. It is the difference between the consumption line and the 45 line at each level of disposable income

Using the calculation from part a) above, we find that saving is ₹ 300 when Y is ₹ 4,000; ₹ 500 when Y is ₹ 5,000 and ₹ 700 when Y is ₹ 6,000.

- (c) Autonomous consumption is the amount consumed when disposable income is zero; autonomous consumption is ₹ 500, i.e the consumption expenditure when the consumption line C intersects the vertical axis and disposable income is 0. Since autonomous consumption is unrelated to income, autonomous consumption is ₹ 500 for all levels of income.
- (d) Induced consumption is the amount of consumption that depends upon the level of income. Consumption is ₹ 3,700 when disposable income is ₹ 4,000. Since ₹ 500 is autonomous (i.e consumed regardless of the income level), ₹ 3,200 out of the ₹ 3,700 level of consumption is induced by disposable income. Similarly, Induced consumption is

₹ 4,000 when disposable income is ₹ 5,000, and ₹ 4,800 when disposable income is ₹ 6,000.

3. The value of the multiplier (k) is found by relating the change in output (ΔY) to the initial change in aggregate spending. The value of the multiplier is directly related to the level of MPC, i.e., the greater the MPC, the larger the value of the multiplier. The value of the multiplier is found from the equation $k = 1 / (1 - MPC)$.

(a) Thus, when MPC is 0.2, the multiplier is 1.25

(b) When MPC is 0.5, the multiplier is 2

(c) When MPC = 0.80, the multiplier is 5

4. The equilibrium level of output can be found by equating output and aggregate spending i.e. by solving $Y = C + I + X - M$ for Y

$$Y = C + I + X - M$$

$$Y = 700 + 0.8Y + 1200 + 100$$

$$Y - 0.8Y = 700 + 1200 + 100$$

$$0.2Y = 2000$$

$$Y = 2000 / 0.2 = 10,000$$

5. (a) $Y = C + I + G + X - M$

$$Y = 100 + b(Y - 50 - tY) + 50 + 50 + 10 - 5 - 0.1Y$$

$$Y = 100 + 0.8(Y - 50 - 0.25Y) + 105 - 0.1Y$$

$$Y = 100 + 0.8Y - 40 - 0.2Y + 105 - 0.1Y$$

$$Y = 165 + 0.8Y - 0.2Y - 0.1Y$$

$$Y = 165 + 0.5Y$$

$$Y - 0.5Y = 165$$

$$Y = 165 / 0.5$$

$$\mathbf{Y = 330}$$

OR

$$Y = \frac{1}{1 - b(1 - t) + m} (a - bT + I + G + X - \bar{M})$$

$$Y = \frac{1}{1 - 0.8(1 - 0.25) + 0.1} (100 - 0.8(50) + 50 + 50 + 10 - 5)$$

$$Y = \frac{1}{0.5} (100 - 40 + 105)$$

$$Y = 165/0.5 = 330$$

$$\text{Foreign trade multiplier} = \frac{1}{1 - b(1 - t) + m} = \frac{1}{1 - 0.8(1 - 0.25) + 0.1} = 2$$

Equilibrium value of imports can be obtained by substituting the equilibrium income in the import function. Thus,

$$M = 5 + 0.1 Y = 38$$

- (b) Required increase in government expenditure to attain ₹ 50 increase in income can be obtained as under

$$\Delta Y = \text{Foreign trade multiplier} \times \Delta G$$

$$\Delta Y = \frac{1}{1 - b(1 - t) + m} \Delta G \Rightarrow \Delta Y = 2 \cdot \Delta G$$

$$\Delta G = 50/2 = 25$$

6. (a) $Y = 50 + 0.8(Y - .20Y) + 180 + 190,$

$$Y_e = 420/.36 = 1166.66 \text{ Crores}$$

(b) $T = 0.2 (1166.66) = 233.332 \text{ Crores}$

$G = 190 < T = 233.332$, thus, budget is not in balance. There exists a budget Surplus

(c) Change in $Y = \text{Change in } I / (1 - b + bt) = 120 / (1 - .8 + .16) = 120/.36 = 333.33 \text{ Crores}$, So new Y equilibrium:

$$Y_{\text{new}} = 1166.66 + 333.33 = 1499.99 \text{ Crores}$$

7. (a) $Y = AE$

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

$$Y = 50 + 0.6(Y - T) + I + G + (X - M)$$

$$240 + .55Y = Y$$

$$Y_e = 533.33 \text{ Crores}$$

(b) $X-M=20-.05(533.33) = -6.66$ Crores

(c) Change in $I= 35$

Change in $Y= 35/(1-b+m) =35/ (1-.6+.05) = 77.77$ Crores

Thus, $Y_e= 533.33+77.77 =611.1$ Crores

$X-M @ Y_e= 611.1= 20-.05(611.1) =10.555$ Crores

PUBLIC FINANCE



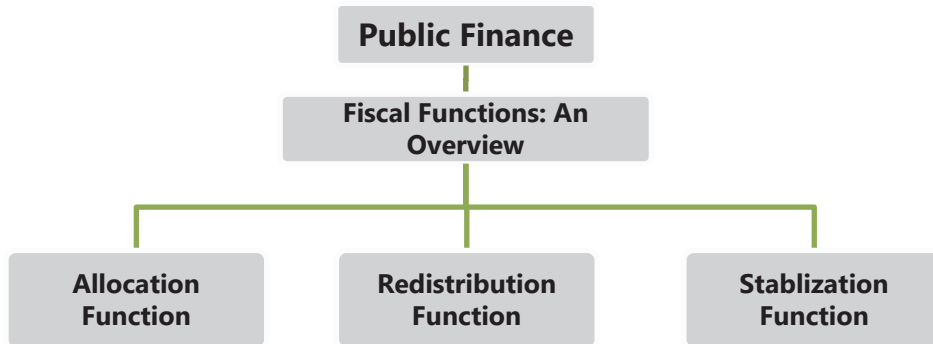
UNIT I: FISCAL FUNCTIONS: AN OVERVIEW

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Enumerate the rationale of government intervention in markets
- ❑ Explain the three-branch taxonomy of the role of government in a market economy
- ❑ Describe the various interventionist measures adopted by the government
- ❑ Analyze the governmental economic actions and classify them according to the economic functions of the government

UNIT OVERVIEW



1.1 INTRODUCTION

The following are a few headlines which appeared recently in the leading business dailies:

1. Start-ups will be exempted from income tax for 3 years as part of benefits being given to entrepreneurs establishing start-ups.
2. Government looking at subsidizing R&D to boost foreign investments.
3. On May 22, 2020, the Monetary Policy Committee (MPC) in an off-cycle meeting of the members decides to cut key interest rates to make banks increase lending to mitigate the impact of COVID-19 on business and industry.
4. Government announces Rs. 3 lakh Crores 'collateral-free loan scheme' for businesses, especially micro, small and medium enterprises (MSMEs), as part of Rs 20-lakh-crore economic stimulus package to deal with the COVID-19 pandemic.
5. Free food kits and essential groceries supplied by government during COVID-19 pandemic

New
Addition

Each of the above statements represents a proactive response on the part of the government to achieve certain objectives in the interest of the economy and the society.

What exactly is the government planning to accomplish by the above measures? On close examination, we can find that the first two steps are intended to boost up innovation and entrepreneurship; the next two are policy responses which seek to revive business and industry in view of the deteriorating outlook for economic activity due to the corona virus pandemic and the last one is to bring in welfare to the underprivileged sections of the society. The government does not expect the economic variables underlying the above mentioned phenomena to function automatically; rather it intervenes to direct them to function in particular directions. Such intervention on the part of the government is based on the belief that the objective of the economic system and the role of government is to improve the wellbeing of individuals and households.

Change

We have experienced in our day-to-day life that though governments at various levels impose many rules and regulations in the economy, some matters still go unregulated. Similarly, most of the goods and services that we consume are provided to us by private producers, but certain goods and services are provided exclusively by the government. For a variety of reasons, we believe that governments should accomplish some activities and should not do others. The purpose of this lesson is to examine the economic functions of the government and to understand why the government should invariably perform them.

1.2 THE ROLE OF GOVERNMENT IN AN ECONOMIC SYSTEM

We shall first consider why an economic system should be in place. The basic economic problem of scarcity arises from the fact that on account of qualitative as well as quantitative constraints, the resources available to any society cannot produce all economic goods and services that its members desire to have. Therefore, an economic system should exist to answer the basic questions such as what, how and for whom to produce and how much resources should be set apart to ensure growth of productive capacity. The modern society, in general, offers three alternate economic systems through which the decisions of resource reallocation may be made namely, the market, the government and a mixed system where both markets and governments simultaneously determine resource allocation. Correspondingly, we have three economic systems namely, capitalism, socialism and mixed economy, each with varying degrees of state intervention in economic activities.

New Addition

Adam Smith is often described as a bold advocate of free markets and minimal governmental activity. However, Smith saw an important resource allocation role for government when he underlined the role of government in national defence, maintenance of justice and the rule of law, establishment and maintenance of highly beneficial public institutions and public works which the market may fail to produce on account of lack of sufficient profits. Since the 1930s, more specifically as a consequence of the great depression, the state's role in the economy has been distinctly gaining in importance, and therefore, the traditional functions of the state as described above, have been supplemented with what is referred to as economic functions (also called fiscal functions or public finance function). While there are differences among different countries in respect of the nature and extent of government intervention in economies, all of them agree on one point that the governments are expected to play a major role in the economy. This comes out of the belief that government intervention will invariably influence the performance of the economy in a positive way.

Richard Musgrave, in his classic treatise 'The Theory of Public Finance' (1959), introduced the three-branch taxonomy of the role of government in a market economy. Musgrave believed that, for conceptual purposes, the functions of the government are to be separated into three, namely, resource allocation, (efficiency), income redistribution (fairness) and macroeconomic stabilization. The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function. The allocation function aims to correct the sources of inefficiency in the economic system, while the distribution role ensures that the distribution of wealth and income is fair. Monetary and fiscal policies, the problems of macroeconomic stability, maintenance of high levels of employment and price stability etc fall under the stabilization function. We shall now discuss in detail this conceptual three-function framework of the responsibilities of the government.



1.3 THE ALLOCATION FUNCTION

Resource allocation refers to the way in which the available resources or factors of production are allocated among the various uses to which they might be put. It determines how much of the various kinds of goods and services will actually be produced in an economy. Resource allocation is a critical problem because the resources of a society are limited in supply, while human wants are unlimited. Moreover, any given resource can have many alternative uses. One of the most important functions of an economic system is the optimal or efficient allocation

New
Addition

of scarce resources so that the available resources are put to their best use and no wastages are there.

As we know, the private sector resource allocation is characterized by market supply and demand and price mechanism as determined by consumer sovereignty and producer profit motives. The state's allocation, on the other hand, is accomplished through the revenue and expenditure activities of governmental budgeting. In the real world, resource allocation is both market-determined and government-determined.

A market economy is subject to serious malfunctioning in several basic respects. There is also the problem of nonexistence of markets in a variety of situations. While private goods will be sufficiently provided by the market, public goods will not be produced in sufficient quantities by the market. **Why do markets fail to give the right answers to the questions as to how the resources can be efficiently utilised and what goods should be produced and in what quantities?** In other words, why do markets generate misallocation of resources? Change

Efficient allocation of available resources in an economy takes place only when free and competitive market structure exists and economic agents make rational choices and decisions. Such efficient allocation of resources is assumed to take place only in perfectly competitive markets. In reality, markets are never perfectly competitive. Market failures which hold back the efficient allocation of resources occur mainly due to the following reasons: Change

- Imperfect competition and presence of monopoly power in different degrees leading to under-production and higher prices than would exist under conditions of competition. These distort the choices available to consumers and reduce their welfare.
- Markets typically fail to provide collective goods which are, by their very nature, consumed in common by all people.
- **Markets fail to provide the right quantity of merit goods.** New Addition
- **Common property resources are overused and exhausted in individual pursuit of self-interest.** New Addition
- Externalities which arise when the production and consumption of a good or service affect people and they cannot influence through markets the decision about how much of the good or service should be produced e.g. pollution.

- Factor immobility which causes unemployment and inefficiency.
- Imperfect information, and
- Inequalities in the distribution of income and wealth.

According to Musgrave, the state is the instrument by which the needs and concerns of the citizens are fulfilled and therefore, public finance is connected with economic mechanisms that should ideally lead to the effective and optimal allocation of limited resources. This logic, in effect, makes it necessary for the government to intervene in the market to bring about improvement in social welfare. In the absence of appropriate government intervention, market failures may occur and the resources are likely to be misallocated with too much production of certain goods or too little production of certain other goods. The allocation responsibility of the governments involves suitable corrective action when private markets fail to provide the right and desirable combination of goods and services. Briefly put, market failures provide the rationale for government's allocative function.

You might have noticed that in many cases, the government can provide us with goods and services that we cannot produce on our own or buy at a price from the market. For example, the government establishes property rights and makes the necessary arrangements for enforcing contracts through provision of law enforcement and courts. Goods which involve externalities that are not appropriately accounted for by price mechanism in the market system require intervention by the government for corrective measures. Merit goods which are greatly beneficial to the society also fall under the purview of provision by the government. **Demerit goods are controlled with appropriate legislations.** These interventions do not imply that markets are replaced by government action. In its allocation role, the government acts as a complement rather than as a substitute to the market system in an economy.

New
Addition

The resource allocation role of government's fiscal policy focuses on the potential for the government to improve economic performance through its expenditure and tax policies. The allocative function in budgeting determines who and what will be taxed as well as how and on what the government revenue will be spent. It is concerned with the provision of public goods and the process by which the total resources of the economy are divided among various uses and an optimum mix of various social goods (both public goods and merit goods). The allocation function also involves the reallocation of society's resources from private use to public use.

A variety of allocation instruments are available by which governments can influence resource allocation in the economy. For example,

- government may directly produce an economic good (for example, electricity and public transportation services)
- government may influence private allocation through incentives and disincentives (for example, tax concessions and subsidies may be given for the production of goods that promote social welfare and higher taxes may be imposed on goods such as cigarettes and alcohol)
- government may influence allocation through its competition policies, merger policies etc. which affect the structure of industry and commerce (for example, the Competition Act in India promotes competition and prevents anti-competitive activities)
- governments' regulatory activities such as licensing, controls, minimum wages, and directives on location of industry influence resource allocation.
- government sets legal and administrative frameworks, and
- any mixture of intermediate methods may be adopted by governments

Maximizing social welfare is one of the primary and most commonly manifest reasons for government intervention in the market. However, it is also possible that instead of eliminating market distortions, sometimes government intervention may contribute to generate them. Such instances are referred to as government failure. A government failure is said to occur when government intervention in the market creates inefficiency and leads to misallocation of society's scarce resources. The possible sources of this type of government failures are inadequate information, political self-interest, conflicting objectives, bureaucracy, corruption and red tape, and high administrative costs involved in government intervention. Government failure may be relatively inconsequential if it gets restricted to being simply ineffective and therefore the costs of such intervention are limited to the resources wasted for such intervention. Government failure is more serious when such intervention has generated new and serious problems which will have far reaching adverse consequences on the welfare of citizens. Governments should, therefore, identify and evaluate the inefficiencies that may result from market failure and the potential inefficiencies associated with deliberate government policies framed to redress market failure.

New
Addition



1.4 REDISTRIBUTION FUNCTION

You might have noticed that over the past decades there has been tremendous expansion in economic activities resulting in enormous increase in aggregate output and wealth. However, the outcomes of this growth have not spread evenly across the households. The distribution responsibility of the government arises from the fact that, left to the market, the distribution of income and wealth among individuals in the society is likely to be skewed and therefore the government has to intervene to ensure a more desirable and just distribution. A major function of the present-day governments therefore involves changing the pattern of distribution of income, wealth and opportunities from what the market would put forward to a more socially optimal and egalitarian one.

The distributive function of budget is related to the basic question of for whom should an economy produce goods and services. As such, it is concerned with the adjustment of the distribution of income and wealth so as to ensure distributive justice namely, equity and fairness. Governments can redistribute either through the expenditure side or through the revenue side of the budget. On the expenditure side, governments may provide free or subsidised education, healthcare, housing, food and basic goods etc to deserving people. On the revenue side, redistribution is done through progressive taxation.

New
Addition

Effective demand is determined by the level of income of the households and this in turn determines the distribution of real output among people. Therefore, the distribution function also relates to the manner in which the effective demand over the economic goods is divided among the various individual and family spending units of the society.

The distribution function of the government aims at:

- redistribution of income to achieve an equitable distribution of societal output among households
- advancing the well-being of those members of the society who suffer from deprivations of different types
- providing equality in income, wealth and opportunities
- providing security (in terms of fulfilment of basic needs) for people who have hardships, and
- ensuring that everyone enjoys a minimal standard of living

A few examples of the redistribution function (or market intervention for socio-economic reasons) performed by governments are:

- taxation policies of the government whereby progressive taxation of the rich is combined with provision of subsidy to the poor households
- proceeds from progressive taxes used for financing public services, especially those that benefit low-income households (for example, supply of essential food grains at highly subsidized prices to BPL households)
- employment reservations and preferences to protect certain segments of the population,
- unemployment benefits and transfer payments to provide support to the underprivileged, dependent, and physically handicapped,
- families below the poverty line are provided with monetary aid and aid in kind
- regulation of manufacture and sale of certain products to ensure health and well-being of consumers, and
- special schemes for backward regions and for the vulnerable sections of the population

New
AdditionNew
Addition

In modern times, most of the egalitarian welfare states provide free or subsidized education and health-care system, unemployment benefits, pensions and such other social security measures. There is, nevertheless, an argument that in exercising the redistributive function, there would be a conflict between efficiency and equity. In other words, governments' redistribution policies which interfere with producer choices or consumer choices are likely to have efficiency costs or deadweight losses. For example, greater equity can be achieved through high rates of taxes on the rich; but high rates of taxes could also act as a disincentive to entrepreneurship and work, and discourage people from making savings and investments and taking risks. This in turn will have negative consequences for economic output, productivity and growth of the economy. Consequently, the potential tax revenue may be reduced in future and the scope for government's welfare activities would get seriously limited. As such, an optimal budgetary policy towards any distributional change should reconcile the conflicting goals of efficiency and equity by exercising an appropriate trade-off between them. In other words, redistribution measures should be accomplished with minimal efficiency costs by carefully balancing equity and efficiency objectives.



1.5 STABILIZATION FUNCTION

The theoretical rationale for the stabilization function of the government is derived from the Keynesian proposition that a market economy does not automatically generate full employment and price stability and therefore, the governments should pursue deliberate stabilization policies. Business cycles are natural phenomena in any economy and they tend to occur periodically. The market system has inherent tendencies to create business cycles. The market mechanism is limited in its capacity to prevent or to resolve the disruptions caused by the fluctuations in economic activity. In the absence of appropriate corrective intervention by government, the instabilities that occur in the economy in the form of recessions, inflation etc. may be prolonged for longer periods causing enormous hardships to people, especially the poorer sections of the society. It is also possible that a situation of stagflation (a state of affairs in which inflation and unemployment exist side by side) may set in and make the problem more intricate. The stabilization issue also becomes more complex due to 'contagion effect' whereby the increased international interdependence and financial integration causes forces of instability to get easily transmitted from one country to other countries.

Change

The stabilization function is one of the key functions of fiscal policy and aims at eliminating macroeconomic fluctuations arising from suboptimal allocation of resources. As you might recall, the economic crisis that engulfed the world in 2008 and the more recent global phenomenon of COVID pandemic-induced economic crisis have highlighted the importance of macroeconomic stability and have, therefore, revived immense interest in countercyclical fiscal policy.

New Addition

The stabilization function is concerned with the performance of the aggregate economy in terms of:

- labour employment and capital utilization,
- overall output and income,
- general price levels,
- balance of international payments, and
- the rate of economic growth.

Government's fiscal policy has two major components which are important in stabilizing the economy:

1. an overall effect generated by the balance between the resources the government puts into the economy through expenditures and the resources it takes out through taxation, charges, borrowing etc.
2. a microeconomic effect generated by the specific policies it adopts.

Government's stabilization intervention may be through monetary policy as well as fiscal policy. Monetary policy works through controlling the size of money supply and interest rate in the economy which in turn would affect consumption, investment and prices. Fiscal policy for stabilization purposes attempts to direct the actions of individuals and organizations by means of its expenditure and taxation decisions. On the expenditure side, Government can choose to spend in such a way that it stimulates other economic activities. For example, government expenditure on building infrastructure may initiate a series of productive activities. Production decisions, investments, savings etc can be influenced by its tax policies.

We know that government expenditure injects more money into the economy and stimulates demand. On the other hand, taxes reduce the disposable income of people and therefore, reduce effective demand. During recession, in order to ensure income protection, the government increases its expenditure or cuts down taxes or adopts a combination of both so that aggregate demand is kept stable or even boosted up with more money put into the hands of the people. On the other hand, to control high inflation the government cuts down its expenditure or raises taxes. In other words, an expansionary fiscal policy is adopted to alleviate recession and a contractionary fiscal policy is resorted to for controlling high inflation. The nature of the budget (surplus or deficit) also has important implications on a country's economic activity. While deficit budgets are expected to stimulate economic activity, surplus budgets tend to slow down economic activity. Generally government's fiscal policy has a strong influence on the performance of the macro economy in terms of employment, price stability, economic growth and external balance.

There is often a conflict between the different goals and functions of budgetary policy. Effective policy design to meet the diverse goals of government is very difficult to conceive and to implement. The challenge before any government is how to design its budgetary policy so that the pursuit of one goal does not jeopardize the other.



1.6 CONCLUSION

We have discussed the need for and rationale of government intervention to improve social welfare by enhancing stability, efficiency and fairness. However, we should also understand that when we say that the market-generated allocation of resources is imperfect, it does not necessarily imply that the government is always infallible and at all times capable of correcting the failures of the market. Governments are likely to commit serious errors in its attempt to correct market failure. For example, in certain cases the costs incurred by government to deal with some market failure could be greater than the cost of the market failure itself. Moreover, just as individuals, governments too have only imperfect information, and hence can commit mistakes. It is also possible that individuals may use government as a mechanism for maximizing their self-interest. Moreover, governments may not always be unbiased and benevolent.

SUMMARY

- Government intervention to direct the functioning of the economy is based on the belief that the objective of the economic system and the role of government is to improve the wellbeing of individuals and households.
- An economic system should exist to answer the basic questions such as what, how and for whom to produce and how much resources should be set apart to ensure growth of productive capacity.
- Since the 1930s, the traditional functions of the state have been supplemented with the economic functions (also called the fiscal functions or the public finance function).
- Richard Musgrave (1959) introduced the three-branch taxonomy of the role of government in a market economy namely, resource allocation, income redistribution and macroeconomic stabilization.
- The allocation and distribution functions are primarily microeconomic functions, while stabilization is a macroeconomic function.
- One of the most important functions of an economic system is the optimal or efficient allocation of scarce resources so that the available resources are put to their best use and no wastages are there.
- Market failures, which hold back the efficient allocation of resources, occur mainly due to imperfect competition, presence of monopoly power,

collectively consumed public goods, externalities, factor immobility, imperfect information, and inequalities in the distribution of income and wealth.

- The allocation responsibility of the governments involves appropriate corrective action when private markets fail to provide the right and desirable combination of goods and services.
- A variety of allocation instruments are available by which governments can influence resource allocation in the economy such as, direct production, provision of incentives and disincentives, regulatory and discretionary policies etc.,
- The distributive function of budget is related to the basic question of for whom should an economy produce goods and services.
- The distribution function aims at redistribution of income so as to ensure equity and fairness to promote the wellbeing of all sections of people and is achieved through taxation, public expenditure, regulation and preferential treatment of target populations.
- Redistribution policies are likely to have efficiency costs or deadweight losses and therefore redistribution measures should be accomplished with minimal efficiency cost by carefully balancing equity and efficiency objectives.
- A market economy does not automatically generate full employment and price stability and therefore the governments should pursue deliberate stabilization policies.
- Stabilization function is one of the key functions of fiscal policy and aims at eliminating macroeconomic fluctuations arising from suboptimal allocation.
- The stabilization function is concerned with the performance of the aggregate economy in terms of labour employment and capital utilization, overall output and income, general price levels, economic growth and balance of international payments.
- Government's stabilization intervention may be through monetary policy as well as fiscal policy. Monetary policy works through controlling the size of money supply and interest rate in the economy, while fiscal policy aims at changing aggregate demand by suitable changes in government spending and taxes.

- There is often conflict between the different goals and functions of budgetary policy. The challenge before any government is how to design its budgetary policy so that the pursuit of one goal does not jeopardize the other.
- Government intervention does not necessarily imply that the government is always capable of correcting the market failures. Government failures occur due to the imperfect information, high administrative costs and tendency of bureaucracy and the politicians to promote vested self-interest using government mechanisms.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. Macroeconomic stabilization may be achieved through
 - (a) Free market economy
 - (b) Fiscal policy
 - (c) Monetary policy
 - (d) (b) and (c) above
2. Which of the following policies of the government fulfils the redistribution function
 - (a) Parking the army on the northern borders of the country
 - (b) Supply of medicines at subsidized prices to the poor people
 - (c) Controlling the supply of money through monetary policy
 - (d) None of the above
3. Choose the correct statement
 - (a) Fiscal policy involves the use of changes in taxation and government spending; while monetary policy involves the use of price and profit controls.
 - (b) Fiscal policy involves the use of price and profit controls; while monetary policy involves the use of taxation and government spending.

- (c) Fiscal policy involves the use of changes in taxation and government spending; while monetary policy involves the use of changes in the supply of money and interest rates.
 - (d) Fiscal policy involves the use of changes in the supply of money and interest rates; while monetary policy involves the use of changes in taxation and government spending.
4. The justification for government intervention is best described by
- (a) The need to prevent recession and inflation in the economy
 - (b) The need to modify the outcomes of private market actions
 - (c) The need to bring in justice in distribution of income and wealth
 - (d) All the above
5. When the government decides to produce fertilizers and supply them to the agriculturists, it aims
- (a) to achieve equity and fairness to the agriculturists
 - (b) to influence the way resources are allocated in the economy
 - (c) to ensure higher profits to agriculturists
 - (d) to make greater profits for the public sector
- 6.. Read the following statements:
- 1. The market-generated allocation of resources is usually imperfect and leads to inefficient allocation of resources in the economy
 - 2. Market failures can at all times be corrected through government intervention
 - 3. Public goods will not be produced in sufficient quantities in a market economy
- Of the three statements above:
- (a) 1 ,2 and 3 are correct
 - (b) 1 and 3 are correct
 - (c) 2 and 3 are correct
 - (d) 3 alone is correct

7. The allocation and distribution functions are primarily:
 - (a) Micro-economic functions
 - (b) Macro-economic functions
 - (c) both micro as well as macro-economic functions
 - (d) aimed at bringing in price stability and economic growth

II. Short Answer Type Questions

1. Describe why governments should perform the allocation function in an economy.
2. How does monopoly power affect efficiency of markets?
3. Explain how government can get domestic producers to produce more pulses.
4. Enumerate the circumstances which necessitate redistribution by government.
5. Illustrate with an example the redistribution effect of a tax and transfer policy.
6. What is the objective of government subsidy?
7. Why do private producers hesitate to produce public parks, bridges and highways?
8. What reason would you assign for employment reservations to socially backward communities?
9. What would be the objective of a government when it declares special schemes for backward regions?
10. What should be the public revenue and expenditure policy of the government during recession?
11. Describe the rationale for the stabilization function of government policy.

III. Long Answer Type Questions

1. Explain the role of government in a market economy.
2. Illustrate four cases which provide justification for government intervention in markets.
3. Describe the various interventional measures adopted by the government.

4. What are the different instruments available to the government to improve allocation efficiency in an economy?
5. Explain how economic stability can be achieved through fiscal policy.

IV. Application Oriented Questions

1. Elucidate the nature of economic function performed by the government in the following cases:-
 - (a) The government initiates a massive programme for eradication of mosquito-borne diseases in coastal areas.
 - (b) The government fixes the prices of 377 essential medicines listed in the National List of Essential Medicine, 2015.
2. The government decides to levy up to ₹ 20,500/ per flight from private airlines on major routes in order to fund an ambitious regional connectivity scheme which seeks to connect small cities by air and to make flying more affordable for the masses. Critically examine the implications of this policy on the airlines market.

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (d) 2. (b) 3. (c) 4. (d) 5. (b) 6. (b)
7. (a)

II Hints to Short Answer Type Questions

New
Addition

1. Government intervention in resource allocation is necessary and justified to ensure social welfare through optimal allocation of resources. Government should perform the allocation function in an economy because it is the responsibility of the governments to initiate suitable corrective action when private markets fail to provide the right and desirable combination of goods and services. Government intervention in resource allocation is also warranted in the case of goods which we cannot produce on our own, or buy at a price from the market and in the case of merit goods and goods which involve externalities.
2. The presence of monopoly power affects the efficiency of markets in different degrees leading to under-production and higher prices than would

exist under conditions of competition. These distort the choices available to consumers and reduce their welfare.

- 3 Government may influence private allocation through incentives and disincentives. Pulses being a major source of protein and nutritional security for people, government should ensure that sufficient quantities are produced. This may be done through a structured policy of tax concessions, subsidies, guaranteed minimum support prices and assured government procurement. Government also needs to incur expenditure to provide accessible physical and technological infrastructure to boost production.
- 4 Governments redistribution function arises when it is necessary to change the pattern of distribution of income, wealth and opportunities from what the market would put forward to a more socially optimal and egalitarian one. The redistribution function aims to achieve an equitable distribution of societal output among households, advance the well-being of those members of the society who suffer from deprivations of different types, provide equality in income, wealth and opportunities, offer security to people who have hardships, and to ensure that everyone enjoys a minimal standard of living.
- 5 Inequality and the resulting loss of social welfare is sought to be tackled by government through an appropriately framed tax and transfer policy. This involves progressive taxation combined with provision of subsidy to low-income households. Proceeds from progressive taxes may be used to finance public services, especially those such as public housing, which particularly benefit low income households. Few examples are: supply of essential food grains at highly subsidized prices to BPL households, free or subsidised education, healthcare, housing, rations and basic goods etc to the deserving people
- 6 Subsidy is a form of market intervention by government. It involves the government directly paying part of cost to the producers (or consumers) in order to promote the production (consumption) of goods and services. The aim of subsidy is to intervene with market equilibrium to reduce the costs and thereby the market price of goods and services and encourage increased production and consumption. Major subsidies in India are fertiliser subsidy, food subsidy, interest subsidy, etc.
7. While private goods will be sufficiently provided by the market, public goods will not be produced in sufficient quantities by the market. The

private producers hesitate to produce public parks, bridges and highways because these are public goods. Markets typically fail to provide such collective goods which are, by their very nature, non-excludable and consumed in common by all the people who are most likely to free – ride (refer unit 2 ; public goods)

- 8 Employment reservation to socially backward communities is a government intervention policy for redistribution and to ensure equity, social justice and fairness to the people who are underprivileged. Left to the competitive market, these communities are unlikely to get their fair share as they are less entitled to compete with others and secure employment.
- 9 Declaration of special schemes for backward region is a type of government intervention in the market for socio-economic reasons. The objective of such a measure is to ensure equity by changing the pattern of distribution of income, wealth and opportunities from what the market would put forward to a more socially optimal and egalitarian one.
- 10 During recession, the government increases its expenditure or cuts down taxes or adopts a combination of both so that aggregate demand is boosted up with more money put into the hands of the people.(refer unit 4 ; Fiscal Policy)
- 11 The rationale for the stabilization function of the government is derived from the Keynesian proposition that a market economy does not automatically generate full employment and price stability and therefore the governments should pursue deliberate stabilization policies. The market system has inherent tendencies to create business cycles. The market mechanism is limited in its capacity to prevent or to resolve the disruptions caused by the fluctuations in economic activity.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be

a compulsory component with a reasonably high proportion of marks earmarked.

- (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
- (c) Substantiate with illustrations from current economic scenario

IV. Hints to Application Oriented Questions

1. (a) (i) Public good – Merit good- Positive externalities – Inefficient market outcomes - Possible market failure –scope for market intervention to improve social welfare - Adam Smith’s proposition of resource allocation role of government i.e establishment and maintenance of highly beneficial public institutions and public works which the market may fail to produce on account of lack of sufficient profits. Define the resource allocation role of government’s policy - the potential for the government to improve economic performance through its expenditure to provide an optimum mix of various social goods.
- (ii) Nature and characteristics of the programme of government action – Policy of Expenditure - Purpose- Welfare outcomes of programmes for eradication of mosquito-borne diseases – Possibility of government failure.
- (iii) Substantiate with examples from recent policy propositions of government.
- (b) (i) The distributive function of budget related to the basic question of for whom should an economy produce goods and services. Left to the market, only private benefits and private costs would be reflected in the price paid by consumers. This means, through the market mechanism, people would consume inadequate quantities compared to what is socially desirable. Outcome: social welfare will not be maximized. *Therefore* - Government Intervention in the case of Merit Goods eg. Healthcare - government deems that its consumption should be encouraged - Price intervention- setting price ceilings - to influence the outcomes of a market on grounds of fairness and equity - price

floor for ensuring minimum price and price ceiling for making a resource or commodity available to all at reasonable prices - May illustrate with diagram.

(ii) Nature and characteristics of the programme of government action - Purpose- Welfare outcomes of the policy – Negative outcomes - Possible disincentives to producers- diversion of resources away from regulated products- black marketing- etc.

(iii) Substantiate with examples

2. Theory of Government intervention for redistribution to ensure fairness and equity (As discussed in the above two questions)

(i) Price intervention - a market-based policy - contributing airlines may experience cost escalation – possible fare hikes – changes in equilibrium quantities – disincentives to fly aircrafts in taxed routes - possible exit from market by low profit margin airlines- Regional connectivity and other welfare outcomes as subsidies to producers would lower their cost of production increase output- substantial positive externalities.

(ii) Another possibility: government intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources - social welfare will not be maximized – uncertainty as to the need for merit goods – disincentives to existing players - cannot be sure that the government interventions would be effective – possibility of government failure.

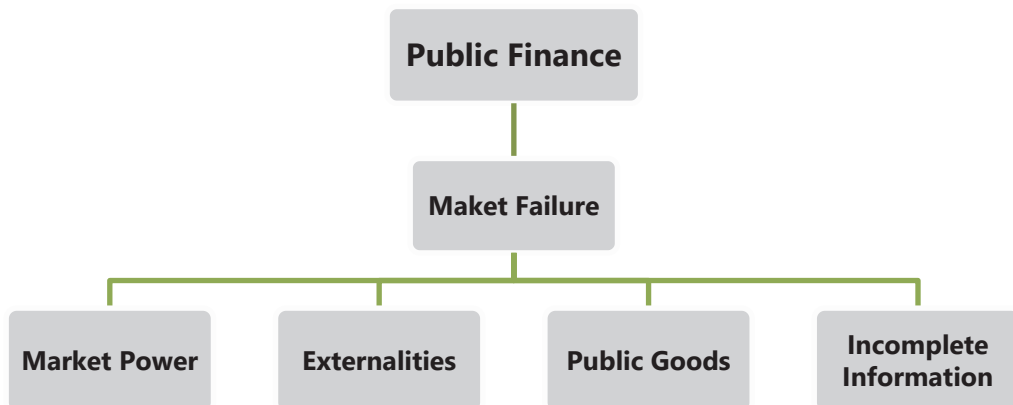
UNIT II: MARKET FAILURE

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define the concept of market failure
- ❑ Describe the different sources of market failure
- ❑ Explain the role of externalities in welfare loss of markets
- ❑ Distinguish between different types of public goods and illustrate how they cause market failure
- ❑ Describe the free rider problem associated with public goods
- ❑ Appraise the role of incomplete information in generating market failure
- ❑ Evaluate government interventions for correcting market failure

UNIT OVERVIEW



 **2.1 INTRODUCTION**

Before we go into the subject matter of market failure which is the focus of this unit, we shall examine two familiar events that are in some way connected with the phenomenon of market failure.

Case I

Sarva Shiksha Abhiyan (SSA) is a centrally sponsored scheme implemented by the Government of India in partnership with the state governments, for universalising good quality elementary education for all children in the 6-14 age groups in a time-bound manner. Through this programme, the government aims to provide opportunity for children to learn about and master their natural environment in order to develop their potential intellectually, spiritually as well as materially. The ultimate objective is to bring in social, regional and gender quantity.

Nearly everyone believes that providing basic education to all citizens is an important responsibility of the government. This is the reason why education is almost entirely administered and extensively financed by government.

Questions

- Why do you think governments should intervene to provide education?
- What do you think the outcome will be if it is left completely to private entrepreneurs?

Case II **New Addition**

The Ministry Women and Child Development is implementing two Centrally Sponsored Umbrella schemes across the country namely:

1. Integrated Child Development Services and
2. Mission for Protection and Empowerment of Women.

There are currently thirteen on-going schemes that target improvements in the condition of women and children. The union budget 2020-21 allocated a total of ₹ 28,600 Crores for women-specific schemes for the financial year 2020-21. These programmes mainly aim at promotion of greater nutrition security to women, increasing women's economic participation, women's empowerment and promotion of education of girl child.

The above case is an example of how government and specifically constituted bodies address different issues to protect the interests of women and children.

Question

Since people should ideally recognize women's rights and need to establish the same, why should governments interfere with the system?

 **2.2 THE CONCEPT OF MARKET FAILURE**

The general belief is that markets are amazingly competent in organizing the activities of an economy as they are generally efficient and capable of achieving optimal allocation of resources. However, there are exceptions to this. Under certain circumstances, 'market failure' occurs, i.e. the market fails to allocate resources efficiently and therefore, market outcomes become inefficient.

Market failure is a situation in which the free market leads to misallocation of society's scarce resources in the sense that there is either overproduction or underproduction of particular goods and services leading to a less than optimal outcome. The reason for market failure lies in the fact that though perfectly competitive markets work efficiently, most often the prerequisites of competition are unlikely to be present in an economy. Market failures are situations in which a particular market, left to itself, is inefficient. We shall first try to understand why markets fail and later, in the subsequent unit, proceed to identify the role of government in dealing with market failure.

We need to appreciate the fact that there are two aspects of market failures namely, demand-side market failures and supply side market failures. Demand-side market failures are said to occur when the demand curves do not take into account the full willingness of consumers to pay for a product. For example, though we experience the benefit, none of us will be willing to pay to view a wayside fountain because we can view it without paying. Supply-side market failures happen when supply curves do not incorporate the full cost of producing the product. For example, a thermal power plant that uses coal may not have to include or pay completely for the costs to the society caused by fumes it discharges into the atmosphere as part of the cost of producing electricity.



2.3 WHY DO MARKETS FAIL?

The pertinent question here is why do markets fail? There are four major reasons for market failure. They are:

- Market power,
- Externalities,
- Public goods, and
- Incomplete information

We shall discuss each of the above in detail.

2.3.1 Market Power

Market power or monopoly power is the ability of a firm to profitably raise the market price of a good or service over its marginal cost. Firms that have market power are price makers and therefore, can charge a price that gives them positive economic profits. Excessive market power causes the single producer or a small number of producers to produce and sell less output than would be produced in a competitive market. Market power can cause markets to be inefficient because it keeps price higher and output lower than the outcome of equilibrium of supply and demand. In the extreme case, there is the problem of non-existence of markets or missing markets resulting in failure to produce various goods and services, despite the fact that such products and services are wanted by people. For example, the markets for pure public goods do not exist.

2.3.2 Externalities

We begin by describing externalities and then, proceed to discuss how they create market inefficiencies. As we are aware, anything that one individual does, may have, at the margin, some effect on others. For example, if individuals decide to switch from consumption of ordinary vegetables to consumption of organic vegetables, they would, other things equal, increase the price of organic vegetables and potentially reduce the welfare of existing consumers of organic vegetables. However, we should note that all these operate through price mechanism i.e. through changes in prices. The price system works efficiently because market prices convey information to both producers and consumers.

However, sometimes, the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Such costs or benefits which are not accounted for by the market price are called externalities because

they are “external” to the market. In other words, there is an externality when a consumption or production activity has an indirect effect on other’s consumption or production activities and such effects are not reflected directly in market prices. The unique feature of an externality is that it is initiated and experienced not through the operation of the price system, but outside the market. Since it occurs outside the price mechanism, it has not been compensated for, or in other words it is uninternalized or the cost (benefit) of it is not borne (paid) by the parties.

Externalities are also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects' or 'side-effects', as the originator of the externality imposes costs or benefits on others who are not responsible for initiating the effect.

Externalities may be unidirectional or reciprocal. Suppose a workshop creates ear-splitting noise and imposes an externality on a baker who produces smoke and disturbs the workers in the workshop, then this is a case of reciprocal externality. If an accountant who is disturbed by loud music but has not imposed any externality on the singers, then the externality is unidirectional.

Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party. The four possible types of externalities are:

- Negative production externalities
- Positive production externalities
- Negative consumption externalities ,and
- Positive consumption externalities

Negative Production Externalities

A negative externality initiated in production which imposes an external cost on others may be received by another in consumption or in production. As an example, a negative production externality occurs when a factory which produces aluminium discharges untreated waste water into a nearby river and pollutes the water causing health hazards for people who use the water for drinking and bathing. Pollution of river also affects fish output as there will be less catch for fishermen due to loss of fish resources. The former is a case where a negative production externality is received in consumption and the latter presents a case of a negative production externality received in production. The firm, however,

has no incentive to account for the external costs that it imposes on consumers of river water or fishermen when making its production decision. Additionally, there is no market in which these external costs can be reflected in the price of aluminium.

Positive Production Externalities

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption. Compared to negative production externalities, positive production externalities are less common. As an example of positive production externality received in production, we can cite the case of a firm which offers training to its employees for increasing their skills. The firm generates positive benefits on other firms when they hire such workers as they change their jobs. Another example is the case of a beekeeper who locates beehives in an orange growing area enhancing the chances of greater production of oranges through increased pollination. A positive production externality is received in consumption when an individual raises an attractive garden and the persons walking by enjoy the garden. These external effects were not in fact taken into account when the production decisions were made.

Negative Consumption Externalities

Negative consumption externalities are extensively experienced by us in our day to day life. Such negative consumption externalities initiated in consumption which produce external costs on others may be received in consumption or in production. Examples to cite where they affect consumption of others are smoking cigarettes in public place causing passive smoking by others, creating litter and diminishing the aesthetic value of the room and playing the radio loudly obstructing one from enjoying a concert. The act of undisciplined students talking and creating disturbance in a class preventing teachers from making effective instruction and the case of excessive consumption of alcohol causing impairment in efficiency for work and production are instances of negative consumption externalities affecting production.

Positive Consumption Externalities

A positive consumption externality initiated in consumption that confers external benefits on others may be received in consumption or in production. For example, if people get immunized against contagious diseases, they would confer a social benefit to others as well by preventing others from getting infected. Consumption of the services of a health club by the employees of a firm would result in an

external benefit to the firm in the form of increased efficiency and productivity. When there are externalities and the costs or benefits are experienced by people outside a transaction, the actors in the transaction (consumers or producers) tend to ignore those external costs or benefits.

New
Addition

Having discussed the nature of externalities in production and consumption, we shall now examine how externalities cause inefficiency and market failure. Before we attempt this, we need to understand the difference between private costs and social costs. Private cost is the cost faced by the producer or consumer directly involved in a transaction. If we take the case of a producer, his private cost includes direct cost of labour, materials, energy and other indirect overheads. Social costs refer to the total costs to the society on account of a production or consumption activity. Social costs are private costs borne by individuals directly involved in a transaction together with the external costs borne by third parties not directly involved in the transaction. In other words, social costs are the total costs incurred by the society when a good is consumed or produced. It is thus private costs plus costs to third parties (i.e. private costs + total negative externalities).

New
Addition

Social Cost = Private Cost + External Cost

Social benefits are the total benefits accrued to the society from an economic activity. Social benefits can be defined as private benefits plus benefits to third parties (i.e. private benefits + total positive externalities).

New
Addition

Let us consider the case of social costs. The external costs are not included in firms' income statements or consumers' decisions. However, these external costs are real and important as far as the society is concerned. As we have mentioned above, firms do not have to pay for the damage resulting from the pollution which they generate. As a result, each firm's cost which is considered for determining output would be only private cost or direct cost of production which does not incorporate externalities.

New
Addition

The presence of externalities creates a divergence between private and social costs of production. When negative production externalities exist, social costs exceed private cost because the true social cost of production would be private cost plus the cost of the damage from externalities. Negative externalities impose costs on society that extend beyond the cost of production as originally intended and actually borne by the producer. If producers do not take into account the externalities, there will be over-production and market failure. Applying the same

logic, negative consumption externalities lead to a situation where the social benefit of consumption is less than the private benefit.

Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to consume. Given that externalities are more often negative, we shall focus on them.

A market exchange assumes that the participants have total control over every aspect of their product and that the prices (or fees) they charge represent the full cost of production plus profit. As a matter of fact, the producers of products with extensive negative externalities are not fully accountable for the full cost of their production which includes private as well as social costs. Recall our earlier case of the aluminium factory which causes pollution of river water. As a matter of fact, the prices of aluminium tend to reflect only the private costs of the producer. Production remains efficient only when all benefits and costs are paid for. Since externalities are not reflected in market prices, they can be a source of inefficiency. Without government intervention, such a producer will have no reason to consider the social costs of pollution. When firms do not have to worry about the negative externalities associated with their production, the result is excess production and unnecessary social costs. The problem, though serious, does not usually float up much because:

- The society does not know precisely who are the producers of harmful externalities
- Even if the society knows it, the cause-effect linkages are so unclear that the negative externality cannot be unquestionably traced to its producer.

Before we look into the effect of externalities, we need to be clear about the terms used in the analysis

- Marginal private cost (MPC) is the change in the producer's total cost brought about by the production of an additional unit of a good or service. It is also known as marginal cost of production. (represented by the supply curve)
- Marginal external cost (MEC) is the change in the cost to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.
- Marginal Social cost (MSC) is the change in society's total cost brought about by an additional unit of a good or service. (=MPC+MEC)

New
Addition

- Marginal private benefit (MPB) = marginal willingness to pay (represented by the demand curve)
- Marginal external benefit (MEB) is the change in the benefit to parties other than the producer or buyer of a good or service due to an additional unit of the good or service.
- Marginal Social benefit (MSB) is the change society's total benefits associated with an additional unit of a good or service. (=MPB+MEB)
- When no externality is present, there are no external costs and marginal social cost is the same as marginal private cost; and marginal social benefit is the same as marginal private benefit. Therefore, $MPC=MSC$ and $MPB=MSB$.
- If an externality is present, then either $MSC \neq MPC$ or $MSB \neq MPB$ (or both); and hence equilibrium (where $MPC=MPB$) is unlikely to be efficient.

New Addition

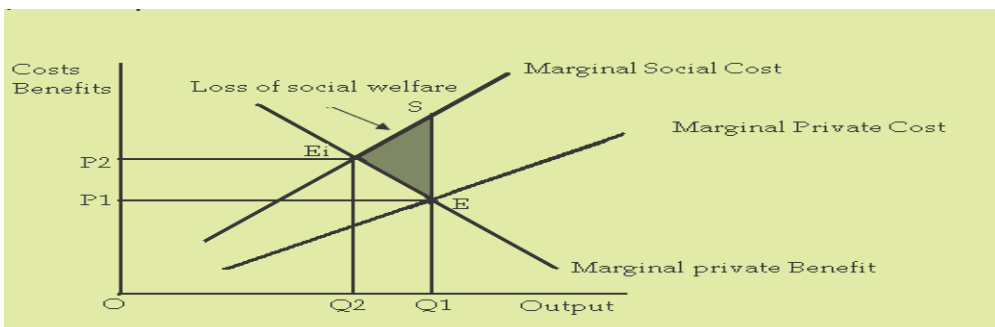
Now, the pertinent question is: what is 'socially optimal output'? It is that amount of output which takes into account all benefits (private as well as external) and all costs (private as well as external). When we want to find out whether social efficiency is achieved or not (i.e. highest possible social benefits, given the constraint of costs), we need to compare marginal social benefits to marginal social costs. The condition for efficiency and optimum output is $MSB=MSC$ i.e., marginal social benefit = marginal social cost. It means 'the last unit produced should yield benefits to society that exactly equals the costs to society for producing the last unit'.

New Addition

The problem of externalities can be explained with the help of the figure below:

Figure 2.2.1

Negative Production Externalities and Loss of Social welfare



The equilibrium level of output that would be produced by a free market is Q_1 at which marginal private benefit (MPB) is equal to marginal private cost (MPC). Marginal social cost (MSC) represents the full or true cost to the society of producing another unit of a good. It includes marginal private cost (MPC) and marginal external cost (MEC). Assuming that there are no externalities arising from consumption (so that $MPB = MSB$), we can see that marginal social cost (Q_1S) is higher than marginal private cost (Q_1E). Social efficiency occurs at Q_2 level of output where MSC is equal to MSB. Output Q_1 is socially inefficient because at Q_1 , the MSC is greater than the MSB and represents over production. The shaded triangle represents the area of dead weight welfare loss. It indicates the area of overconsumption. Thus, we conclude that when there is negative externality, a competitive market will produce too much output relative to the social optimum. This is a clear case of market failure where prices are lower than optimum and fail to provide the correct signals.



2.4 PUBLIC GOODS

Paul A. Samuelson who introduced the concept of 'collective consumption good' in his path-breaking 1954 paper 'The Pure Theory of Public Expenditure' is usually recognized as the first economist to develop the theory of public goods. A public good (also referred to as collective consumption good or social good) is defined as one which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individuals' consumption of that good.

Before we go on to discuss the distinguishing features of public goods and how they differ from private goods, it is pertinent to first understand the characteristics of private goods.

2.4.1 Characteristics of Private Goods

- Private goods refer to those goods that yield utility to people. Since they are scarce anyone who wants to consume them must purchase them.
- Owners of private goods can exercise private property rights and can prevent others from using the good or consuming their benefits.
- Consumption of private goods is 'rivalrous' that is the purchase and consumption of a private good by one individual prevents another individual from consuming it. In other words, simultaneous consumption of a rivalrous good by more than one person is impossible.

- Private goods are 'excludable' i.e. it is possible to exclude or prevent consumers who have not paid for them from consuming them or having access to them. In other words, those who want to consume private goods must buy them at a price from its sellers. Excludability necessitates that consumers of private goods send the right signals in the market. A buyer of a private good is forced in a transaction to reveal what he or she is willing to pay for a good or a service.
- Private goods do not have the free-rider problem. This means that private goods will be available to only those persons who are willing to pay for them.
- Private goods can be parcelled out among different individuals and therefore, it is possible to refer to total consumption as the sum of each individual's consumption. Therefore, the market demand curve for a private good is obtained by horizontal summation of individual demand curves.
- All private goods and services can be rejected by the consumers if their needs, preferences or budgets change.
- Additional resource costs are involved for producing and supplying additional quantities of private goods.
- Since buyers can be excluded from enjoying the good if they are not willing and able to pay for it, consumers will get different amounts of goods and services based on their desires and ability and willingness to pay. Therefore, whenever there is inequality in income distribution in an economy, issues of fairness and justice tend to arise with respect to private goods.
- Normally, the market will efficiently allocate resources for the production of private goods.

Most of the goods produced and consumed in an economy are private goods. A few examples are: food items, clothing, movie ticket, television, cars, houses etc.

You can make a list of ten such goods and check whether each of them satisfies all the above mentioned characteristics.

Having understood the features of private goods, we shall now proceed to consider the distinguishing characteristics of public goods.

2.4.2 Characteristics of Public Goods

- Public goods yield utility to people and are products (goods or services) whose consumption is essentially collective in nature. No direct payment by the consumer is involved in the case of pure public goods.
- Public good is non-rival in consumption. It means that consumption of a public good by one individual does not reduce the quality or quantity available for all other individuals. When consumed by one person, it can be consumed in equal amounts by the rest of the persons in the society. That is, your consumption of a public good in no way interferes with its consumption by other people. For example, if, you eat your apple, another person too cannot eat it. But, if you walk in street light, other persons too can walk without any reduced benefit from the street light.
- Public goods are non-excludable. Consumers cannot (at least at less than prohibitive cost) be excluded from consumption benefits. If the good is provided, one individual cannot deny other individuals' consumption. Provision of a public good by government means provision for all. For example, national defence once provided, it is impossible to exclude anyone within the country from consuming and benefiting from it.
- Public goods are characterized by indivisibility. For example, you can buy chocolates or ice cream as separate units, but a lighthouse, a highway, an airport, defence, clean air etc cannot be consumed in separate units. In the case of public goods, each individual may consume all of the good i.e. the total amount consumed is the same for each individual.
- Public goods are generally more vulnerable to issues such as externalities, inadequate property rights, and free rider problems.

Once a public good is provided, the additional resource cost of another person consuming the goods is 'zero'. A good example is a lighthouse near a sea shore to guide the ships. Once the beacon is lit, an additional ship can use it without any additional cost of provision.

Public goods are generally divided into two categories namely, public consumption goods and public factors of production. A few examples of public goods are: national defence, highways, public education, scientific research which benefits everyone, law enforcement, lighthouses, fire protection, disease prevention and public sanitation.

A unique feature of public goods is that they do not conform to the settings of market exchange. The property rights of public goods with extensive indivisibility and nonexclusive properties cannot be determined with certainty. Therefore, the owners of such products cannot exercise sufficient control over their assets. For example, if you maintain a beautiful garden, you cannot exercise full control over it so as to charge your neighbours for the enjoyment which they get from your garden. As a consequence of their peculiar characteristics, public goods do not provide incentives that will generate optimal market reaction. Producers are not motivated to produce a socially-optimal amount of products if they cannot charge a positive price for them or make profits from them. As such, though public goods are extremely valuable for the well-being of the society, left to the market, they will not be produced at all or will be grossly under-produced.

Now that we have understood the difference between private goods and public goods, we shall examine the implications of these characteristics on the production, supply and use of these goods. As mentioned above, ideally competitive markets have sufficient incentives to produce and supply private goods. Because of the peculiar characteristics of public goods such as indivisibility, non-excludability and nonrivalry, competitive private markets will fail to generate economically efficient outputs of public goods. That is why public goods are often (though not always) under-provided in a free market economy.

2.4.3 Classification of Public Goods

One approach to classify goods so as to establish taxonomy of different types of goods is to concentrate on the non-rival and non-excludable characteristics of public goods. The following table presenting the taxonomy of goods will help us understand the classification of goods.

	Excludable	Non-excludable
Rivalrous	A Private goods food, clothing, cars	B Common resources such as fish stocks, forest resources, coal
Non-rivalrous	C Club goods, cinemas, private parks, satellite television	D Pure public goods such as national defence

- Goods in category A are rival in consumption and are excludable. These are also known as pure private goods.

- Goods in category D which are characterized by both non-excludability and non-rivalry properties are called pure public goods. A pure public good is non-rival as well as non-excludable. The benefit that an individual gets from a pure public good does not depend on the number of users. The clarity of your radio reception, for example, is generally independent of the number of other listeners. Knowledge is another non-rivalrous good. Once something has been discovered, one person's use of that knowledge does not preclude others from applying the same knowledge. But, this is not the case with most private goods.
- Consumption goods that fall in category B are rival but not excludable. Common resources would come under this (explained in section 2.4.6 below). Let us take another example. Bees from the hives of different bee keepers collect nectar from the nearby orange garden. The blossom is rival as the nectar collected for one hive is unavailable to another. Even so, it may be inconceivable to try to deny any particular honey bee access i.e. the situation is non-excludable. The examples include public parks, public roads in a city etc.
- Goods in category C are non-rival in consumption but are excludable. A toll booth may exclude vehicles unless payment is made. Yet, if the road is not congested, one car may utilize it with no loss of benefit even though the other cars are also consuming the road service. Similarly, admission to a cinema, swimming pool, music concert etc. has potential for exclusion, but if there is no congestion, each individual admitted may consume the services without subtracting from the benefit of others. A good example of this is DTH cable TV service or Digital goods. The consumption of these is non-rival in nature but exclusion of households who do not pay is feasible.

2.4.4 Pure and Impure Public Goods

The concept of pure public good is often criticized by many who point out that such goods are not in fact observable in the real world. They argue that goods which perfectly satisfy nonrivalness and non-excludability are not easy to come across. For example, if the government provides law and order or medical care, the use of law courts or medical care by some individuals subtracts the consumption of others if they need to wait. As another example, we may take defence. If armies are mostly deployed in the northern borders, it may not result in the same amount of protection to people in the south.

There are many hybrid goods that possess some features of both public and private goods. These goods are called impure public goods and are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users. Consumption of these goods by another person reduces, but does not eliminate, the benefits that other people receive from their consumption of the same good. For example, open-access Wi-Fi networks become crowded when more people access it. Impure public goods also differ from pure public goods in that they are often excludable.

An example of an impure public good would be cable television. It is non-rivalrous because the use of cable television by other individuals will in no way reduce your enjoyment of it. The good is excludable since the cable TV service providers can refuse connection if you do not pay for set top box and recharge it regularly..

We have seen above that impure public goods only partially satisfy the two public good characteristics of non-rivalry in consumption and non-excludability. The possibility of exclusion from the use of an impure public good has two implications.

1. Since free riding can be eliminated, the impure public good may be provided either by the market or by the government at a price or fee. If the consumption of a good can be excluded, then, the market would provide a price mechanism for it.
2. The provider of an impure public good may be able to control the degree of congestion either by regulating the number of people who may use it , or the frequency with which it may be used or both.

Two broad classes of goods have been included in the studies related to impure public goods.

1. Club goods; first studied by Buchanan
2. Variable use public goods; first analyzed by Oakland and Sandmo

Examples of club goods are: facilities such as swimming pools, fitness centres etc. These goods are replicable and, therefore, individuals who are excluded from one facility may get similar services from an equivalent provider.

Variable use public goods include facilities such as roads, bridges etc. Once they are provided, everybody can use it. They can be excludable or non excludable. If

they are excludable, some people can be discouraged from using it frequently by making them pay for its consumption. In doing so, the frequency of usage of the public good can be controlled. Since they are not replicable, the facility should be accessible to all potential users. Why should we exclude the enjoyment of roads, bridges etc of some people? The reason is the possibility of congestion due to large number of vehicles and the potential reduction of benefit to the users.

2.4.5. Quasi-Public Goods (Mixed Goods)

This second approach to classification of impure public goods focuses on the mix of services that arise from the provision of the good. For example, if one gets inoculated against measles, it confers not only a private benefit to the individual, but also an external benefit because it reduces the chances getting infected of other persons who are in contact with him. You can observe here that the external effect associated with the consumption of a private good may have the characteristics of a public good.

Similarly, education will improve the individual's earning potential and at the same time, it may facilitate basic research creating non-rival, non-excludable knowledge and information which are public goods. Other examples of benefits to the society through education are improvement in decision making behaviour, provision of a screening device for the labour market to determine the quality of labour and better cultural environment and heritage for future generations. For example, other things remaining the same, the students pursuing the chartered accountancy programme will have a demand curve for the programme at various prices. This reflects the private benefits which the students believe they would enjoy as a result of this education. These may be viewed as 'private return' on education and they depend in part on the income differential that students expect during their working life as a result of chartered accountancy education. However, there are likely other benefits such as, the possible addition which you may make to accounting knowledge and practices, the consultancy services you give to others, the policy recommendations that you may be able to put forth for a better tax or budgeting system etc. to mention a few. These have the characteristics of public good as everyone in the society can consume them without reducing the amount available for consumption by others. Obviously, your demand curve for the CA programme did not incorporate all these external effects.

The quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all of the qualities of the private goods

and some of the benefits of public good. It is easy to keep people away from them by charging a price or fee. However, it is undesirable to keep people away from such goods because the society would be better off if more people consume them. This particular characteristic namely, the combination of virtually infinite benefits and the ability to charge a price results in some quasi-public goods being sold through markets and others being provided by government. As such, people argue that these should not be left to the market alone.

Markets for the quasi-public goods are considered to be incomplete markets and their lack of provision by free markets would be considered as inefficiency and market failure.

2.4.6 Common Access Resources

Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Some important natural resources fall into this category.

Examples of common access resources are fisheries, forests, backwaters, common pastures, rivers, sea, backwaters biodiversity etc. The earth's atmosphere is perhaps the best example. Emissions of carbon dioxide and other greenhouse gases have led to the depletion of the ozone layer endangering environmental sustainability. Although nations are aware of the fact that reduced global warming would benefit everyone, they have an incentive to free ride, with the result that nothing positive is likely to be done to correct the problem.

Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation. This creates threat to the sustainability of these resources and, therefore, the availability of common access resources for future generations.

2.4.7. Tragedy of the Commons

New Section

The problem of the 'tragedy of the commons' was first described and analysed by Garrett Hardin in his article 'The Tragedy of the Commons' (1968). Economists use the term to describe the problem which occurs when rivalrous but non excludable goods are overused to the disadvantage of the entire world. The term "commons"

is derived from the traditional English legal term of “common land” where farmers/peasants would graze their livestock, hunt and collect wild plants and other produce. Everyone has access to a commonly held pasture; there are no rules about sustainable numbers for grazing. The outcome of the individual rational economic decisions of cattle owners was market failure, because these actions resulted in degradation, depletion or even destruction of the resource leading to welfare loss for the entire society.

2.4.8. Global Public Goods

Global public goods are those public goods with benefits /costs that potentially extend to everyone in the world. These goods have widespread impact on different countries and regions, population groups and generations throughout the entire globe. Global Public goods may be:

- final public goods which are ‘outcomes’ such as ozone layer preservation or climate change prevention, or
- intermediate public goods, which contribute to the provision of final public goods. e.g. International health regulations

The World Bank identifies five areas of global public goods which it seeks to address: namely,

- the environmental commons (including the prevention of climate change and biodiversity),
- communicable diseases (including HIV/AIDS, tuberculosis, malaria, and avian influenza),
- international trade,
- international financial architecture, and
- global knowledge for development.

The distinctive characteristic of global public goods is that there is no mechanism (either market or government) to ensure an efficient outcome.

2.4.9 The Free-Rider Problem

A free rider is a person who benefits from something without expending effort or paying for it. In other words, free riders are those who utilize goods without paying for their use. Example is Wikipedia, a free encyclopaedia which faces a free rider problem. Hundreds of millions of people use Wikipedia every month but

Change
and
New
addition

New
Addition

only a small part of users pay to use it. A large majority of Wikipedia users do not pay to use the site but are able to benefit from the information provided by the website. The free-rider problem occurs when everyone enjoys the benefits of a good without paying for it. Since private goods are excludable, free-riding mostly occurs in the case of public goods. The free-rider problem leads to under-provision of a good or service and thus causes market failure.

As seen above, public goods provide a very important example of market failure in which the self-interested behaviour of individuals does not produce efficient results. The absence of excludability in the case of public goods and the tendency of people to act in their own self-interest will lead to the problem of free-riding. If individuals cannot be excluded from the benefit of a public good, then they are not likely to express the value of the benefits which they receive as an offer to pay. In other words, they will not express to buy a particular quantity at a price. Briefly put, there is no incentive for people to pay for the good because they can consume it without paying for it.

The problem occurs because of the failure of individuals to reveal their real or true preferences for the public good through their willingness to pay. On account of the free-rider problem, there is no meaningful demand curve for public goods. If individuals make no offer to pay for public goods, there is a market failure in the case of these goods and the profit-maximizing firms will not produce them.

There is an important implication for the behaviour of free-riding. If every individual plays the same strategy of free-riding, the strategy will fail because nobody is willing to pay and therefore, nothing will be provided by the market. Then, a free ride for any one becomes impossible.

In fact, the public goods are valuable for people. If there is no free-rider problem, people would be willing to pay for them and they will be produced by the market. As such, if the free-rider problem cannot be solved, the following two outcomes are possible:

1. No public good will be provided in private markets
2. Private markets will seriously under produce public goods even though these goods provide valuable service to the society.



2.5 INCOMPLETE INFORMATION

Complete information is an important element of competitive market. Perfect information implies that both buyers and sellers have complete information about anything that may influence their decision making. However, this assumption is not fully satisfied in real markets due to the following reasons.

- Often, the nature of products and services tends to be highly complex e.g. cardiac surgery, financial products (such as pension products, mutual funds etc).
- In many cases consumers are unable to quickly / cheaply find sufficient information on the best prices as well as quality for different products. Sometimes they misunderstand the true costs or benefits of a product or are uncertain about the true costs and benefits.
- People are ignorant or not aware of many matters in the market. Generally they have inaccurate or incomplete data and consequently make potentially 'wrong' choices / decisions.

Information failure is widespread in numerous market exchanges. When this happens misallocation of scarce resources takes place and equilibrium price and quantity is not established through price mechanism. This results in market failure.

2.5.1 Asymmetric Information

Asymmetric information occurs when there is an imbalance in information between the buyer and the seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer. This can distort choices. For example, the landlords know more about their properties than tenants, a borrower knows more about their ability to repay a loan than the lender, a used-car seller knows more about vehicle quality than a buyer, health insurance buyers know more about the state of health than the insurance companies and some traders may possess insider information in financial markets. These are situations in which one party to a transaction knows a material fact that the other party does not. This phenomenon, which is sometimes referred to as the 'lemons problem', is an important source of market failure.

2.5.2 Adverse Selection

New Section

Asymmetric information generates adverse selection which results from hidden attributes that can distort the usual market process and affect a transaction

before it occurs. Adverse selection generally refers to any situation in which one party to a contract or negotiation, such as a seller, possesses information relevant to the contract or negotiation that the corresponding party, such as a buyer, does not have; this asymmetric information leads the party lacking relevant knowledge to make suboptimal decisions and suffer adverse effects. In such a situation, asymmetric information about quality eliminates high-quality goods from a market. Economic agents end up either selecting a sub-standard product or leaving the market altogether. It can also lead to missing markets.

For example, in the insurance market, if the health insurance companies could costlessly identify the health risks of buyers, then there is no asymmetric information and therefore, insurers could offer low premiums to the low-risk buyers and high premiums to the high-risk buyers. As a matter of fact, compared to insurance buyers, insurers know less about the health conditions of buyers and are therefore unable to differentiate between high-risk and low-risk persons. Due to the tendency of people with higher health risks to obtain insurance coverage to a greater extent than persons with lesser risk, the proportion of unhealthy people in the pool of insured people increases. In such situations, an insurance company extends insurance coverage to an applicant whose actual risk is substantially higher than the risk known by the insurance company. By not revealing the actual state of health, an applicant is leading the insurance company to make decisions on coverage or premium costs that are adverse to the insurance company's management of financial risk. This forces the price of insurance to rise, so that more healthy people, aware of their low risks, choose not to be insured. This further increases the proportion of unhealthy people among the insured, thus raising the price of insurance up more. The process continues until most people who want to buy insurance are unhealthy. At that point, insurance becomes very expensive, or—in the extreme—insurance companies stop selling the insurance leading to missing markets. If the sellers wish to do business profitably, they may have to incur considerable costs in terms of time and money for identifying the extent of risk for different buyers which in turn would increase insurance premium.

When dealing with problems of asymmetric information, the most frequently cited and studied example in Economics is the one developed by George Akerlof in relation to the used car market, which distinguishes cars classified as good from those defined as "lemons" (poor quality vehicles). The owner of a car knows much more about its quality than anyone else. While placing it for sale, he may not disclose all that he knows about the mechanical defects of the vehicle. Based

on the probability that the car on sale is a 'lemon', the buyers' willingness to pay for any particular car will be based on the 'average quality' of used cars. Not knowing the honesty of the seller means, the price offered for the vehicle is likely to be less than that of a good car, to account for this risk. However, anyone who sells a 'lemon' (an unusually poor car) stands to gain. If buyers were aware as to which car is good, they would pay the price they feel reasonable for a good car. Since the price offered in the market is lower than the acceptable one, good car sellers will not be inclined to sell. The market becomes flooded with 'lemons' and eventually the market may offer nothing but 'lemons'. The good-quality cars disappear because they are kept by their owners or sold only to friends. The result is market distortion with lower prices and lower average quality of cars. With asymmetric information, just as low quality high risk buyers drive out high quality low risk buyers of insurance, low-quality cars can drive high-quality cars out of the market.

2.5.3 Moral Hazard

New Section

Moral hazard arises whenever there is an externality (i.e., whenever an economic agent can shift some of its costs to others). It is about actions, made after making a market exchange, which may have adverse impact on the less-informed person. In other words, it is about the opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action. It arises from lack of information about someone's future behaviour. It occurs when one party to an agreement knows that he need not bear the consequences of his bad behaviour or poor decision making and that the consequence, if any, would be borne by the other party. Therefore, he engages in risky behaviour or fails to act in good faith or acts in a different way than if he had to bear those consequences himself.

In the insurance market, moral hazard refers to a situation that increases the probability of occurrence of a loss or a larger than normal loss because of a change in the insurance policy holders' behaviour after the issuance of policy. For example, a driver who has a comprehensive insurance tends to exhibit greater taste for risk-taking in getting to his destination quickly and hence his interests contradict with those of the insurer. The more of one's costs that are covered by the insurance company, the less he cares whether the doctor charges excessive fees or uses inefficient and costly procedures as part of his health care. This causes insurance premiums to rise for everyone, driving many potential customers out of the market. In short, when someone is protected from paying the full costs

of their harmful actions, they tend to act irresponsibly, making the harmful consequences more likely.

If the company could costlessly monitor the behaviour of the insured, it can charge higher fees for those who make more claims. The problem lies in the fact that the insurance company cannot observe people's actions post-sale and therefore cannot judge without costly monitoring whether occurrence of an event is genuine or the outcome of lack of effort on the part of the insured. Therefore the expected outflow is higher and the insurance companies may be forced to increase premiums for everyone or may even refuse to sell insurance at all in which case it is a case of missing markets.

Asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore lead to market failure because the party with better information has a competitive advantage.

2.6 CONCLUSION

Markets, do not always lead to efficiency. When there is a market failure, the market outcomes may be inefficient and government intervention can improve society's welfare. Government can ensure economic efficiency by providing the necessary legal and regulatory system that facilitates efficiency and /or it can intervene to correct specific market failures. The role of the government in combating market failures will be discussed in the next unit.

SUMMARY

- Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or underproduction of particular goods and services leading to less than optimal market outcomes.
- The demand-side market failures are said to occur when demand curves do not take into account the full willingness of consumers to pay for a product. The supply-side market failures happen when supply curves do not incorporate the full cost of producing the product.
- The price system and markets work efficiently only if market prices convey information to both producers and consumers.
- There are four major reasons for market failure. They are: market power, externalities, public goods, and incomplete information.

- Excessive market power causes the single producer or small number of producers to produce and sell less output than would be produced and charge a higher price in a competitive market.
- Externalities also referred to as 'spillover effects', 'neighbourhood effects' 'third-party effects', or 'side-effects', occur when the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price.
- Externalities cause market inefficiencies because they hinder the ability of market prices to convey accurate information about how much to produce and how much to buy. Since externalities are not reflected in market prices, they can be a source of economic inefficiency.
- Externalities are initiated and experienced, not through the operation of the price system, but outside the market and therefore, are external to the market.
- Externalities may be unidirectional or reciprocal. Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on another party. Positive externalities occur when the action of one party confers benefits on another party.
- The four possible types of externalities are: Negative externality initiated in production which imposes an external cost on others. Positive production externality, less commonly seen, initiated in production that confers external benefits on others. Negative consumption externalities initiated in consumption which produce external costs on others. Positive consumption externality initiated in consumption that confers external benefits on others. Each of the above may be received by another in consumption or in production. The firm or the consumer as the case may be, however, has no incentive to account for the external costs that it imposes on consumers
- Private cost is the cost faced by the producer or consumer directly involved in a transaction and includes direct cost of labour, materials, energy and other indirect overheads and does not incorporate externalities.
- Social cost is the entire cost which the society bears. $\text{Social Cost} = \text{Private Cost} + \text{External Cost}$.
- When negative production externalities exist, social costs exceed private cost. If producers do not take into account the externalities, there will be over-production and market failure and unwarranted social consequences.

- When firms do not have to worry about negative externalities associated with their production, the result is excess production and unnecessary social costs
- A public good (also referred to as a collective consumption good or a social good) is defined as one which all individuals enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good.
- Private goods are 'rivalrous' and 'excludable' and less likely to have the free rider problem. Additional resource costs are involved for providing to another individual.
- Public goods consumption is indivisible, collective, nonrival, non-excludable and vulnerable to externalities and free rider problems.
- Public goods do not conform to the settings of market exchange and left to the market, they will not be produced at all or will be underproduced. This is because the price becomes zero.
- A pure public good is non-rivalrous and non-excludable. Impure public goods are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users.
- The provider of an impure public good may be able to control the degree of congestion either by regulating the number of people who may use it, or the frequency with which it may be used or both.
- The quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all of the qualities of the private goods and some of the benefits of public good. They exhibit market failure as incomplete markets.
- Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others.
- Since price mechanism does not apply to 'common resources', producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

- Economists use the term 'tragedy of the commons' to describe the problem which occurs when rivalrous but non excludable goods are overused to the disadvantage of the entire universe.
- The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual is known as the free rider problem.
- If every individual plays the same strategy of free riding, the strategy will fail because nobody is willing to pay and therefore nothing will be provided by the market.
- Complete information is an essential element of competitive market. But it is not fully satisfied in real world markets for goods or services due to highly complex nature of products.
- Asymmetric information occurs when there is an imbalance in information between buyer and seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer. This can distort choices. With asymmetric information, low-quality goods can drive high-quality goods out of the market.
- Adverse selection is a situation in which asymmetric information about quality eliminates high-quality goods from a market. Buyers expect hidden problems in items offered for sale, leading to low prices and the best items being kept off the market.
- Moral hazard is opportunism characterized by an informed person's taking advantage of a less-informed person through an unobserved action.
- Asymmetric information, adverse selection and moral hazard affect the ability of markets to efficiently allocate resources and therefore, lead to market failure because the party with better information has a competitive advantage. Due to this the market collapses as transactions do not take place or very few transactions occur.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Question

1. 'Market failure' occurs
 - (a) when public goods are not sufficiently provided by public sector
 - (b) the market fails to allocate resources efficiently and therefore market outcomes become inefficient
 - (c) people are not willing to pay and want to free ride
 - (d) (a) and (b) above
2. Markets fail because
 - (a) externalities are not accounted for in pricing and quantity decisions of firms
 - (b) most often the prerequisites of competition are unlikely to be present in an economy
 - (c) prices fail to reflect the true costs and benefits to the society
 - (d) all the above
3. Market power
 - (a) makes price equal marginal cost and produce a positive external benefit on others
 - (b) can cause markets to be inefficient because it keeps price and output away from equilibrium of supply and demand
 - (c) makes the firms price makers and restrict output so as to make allocation inefficient
 - (d) (b) and(c) above
4. Markets do not exist
 - (a) for pure public goods
 - (b) for goods which have positive externalities
 - (c) for goods which have negative externalities
 - (d) none of the above

5. The unique feature of an externality is that it is
- (a) initiated and experienced, not through the operation of the price system but affects an external agent
 - (b) initiated and experienced, not through the operation of the price system, but outside the market
 - (c) initiated and experienced by the same entity, but causes decrease in social welfare
 - (d) causes decreases in social welfare through the system of prices prevailing in the market
6. If a textile mill produces large amounts of negative externality, then which one of the following is possible?
- (a) The output of textile is too little when compared to the socially optimal quantity
 - (b) The output of textile is too large when compared to the socially optimal quantity
 - (c) The output of textile is not socially optimal as it is likely to be a regulated one
 - (d) Any of the above
7. All but one of the following statements is incorrect. Identify the correct statement.
- (a) When there is a negative externality, the social marginal cost will exceed private marginal cost
 - (b) When there is a positive externality the social marginal cost will exceed private marginal cost
 - (c) Common property resources are non-rival and non-excludable public goods so that the problem of sustainability becomes grave
 - (d) Goods that are rival in consumption and are non-excludable are known as private goods
8. In case of a positive externality
- (a) the social marginal cost will exceed private marginal cost
 - (b) the social marginal cost will be equal to private marginal cost

- (c) the social marginal cost will be less than private marginal cost
(d) the social marginal cost has no relation to private marginal cost
9. Which of the following statement is correct in respect of externalities?
- (a) When social marginal costs are equal to private marginal costs, the level of output will be equal to the socially optimal level
(b) When social marginal costs are less than private marginal costs, the level of output will be lower than the socially optimal level
(c) When social marginal costs are greater than private marginal costs, the level of output will be higher than the socially optimal level
(d) All of the above.
10. Match the following
- | | |
|-----------------------|-----------------------------------|
| (a) Pure public goods | i) Excludable and rival |
| (b) Club goods | ii) Non excludable and rival |
| (c) Common resources | iii) Non excludable and non rival |
| (d) Private good | iv) Non rival and excludable |
- (a) {a) i}); {b) ii}); {c) iv}); {d) iii}
(b) {a) ii}); {b) i}); {c) iii}); {d) iv}
(c) {a) iii}); {b) i}); {c)ii}); {d) iv}
(d) {a) iii}); {b) iv}); {c) ii}); {d) i}
11. Pollution is an instance of market failure
- (a) because the equilibrium price is higher than the efficient price
(b) because the equilibrium price is less than the efficient price
(c) because property rights are poorly distributed
(d) because the market does not produce enough of the good
12. An adequate amount of a pure public good will not be provided by the private market because of
- (a) the existence of negative externalities
(b) governments would any way produce them

- (c) There are restrictions as well as taxes on the private market
 - (d) The possibility of free riding
13. The free rider problem arises because of
- (a) ability of participants to produce goods at zero marginal cost
 - (b) marginal benefit cannot be calculated due to externalities present
 - (c) the good or service is non excludable
 - (d) general poverty and unemployment of people
14. Which of the following is an example of an impure public good?
- (a) a lighthouse provided by government
 - (b) a congested highway during peak hours
 - (c) a polio vaccination program sponsored by the government
 - (d) national defence and the security offered by it
15. A situation where a pharmaceutical company has full information regarding the risks of a product, but continues to sell it is a case of
- (a) asymmetric information
 - (b) moral hazard
 - (c) free riding
 - (d) (a) and (c) above
16. If an individual tends to drive his car in a dangerously high speed because he has a comprehensive insurance cover, it is a case of
- (a) free riding
 - (b) moral hazard
 - (c) negative externality
 - (d) efficiency
17. Read the following statements
- I. Common resources are pure public goods which are non rival
 - II. Since price mechanism does not apply to common resources, producers and consumers do not pay for these resources

- III. Self-interest makes them overuse the common resources and cause their depletion and degradation
 - IV. The common resources are impure public goods which are excludable but nonrival
 - (a) Statement I alone is correct
 - (b) Statements I and IV are correct
 - (c) Statements II and III are correct
 - (d) Statements ,II and III are correct
18. Market failure will never occur in a
- (a) Socialist economy which is developed
 - (b) Unplanned economy which is underdeveloped
 - (c) Capitalist economy which is developed
 - (d) None of the above

II Short Answer Type Questions

1. Explain the term market failure.
2. Explain, with the aid of examples, the main characteristics of private goods.
3. Identify a pure public good using the criteria for identification
4. Explain the free rider problem. Give examples
5. Public goods do not use up extra resources as additional people consume them. Why?
6. Why do economists use the word external to describe third-party effects that are harmful or beneficial?
7. Explain why environmental pollution is regarded as a source of market failure.
8. Define externalities. Why are they considered as a source of market failure?
9. Distinguish between positive and negative externalities.
10. Appraise the role of incomplete information in generating market failure.
11. What do you understand by externalities in consumption?

12. What criteria are used to distinguish between pure and impure public goods?
13. Explain the term quasi public goods.
14. How can social costs be differentiated from private cost?
15. What is the consequence of a negative externality on price and output?
16. How does the presence of positive externality influence price and output?
17. Describe the term 'Tragedy of Commons'.
18. Define common resources. Why are they overused?
19. Discuss the importance of the distinction between private costs and social costs.
20. Describe, using examples, common access resources
21. Why are health and education not pure public goods?

III Long Answer Type Questions

1. Define the concept of market failure. Describe the different sources of market failure.
2. Explain the different types of externalities. Illustrate how externalities lead to welfare loss of markets.
3. Describe why markets have incentives to produce private goods.
4. Why do markets fail to produce public goods? Illustrate your answer.
5. Distinguish between different types of public goods. How do public goods cause market failure?
6. Explain using diagram and examples, the concepts of negative externalities of production and consumption, and the welfare loss associated with the production or consumption of a good or service.
7. Explain, with the aid of examples, the main characteristics of merit goods.
8. Describe the free rider problem associated with public goods. What would be the outcome of this problem? Give examples.
9. 'The existence of poverty in economically less developed countries creates negative externalities through over-exploitation of land for agriculture, and this poses a threat to sustainability'. Elucidate

IV Application Oriented Questions

1. Identify the market outcomes for each of the following situations
 - (a) A few youngsters play loud music at night. Neighbours may not be able to sleep.
 - (b) Ram buys a large SUV which is very heavy
 - (c) X smokes in a public place
 - (d) Rural school students are given vaccination against measles
 - (e) Traffic congestion making travel very uncomfortable
 - (f) Piracy of computer programs
 - (g) Some species of fish are now getting extinct because they have been caught indiscriminately.
 - (h) The municipality provides sirens four times a day
 - (i) Burglar alarms are installed by many in your locality
 - (j) Global warming increases due to emissions of fossil fuels

ANSWERS/HINTS

I Multiple Choice Type Questions

- | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1. | (b) | 2. | (d) | 3. | (d) | 4. | (a) | 5. | (b) | 6. | (b) |
| 7. | (a) | 8. | (c) | 9. | (c) | 10. | (d) | 11. | (b) | 12. | (d) |
| 13. | (c) | 14. | (b) | 15. | (a) | 16. | (b) | 17. | (c) | 18. | (d) |

II Hints to Short Answer Type Questions

New
Addition

1. Market failure is a situation in which the free market fails to allocate resources efficiently in the sense that there is either overproduction or underproduction of particular goods and services leading to less than optimal market outcomes.
2. Private goods like car, food are 'rivalrous' and 'excludable' and less likely to have the free rider problem which means that simultaneous consumption of these goods by more than one person is impossible and it is possible to exclude or prevent consumers who have not paid for them from consuming.

them or having access to them. Additional resource costs are involved for providing to another consumer.

3. The criteria for identifying the nature of the good, whether private or public are rivalry and excludability in consumption. Pure public goods are perfectly non-rival in consumption and are non-excludable. Knowledge is a pure public good: once something is known, that knowledge can be used by anyone, and its use by any one person does not preclude its use by others.
4. The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual is known as the free rider problem. In other words, free riding is 'benefiting from the actions of others without paying'. Example is national defence. The government provides defence for all its citizens regardless of much they contribute in taxes. Another example is Wikipedia- few people contribute (financially or otherwise), but everyone gets to use it.
5. Public goods do not use up extra resources as additional people consume them. In other words, once a public good like a light house is provided, it is commonly consumed and the additional resource cost of another person consuming the goods is 'zero'.
6. Economists use the word 'external' to describe third-party effects that are harmful or beneficial because sometimes, the actions of either consumers or producers result in costs or benefits that do not reflect as part of the market price. Such costs or benefits which are not accounted for by the market price are called externalities because they are "external" to the market. Or in other words, externality is costs or benefits that result from an activity or transaction and affects a third party who did not choose to incur the cost or benefit. Externalities are either positive or negative depending on the nature of the impact on the third party.
7. Environmental pollution is regarded as a source of market failure because third parties experience negative effects from this activity in which they did not choose to be involved. The social cost exceeds private cost and if producers do not take into account the externalities, there will be overproduction and market failure.
8. Externality refers to costs or benefits that result from an activity or transaction and affects a third party who did not choose to incur the cost or benefit. They are considered as a source of market failure because prices fail

to reflect the true costs and benefits to the society and externalities are not accounted for in pricing and quantity decisions of the firms.

9. Externalities can be positive or negative. Positive externalities occur when the action of one party confers benefits on another party. For example, providing good public education mainly benefits the students, but the benefits of this public good will spill over to the whole society. On the other hand, negative externalities occur when the action of one party imposes costs on another party. For example, even though cigarette smoking is primarily harmful to a smoker; it also causes a negative health impact on people around the smoker.
10. Incomplete information is manifest in asymmetric information which occurs when there is an imbalance in information between the buyer and the seller i.e. when the buyer knows more than the seller or the seller knows more than the buyer. This can distort choices. Asymmetric information generates adverse selection and moral hazard. Adverse selection is a situation in which asymmetric information about quality eliminates high-quality goods from a market. Economic agents end up either selecting a sub-standard product or leaving the market altogether. It can also lead to missing markets.

Moral hazard arises whenever there is an externality (i.e., whenever an economic agent can shift some of its costs to others). It occurs when one party to an agreement knows that he need not bear the consequences of his bad behaviour or poor decision making and that the consequence, if any, would be borne by the other party. In the insurance market, moral hazard refers to a situation that increases the probability of occurrence of a loss or a larger than normal loss because of a change in the insurance policy holders' behaviour after the issuance of policy.

11. Externality in consumption occurs when consuming a good cause either a positive or negative externality to a third party. Positive consumption externality initiated in consumption confers external benefits on others. Negative consumption externalities initiated in consumption produce external costs on others.
12. A pure public good is non-rivalrous and non-excludable whereas impure public goods are partially rivalrous or congestible. Because of the possibility of congestion, the benefit that an individual gets from an impure public good depends on the number of users.

13. Quasi-public goods or services, also called a near public good (for e.g. education, health services) possess nearly all of the qualities of the private goods and some of the benefits of public good. Markets for the quasi-public goods are considered to be incomplete markets and their lack of provision by free markets reflects inefficiency and market failure.
14. Social Cost = Private Cost + External Cost
The presence of externalities creates a divergence between private and social costs of production. When negative production externalities exist, social costs exceed private cost because the true social cost of production would be private cost plus the cost of the damage from externalities. If producers do not take into account the externalities, there will be over-production and market failure. Applying the same logic, negative consumption externalities lead to a situation where the social benefit of consumption is less than the private benefit.
15. When there is negative externality, a competitive market will produce too much output relative to the social optimum. This is a clear case of market failure where prices fail to provide the correct signals.
16. The presence of positive externalities influence price and output since marginal social benefits is greater than marginal private benefits and hence equilibrium (where $MPC=MPB$) is unlikely to be efficient. If a positive production externality is present, then ceteris paribus, MSC is less than MPC and the market output is less than optimal. Similarly, when there is a positive consumption externality ceteris paribus, MSB is greater than MPB and output will be less than optimal.
17. Economists use the term 'tragedy of the commons' to describe the problem which occurs when rivalrous but non-excludable goods are overused to the disadvantage of the entire universe. For example, everyone has access to a commonly held pasture; there are no rules about sustainable numbers for grazing. The outcome of the individual rational economic decisions of cattle owners would be market failure, because these actions result in the degradation, depletion or even destruction of the resource leading to welfare loss for the entire society.
18. Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. Since price mechanism does not

apply to 'common resources', producers and consumers do not pay for these resources and therefore, they overuse them and cause their depletion and degradation.

19. Private cost is the cost faced by the producer or consumer directly involved in a transaction. Social costs refer to the total costs to the society on account of a production or consumption activity and include external costs as well. The actors in the transaction (consumers or producers) tend to ignore those external costs and these are not included in firms' income statements or consumers' decisions. However, these external costs are real and important as far as the society is concerned. If producers do not take into account the externalities, there will be over-production and market failure. Applying the same logic, negative consumption externalities lead to a situation where the social benefit of consumption is less than the private benefit. Therefore, it is important that a distinction be made between private costs and social costs.
20. Common access resources or common pool resources are a special class of impure public goods which are non-excludable as people cannot be excluded from using them. These are rival in nature and their consumption lessens the benefits available for others. This rival nature of common resources is what distinguishes them from pure public goods, which exhibit both non-excludability and non-rivalry in consumption. They are generally available free of charge. Examples of common access resources are fisheries, common pastures, rivers, sea, backwaters, biodiversity etc.
21. A pure public good is non-rivalrous and non-excludable in nature. Education and health services are not pure public goods; rather they are quasi-public goods that possess nearly all of the qualities of the private goods and some of the benefits of public good. It is clearly possible to exclude people who do not pay from availing these services

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner

may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.

- (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
- (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

- (a) Negative externality, overproduction
- (b) Negative externality, environmental externality, wear and tear of roads, increased fuel consumption, added insecurity imposed on others
- (c) Negative externality, overproduction
- (d) Public good, positive externality
- (e) Negative externality
- (f) Unpatented computer programs have characteristics very much like a public good and therefore market failure.
- (g) The problem of the commons –The tragedy of commons
- (h) Sirens have all characteristics of public goods. People will free ride – market failure.
- (i) Positive externality, free riding.
- (j) Negative externality.

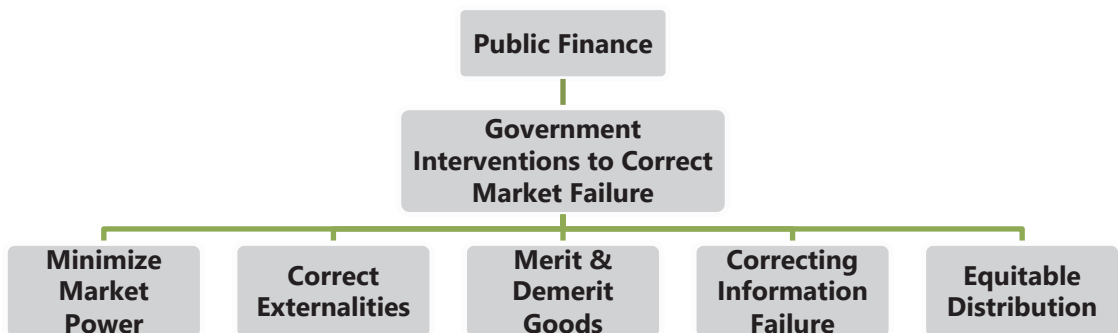
UNIT III: GOVERNMENT INTERVENTIONS TO CORRECT MARKET FAILURE

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Describe the different forms of government intervention for correcting market failure
- Evaluate the outcomes of intervention in case of public goods, merit goods and demerit goods
- Illustrate how intervention combat market power, externalities, inequalities and information failure
- Elucidate the functioning and outcomes of price intervention

UNIT OVERVIEW



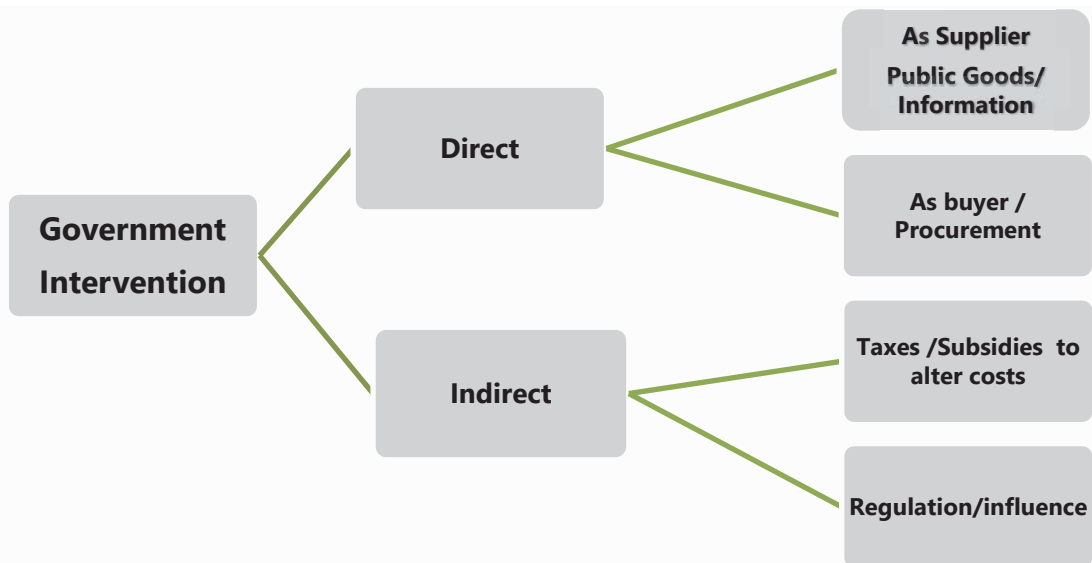
In the previous unit, we have seen that under a variety of circumstances the market and the price system fail to achieve productive and allocative efficiency in an economy. As such, it should be construed that the existence of a free market does not altogether eliminate the need for government and that government

intervention is essential for the efficient functioning of markets. The focus of this unit will be the intervention mechanisms which governments adopt to ensure greater welfare to the society and the probable outcomes of such market interventions.

Government plays a vital role in creating the necessary physical and institutional infrastructure within which fair and open competitive markets can exist. The physical infrastructure such as roads, bridges, airports and waterways are often provided by governments. The government-provided institutional infrastructure namely, the legal and regulatory framework, is essential for a well functioning market. It is indispensable that government establishes the 'rule of law', and in this process, creates and protects property rights, ensures that contracts are upheld and sets up necessary institutions for proper functioning of markets. For achieving this, an appropriately framed competition and consumer law framework that regulates the activities of firms and individuals in their market exchanges should be in place.

New
Addition

We have seen in the previous unit that the major reasons for market failure are market power, externalities, public goods, and incomplete information. Before we go into the details of government intervention, we shall try to have a quick glimpse of the forms of government intervention.





3.1 GOVERNMENT INTERVENTION TO MINIMIZE MARKET POWER

As we are aware, market power—exercised either by sellers or buyers— is an important factor that contributes to inefficiency because it results in higher prices than competitive prices. In addition, market power also tends to restrict output and leads to deadweight loss. Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition. These legislations differ from country to country. For example, in India, we have the Competition Act, 2002(as amended by the Competition (Amendment) Act, 2007) to promote and sustain competition in markets. The Antitrust laws in the US and the Competition Act, 1998 of UK etc are designed to promote competitive economy by prohibiting actions that are likely to restrain competition. Such legislations generally aim at prohibiting contracts, combinations and collusions among producers or traders which are in restraint of trade and other anticompetitive actions such as predatory pricing.

Other measures include:

New
Addition

- Market liberalisation by introducing competition in previously monopolistic sectors such as energy, telecommunication etc
- Controls on mergers and acquisitions if there is possible market domination
- Price capping and price regulation based on the firm's marginal costs, average costs, past prices, or possible inflation and productivity growth
- Profit or rate of return regulation
- Performance targets and performance standards
- Patronage to consumer associations
- Tough investigations into cartelisation and unfair practices such as collusion and predatory pricing
- Restrictions on monopsony power of firms
- Reduction in import controls and
- Nationalisation

New
Addition

It is common that some of the regulatory responses of government to incentive failure tend to create and protect monopoly positions of firms that have

developed unique innovations. For example, patent and copyright laws grant exclusive rights of products or processes to provide incentives for invention and innovation. Another example is that of permitted natural monopoly. Natural monopolies can produce the entire output of the market at a cost that is lower than what it would be if there were several firms. If a firm is a natural monopoly, it is more efficient to permit it to serve the entire market rather than have several firms compete each other. Examples of such natural monopoly are electricity, gas and water supplies. The Policy options for limiting market power in case of natural monopolies include price regulation in the form of setting maximum prices that firms can charge. In some cases, the government's regulatory agency determines an acceptable price, so as to ensure a competitive or fair rate of return. This practice is called rate-of-return regulation.

Change
and
new
addition

3.2 GOVERNMENT INTERVENTION TO CORRECT EXTERNALITIES

As you may easily recall, freely functioning markets produce externalities because producers and consumers need to consider only their private costs and benefits and not the costs imposed on or benefits accrued to others. To promote the overall welfare of all members of society, social returns should be maximized and social costs minimized. This implies that all costs and benefits need to be internalized by consumers and producers while making buying and production decisions. Otherwise, market outcomes involve underproduction of goods or services that entail positive externalities or overproduction in the case of negative externalities.

New
Addition

Governments have numerous methods to reduce the effects of negative externalities and to promote positive externalities. We shall first examine how government regulation can deal with the inefficiencies that arise from negative externalities. Since the most commonly referred negative externality is pollution, we shall take it as an exemplar in the following discussion.

Government initiatives towards negative externalities may be classified as:

1. Direct controls or regulations that openly regulate the actions of those involved in generating negative externalities, and
2. Market-based policies that would provide economic incentives so that the self-interest of the market participants would achieve the socially optimal solution.

Direct controls, also known as command solutions, prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level. For example, government may limit the amounts of certain pollutants released into water and air by individual firms or make it mandatory to use pollution control devices. Licensing, production quotas and mandates regarding acceptable production processes are other examples of direct intervention by governments. Production, use and sale of many commodities and services are prohibited in our country. Smoking is completely banned in many public places. Stringent rules are in place in respect of tobacco advertising, packaging and labelling etc.

Governments may pass laws to alleviate the effects of negative externalities. Government stipulated environmental standards are rules that protect the environment by specifying actions by producers and consumers. For example, India has enacted the Environment (Protection) Act, 1986. The government may, through legislation, fix emissions standard which is a legal limit on how much pollutant a firm can emit. The set standard ensures that the firm produces efficiently. If the firm exceeds the limit, it can invite monetary penalties or/and criminal liabilities. The firms have to install pollution-abatement mechanisms to ensure adherence to the emission standards. This means additional expenditure to the firm leading to rise in the firm's average cost. New firms will find it profitable to enter the industry only if the price of the product is greater than the average cost of production plus abatement expenditure.

Another method is to charge an emissions fee which is levied on each unit of a firm's emissions. The firms can minimize costs and enhance their profitability by reducing emissions. Governments may also form special bodies/ boards to specifically address the problem: for instance the Ministry of Environment & Forest, the Pollution Control Board of India and the State Pollution Control Boards.

The market-based approaches—environmental taxes and cap-and-trade – operate through price mechanism to create an incentive for change. In other words, they rely on economic incentives to accomplish environmental goals at lesser costs. The market based approaches focus on generation of a market price for pollution. This is achieved by:

1. Setting the price directly through a pollution tax
2. Setting the price indirectly through the establishment of a cap-and-trade system.

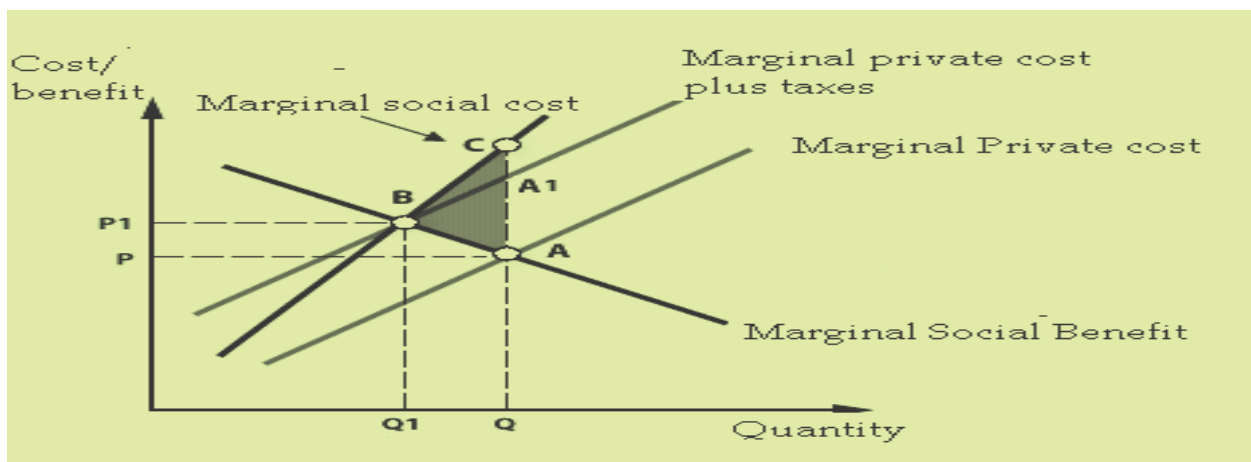
An externality is internalised if the persons or group that generated the externality incorporate into their private or internal cost-benefit calculations the external benefits (in the case of positive externality) and external costs (in the case of negative externality) that third parties bear. In other words, the key to internalizing an externality (both external costs and benefits) is to ensure that those who create the externalities include them while making decisions.

One method of ensuring internalization of negative externalities is imposing pollution taxes. The size of the tax depends on the amount of pollution a firm produces. These taxes are named Pigouvian taxes after A.C. Pigou who argued that an externality cannot be alleviated by contractual negotiation between the affected parties and therefore taxation should be resorted to. These taxes, by 'making the polluter pay', seek to internalize the external costs into the price of a product or activity. More precisely, the tax is placed on the externality itself (the amount of pollution emissions) rather than on output (say, amount of steel). For each unit of pollution, the polluter must choose either to pay the tax or to reduce pollution through any means at its disposal. Tax increases the private cost of production or consumption as the case may be, and would decrease the quantity demanded and therefore the output of the good which creates negative externality. The proceeds from the tax, some argue, can be specifically earmarked for projects that protect or enhance environment.

The following figure illustrates the market outcomes of pollution tax.

Figure 2.3.1

Market Outcomes of Pollution Tax



When negative production externalities exist, marginal social cost is greater than marginal private cost. The free market outcome would be to produce a socially non optimal output level Q at the level of equality between marginal private cost and marginal private benefit. (Since externalities are not taken into account, marginal private benefit would be contemplated as marginal social benefit). When negative externalities are present, the welfare loss to the society or dead weight loss would be the shaded area ABC . The tax imposed by government (equivalent to the vertical distance AA_1) would shift the cost curve up by the amount of tax, prices will rise to P_1 and a new equilibrium is established at point B , where the marginal social cost is equal to marginal social benefit. Output level Q_1 is socially optimal and eliminates the welfare loss on account of overproduction. The ideal corrective tax is equal to the negative externality. A tax on each unit of a good equal to the external harm it causes can correct a negative externality, and bring the market to the efficient quantity of the good. Thus the tax internalises the externality by making pollution an accounting cost.

New Addition

However, there are problems in administering an efficient pollution tax.

Arguments against pollution taxes

- Pollution taxes are difficult to determine and administer because it is difficult to discover the right level of taxation that would ensure that the private cost plus taxes will exactly equate with the social cost.
- If the demand for the good is inelastic, the tax may only have an insignificant effect in reducing demand. In such cases, the producers will be able to easily shift the tax burden in the form of higher product prices. This will have an inflationary effect with little effect on the level of production and may reduce consumer welfare.
- The method of taxing the polluters has many limitations because it involves the use of complex and costly administrative procedures for monitoring the polluters.
- This method does not provide any genuine solutions to the problem. It only establishes an incentive system for use of methods which are less polluting.
- Pollution taxes also have potential negative consequences on employment and investments because high pollution taxes in one country may encourage producers to shift their production facilities to those countries with lower taxes.

Change

The second approach to establishing prices indirectly is 'tradable emissions permits'. The use of tradable permits to limit emissions is often called 'cap and trade'. A tradable permit is a license that allows a company to release a unit of pollution into the environment over some period of time. By issuing a fixed number of permits, the government determines the total level of pollution that can be legally emitted during each period (the "cap"). Each firm has permits specifying the number of units of emissions that the firm is allowed to generate. A firm that generates emissions above what is allowed by the permit is penalized with substantial monetary sanctions. By allocating fewer permits than the free pollution level, the regulatory agency creates a shortage of permits which then leads to a positive price for pollution, just as in the tax case.

The firms can sell their government-issued permits to other firms in an organized market. Since the permits are tradable (the firm can sell for a price), a polluting firm faces an opportunity cost i.e. for each unit of pollution that it creates, it must either buy a permit, or it must forgo the revenue it could earn by selling the permit to some other firm. A firm whose technology would make it very costly to reduce pollution generally buys permits in the market. At the same time, a firm whose technology enables it to reduce pollution rather cheaply will sell permits. Since these permits are transferable different pollution levels are possible across the regulated entities.

Under this system, a market in permits to pollute will emerge. The high polluters have to buy more permits, which increases their costs, and makes them less competitive and less profitable. The low polluters receive extra revenue from selling their surplus permits, which makes them more competitive and more profitable. Therefore, firms will have an incentive not to pollute.

The general public, however, is not affected by the trade because total emissions remain unchanged. Thus, the price of the permit becomes part of the marginal cost of producing the polluting good. With higher marginal cost, the market supply curve shifts upward, and the market equilibrium price of the polluting good rises as well. This can move the quantity of a polluting good toward its efficient level, similar to the effects of a tax. Tradable permits allow consumers and firms to respond to prices when determining how much of the negative externality to create. Tradable permits have been used since the early 1980s to reduce several types of pollution in the United States. In 1994 the United States began a cap and trade system for the sulphur dioxide emissions that cause acid rain by issuing permits to power plants based on their historical consumption of

coal. India is experimenting with cap-and-trade in the form of Perform, Achieve & Trade (PAT) scheme and carbon tax in the form of a cess on coal.

Change

Following are some advantages claimed for tradable permits:

- The system allows flexibility and rewards efficiency. We can reasonably expect that the firms will have a strong incentive to reduce pollution, since permits can be sold off for profit.
- The 'cap' puts a clear upper limit on the quantity of pollution that may be generated in each period
- The market for permits enables a clear price for pollution and helps in internalizing the costs. The price of permits can be increased over time by reducing the number of permits available.
- It is administratively cheap and simple to implement and ensures that pollution is minimised in the most cost-effective way.
- It also provides strong incentives for innovation to combat pollution.
- Consumers may benefit if the extra profits made by low pollution firms are passed on to them in the form of lower prices.

New Addition

New Addition

New Addition

The main argument in opposition to the employment of tradable emission permits is that they do not, in reality, stop firms from polluting the environment; they only provide an incentive to them to do so. Moreover, if firms have monopoly power of some degree along with a relatively inelastic demand for its product, the extra cost incurred for procuring additional permits so as to further pollute the atmosphere, could easily be compensated by charging higher prices to consumers.

The two interventions mentioned above i.e. permits and taxes make use of market forces to encourage consumers and producers to take externalities into account when planning their consumption and production. In other words, the polluters are forced to consider pollution as a private cost.

We have been dealing with negative production externalities in the above discussion. We shall now look into the case of positive externalities. A positive consumption (production) externality occurs when consumption (production) of a good cause positive benefits to a third party. This means that the social benefits of consumption or production exceed the private benefits.

Change and new addition

In the case of positive consumption externality, the social marginal benefit (SMB) is higher than private marginal benefit (PMB). Education, preventive vaccination

etc are examples of consumption having positive externality. In the case of positive production externality, the marginal social cost (MSC) is less than private marginal cost. Research and development, production of education, healthcare and similar merit goods fall under this. The intersection of the marginal social cost (MSC) and the social value curve (MSB curve) determines the optimal level of output.

Though positive externality is associated with external benefits, we still call it a market failure because, left to market, there will be less than optimal output. In a free market without government intervention, there will be under-consumption of goods with positive consumption externalities. In case of goods with positive production externality, the market will produce less than the efficient quantity.

Since positive externalities promote welfare, governments implement policies that promote positive externalities. When positive externalities are present, government may attempt to solve the problem through corrective subsidies to the producers aimed at either increasing the supply of the good or through corrective subsidies to consumers aimed at increasing the demand for the good.

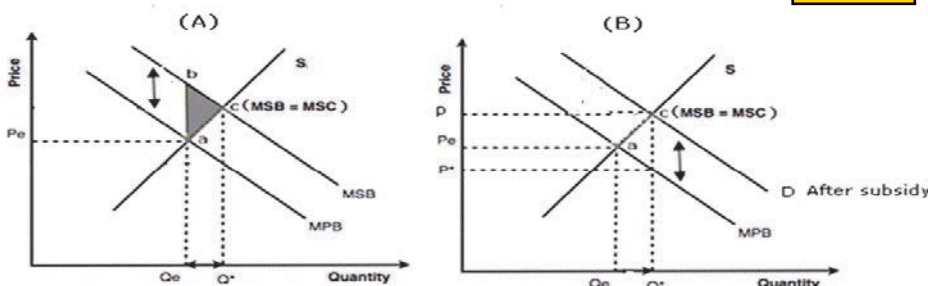
Change and new addition

We shall first look into consumption externalities with the classic example of education. A competitive market in education with no government interference would be inefficient. In panel A of the following diagram, the horizontal axis measures the quantity of education and the vertical axis measures the price of education. The demand curve (MPB) for education does not reflect positive externalities of education consumption. Without government intervention, the market reaches inefficient equilibrium at point 'a' with Q_e amount of education at P_e prices. The distance 'a b' (marked by arrow) is the value of the positive externality. The efficient level of output is Q^* corresponding to point 'c' where the MSB curve intersects the supply curve. The total deadweight loss (welfare loss) from all the education not provided is the shaded triangle 'b a c'.

Figure 2.3.2

Effect of Government Subsidy

New Addition



A government subsidy is a market-based approach that changes the price of the product and allows individual consumers to respond to those prices and make their own decisions. Subsidies to consumers of a good with positive externality will increase the marginal private benefit of consumption (since individuals now get paid to buy a good) and increase the demand for the good.

In panel B, a subsidy equal to the value of the positive externality (marked by arrow) is paid to each student. The subsidy causes each student to add the same amount to the value that he or she places on education and shifts up the demand curve by that amount. The demand curve now rises to the level of the MSB curve, and the market equilibrium moves to Q^* -the efficient number. In the new equilibrium, the price of education rises from P_e to P ; however the students, after accounting for the subsidy, pay only P^* so that more of them choose to acquire education. Thus, a subsidy on each unit of a good, equal to the external benefits it creates can correct a positive externality and bring the market to an efficient output level.

As we are aware, a corrective production subsidy involves government paying part of the cost to the firms in order to promote the production of goods having positive externalities. This is in fact a market-based policy as subsidies to producers would lower their cost of production. What would be the outcome of government intervention through subsidy? A subsidy on a good which has substantial positive externalities would reduce the marginal private costs of production, increase the supply, shift the supply curve to the right, reduce the price and increase the quantity demanded of the subsidised good. A higher output that would equate marginal social benefit and marginal social cost is socially optimal.

In the case of products and services whose externalities are vastly positive and pervasive, government enters the market directly as an entrepreneur to produce and provide them. Public education and health care are the obvious examples. Another example, fundamental research to protect the futuristic technology interest of the society is, in most cases, funded by government as the market may not be willing to provide them. Governments also engage in direct production of environmental quality. Examples are: afforestation, reforestation, protection of water bodies, treatment of sewage and cleaning of toxic waste sites.

Change
and new
addition



3.3 GOVERNMENT INTERVENTION IN THE CASE OF MERIT GOODS

Merit goods are goods which are deemed to be socially desirable and therefore the government deems that its consumption should be encouraged. Substantial positive externalities are involved in the consumption of merit goods. Left to the market, only private benefits and private costs would be reflected in the price paid by consumers. This means, compared to what is socially desirable, people would consume inadequate quantities. Examples of merit goods include education, health care, welfare services, housing, fire protection, waste management, public libraries, museum and public parks.

In contrast to pure public goods, merit goods are rival, excludable, limited in supply, rejectable by those unwilling to pay, and involve positive marginal cost for supplying to extra users. Merit goods can be provided through the market, but are likely to be under-produced and under-consumed through the market mechanism so that social welfare will not be maximized.

The additional reasons for government provision of merit goods are:

- Information failure is widely prevalent with merit goods and therefore individuals may not act in their best interest because of imperfect information.
- Equity considerations demand that merit goods such as health and education should be provided free on the basis of need rather than on the basis of individual's ability to pay.
- There is a lot of uncertainty as to the need for merit goods E.g. health care. Due to uncertainty about the nature and timing of healthcare required in future, individuals may be unable to plan their expenditure and save for their future medical requirements. The market is unlikely to provide the optimal quantity of health care when consumers actually need it, because they may be short of the necessary finances to pay the market price.

The possible government responses to under-provision of merit goods are regulation, subsidies, direct government provision and a combination of government provision and market provision. Regulation determines how a private activity may be conducted. For example, the way in which education is to be imparted is government regulated. Governments can prohibit some type of goods and activities, set standards and issue mandates making others oblige. For

example, government may make it compulsory to avail insurance protection. Compulsory immunization may be insisted upon as it helps not only the individual but also the society at large. Government could also use legislation to enforce the consumption of a good which generates positive externalities. E.g. use of helmets, seat belts etc. The Right of Children to Free and Compulsory Education Act, 2009 which mandates free and compulsory education for every child of the age of six to fourteen years is another example. A variety of regulatory mechanisms may also be set up by government to enhance consumption of merit goods and to ensure their quality. Government can also provide free information to consumers, to compensate for the information failure that discourages consumption.

New Addition

An additional option is to compel individuals to consume the good or service that generates the external benefit. For example, if suspected of having a contagious disease such as COVID, an individual may be forced to get medical treatment. Universal compulsory schooling for children upto 14 years is another example.

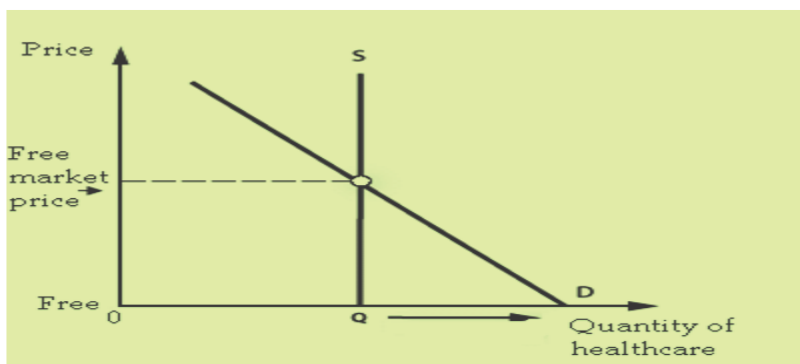
When governments provide merit goods, it may give rise to large economies of scale and productive efficiency apart from generating substantial positive externalities and overcoming the problems mentioned above.

The ultimate encouragement to consume is to make the good completely free at the point of consumption, such as with freely available hospital treatment for contagious diseases. When merit goods are directly provided free of cost by government, there will be substantial demand for the same. As can be seen from the following diagram, when people are required to pay the free market price, people would consume only OQ quantity of healthcare. If provided free at zero prices, the demand OD far exceeds supply.

New Addition

Figure 2.3.3

Consumption of Merit Goods at Zero Price





3.4 GOVERNMENT INTERVENTION IN THE CASE OF DEMERIT GOODS

Demerit goods are goods which are believed to be socially undesirable. Examples of demerit goods are cigarettes, alcohol, intoxicating drugs etc. The consumption of demerit goods imposes significant negative externalities on the society as a whole and therefore the private costs incurred by individual consumers are less than the social costs experienced by the society. The production and consumption of demerit goods are likely to be more than optimal under free markets. The price that consumers pay for a packet of cigarettes is market determined and does not account for the social costs that arise due to externalities. In other words, the marginal social cost will exceed the market price and overproduction and over-consumption will occur, causing misallocation of society's scarce resources. (Refer Figure 2.2.1 in unit 2). However, it should be kept in mind that all goods with negative externalities are not essentially demerit goods; e.g. Production of steel causes pollution, but steel is not a socially undesirable good.

The generally held argument is that consumers overvalue demerit goods because of imperfect information and they are not the best judges of welfare with respect to such goods. The government should therefore intervene in the marketplace to discourage their production and consumption. How do governments correct market failure resulting from demerit goods?

- At the extreme, government may enforce complete ban on a demerit good. e.g. Intoxicating drugs. In such cases, the possession, trading or consumption of the good is made illegal.
- Through persuasion which is mainly intended to be achieved by negative advertising campaigns which emphasize the dangers associated with consumption of demerit goods.
- Through legislations that prohibit the advertising or promotion of demerit goods in whatsoever manner.
- Strict regulations of the market for the good may be put in place so as to limit access to the good, especially by vulnerable groups such as children and adolescents.
- Regulatory controls in the form of spatial restrictions e.g. smoking in public places, sale of tobacco to be away from schools, and time restrictions under which sale at particular times during the day is banned.

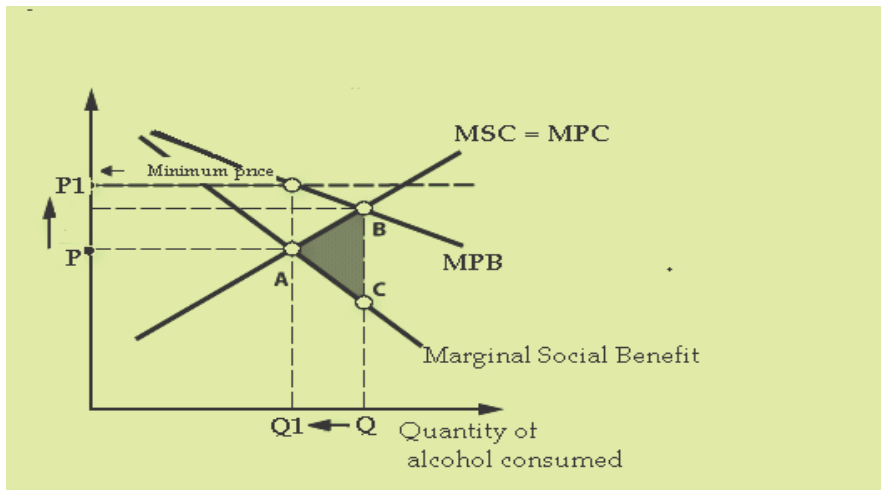
Imposing unusually high taxes on producing or purchasing the good making them very costly and unaffordable to many is perhaps the most commonly used method for reducing the consumption of a demerit good. For example, the GST Council has bracketed four items namely, high end cars, pan masala, aerated drinks and tobacco products into demerit goods category and therefore these would be taxed (with a cess being added on to the basic tax) at much higher rates than the top GST slab of 28 per cent.

However, there are various limitations for government to succeed in producing the desired optimal effects in the case of demerit goods. There are many practical difficulties in imposing taxes. In order to impose a tax which is equivalent to the marginal external cost, the governments need to know the exact value of the marginal external cost and then ascribe accurate monetary value to those negative externalities. In practice, this is extremely difficult to do.

The government can fix a minimum price below which the demerit good should not be exchanged. The effect of such minimum price fixation above equilibrium price is shown in the figure below:

Figure 2.3.4

Outcomes of Minimum Price for a Demerit Good



Free market equates marginal private cost with marginal private benefit (point B) and produces an output of a demerit good Q at which marginal social benefit (MSB) is much less than marginal private benefit (MPB). At this level of output, there is a divergence (BC) between marginal private benefit (MPB) and marginal

social benefit (MSB). The shaded area represents loss of social welfare. If the government determined minimum price is P_1 , demand contracts and the quantity of alcohol consumed would be reduced to Q_1 . At Q_1 level of output, marginal social benefit (MSB) is equal to marginal social cost (MSC) and the quantity of alcohol consumed is optimal from the society's point of view.

The demand for demerit goods such as, cigarettes and alcohol is often highly inelastic, so that any increase in price resulting from additional taxation causes a less than proportionate decrease in demand. Also, sellers can always shift the taxes to consumers without losing customers.

The effect of stringent regulation such as total ban is seldom realized in the form of complete elimination of the demerit good; conversely such goods are secretly driven underground and traded in a hidden market.



3.5 GOVERNMENT INTERVENTION IN THE CASE OF PUBLIC GOODS

We have seen in the previous unit that public goods which are non excludable are highly prone to free rider problem and therefore markets are unlikely to get established. Direct provision of a public good by government can help overcome free-rider problem which leads to market failure. The non-rival nature of consumption provides a strong argument for the government rather than the market to provide and pay for public goods. In the case of such pure public goods where entry fees cannot be charged, direct provision by governments through the use of general government tax revenues is the only option.

Excludable public goods can be provided by government and the same can be financed through entry fees. A very commonly followed method is to grant licenses to private firms to build a public good facility. Under this method, the goods are provided to the public on payment of an entry fee. In such cases, the government regulates the level of the entry fee chargeable from the public and keeps strict watch on the functioning of the licensee to guarantee equitable distribution of welfare.

Some public goods are provided by voluntary contributions and private donations by corporate entities and nongovernmental organisations. Self-interested firms or individuals sometimes provide public goods because they can indirectly make money out of them. The most important public goods like defence, establishment

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and maintenance of legal system, fire protection, disease prevention etc are invariably provided by the government.

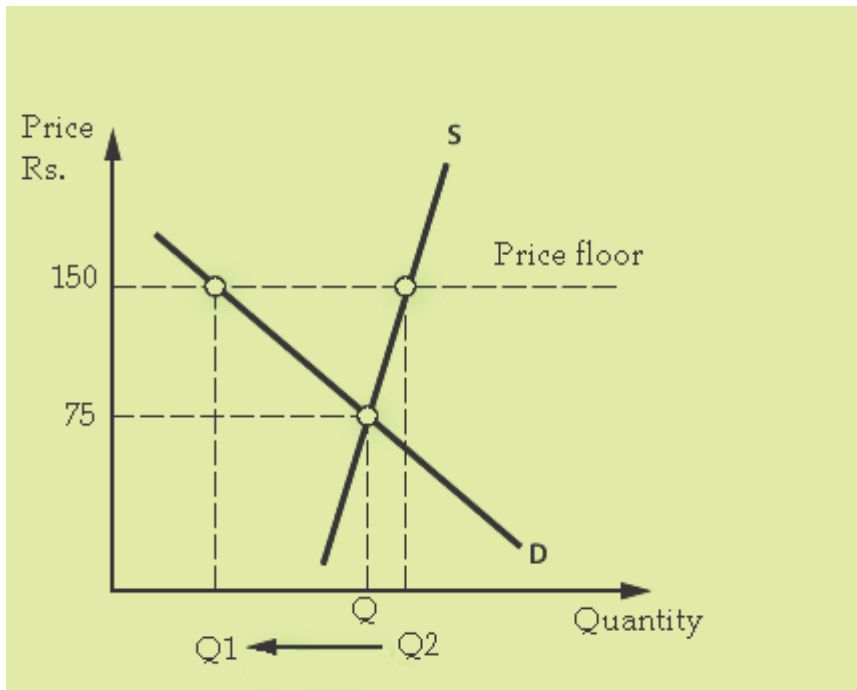
Certain goods are produced and consumed as public goods and services despite the fact that they can be produced or consumed as private goods. This is because, left to the markets and profit motives, these may prove dangerous to the society. Examples are scientific approval of drugs, production of strategic products such as atomic energy, provision of security at airports etc.

3.6 PRICE INTERVENTION: NON MARKET PRICING

Price controls are put in place by governments to influence the outcomes of a market. Very often, there is strong political demand for governments to intervene in markets for various goods and services on grounds of fairness and equity. Price intervention generally takes the form of price controls which are legal restrictions on price. Price controls may take the form of either a price floor (a minimum price buyers are required to pay) or a price ceiling (a maximum price sellers are allowed to charge for a good or service). Fixing of minimum wages and rent controls are examples of such market intervention.

Government usually intervenes in many primary markets which are subject to extreme as well as unpredictable fluctuations in price. For example in India, in the case of many crops the government has initiated the Minimum Support Price (MSP) programme as well as procurement by government agencies at the set support prices. The objective is to guarantee steady and assured incomes to farmers. In case the market price falls below the MSP, then the guaranteed MSP will prevail. The following diagram will illustrate the effects of a price floor. Nevertheless, mere announcement of higher support prices for commodities, which are not effectively backed up by procurement arrangement, does not serve the purpose of remunerative levels of prices for producers.

Figure 2.3.5
Market Outcome of Minimum Support Price

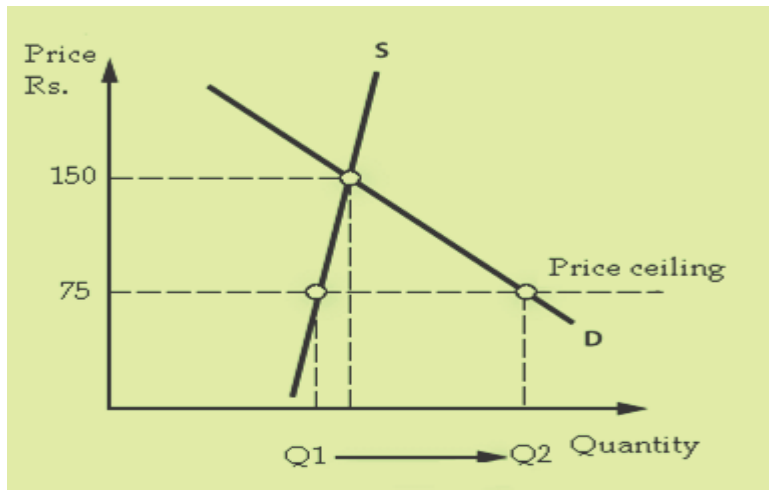


When price floors are set above market clearing price, suppliers are encouraged to over-supply and there would be an excess of supply over demand. At price ₹ 150/ which is much above the market determined equilibrium price of ₹ 75/, the market demand is only Q_1 , but the market supply is Q_2 .

When prices of certain essential commodities rise excessively, government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices. For example: maximum prices of food grains and essential items are set by government during times of scarcity. A price ceiling which is set below the prevailing market clearing price will generate excess demand over supply. As can be seen in the following figure, the price ceiling of ₹ 75/ which is below the market-determined price of ₹150/leads to generation of excess demand over supply equal to Q_1-Q_2 .

Figure 2.3.6

Market Outcome of Price Ceiling



With the objective of ensuring stability in prices and distribution, governments often intervene in grain markets through building and maintenance of buffer stocks. It involves purchases from the market during good harvest and releasing stocks during periods when production is below average.



3.7 GOVERNMENT INTERVENTION FOR CORRECTING INFORMATION FAILURE

For combating the problem of market failure due to information problems and considering the importance of information in making rational choices, the following interventions are resorted to:

- Government makes it mandatory to have accurate labelling and content disclosures by producers. Eg. Labelling on cigarette packets and nutritional information in food packages.
- Mandatory disclosure of information For example: SEBI requires that accurate information be provided to prospective buyers of new stocks.
- Public dissemination of information to improve knowledge and subsidizing of initiatives in that direction.
- Regulation of advertising and setting of advertising standards to make advertising more responsible, informative and less persuasive.

New Addition

New Addition



3.8 GOVERNMENT INTERVENTION FOR EQUITABLE DISTRIBUTION

One of the most important activities of the government is to redistribute incomes so that there is equity and fairness in the society. Equity can be brought about by redistribution of endowments with which the economic agents enter the market. Some common policy interventions include: progressive income tax, targeted budgetary allocations, unemployment compensation, transfer payments, subsidies, social security schemes, job reservations, land reforms, gender sensitive budgeting etc. Government also intervenes to combat black economy and market distortions associated with a parallel black economy. Government intervention in a market that reduces efficiency while increasing equity is often justified because equity is greatly appreciated by society.

The discussion above is far from being comprehensive; yet it points toward the numerous ways in which governments intervene in the markets. However, we cannot be sure whether the government interventions would be effective or whether it would make the functioning of the economy less efficient. Government failures where government intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources occur very often. Government failure occurs when:

- intervention is ineffective causing wastage of resources expended for the intervention
- intervention produces fresh and more serious problems

There are costs and benefits associated with any Government intervention in a market, and it is important that policy makers consider all of the costs and benefits of a policy intervention.

SUMMARY

- Governments intervene in various ways to correct the distortions in the market which occur when there are deviations from the ideal perfectly competitive state.
- Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition.

- Natural monopolies such as electricity, gas and water supplies are usually subject to price controls.
- Government initiatives towards combating market failures due to negative externalities are either direct controls or market-based policies that would provide economic incentives.
- Direct controls prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level, for instance limiting emissions.
- Government may pass laws to alleviate the effects of negative externalities or fix emissions standard which is a legal limit on how much pollutant a firm can emit. It may charge an emissions fee which is levied on each unit of a firm's emissions.
- The market-based approaches– environmental taxes and cap-and-trade – operate through price mechanism to create an incentive for change.
- The key is to internalizing an externality (both external costs and benefits) is to ensure that those who create the externalities include them while making decisions.
- One method of ensuring internalization of negative externalities is imposing pollution taxes. Pigouvian taxes by 'making the polluter pay', seek to internalize external costs into the price of a product or activity.
- Pollution taxes are difficult to determine and administer due to difficulty to discover the right level of taxation, problems associated with inelastic nature of demand for the good and the problem of possible capital flight.
- Tradable emissions permits are marketable licenses to emit limited quantities of pollutants and can be bought and sold by polluters. The high polluters have to buy more permits and the low polluters receive extra revenue from selling their surplus permits.
- The system is administratively cheap and simple, allows flexibility and reward efficiency and provides strong incentives for innovation
- Subsidy is market-based policy and involves the government paying part of the cost to the firms in order to promote the production of goods having positive externalities
- Merit goods such as education, health care etc are socially desirable and have substantial positive externalities. They are rival, excludable, limited in supply,

rejectable by those unwilling to pay, and involve positive marginal cost for supplying to extra users.

- Left to the market, merit goods are likely to be under-produced and under-consumed so that social welfare will not be maximized.
- The possible government responses to under-provision of merit goods are regulation, legislation, subsidies, direct government provision and a combination of government provision and market provision.
- When governments provide merit goods, it may give rise to large economies of scale and productive efficiency and there will be substantial demand for the same.
- Demerit goods are goods which impose significant negative externalities on the society as a whole and are believed to be socially undesirable.
- The production and consumption of demerit goods are likely to be more than optimal under free markets. The government should therefore intervene in the marketplace to discourage their production and consumption.
- Steps taken by government include complete ban of the good, legislations, persuasion and advertising campaigns, limiting access to the good, especially by vulnerable groups,
- In the case of pure public goods where entry fees cannot be charged, direct provision by governments through the use of general government tax revenues is the only option. Excludable public goods can be provided by government and the same can be financed through entry fees.
- A very commonly followed method in the case of public good is to grant licenses to private firms to build a facility and then the government regulates the level of the entry fee chargeable from the public.
- Due to strategic and security reasons, certain goods are produced and consumed as public goods and services despite the fact that they can be produced or consumed as private goods.
- Price controls may take the form of either a price floor (a minimum price buyers are required to pay) or a price ceiling (a maximum price sellers are allowed to charge for a good or service).

- When prices of certain essential commodities rise excessively government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices.
- With the objective of ensuring stability in prices and distribution, governments often intervene in grain markets through building and maintenance of buffer stocks.
- Government failures where government intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources occur very often.
- Government failure occurs when intervention is ineffective causing wastage of resources expended for the intervention and/or when intervention produces fresh and more serious problems.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. A thermal power plant uses coal and creates pollution in an otherwise unpolluted area. Which of the following would ensure that a socially optimal output of electricity is produced?
 - (a) Where marginal private cost equals marginal private benefit.
 - (b) Where marginal private cost equals marginal social benefit.
 - (c) Where marginal social cost equals marginal private benefit.
 - (d) Where marginal social cost equals marginal social benefit.
2. Which of the following statements is true?
 - I The market-based approaches to control externalities price mechanism
 - II. When externalities are present, the welfare loss would be eliminated
 - III. The key to internalizing an externality is to create the externality
 - (a) Both II and III
 - (b) I only
 - (c) II only
 - (d) Both I and III

3. Which of the following statements is false?
 - (a) Tradable permits provide incentive to innovate
 - (b) A subsidy on a good which has substantial positive externalities would reduce its cost and consequently price
 - (c) Substantial negative externalities are involved in the consumption of merit goods.
 - (d) Merit goods are likely to be under-produced and under consumed through the market mechanism
4. A Pigouvian subsidy
 - (a) cannot be present when externalities are present
 - (b) is a good solution for negative externality as prices will increase
 - (c) is not measurable in terms of money and therefore not practical
 - (d) may help production to be socially optimal when positive externalities are present
5. If governments make it compulsory to avail insurance protection, it is because
 - (a) Insurance companies need to be running profitably
 - (b) Insurance will generate moral hazard and adverse selection
 - (c) Insurance is a merit good and government wants people to consume it
 - (d) None of the above
6. If merit goods are provided free by the government
 - (a) The quantity demanded of merit good will be less than supply
 - (b) The quantity demanded of merit good will be equal to supply
 - (c) The quantity demanded of merit good is likely to be more than supply
 - (d) Any of the above can happen
7. The government should intervene in the marketplace to discourage the production and consumption of -----
 - (a) Goods which are not necessary

- (b) Demerit goods
 - (c) Goods having no externalities
 - (d) Goods which the markets produce less
8. If government produces and supplies a public good
- (a) It may correct market failure as there will be no externalities
 - (b) It may correct market failure caused by free riding
 - (c) It may correct market failure because people may free ride
 - (d) It may correct market failure because people may not free ride
9. Rules regarding product labelling
- (a) Seeks to correct market failure due to externalities
 - (b) Is a method of solving the problem of public good
 - (c) May help solve market failure due to information failure
 - (d) Reduce the problem of monopolies in the product market
10. Identify the incorrect statement
- (a) A minimum support price for agricultural goods is a market intervention method to guarantee steady and assured incomes to farmers.
 - (b) A price ceiling which is set below the prevailing market clearing price will generate excess demand over supply.
 - (c) Excludable public goods can be provided by government and the same can be financed through entry fees.
 - (d) The production and consumption of demerit goods are likely to be less than optimal under free markets

II Short Answer Type Questions

1. How do governments ensure that market power does not create distortions in the market?
2. Describe direct government actions to solve negative externalities.
3. What are the relative advantages of market based interventions?

4. Account for the difficulties in determination of level of taxes to solve the problems associated with market failure?
5. Why do governments provide public goods?
6. Define demerit good and point out its characteristics
7. What are the different options for providing merit goods to the public?
8. What are the consequences if demerit goods are left to free market?
9. Explain why governments impose taxes on goods and services?
10. Explain why governments provide subsidies? Illustrate a few examples of subsidies.
11. Explain why governments impose price ceilings?
12. How do you justify food price controls and rent controls?
13. Describe the effects of price ceilings with examples
14. Illustrate the impact of a price ceiling on market outcomes.
15. Explain why governments impose price floors?
16. Describe the concept of price floors with examples.
17. Explain the rationale for price support for agricultural products
18. Why do governments fix minimum wages?

III Long Answer Type Questions

1. Do you think government intervention in markets will help enhance social welfare? Substantiate your arguments
2. Explain the intervention strategies of government to bring about efficient market outcomes
3. Explain how government intervention can solve the problem of externalities?
4. Explain the market based methods for solving the problems of negative externalities?
5. Explain the effectiveness of regulatory mechanisms for mitigating market failure?
6. What is the rationale behind the argument that public goods should be provided by government?

7. Why do you think it is necessary for the government to manipulate the price and output of commodities and services? What consequences do you foresee in the absence of government intervention?

IV Application Oriented Questions

1. The pharmaceutical industry is involved in innovation, development, production, and marketing of medicines in India. Ensuring the availability of lifesaving drugs at reasonable prices is the duty of the government. The National Pharmaceutical Pricing Authority (NPPA) is the watchdog in India, which controls the prices of drugs. Government has to consider the interest of both the producers and the buyers.

Questions

- (i) Elucidate the market outcomes if matters relating to drugs are entirely left to the pharmaceutical industry.
 - (ii) Appraise the need for government action in the above case. Do you consider government action necessary in the case of medicines? Why?
 - (iii) What are the different policy options available to government to meet its public health objectives?
2. The draft of New Education Policy, 2016 proposes key changes in government's policy towards education. Explain the rationale for government action to streamline the education system in the country.
3. The Commission for Agricultural Costs and Prices (CACP) advises the government on minimum support prices of 23 agricultural commodities which comprise 7 cereals, 5 pulses, 7 oilseeds, and 4 commercial crops.
- (i) What is the underlying principle of minimum support prices? Do you think MSP is a form of market intervention? Why?
 - (ii) Why do you consider free markets undesirable for the above mentioned agricultural commodities?

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (d) 2. (d) 3. (c) 4. (b) 5. (c) 6. (c)
 7. (b) 8. (c) 9. (c) 10. (d)

II Hints to short answer type questionsNew
Addition

1. Market power is an important factor that contributes to inefficiency due to higher prices than competitive prices. Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition. Policy options also include price regulation in the form of setting maximum prices that firms can charge based on the firm's variable costs, past prices, and possible inflation and productivity growth. These are some methods by which the government ensures that market does not create distortions
2. Direct controls prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level, for instance limiting emissions.

Government initiatives towards negative externalities may include

1. Direct controls that openly regulate the actions of those involved in generating negative externalities, and
2. Market-based policies that would provide economic incentives so that the self-interest of the market participants would achieve the socially optimal solution.

Direct controls prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level, for instance limiting emissions. Production, advertising, use and sale of many commodities and services may be prohibited. Stringent rules may be established in respect of advertising, packaging and labeling etc. Governments may, through legislation, stipulate stringent standards such as environmental standards, emissions standards non adherence of which will invite monetary penalties or/and criminal liabilities. Another method is to create negative incentives through charging fees on activities creating negative externalities Governments may also form special bodies/ boards to specifically address the problem of negative externality. The market-based approaches (such as environmental taxes and cap-and-trade), operate through price mechanism to create an incentive for change.

3. The market-based approaches—environmental taxes and cap-and-trade – operate through price mechanism to create an incentive for change. In other words, they rely on economic incentives to accomplish environmental

goals at lesser costs. They make use of market forces to encourage consumers and producers to take negative externalities into account when planning their consumption and production. In other words, the polluters are forced to consider pollution as a private cost.

4. Pollution taxes are difficult to determine and administer due to difficulty to discover the right level of taxation, problems associated with inelastic nature of demand for the good and the problem of possible capital flight.
5. Direct provision of a public good by government can help overcome free-rider problem which leads to market failure. The non-rival nature of consumption provides a strong argument for the government rather than the market to provide and pay for public goods.
6. Demerit goods are goods which impose significant negative externalities on the society as a whole and are believed to be socially undesirable. The production and consumption of demerit goods are likely to be more than optimal under free markets. The government should therefore intervene in the marketplace to discourage their production and consumption.
7. Merit goods are likely to be under-produced and under consumed so that social welfare will not be maximized. The possible government responses to under-provision of merit goods are regulation, legislation, subsidies, direct government provision and a combination of government provision and market provision.
8. If demerits goods are left to the free market then the production and consumption of demerit goods are likely to be more than optimal under free markets.
9. Imposing unusually high taxes on producing or purchasing the goods and services making them very costly and unaffordable to many.
10. Subsidy is market-based policy and involves the government paying part of the cost to the firms in order to promote the production of goods having positive externalities. Or in other words ,A subsidy on a good which has substantial positive externalities would reduce its cost and consequently price, shift the supply curve to the right and increase its output. A higher output that would equate marginal social benefit and marginal social cost is socially optimal. There are many forms of subsidies given out by the government. Two of the most common types of individual subsidies are welfare payments and unemployment benefits. The objective of these types

of subsidies is to help people who are temporarily suffering economically. Other subsidies, such as subsidized interest rates on student loans, are given to encourage people to further their education.

11. When prices of certain essential commodities rise excessively government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices.
12. Food price control is justified as long as farmer gets profits and customer gets food stuff at lesser price without middle men. Rent control is justified as owner and tenant have correct price according to the locality. Both these need Governmental control.
13. Price ceilings prevent a price from rising above a certain level. When a price ceiling is set below the equilibrium price, quantity demanded will exceed quantity supplied, and excess demand or shortages will result. For example: maximum prices of food grains and essential items are set by government during times of scarcity. A price ceiling which is set below the prevailing market clearing price will generate excess demand over supply.
14. A price ceiling will only impact the market if the ceiling is set below the free- market equilibrium price. This is because a price ceiling above the equilibrium price will lead to the product being sold at the equilibrium price. If the ceiling is less than the economic price, the immediate result will be a supply shortage.
15. Price floor prevent a price from falling below a certain level. Price floors are used by the government to prevent prices from being too low. The most common price floor is the minimum wage-the minimum price that can be paid for labour.
16. Price floor is defined as an intervention to raise market prices if the government feels the price is too low. In this case, since the new price is higher, the producers benefit. For a price floor to be effective, the minimum price has to be higher than the equilibrium price. For example, many governments intervene by establishing price floors to ensure that farmers make enough money by guaranteeing a minimum price that their goods can be sold for. The most common example of a price floor is the minimum wage. This is the minimum price that employers can pay workers for their labour.

17. The rationale for price support for agricultural products is to guarantee steady and assured income to farmers. In case the market price falls below the MSP, then the guaranteed MSP will prevail.
18. The government fixes minimum wages because minimum wage is the lowest remuneration that employers can legally pay their workers—the price floor below which workers may not sell their labour.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1. (i) Essential commodity – Left to market there may be inefficiency and possible market power – likely to charge higher prices than competitive prices- Price controls are put in place by governments to influence the outcomes of a market- Policy options for limiting market power also include price regulation in the form of setting maximum prices that firms can charge- In some cases, the government's regulatory agency determines an acceptable rate-of return - setting price-caps based on the firm's variable costs, past prices, and possible inflation and productivity growth regulation price, so as to ensure a competitive or fair rate of return. Legislation, regulation in terms of price controls, selection and listing of items to be included in price control, care to be taken not to damage the incentives of producers. Illustrate with figures

- (ii) Merit good- merit goods are rival, excludable, limited in supply, rejectable by those unwilling to pay, and involve positive marginal cost for supplying to extra users. Positive externalities- Left to the market, only private benefits and private costs would be reflected in the price paid by consumers. This means, compared to what is socially desirable, people would consume inadequate quantities.
 - (iii) Merit goods can be provided through the market, but are likely to be under produced and under-consumed through the market mechanism so that social welfare will not be maximized - This is a strong case for government intervention. Government intervention in the form of direct provision, regulation, licensing and controls. Illustrate with figure: Market outcome for merit goods.
2. Merit good (Refer hints to question 1 above) Illustrate with figure: Market outcome for merit goods.
3. (i) Influence the outcomes of a market on grounds of fairness and equity- strong political demand for government intervention - Price intervention for ensuring stable prices and stable incomes to producers - market-based incentives to ensure steady output, outcomes of higher than equilibrium price. Illustrate with figures
- (ii) Markets for primary products are subject to extreme as well as unpredictable fluctuations in price – Income elasticity of demand for primary products is less than one – need to guarantee steady and assured incomes to farmers - Minimum Support Price (MSP) programme as well as procurement by government agencies at the set support prices - Illustrate with figure : Market outcome of minimum support price- When price floors are set above market clearing price, suppliers are encouraged to over-supply and there would be an excess of supply over demand – limitations -possible government failure

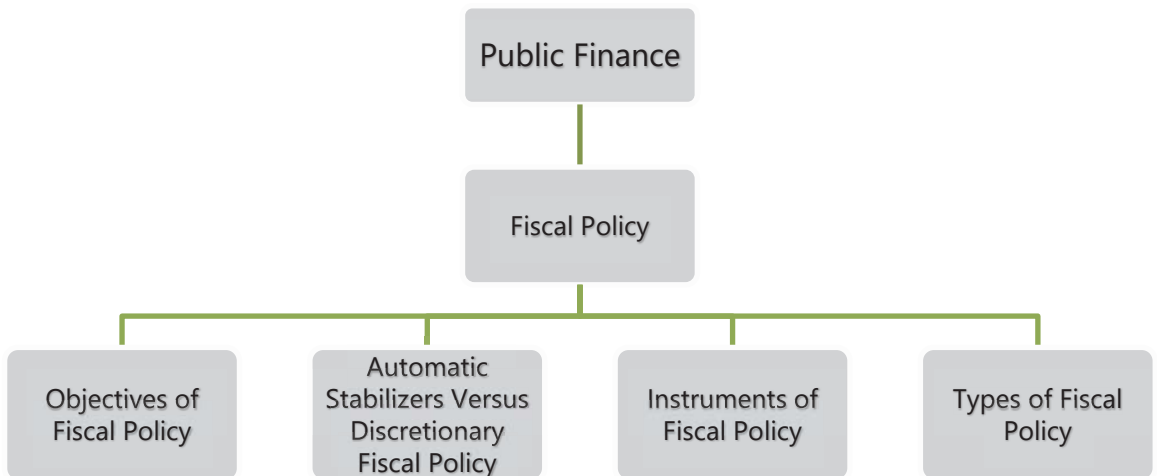
UNIT IV: FISCAL POLICY

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Define fiscal policy and list out its objectives
- Distinguish between discretionary and non- discretionary fiscal policy
- Explain the various instruments of fiscal policy
- Describe the expansionary and contractionary fiscal policies
- Illustrate the use of fiscal policy for redistribution and economic growth
- Elucidate the limitations of fiscal policy

UNIT OVERVIEW



4.1 INTRODUCTION

In the previous unit, we have studied the nature of governments' intervention in markets to provide public goods, remedy externalities, ensure efficient allocation of resources and to enable redistribution of income. We have also looked into how taxes and subsidies influence the incentives for private economic activity. We have been doing this from the microeconomic point of view. From the macroeconomic perspective, the focus is on the aggregate economic activity of governments, say, aggregate expenditure, taxes, transfers and issues of government debts and deficits and their effects on aggregate economic variables such as total output, total employment, inflation, overall economic growth etc. These, in fact, form the subject matter of fiscal policy.

The significance of fiscal policy as a strategy for achieving certain socio-economic objectives was not recognized or widely acknowledged before 1930 due to the faith in the limited role of government advocated by the then prevailing laissez-faire approach. Great Depression and the consequent instabilities made policymakers support a more proactive role for governments in the economy. However, later on, markets started demonstrating an enhanced role in the allocation of goods and services in the economy. In the previous unit, we have seen situations under which markets fail to achieve optimal outcomes and the need for government intervention to combat those market failures. In recent times, especially after being threatened by the global financial crisis and recession, many countries have preferred to have a more active fiscal policy.

Governments of all countries pursue innumerable policies to accomplish their economic goals such as rapid economic growth, equitable distribution of wealth and income, reduction of poverty, price stability, exchange rate stability, full-employment, balanced regional development etc. Government budget is one among the most powerful instruments of economic policy. The important tools in the budgetary policy could be broadly classified into public revenue (including taxation), public expenditure, public debt and finally deficit-financing to bridge the gap between public receipts and payments. When all these tools are used for achieving certain goals of economic policy, public finance is transformed into what is called fiscal policy. In other words, through the use of these instruments governments intend to favourably influence the level of economic activity of a country.

Fiscal policy involves the use of government spending, taxation and borrowing to influence both the pattern of economic activity and level of growth of aggregate

demand, output and employment. It includes any design on the part of the government to change the price level, composition or timing of government expenditure or to alter the burden, structure or frequency of tax payment. In other words, fiscal policy is designed to influence the pattern and level of economic activity in a country. Fiscal policy is in the nature of a demand-side policy. An economy which is producing at full-employment level does not require government action in the form of fiscal policy.

4.2 OBJECTIVES OF FISCAL POLICY

The objectives of fiscal policy, like those of other economic policies of the government, are derived from the aspirations and goals of the society. Since nations differ in numerous aspects, the objectives of fiscal policy also may vary from country to country. However, the most common objectives of fiscal policy are:

- achievement and maintenance of full employment,
- maintenance of price stability,
- acceleration of the rate of economic development, and
- equitable distribution of income and wealth.

The importance as well as order of priority of these objectives may vary from country to country and from time to time. For instance, while stability and equality may be the priorities of developed nations, economic growth, employment and equity may get higher priority in developing countries. Also, these objectives are not always compatible; for instance the objective of achieving equitable distribution of income may conflict with the objective of economic growth and efficiency.

Before we go into the details of fiscal policy, we need to know the difference between discretionary fiscal policy and non-discretionary fiscal policy or automatic stabilizers.

4.3 AUTOMATIC STABILIZERS VERSUS DISCRETIONARY FISCAL POLICY

Non-discretionary fiscal policy or automatic stabilizers are part of the structure of the economy and are 'built-in' fiscal mechanisms that operate automatically to reduce the expansions and contractions of the business cycle. Changes in fiscal

policy do not always require explicit action by government. In most economies, changes in the level of taxation and level of government spending tend to occur automatically. These are dependent on and are determined by the level of aggregate production and income, such that the instability caused by business cycle is automatically dampened without any need for discretionary policy action.

Any government programme that automatically tends to reduce fluctuations in GDP is called an automatic stabilizer. Automatic stabilizers have a tendency for increasing GDP when it is falling and reducing GDP when it is rising. In automatic or non-discretionary fiscal policy, the tax policy and expenditure pattern are so framed that taxes and government expenditure automatically change with the change in national income. It involves built-in tax or expenditure mechanism that automatically increases aggregate demand when recession is there and reduces aggregate demand when there is inflation in the economy. Personal income taxes, corporate income taxes and transfer payments (unemployment compensation, welfare benefits) are prominent automatic stabilizers.

Automatic stabilisation occurs through automatic adjustments in government expenditures and taxes without any deliberate governmental action. These automatic adjustments work towards stimulating aggregate spending during the recessionary phase and reducing aggregate spending during economic expansion. As we know, during recession incomes are reduced; with progressive tax structure, there will be a decline in the proportion of income that is taxed. This would result in lower tax payments as well as some tax refunds. Simultaneously, government expenditures increase due to increased transfer payments like unemployment benefits. These two together provide proportionately more disposable income available for consumption spending to households. In the absence of such automatic responses, household spending would tend to decrease more sharply and the economy would in all probability fall into a deeper recession.

On the contrary, when an economy expands, employment increases, with progressive system of taxes people have to pay higher taxes as their income rises. This leaves them with lower disposable income and thus causes a decline in their consumption and therefore aggregate demand. Similarly, corporate profits tend to be higher during an expansionary phase attracting higher corporate tax payments. With higher income taxes, firms are left with lower surplus causing a decline in their investments and thus in the aggregate demand. Again, during expansion unemployment falls, therefore government expenditure by way of transfer payments falls and with lower government expenditure inflation gets

controlled to a certain extent. Briefly put, during an expansionary phase, all types of incomes rise and the amount of transfer payments decline resulting in proportionately less disposable income available for consumption expenditure. The built-in stabilisers automatically remove spending from the economy to reduce demand-pull inflationary pressures and further expansionary stimulation. In brief, automatic stabilizers work through limiting the increase in disposable income during an expansionary phase and limiting the decrease in disposable income during the contraction phase of the business cycle. Since automatic stabilizers affect disposable personal income directly, and because changes in disposable personal income are closely linked to changes in consumption, these stabilizers act swiftly to reduce the extent of changes in real GDP.

However, automatic stabilizers that depend on the level of economic activity alone would not be sufficient to correct instabilities. The government needs to resort to discretionary fiscal policies. Discretionary fiscal policy for stabilization refers to deliberate policy actions on the part of government to change the levels of expenditure, taxes to influence the level of national output, employment and prices. Governments influence the economy by changing the level and types of taxes, the extent and composition of spending, and the quantity and form of borrowing.

Governments may directly as well as indirectly influence the way resources are used in an economy. We shall now see how this happens by investigating into the fundamental equation of national income accounting that measures the output of an economy, or gross domestic product (GDP), according to expenditures.

$$\mathbf{GDP = C + I + G + NX.}$$

We know that GDP is the value of all final goods and services produced in an economy during a given period of time. The right side of the equation shows the different sources of aggregate spending or demand namely, private consumption (C), private investment (I), government expenditure i.e. purchases of goods and services by the government (G), and net exports, (exports minus imports) (NX). It is evident from the equation that governments can influence economic activity (GDP) by controlling G directly and influencing C, I, and NX indirectly, through changes in taxes, transfer payments and expenditure.

4.4 INSTRUMENTS OF FISCAL POLICY

Fiscal policy is a vital component of the general economic framework of a country and is therefore closely connected with its overall economic policy strategy. The ability of fiscal policy to influence output by affecting aggregate demand makes it a potential instrument for stabilization of the economy. The Keynesian school is of the opinion that fiscal policy can have very powerful effects in altering aggregate demand, employment and output in an economy when the economy is operating at less than full employment levels and when there is need to offer stimulus to demand. As such, there is a significant and justifiable role for the government to institute relevant fiscal policy measures. In fact the global financial crisis around the year 2008 has caused fiscal policy to be at centre of the public policy debate.

The tools of fiscal policy are taxes, government expenditure, public debt and the government budget. We shall discuss each of them in the following paragraphs.

4.4.1. Government Expenditure as an Instrument of Fiscal Policy

Public expenditures are income-generating and include all types of government expenditure such as capital expenditure on public works, relief expenditures, subsidy payments of various types, transfer payments and other social security benefits. Government expenditure is an important instrument of fiscal policy. It includes governments' expenditure towards consumption, investment, and transfer payments. Government expenditures include:

1. current expenditures to meet the day-to-day running of the government,
2. capital expenditures which are in the form of investments made by the government in capital equipments and infrastructure, and
3. transfer payments i.e. government spending which does not contribute to GDP because income is only transferred from one group of people to another without any direct contribution from the receivers.

Government may spend money on performance of its large and ever-growing functions and also for deliberately bringing in stabilization. During a recession, it may initiate a fresh wave of public works, such as construction of roads, irrigation facilities, sanitary works, ports, electrification of new areas etc. Government expenditure involves employment of labour as well as purchase of multitude of goods and services. These expenditures directly generate incomes to labour and suppliers of materials and services. Apart from the direct effect, there is also indirect effect in the form of working of multiplier. The incomes generated are

spent on purchase of consumer goods. The extent of spending by people depends on their marginal propensity to consume (MPC). There is generally surplus capacity in consumer goods industries during recession and an increase in demand for various goods leads to expansion in production in those industries as well. Additionally, a programme of public investment will strengthen the general confidence of businessmen and consequently their willingness to invest. Primary employment in public works programmes will induce secondary and tertiary employment, and before long the economy is put on an expansion track.

A distinction is made between the two concepts of public spending during depression, namely, the concept of 'pump priming' and the concept of 'compensatory spending'. Pump priming involves a one-shot injection of government expenditure into a depressed economy with the aim of boosting business confidence and encouraging larger private investment. It is a temporary fiscal stimulus in order to set off the multiplier process. The argument is that with a temporary injection of purchasing power into the economy through a rise in government spending financed by borrowing rather than taxes, it is possible for government to bring about permanent recovery from a slump. Pump priming was widely used by governments in the post-war era in order to maintain full employment; however, it became discredited later when it failed to halt rising unemployment and was held responsible for inflation. Compensatory spending is said to be resorted to when the government spending is deliberately carried out with the obvious intention to compensate for the deficiency in private investment.

Public expenditure is also used as a policy instrument to reduce the severity of inflation and to bring down the prices. This is done by reducing government expenditure when there is a fear of inflationary rise in prices. Reduced incomes on account of decreased public spending, helps to eliminate excess aggregate demand.

The Government Spending Multiplier

New
Addition

Spending multiplier (also known as Keynesian or fiscal policy multiplier) represents the multiple by which GDP increases or decreases in response to an increase and decrease in government expenditures and investment, holding the real money supply constant. Quantitatively, the government spending multiplier is the same as the investment multiplier. It is the reciprocal of the marginal propensity to save (MPS). Higher the MPS, lower the multiplier, and lower the MPS, higher the multiplier.

$$\frac{\Delta Y}{\Delta G} = \frac{1}{MPS} = \frac{1}{1 - MPC} = \frac{1}{1 - b}$$

New
Addition

Where,

MPS stands for marginal propensity to save (*MPS*); and

MPC is marginal propensity to consume

MPS equals $1 - MPC$

Numerical Illustrations

New
Addition

ILLUSTRATION 1

Assume that the *MPC* is equal to 0.6.

- What is the value of government spending multiplier?
- What impact would a 50 billion increase in government spending have on equilibrium GDP?
- What about a 50 billion decrease in government spending?

SOLUTION

$$(a) \frac{1}{MPS} = \frac{1}{1 - MPC}$$

$$= 1/(1 - 0.6) = 1/0.4 = 2.5$$

(b) & (c) Change in GDP = Initial Change in Spending \times $(1 - MPC)$

$$50 \times 2.5 = 125 \text{ billion}$$

ILLUSTRATION 2

New
Addition

If country X has a marginal propensity to consume of 0, what is the value of fiscal multiplier?

SOLUTION

Given $MPC = 0$; $MPS = (1 - 0) = 1$

The spending multiplier = 1. There is no multiplier effect

ILLUSTRATION 3

New
Addition

Average per capita income of country Y rose from 42,300 to 50,000 and the corresponding figures for per capita consumption rose from 35,400 to 42,500. Find the spending multiplier for this economy.

SOLUTION

Spending multiplier = $1/(1-MPC)$.

$$\begin{aligned} MPC &= \text{Increase in Consumption} / \text{Increase in Income} \\ &= (42,500 - 35,400) / (50,000 - 42,300) \\ &= 0.922 \end{aligned}$$

$$\text{Multiplier} = 1/(1-0.922) = 1/(0.078) = 12.83$$

4.4.2 Taxes as an Instrument of Fiscal Policy

Taxes form the most important source of revenue for governments. Taxation policies are effectively used for establishing stability in an economy. Tax as an instrument of fiscal policy consists of changes in government revenues or in rates of taxes aimed at encouraging or restricting private expenditures on consumption and investment. Taxes determine the size of disposable income in the hands of the general public which in turn determines aggregate demand and possible inflationary and deflationary gaps. The structure of tax rates is varied in the context of the overall economic conditions prevailing in an economy. During recession and depression, the tax policy is framed to encourage private consumption and investment. A general reduction in income taxes leaves higher disposable incomes with people inducing higher consumption. Low corporate taxes increase the prospects of profits for business and promote further investment. The extent of tax reduction and /or increase in government spending required depends on the size of the recessionary gap and the magnitude of the multiplier.

During inflation, new taxes can be levied and the rates of existing taxes are raised to reduce disposable incomes and to wipe off the surplus purchasing power. However, excessive taxation usually stifles new investments and therefore the government has to be cautious about a policy of tax increase.

As we know, income taxes lower consumption spending at each level of income because such taxes reduce disposable income which is a major determinant of households' consumption. This is because the marginal propensity to consume out of income after paying taxes is $c(1-t)$ where $(1-t)$ is the fraction of income left after taxes.

The tax multiplier represents the multiple by which GDP increases (decreases) in response to a decrease (increase) in taxes charged by governments.

New
Addition

In the discussion on the simple version of tax multiplier, it is assumed that any increase or decrease in tax affects consumption only (and has no effect on investment, government expenditures etc.)

Simple Tax multiplier =

$$\frac{-MPC}{MPS} = \frac{MPC}{1 - MPC} = \frac{-b}{1 - b}$$

$$\Delta Y = \frac{1}{1 - b} (-b \Delta T) = \frac{-b \Delta T}{1 - b}$$

$$\frac{\Delta Y}{\Delta T} = \frac{-b}{1 - b}$$

This can be understood in the following manner: since $C = c(Y - T)$, a rise in tax by an amount ΔT leads to a change in consumption by $-b \Delta T$ which, through multiplier leads to a total change equal to $\frac{-b \Delta T}{1 - b}$ in equilibrium income.

New
Addition

The tax multiplier has a negative sign. It means that tax and increase in tax have negative impact on national income.

Given the same value of marginal propensity to consume, simple tax multiplier will be lower than the spending multiplier. This is because in the first round of increase in business or government expenditures, they inject the initial amount of that spending into the income stream and then it multiplies through the economy, while in case of a decrease in taxes of the same amount, consumption increase by a factor of MPC. So, if the government increases spending by 10 billion, the entire 10 billion is injected into the income stream. On the other hand, if taxes are reduced by 10 billion, only the MPC x 10 billion is injected into the expenditure stream. For example when the MPC is 0.9, the spending multiplier is 10; but the tax multiplier is -9 and when the MPC is 0.6, the spending multiplier is 2.5; but the tax multiplier is -1.5.

The method of analysing the impact of a change in lump-sum taxes on the level of income is the same as that of change in government expenditure.

Balanced Budget multiplier

New
Addition

The government budget is said to be in balance when $\Delta G = \Delta T$. The balanced budget multiplier is always equal to 1.

The balanced budget multiplier is obtained by adding up the government spending multiplier (fiscal multiplier) and the tax multiplier.

$$\text{Balanced budget multiplier} = \frac{\Delta Y}{\Delta G} + \frac{\Delta Y}{\Delta T}$$

$$= \frac{1}{1-b} + \frac{-b}{1-b} = \frac{1-b}{1-b} = 1$$

New
Addition**Numerical Illustration****ILLUSTRATION 4**New
Addition

What would be the impact on GDP if both government spending and taxes are increased by 5 billion when the MPC is 0.9?

SOLUTION

MPC = 0.9; MPS = 0.1. Therefore, spending Multiplier = $\frac{1}{1-b} = 10$

Change in GDP = Initial Change in Spending $\times 10 = 5 \times 10 = 50$ billion

Tax multiplier = $\frac{-b}{1-b} = -9$

Decrease in GDP = Initial Change in Tax $\times 9 = 45$ billion

The net result is that output increases by 5 billion.

For further technical analysis, students are requested to refer the following headings in Chapter 1, Unit 2, The Government Sector and Income Determination, under 'Determination of Equilibrium Income: Three Sector Model':

- (i) Income Determination with Lump Sum Tax
- (ii) Income Determination with Lump Sum Tax and Transfer Payments
- (iii) Income Determination with tax as a function of income and
- (iv) Income Determination with Tax (as a Function of Income), Government Expenditure and Transfer Payments,

4.4.3 Public Debt as an Instrument of Fiscal Policy

A rational policy of public borrowing and debt repayment is a potent weapon to fight inflation and deflation. Public debt may be internal or external; when the government borrows from its own people in the country, it is called internal debt. On the other hand, when the government borrows from outside sources, the debt is called external debt. Public debt takes two forms namely, market loans and small savings.

In the case of market loans, the government issues treasury bills and government securities of varying denominations and duration which are traded in debt markets. For financing capital projects, long-term capital bonds are floated and for meeting short-term government expenditure, treasury bills are issued.

The small savings represent public borrowings, which are not negotiable and are not bought and sold in the market. In India, various types of schemes are introduced for mobilising small savings e.g., National Savings Certificates, National Development Certificates, etc. Borrowing from the public through the sale of bonds and securities curtails the aggregate demand in the economy. Repayments of debt by governments increase the availability of money in the economy and increase aggregate demand.

4.4.4 Budget as an Instrument of Fiscal Policy

Government's budget is widely used as a policy tool to stimulate or contract aggregate demand as required. The budget is simply a statement of revenues earned from taxes and other sources and expenditures made by a nation's government in a year. The net effect of a budget on aggregate demand depends on the government's budget balance. A government's budget can either be balanced, surplus or deficit. A balanced budget results when expenditures in a year equal its revenues for that year. Such a budget will have no net effect on aggregate demand since the leakages from the system in the form of taxes collected are equal to the injections in the form of expenditures made. A budget surplus that occurs when the government collects more than what it spends, though sounds like a highly attractive one, has in fact a negative net effect on aggregate demand since leakages exceed injections. A budget deficit wherein the government expenditure in a year is greater than the tax revenue it collects has a positive net effect on aggregate demand since total injections exceed leakages from the government sector.

While a budget surplus reduces national debt, a budget deficit will add to the national debt. A nation's debt is the difference between its total past deficits and its total past surpluses. If a government has borrowed money over the years to finance its deficits and has not paid it back through accumulated surpluses, then it is said to be in debt. Deliberate changes to the composition of revenue and expenditure components of the budget are extensively used to change macro economic variables such as level of economic growth, inflation, unemployment and external stability. For instance, a budget surplus reduces government debt,

increases savings and reduces interest rates. Higher levels of domestic savings decrease international borrowings and lessen the current account deficit.

4.5 TYPES OF FISCAL POLICY

According to the classical economists, fiscal policy may be unnecessary because market mechanisms eventually cure instability without government intervention. These market forces, they argue, are dynamic and help to keep the economy always at or near the natural level of real GDP. For example they believed that prices and wages are flexible and that they would guarantee that markets adjust to equilibrium and eliminate shortages and surpluses.

Fiscal policy measures to correct different problems created by business-cycle instability are of two basic types namely, expansionary and contractionary. Expansionary fiscal policy is designed to stimulate the economy during the contractionary phase of a business cycle or when there is an anticipation of a business cycle contraction. This is accomplished by increasing aggregate expenditures and aggregate demand through an increase in all types of government spending and / or a decrease in taxes.

Contractionary fiscal policy is basically the opposite of expansionary fiscal policy. Contractionary fiscal policy is designed to restrain the levels of economic activity of the economy during an inflationary phase or when there is anticipation of a business-cycle expansion which is likely to induce inflation. This is carried out by decreasing the aggregate expenditures and aggregate demand through a decrease in all types of government spending and/ or an increase in taxes. Contractionary fiscal policy should ideally lead to a smaller government budget deficit or a larger budget surplus. In other words, if the state of the economy is such that its growth rate is extraordinarily high causing inflation and asset bubbles, contractionary fiscal policy can be used to confine it into sustainable levels.

We have understood in general that governments influence the economy through their policies in respect of taxation, expenditure and borrowing. The essence of what we learn in the rest of the unit is that:

- during inflation or when there is excessive levels of utilization of resources, fiscal policy aims at controlling excessive aggregate spending, and

- during deflation or during a period of sluggish economic activity when the rate of utilization of resources is less, fiscal policy aims to compensate the deficiency in effective demand by boosting aggregate spending.

We shall now describe the application of each of the fiscal policy tools.

4.5.1 Expansionary Fiscal Policy

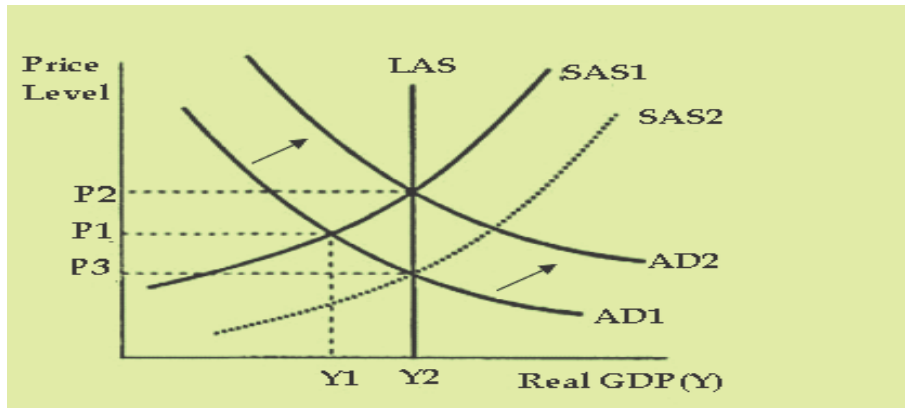
A recession is said to occur when overall economic activity declines, or in other words, when the economy 'contracts'. A recession sets in with a period of declining real income, as measured by real GDP simultaneously with a situation of rising unemployment. If an economy experiences a fall in aggregate demand during a recession, it is said to be in a demand-deficient recession. Due to decline in real GDP, the aggregate demand falls and therefore, lesser quantity of goods and services will be produced. To combat such a slump in overall economic activity, the government can resort to expansionary fiscal policies.

An expansionary fiscal policy is used to address recession and the problem of general unemployment on account of business cycles. We may technically refer to this as a policy measure to close a 'recessionary gap'. A recessionary gap, also known as a contractionary gap, is said to exist if the existing levels of aggregate production is less than what would be produced with full employment of resources. It is a measure of output that is lost when actual national income falls short of potential income, and represents the difference between the actual aggregate demand and the aggregate demand which is required to establish the equilibrium at full employment level of income. This gap occurs during the contractionary phase of business-cycle and results in higher rates of unemployment. In other words, recessionary gap occurs when the aggregate demand is not sufficient to create conditions of full employment. Now the question is how do changes in government expenditure (G), and taxes (T) eliminate a recessionary gap?

We shall now look into the Keynesian arguments for combating recession using expansionary fiscal policy. When the aggregate demand (i.e. economy's appetite for buying goods and services) falls short of aggregate supply (the economy's capacity to produce goods and services), it results in unemployment of resources, especially labour. In that case, the government intervenes through an expansionary fiscal policy. The following figure illustrates the operation of expansionary fiscal policy.

Figure 2.4.1

Expansionary Fiscal policy for Combating Recession



Real GDP at Y_1 level lies below the natural level, Y_2 . This represents a situation where the economy is initially in a recession. There is less than full employment of the resources in the economy. The classical economists held the view that in such a condition flexibility of wages would cause wages to fall resulting in reduction in costs. Consequently, suppliers would increase supply and the short run aggregate supply curve SAS_1 will shift to the right say SAS_2 and bring the economy back to the level of full employment at Y_2 . However, according to Keynes, wages are not as flexible as what the classical economists believed and are 'sticky downward,' meaning wages will not adjust rapidly to accommodate the unemployed. Therefore, recession, once set in, would persist for a long time. How does the government intervene? The government responds by increasing government expenditures in adequate quantities so as to cause a shift in the aggregate demand curve to the right from AD_1 to AD_2 . In doing so, the government may have to incur a budget deficit by spending more than its current receipts. As a response to the shift in AD, output increases as the total demand in the economy increases. Firms respond to growing demand by producing more output. In order to increase their output in the short-run, firms must hire more workers. This has the effect of reducing unemployment in the economy.

A relevant question here is how much should be the increase in government expenditure? Should it be exactly the same amount as the required level of increase in output? ($Y_2 - Y_1$)? The answer is that it depends upon the GNP gap created due to recession and also on the size of multiplier which depends upon

marginal propensity to consume. The increase in government expenditures need not be equal to the difference between Y_2 and Y_1 , it can be much less. The concept of 'fiscal multiplier,' i.e. the response of gross domestic product to an exogenous change in government expenditures is of use to determine the required level of government expenditure. Any increase in autonomous aggregate expenditures (including government expenditures) has a multiplier effect on aggregate demand. As such, the government needs to incur only a lesser amount of expenditure to cause aggregate demand to increase by the amount necessary to achieve the natural level of real GDP.

A pertinent question here is; from where will the government find resources to increase its expenditure? We know that if government resorts to increase in taxes, it is self-defeating as increased taxes will reduce the disposable incomes and therefore aggregate demand. The government should in such cases go for a deficit budget which may be financed either through borrowing or through monetization (creation of additional money to finance expenditure). The former runs the risk of crowding out private spending.

It may however be noted that expansionary fiscal policy will be successful only if there is accommodative monetary policy. If interest rates rise as a result of increased demand for money but money supply does not rise concurrently, then private investment will be adversely affected. If interest rates remain unchanged, private investment will not be affected badly and a rise in government expenditure will have full effect on national income and employment.

4.5.2 Contractionary Fiscal Policy

When aggregate demand rises beyond what the economy can potentially produce by fully employing its given resources, it gives rise to inflationary pressures in the economy. The aggregate demand may rise due to large increase in consumption demand by households or investment expenditure by entrepreneurs, or government expenditure. In these circumstances inflationary gap occurs which tends to bring about rise in prices. Under such circumstances, a contractionary fiscal policy will have to be used.

Contractionary fiscal policy refers to the deliberate policy of government applied to curtail aggregate demand and consequently the level of economic activity. In other words, it is fiscal policy aimed at eliminating an inflationary gap. This is achieved by adopting policy measures that would result in the aggregate demand

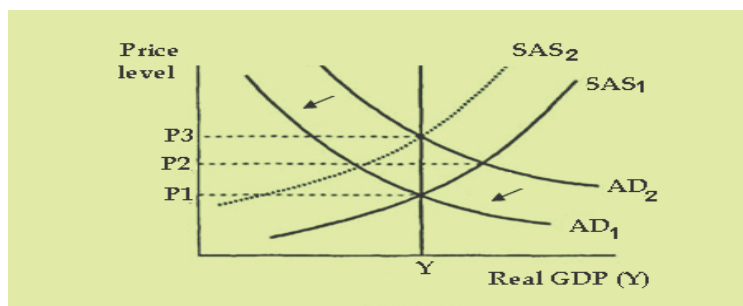
curve (AD) shifting to the left so the equilibrium may be established at the full employment level of real GDP. This can be achieved either by:

1. Decrease in government spending: With decrease in government spending, the total amount of money available in the economy is reduced which in turn trim down the aggregate demand.
2. Increase in personal income taxes and/or business taxes: An increase in personal income taxes reduces disposable incomes leading to fall in consumption spending and aggregate demand. An increase in taxes on business profits reduces the surpluses available to businesses, and as a result, firms' investments shrink causing aggregate demand to fall. Increased taxes also dampen the prospects of profits of potential entrants who will respond by holding back fresh investments.
3. A combination of decrease in government spending and increase in personal income taxes and/or business taxes

We shall analyze the overall impact of these abovementioned measures with the help of the following figure.

Figure 2.4.2

Contractionary Fiscal policy for Combating Inflation



As real GDP rises above its natural level, (Y in the above figure), prices also rise, prompting an increase in wages and other resource prices. This causes the SAS curve to shift from SAS_1 to SAS_2 . As a result, the price level goes up from P_1 to P_3 . Nevertheless, the real GDP remains the same at Y . The government now needs to intervene to control inflation by engaging in a contractionary fiscal policy designed to reduce aggregate demand so that the aggregate demand curve (AD_1) does not shift to AD_2 . The government needs

to reduce expenditures or raise taxes only by a small amount because of the multiplier effects that such actions may have. Even as expenditures are reduced, the government may attempt to enhance public revenues in order to generate a budget surplus. In any economy, on account of political, social and defence considerations government spending cannot be reduced beyond a particular limit. However, the government can change its expenditure in response to inflationary pressures.

4.6 FISCAL POLICY FOR LONG-RUN ECONOMIC GROWTH

We have been discussing so far about how fiscal policy acts as an effective tool for managing aggregate demand in the short-run to help maintain price stability and employment levels. However, demand-side policies unaccompanied by policies to stimulate aggregate supply cannot produce long-run economic growth. Fiscal policies such as those involving infrastructure spending generally have positive supply-side effects. When government supports building a modern infrastructure, the private sector is provided with the requisite overheads it needs. Government provision of public goods such as education, research and development etc. provide momentum for long-run economic growth. A well designed tax policy that rewards innovation and entrepreneurship, without discouraging incentives will promote private businesses who wish to invest and thereby help the economy grow.

4.7 FISCAL POLICY FOR REDUCTION IN INEQUALITIES OF INCOME AND WEALTH

Many developed and developing economies are facing the challenge of rising inequality in incomes and opportunities. Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice. The distribution of income in the society is influenced by fiscal policy both directly and indirectly. While current disposable incomes of individuals and corporates are dependent on direct taxes, the potential for future earnings is indirectly influenced by the nation's fiscal policy choices.

Government revenues and expenditure have traditionally been regarded as important instruments for carrying out desired redistribution of income. We shall

see a few such measures as to how each of these can be manipulated to achieve desired distributional effects.

- A progressive direct tax system ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population.
- Indirect taxes can be differential: for example, the commodities which are primarily consumed by the richer income group, such as luxuries, are taxed heavily and the commodities the expenditure on which form a larger proportion of the income of the lower income group, such as necessities, are taxed light.
- A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society. This is done through spending programmes targeted on welfare measures for the disadvantaged, such as
 - (i) poverty alleviation programmes
 - (ii) free or subsidized medical care, education, housing, essential commodities etc. to improve the quality of living of poor
 - (iii) infrastructure provision on a selective basis
 - (iv) various social security schemes under which people are entitled to old-age pensions, unemployment relief, sickness allowance etc.
 - (v) subsidized production of products of mass consumption
 - (vi) public production and/ or grant of subsidies to ensure sufficient supply of essential goods, and
 - (vii) strengthening of human capital for enhancing employability etc.

Choice of a progressive tax system with high marginal taxes may act as a strong deterrent to work, save and invest. Therefore, the tax structure has to be carefully framed to mitigate possible adverse impacts on production and efficiency. Additionally, the redistributive fiscal policy and the extent of spending on redistribution should be consistent with the macroeconomic policy objectives of the nation.

4.8 LIMITATIONS OF FISCAL POLICY

We have seen above that discretionary fiscal policy is the conscious manipulation of government spending and taxes to influence the economy. However, there are some significant limitations in respect of choice and implementation of fiscal policy.

1. One of the biggest problems with using discretionary fiscal policy to counteract fluctuations is the different types of lags involved in fiscal-policy action. There are significant lags are:
 - Recognition lag: The economy is a complex phenomenon and the state of the macro economic variables is usually not easily comprehensible. Just as in the case of any other policy, the government must first recognize the need for a policy change.
 - Decision lag: Once the need for intervention is recognized, the government has to evaluate the possible alternative policies. Delays are likely to occur to decide on the most appropriate policy.
 - Implementation lag: even when appropriate policy measures are decided on, there are possible delays in bringing in legislation and implementing them.
 - Impact lag: impact lag occurs when the outcomes of a policy are not visible for some time.
2. Fiscal policy changes may at times be badly timed due to the various lags so that it is highly possible that an expansionary policy is initiated when the economy is already on a path of recovery and vice versa.
3. There are difficulties in instantaneously changing governments' spending and taxation policies.
4. It is practically difficult to reduce government spending on various items such as defence and social security as well as on huge capital projects which are already midway.
5. Public works cannot be adjusted easily along with movements of the trade cycle because many huge projects such as highways and dams have long gestation period. Besides, some urgent public projects cannot be postponed for reasons of expenditure cut to correct fluctuations caused by business cycles.

6. Due to uncertainties, there are difficulties of forecasting when a period of inflation or deflation may set in and also promptly determining the accurate policy to be undertaken.
7. There are possible conflicts between different objectives of fiscal policy such that a policy designed to achieve one goal may adversely affect another. For example, an expansionary fiscal policy may worsen inflation in an economy
8. Supply-side economists are of the opinion that certain fiscal measures will cause disincentives. For example, increase in profits tax may adversely affect the incentives of firms to invest and an increase in social security benefits may adversely affect incentives to work and save.
9. Deficit financing increases the purchasing power of people. The production of goods and services, especially in underdeveloped countries may not catch up simultaneously to meet the increased demand. This will result in prices spiralling beyond control.
10. Increase in government borrowing creates perpetual burden on even future generations as debts have to be repaid. If the economy lags behind in productive utilization of borrowed money, sufficient surpluses will not be generated for servicing debts. External debt burden has been a constant problem for India and many developing countries.
11. If governments compete with the private sector to borrow money for spending, it is likely that interest rates will go up, and firms' willingness to invest may be reduced. Individuals too may be reluctant to borrow and spend and the desired increase in aggregate demand may not be realized. This phenomenon is described below.

4.8.1 Crowding Out

Some economists are of the opinion that government spending would sometimes substitute private spending and when this happens the impact of government spending on aggregate demand would be smaller than what it should be and therefore fiscal policy may become ineffective. The crowding out view is that a rapid growth of government spending leads to a transfer of scarce productive resources from the private sector to the public sector where productivity might be lower. An increase in the size of government spending during recessions will 'crowd-out' private spending in an economy and lead to reduction in an economy's ability to self-correct from the recession, and possibly also reduce the economy's prospects of long-run economic growth.

New
Addition

Crowding out effect is the negative effect fiscal policy may generate when money from the private sector is 'crowded out' to the public sector. In other words, when spending by government in an economy replaces private spending, the latter is said to be crowded out. When the government increases its spending by borrowing from the loanable funds from the market the demand for loans increases and this pushes the interest rates up. Private investments are sensitive to interest rates and therefore some private investment spending is discouraged. Similarly, when government increases the budget deficit by selling bonds or treasury bills, the amount of money with the private sector decreases and consequently interest rates will be pushed up. As a result, private investments, especially the ones which are interest –sensitive, will be reduced. Fiscal policy becomes ineffective as the decline in private spending partially or completely offset the expansion in demand resulting from an increase in government expenditure. Nevertheless, during deep recessions, crowding-out is less likely to happen as private sector investment is already minimal and therefore there is only insignificant private spending to crowd out. Moreover, during a recession phase the government would be able to borrow from the market without increasing interest rates.



4.9 CONCLUSION

Well designed and timely fiscal responses are necessary for an economy which is either going through stages of recession or inflation or on a drive to achieve economic growth and/ or equitable distribution of income. During periods of recession when there are idle productive capacity and unemployed workers, an increase in aggregate demand will generally bring about an increase in total output without changing the level of prices. On the contrary, if an economy is functioning at full employment, an expansionary fiscal policy will exert pressure on prices to go up and will have no impact on total output. Fiscal policy is also a potent instrument for bringing in economic growth and equality in distribution of income.

Fiscal Policy Responses of Government of India to COVID 19

New
Addition

The fiscal policy measures during the pandemic aimed to ensure extensive food security, employment support, quality livelihoods and mitigation of the economic impact of the pandemic on businesses, especially small businesses.

On March 26, 2020, the Finance Minister announced a stimulus package valued at approximately 0.8 percent of GDP. The significant components of the package include:

- cash transfers to lower-income households and transfers in kind such as food items, cooking gas etc
- insurance coverage for workers in the healthcare sector;
- wage support to low-wage workers who continued working
- Support in the form of easing the criteria for receiving benefits in the event of job loss.

These measures are in addition to a previous commitment by the Prime Minister amounting to an additional 150 billion rupees (about 0.1 percent of GDP) allocated to health infrastructure, including for testing facilities for COVID-19, personal protective equipment, isolation beds, ICU beds and ventilators.

Nearly all state governments adopted measures to support the health and wellbeing of lower-income households.

- The measures by state governments varied from state to state and included direct transfers in the form of free food, free rations and cash transfers.
- on an aggregate, the measures till July, 2020 amount to approximately 0.2 percent of India's GDP.

During May, 2020 many new measures (forming about 2.7 percent of GDP), were announced, including many measures targeting businesses. These include

- support for poor households, especially migrants and farmers (about 1.5 percent of GDP),
- targeted support for the agricultural sector (about 0.7 percent of GDP),
- expansion of existing programs providing work opportunities to low-wage labourers (about 0.2 percent of GDP).

The business-support package composed of;

- financial sector measures for micro, small, and medium-sized enterprises and non-bank financial companies;
- liquidity injection for electricity distribution companies; and a reduction in up-front tax deductions for workers.

- (c) measures to ease the tax compliance burden across different sectors included postponement of select tax-filing and other compliance deadlines.
- (d) reduction of interest rate charged on overdue filings of small businesses to half of what is payable.
- (e) additional support was declared for migrants as well as farmers, mainly in the form of providing concessional credit to farmers as well as credit facility for street vendors. Infrastructure development constituted the major support for the agricultural sector.

To ensure food security, food provision was done for non-ration card holders among vulnerable households (mainly migrants) till November, 2020

SUMMARY

- From a macro-economic perspective, the focus of fiscal policy is on the aggregate economic activity of governments, say, aggregate expenditure, taxes, transfers and issues of government debts and deficits and their effects on aggregate economic variables such as total output, total employment, unemployment rate, inflation, overall economic growth etc.
- Laissez-faire approach advocated limited role of government resulting in non-recognition of the significance of fiscal policy as a strategy for achieving certain socio-economic objectives till 1930.
- Through the use of budgetary instruments, such as public revenue, public expenditure, public debt and deficit financing, governments intend to favourably influence the level of economic activity of a country.
- The objectives of fiscal policy may vary from country to country, but generally they are: achievement and maintenance of full employment, maintenance of price stability, acceleration of the rate of economic development and equitable distribution of income and wealth.
- Fiscal policy involves the use of government spending, taxation and borrowing to influence both the pattern of economic activity and level of growth of aggregate demand, output and employment.
- Non-discretionary fiscal policy or automatic stabilizers are part of the structure of the economy and are 'built-in' fiscal mechanisms that operate automatically to reduce the expansions and contractions of the business cycle.

- Automatic stabilisation occurs through automatic adjustments in government expenditures and taxes without any deliberate governmental action i.e. by limiting the increase in disposable income during an expansionary phase and limiting the decrease in disposable income during the contraction phase of the business cycle.
- During recession incomes are reduced leading to lower tax payments. Government expenditures increase due to increased transfer payments. These together provide proportionally more disposable income available for consumption spending to households
- When an economy expands, employment increases, incomes rise and the amount of transfer payments decline resulting in proportionally less disposable income available for consumption expenditure
- Discretionary fiscal policy refers to deliberate policy actions on the part of the government to change the levels of expenditure and taxes to influence the level of national output, employment and prices.
- Since $GDP = C + I + G + NX$, governments can influence economic activity (GDP), by controlling G directly and influencing C, I, and NX indirectly, through changes in taxes, transfer payments and expenditure.
- The Keynesian school is of the opinion that fiscal policy can have very powerful effects in altering aggregate demand, employment and output in an economy when the economy is operating at less than full employment levels and when there is a need to offer stimulus to demand.
- The tools of fiscal policy are taxes, government expenditure, public debt and the budget.
- Expansionary fiscal policy is designed to stimulate the economy during the contractionary phase of a business cycle and is accomplished by increasing aggregate expenditures and aggregate demand through an increase in all types of government spending and / or a decrease in taxes
- Contractionary fiscal policy is designed to restrain the levels of economic activity of the economy during an inflationary phase by decreasing the aggregate expenditures and aggregate demand through a decrease in all types of government spending and/ or an increase in taxes
- A recession sets in with a period of declining real income, as measured by real GDP and a situation of rising unemployment.

- A recessionary gap, also known as a contractionary gap, is said to exist if the existing levels of aggregate production is less than what would be produced with the full employment of resources
- Government expenditure, an important instrument of fiscal policy, generates incomes and also has indirect effect in the form of working of multiplier.
- Pump priming involves a one-shot injection of government expenditure into a depressed economy with the aim of boosting business confidence and encouraging larger private investment. It is a temporary fiscal stimulus in order to set off the multiplier process.
- Compensatory spending is said to be resorted to when the government spending is carried out with the obvious intention to compensate the deficiency in private investment.
- Taxes determine the size of disposable income in the hands of general public which in turn determines aggregate demand and possible inflationary and deflationary gaps
- During recession and depression, the tax policy is framed to encourage private consumption and investment. A general reduction in income taxes and low corporate taxes increases aggregate demand and investments respectively.
- During inflation new taxes can be levied and the rates of existing taxes are raised to reduce disposable incomes and to wipe off the surplus purchasing power
- Borrowing from the public through the sale of bonds and securities curtails the aggregate demand in the economy. Repayments increase the availability of money in the economy and increase aggregate demand.
- Budget is widely used as a policy tool to stimulate or contract aggregate demand as required.
- Fiscal policy also aims to attain long-run economic growth through policies to stimulate aggregate supply. Fiscal policy is a chief instrument available for governments to influence income distribution and plays a significant role in reducing inequality and achieving equity and social justice.
- Contractionary fiscal policy is aimed at eliminating inflationary gaps and to trim down the aggregate demand by decrease in government spending and

an increase in personal income taxes and/or business taxes causing less disposable incomes and lower incentives to invest.

- Fiscal policy suffers from limitations such as limitations in respect of choice of appropriate policy, recognition lag, decision lag, implementation lag, impact lag, inappropriate timing, difficulties of forecasting due to uncertainties, possible conflicts between different objectives, possibility of generating disincentives, practical difficulty to reduce government expenditures and the possibility of certain fiscal measures replacing private spending or crowding out private spending.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions CHAPTER-2 UNIT-4

1. If Real GDP is continuously declining and the rate of unemployment in the economy is increasing, the appropriate policy should be to
 - (a) Increase taxes and decrease government spending
 - (b) Decrease both taxes and government spending
 - (c) Decrease taxes and increase government spending
 - (d) Either (a) or (c)
2. Which of the following are likely to occur when an economy is in an expansionary phase of a business cycle?
 - A. Rising unemployment rate
 - B. Falling unemployment rate
 - C. Rising inflation rate
 - D. Deflation
 - E. Falling or stagnant wage for workers
 - F. Increasing tax revenue
 - G. Falling tax revenue
 - (a) A, B and F are most likely to occur
 - (b) B, C and F and are most likely to occur
 - (c) D, E and F are most likely to occur

- (d) A, E and G are most likely to occur
3. Fiscal policy refers to
- (a) use of government spending, taxation and borrowing to influence the level of economic activity
 - (b) government activities related to use of government spending for supply of essential goods
 - (c) use of government spending, taxation and borrowing for reducing the fiscal deficits
 - (d) (a) and (b) above
4. During recession fiscal policy of the government should be directed towards
- (a) Increasing the taxes and reducing the aggregate demand
 - (b) Decreasing taxes to ensure higher disposable income
 - (c) Increasing government expenditure and increasing taxes
 - (d) None of the above
5. Automatic stabilizers
- (a) work towards stimulating aggregate spending during economic expansion and reducing aggregate spending during the recessionary phase.
 - (b) provide proportionally more disposable income available for consumption spending to households during expansion
 - (c) work towards stimulating aggregate spending during the recessionary phase and reducing aggregate spending during economic expansion.
 - (d) provide proportionally less disposable income available for consumption spending to households during contraction
6. Discretionary fiscal policy
- (a) refers to the working of built-in stabilizers to change the levels of expenditure and taxes to influence the level of national output, employment and prices
 - (b) refers to how governments may directly as well as indirectly influence the level of taxes to attain export competitiveness

- (c) refers to deliberate policy actions on the part of the government to change the levels of expenditure and taxes to influence the level of national output, employment and prices
 - (d) refers to deliberate policy actions on the part of the government to change the composition of taxes to influence compliance
7. Keynesian economists believe that
- (a) fiscal policy can have very powerful effects in altering aggregate demand, employment and output in an economy
 - (b) when the economy is operating at less than full employment levels and when there is a need to offer stimulus to demand fiscal policy is of great use
 - (c) Wages are flexible and therefore business fluctuations would be automatically adjusted
 - (d) (a) and(b) above
8. Which of the following may ensure a decrease in aggregate demand during inflation
- (a) decrease in all types of government spending and/ or an increase in taxes
 - (b) increase in government spending and/ or a decrease in taxes
 - (c) decrease in government spending and/ or an decrease in taxes
 - (d) All the above
9. A recession is characterized by
- (a) Declining prices and rising employment
 - (b) Declining unemployment and rising prices
 - (c) Declining real income and rising unemployment
 - (d) Rising real income and rising prices
 - (e)
10. Discretionary fiscal policy differs from non-discretionary fiscal policy in which of the following manner?

- (a) Discretionary fiscal policy is concerned with government spending and non discretionary fiscal policy deals with tax policy
 - (b) Discretionary fiscal policy is concerned with government spending and non discretionary fiscal policy deals government revenues
 - (c) Discretionary fiscal policy is concerned with deliberate actions on the part of the government and non-discretionary fiscal policy works automatically
 - (d) Discretionary fiscal policy is built into the system and non discretionary fiscal policy is concerned with deliberate actions on the part of government
11. Which one of the following is an example of discretionary fiscal policy?
- (a) A tax-cut aimed at increasing the disposable income and spending
 - (b) A reduction in government expenditure to contain inflation
 - (c) An increase in taxes and decrease in government expenditure to control inflation
 - (d) All the above
12. Which of the following would illustrate a recognition lag?
- (a) The time required to identify the appropriate policy
 - (b) The time required to identify to pass a legislation
 - (c) The time required to identify the need for a policy change
 - (d) The time required to establish the outcomes of fiscal policy
13. Which statement (s) is (are) correct about crowding out?
- I. A decline in private spending may be partially or completely offset the expansion of demand resulting from an increase in government expenditure.
 - II. Crowding out effect is the negative effect fiscal policy may generate when money from the private sector is 'crowded out' to the public sector.
 - III. When spending by government in an economy increases; government spending would be crowded out.

- IV. Private investments, especially the ones which are interest –sensitive, will be reduced if interest rates rise due to increased spending by government
- (a) I and III only
(b) I, II, and III
(c) I, II, and IV
(d) III only
14. Which of the following policies is likely to shift an economy's aggregate demand curve to the right?
- (a) Increase in government spending
(b) Decrease in taxes
(c) A tax cut along with increase in public expenditure
(d) All the above
15. Identify the incorrect statement
- (a) A progressive direct tax system ensures economic growth with stability because it distributes the burden of taxes equally
(b) A carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society.
(c) There are possible conflicts between different objectives of fiscal policy such that a policy designed to achieve one goal may adversely affect another
(d) An increase in the size of government spending during recessions may possibly 'crowd-out' private spending in an economy.

II Short Answer Type Questions

1. Define fiscal policy.
2. What are the objectives of fiscal policy?
3. Distinguish between discretionary and non-discretionary fiscal policy.
4. Explain how automatic stabilization brings in stability in an economy.
5. How do built-in stabilizers combat demand-pull inflationary pressures?
6. What are the symptoms of the beginning of a recession?

7. Explain the term 'recessionary gap'.
8. What should be the tax policy during recession and depression?
9. What is the consequence excessive taxation will have on business?
10. Distinguish between 'pump priming' and the 'compensatory spending'.
11. Describe the term expansionary fiscal policy.
12. What is meant by crowding out?
13. Explain the use of fiscal policy for economic growth.
14. What types of fiscal policy measures are useful for redistribution of income in an economy?
15. What are the measures undertaken in a contractionary fiscal policy?
16. Point out the limitations of fiscal policy.

III Long Answer Type Questions

1. Explain the role of fiscal policy in achieving economic stability.
2. Define the terms 'recessionary gap' and 'inflationary gap'. What would be the appropriate fiscal policy measures to eliminate 'recessionary gap' and 'inflationary gap'? Illustrate your answer.
3. Explain the term contractionary fiscal policy. What are limitations in pursuing a contractionary fiscal policy?
4. Under what circumstances do governments pursue expansionary fiscal policy? What are the instruments for expansionary fiscal policy?
5. List out the factors that limit the effectiveness of fiscal policy. Explain the possible impacts on private sector.
6. Using aggregate demand and supply diagrams, examine the impact of fiscal policy on national output.
7. Unemployment and recessionary trends can be solved through the use of fiscal policies. Do you agree? Justify your answer.

IV Application Oriented Questions

1. The government of Country X, an underdeveloped country, having a severe problem of unemployment of labour embarks on a massive development programme. It has recognized the imminent need for boosting up

investments to take the country to a higher than average growth trajectory. The following steps were taken by the government:

- i) Invited tenders for a huge network of highways, solar energy generation, communication systems and computerized systems
- ii) Large number of schools throughout the country
- iii) Research grants for universities and private research institutes
- iv) Announced a number of free healthcare programmes for all
- v) All citizens assured of social security
- vi) Increase in payments under existing social security schemes
- vii) Tax exemption limit raised for individuals, instituted progressive taxes with high marginal rates - increased corporate taxes

Very soon prices started spiralling and there was general unrest among people especially the poor.

- i) Analyze each of the above measures from a fiscal policy perspective.
- ii) Why did overall prices increase?
- iii) What policies do you suggest to solve the problem of price rise?
- iv) What are the limitations of such policies?

2. In the above example, suppose that the increase in government spending has been 5 billion. Assume that the marginal propensity to consume of people is equal to 0.6.

- (i) what will be the government spending multiplier?
- (ii) What impact would a 5 billion increase in government expenditure have on equilibrium GDP?

3. For an Economy with the following specifications

Consumption, $C = 50 + 0.75 Y_d$

Investment, $I = 100$

Government Expenditure, $G = 200$

Transfer Payments, $R = 110$

Income Tax = $0.2Y$

Calculate the equilibrium of income and the value of expenditure multiplier.

New
Addition

ANSWERS/HINTS

I. Multiple Choice Type Questions

1. (c) 2. (b) 3. (a) 4. (b) 5. (c) 6. (c)
7. (d) 8. (a) 9. (c) 10. (c) 11. (d) 12. (c)
13. (c) 14. (d) 15. (a)

II. Short Answer Type Questions

1. Use of government spending, taxation and borrowing to influence both the pattern of economic activity and level of growth of aggregate demand, output and employment.
2. Objectives vary from country to country - achievement and maintenance of full employment, maintenance of price stability, acceleration of the rate of economic development, and equitable distribution of income and wealth.
3. Automatic stabilisation occurs through automatic adjustments in government expenditures and taxes (non-discretionary policy) without any deliberate governmental action - stimulate aggregate spending during the recessionary phase and reduce aggregate spending during economic expansion. Discretionary fiscal policy (refer hint (1) above)
4. Refer hint (3) above
5. Employment increases, with progressive system of taxes - higher taxes - lower disposable incomes - higher corporate tax payments- lower surplus - decline in consumption and investments – decline in aggregate demand.
6. Declining GDP - growing unemployment - declining prices – lower aggregate demand
7. Also known as a contractionary gap, the difference between the actual aggregate demand and the aggregate demand which is required to be filled-in to establish the equilibrium at full employment level of income.
8. Tax policy to encourage private consumption and investment - general reduction in income taxes -higher disposable incomes -higher consumption- low corporate taxes –further investment.
9. Less potential profits - disincentives- stifles new investments- less growth

10. Pump priming - certain volumes of public spending to revive the economy; compensatory spending is government spending to compensate for the deficiency in private investment
11. Designed to stimulate the economy – aim to increase aggregate expenditures and aggregate demand- increase in government spending and / or a decrease in taxes.
12. Negative effect of fiscal policy when spending by government in an economy replaces private spending -money from private sector is 'crowded out' to the public sector- decline in private spending - fiscal policy becomes ineffective
13. Expenditure on developmental activities- public goods such as education, research and development etc.-tax policy that rewards innovation and entrepreneurship
14. Progressive direct tax system - differential indirect taxes –use of tax proceeds for social development.
15. Deliberate policy to curtail aggregate demand - eliminate an inflationary gap – reduce the level of economic activity -decrease in government spending -increase in personal income taxes and/or business taxes -a combination of decrease in government spending and increase in personal income taxes and/or business taxes.
16. See 4.8

III Hints to Long Answer Type Questions

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.

- (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions.

1.
 - (i) Fiscal policy aimed at economic growth and desired redistribution of income - This is done through spending programmes targeted on welfare measures for the disadvantaged for e.g. poverty alleviation programmes, free or subsidized amenities to improve the quality of living of poor, infrastructure provision on a selective basis, strengthening of human capital for enhancing employability, Government provision of public goods such as education, research and development etc. provide momentum for long-run economic growth - A well designed tax policy that rewards innovation and entrepreneurship, without discouraging incentives will promote private businesses who wish to invest and thereby help the economy grow- A progressive direct tax system ensures that those who have greater ability to pay contribute more towards defraying the expenses of government and that the tax burden is distributed fairly among the population- carefully planned policy of public expenditure helps in redistributing income from the rich to the poorer sections of the society-
 - (ii) Conflict with stabilization functions of state policy - Government expenditure injects more money into the economy and stimulates demand in each case, disposable incomes increase- aggregate demand increases – illustrate with shift in AD curve- No corresponding increase in output- inflation sets in
 - (iii) Remedy through fiscal policy- reduce aggregate demand – contractionary fiscal policy–increase aggregate supply - illustrate using figure
 - (iv) Conflict of objectives -Possible lags - long gestation periods - politically unviable to reduce expenditure-high taxes lead to disincentives to invest.
2.
 - (i) The government spending multiplier when the MPC is 0.6, is $1/(1 - MPC) = 2.5$.

- (ii) A 5 billion increase in government expenditure will change the GDP by $5 \times 2.5 = 12.5$ billion if the MPC = 0.6.

3. The level of disposable income Y_d is given by

$$\begin{aligned} Y_d &= Y - \text{Tax} + \text{Transfer Payments, Where, Transfer Payment} = 110 \\ &= Y - 0.2 Y + 110 = 0.8Y + 110, \end{aligned}$$

$$\begin{aligned} \text{and } C &= 50 + 0.75 Y_d \\ &= 50 + 0.75(0.8Y + 110) \text{ (where } Y_d = 0.8Y + 110) \\ &= 50 + (0.75 \times 0.8Y) + (0.75 \times 110) = 132.50 + 0.6Y \end{aligned}$$

$$C = 132.50 + 0.6 Y$$

Now $Y = C + I + G$, Where $C = 132.50 + 0.6Y$, $I = 100$, $G = 200$ (Given)

$$\begin{aligned} Y &= (132.50 + 0.6Y) + 100 + 200 \\ &= 432.50 + 0.6Y \end{aligned}$$

$$Y - 0.6Y = 0.4Y = 432.50$$

$$\text{or } Y = 432.50 / 0.4 = 1,081.25 \text{ Crores}$$

$$\text{Expenditure Multiplier} = \frac{1}{1-b} = \frac{1}{1-0.6} = 2.5 \left(\text{Multiplier in closed economy } \frac{1}{1-b} \right)$$

$$\left(\text{Here } b = \text{MPC} = \frac{\Delta C}{\Delta Y} \right)$$

MONEY MARKET



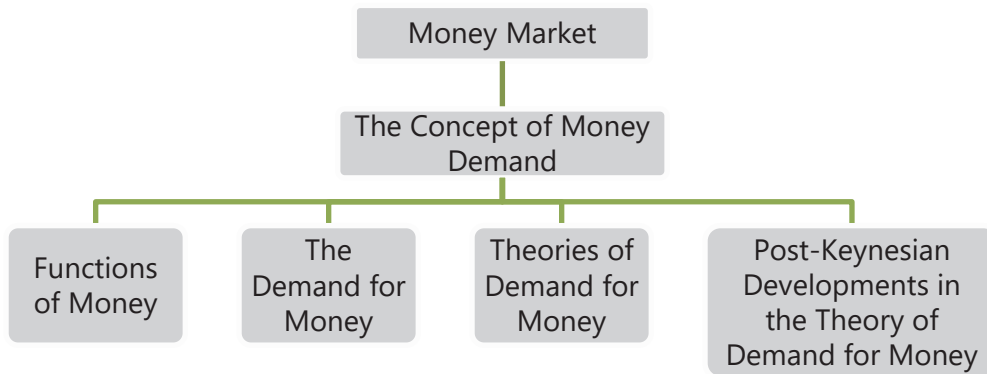
UNIT I: THE CONCEPT OF MONEY DEMAND: IMPORTANT THEORIES

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Define money and describe its nature and characteristics
- Explain the functions performed by money
- Describe the various theories related to demand for money
- Identify the factors that affect the demand for money.
- Distinguish between the different variables considered by each of the theories of demand for money

UNIT OVERVIEW



1.1 INTRODUCTION

Money is at the centre of every economic transaction and plays a significant role in all economies. In simple terms money refers to assets which are commonly used and accepted as a means of payment or as a medium of exchange or for transferring purchasing power. For policy purposes, money may be defined as the set of liquid financial assets, the variation in the stock of which will have impact on aggregate economic activity. **As a statistical concept, money could include certain liquid liabilities of a particular set of financial intermediaries or other issuers (RBI, 2007).**

New Addition

Money has generalized purchasing power and is generally acceptable in settlement of all transactions and in discharge of other kinds of business obligations including future payments. Anything that would act as a medium of exchange is not necessarily money. For example, a bill of exchange may also be a medium of exchange, but it is not money since it is not generally accepted as a means of payment. Money is a totally liquid asset as it can be used directly, instantly, conveniently and without any costs or restrictions to make payments. At the fundamental level, money provides us with a convenient means to access goods and services.

Money represents a certain value, but currency which represents money does not necessarily have intrinsic value. When money takes the form of a commodity with intrinsic value, it is called commodity money. For e.g. gold, silver or any other such elements may be used as money. As you know, fiat money (also known as token money) has no intrinsic value, that is, it has no value if it were not used as

money. Fiat money is used as a medium of exchange because the government has, by law, made them "legal tender," which means, they serve, by law, as means of payment. In modern days, money is not necessarily a physical item; it may also constitute electronic records. Money is, in fact, only one among many kinds of financial assets which households, firms, governments and other economic units hold in their asset portfolios. Unlike other financial assets, money is an essential element in conducting most of the economic transactions in an economy.

'There is no unique definition of 'money', either as a concept in economic theory or as measured in practice. Money can be defined for policy purposes as the set of liquid financial assets, the variation in the stock of which could impact on aggregate economic activity. As a statistical concept, money could include certain liquid liabilities of a particular set of financial intermediaries or other issuers'.
(Reserve Bank of India Manual on Financial and Banking Statistics, 2007)

1.2 FUNCTIONS OF MONEY

Money performs many important functions in an economy which **not only remove the difficulties of barter but also support trade and industry.** These functions are as follows-

New
Addition

- (i) Money is a convenient medium of exchange or it is an instrument that facilitates easy exchange of goods and services. Money, though not having any inherent power to directly satisfy human wants, by acting as a medium of exchange, it commands purchasing power and its possession enables us to purchase goods and services to satisfy our wants. By acting as an intermediary, money increases the ease of trade and reduces the inefficiency and transaction costs involved in a barter exchange. **In a barter economy every transaction has to involve an exchange of goods (and /or services) on both sides of the transaction.** By decomposing the single barter transaction into two separate transactions of sale and purchase, money eliminates the need for double coincidence of wants. Money also facilitates separation of transactions both in time and place and this in turn enables us to economize on time and efforts involved in transactions.
- (ii) **Money is an explicitly defined unit of value or unit of account. A unit of account is the yardstick people use to post prices and record debts. All economic values are measured and recorded in terms of money. As a measure of value, money works as a common denominator, as a unit of**

New
Addition

Change

account. We know, Rupee is the unit of account in India in which the entire money is denominated.

Change

The monetary unit measures and express the value of all goods and services. In fact, money helps in expressing the value of each good or service in terms of price, which is nothing but the number of monetary units for which the good or service can be exchanged. It is convenient to trade all commodities in exchange for a single commodity. So also, it is convenient to measure the prices of all commodities in terms of a single unit, rather than record the relative price of every good in terms of every other good. Thus, an obvious advantage of having a single unit of account is that it greatly reduces the number of exchange ratios between goods and services. Use of money as a unit of account can encourage trade by making it easier for individuals to know how much one good is worth in terms of another.

Change

A common unit of account facilitates a system of orderly pricing which is crucial for rational economic choices. Goods and services which are otherwise not comparable are made comparable through expressing the worth of each in terms of money.

Money is a useful measuring rod of value only if the value of money remains constant. The value of money is linked to its purchasing power, i.e. the quantity of goods and services that can be bought with a unit of money.

New Addition

Purchasing power of money is the inverse of the average or general level of prices as measured by the consumer price index. As such the value of money decreases when prices rise and increase when prices fall.

New Addition

- (iii) Money serves as a unit or standard of deferred payment i.e. money facilitates recording of deferred promises to pay. Money is the unit in terms of which future payments are contracted or stated. It simplifies credit transactions. By acting as a standard of deferred payments, money helps in capital formation both by the government and business enterprises. This function of money enables the growth of financial and capital markets and helps in the growth of the economy. However, variations in the purchasing power of money due to inflation or deflation reduce the efficacy of money in this function.
- (iv) Like nearly all assets such as stocks, bonds and other forms of wealth, money is a store of value. A store of value is an item that people can use to transfer purchasing power from the present to the future. People prefer to hold it as an asset, that is, as part of their stock of wealth. The splitting of

Change and modify

purchases and sale into two transactions involves a separation in both time and space. This separation is possible because money can be used as a store of value or store of means of payment during the intervening time. Again, rather than spending one's money at present, one can store it for use at some future time. Thus, money functions as a temporary abode of purchasing power in order to efficiently perform its medium of exchange function.

Money also functions as a permanent store of value. There are many other assets such as government bonds, deposits and other securities, land, houses etc. which also store value. Despite having the advantages of potential income yield and appreciation in value over time, these other assets are subject to limitations such as storage costs, lack of liquidity and possibility of depreciation in value. Money is the only asset which has perfect liquidity. Additionally, money also commands reversibility as its value in payment equals its value in receipt. All assets other than money lack perfect reversibility in the sense that their value in payment is not equal to their value in receipt. Even financial assets like the riskless government bonds do not command perfect reversibility as their purchase and sale are subject to certain brokerage costs although this may be quite small.

The effectiveness of an asset as a store of value depends on the degree and certainty with which the asset maintains its value over time. Hence, in order to serve as a permanent store of value in the economy, the purchasing power or the value of money should either remain stable or should monotonically rise over time.

There are some general characteristics that money should possess in order to make it serve its functions as money. Money should be:

- generally acceptable
- durable or long-lasting
- effortlessly recognizable.
- difficult to counterfeit i.e. not easily reproducible by people
- relatively scarce, but has elasticity of supply
- portable or easily transported
- possessing uniformity; and

Change
and
modify

- divisible into smaller parts in usable quantities or fractions without losing value



1.3 THE DEMAND FOR MONEY

Having understood the role of money in an economy, we shall now examine the concept of demand for money. If people desire to hold money, we say there is demand for money. As we are aware, the demand for money is in the nature of derived demand; it is demanded for its purchasing power. The demand for money is a demand for real balances. In other words, people demand money because they wish to have command over real goods and services with the use of money. Demand for money is actually demand for liquidity and demand to store value. The demand for money is a decision about how much of one's given stock of wealth should be held in the form of money rather than as other assets such as bonds. Although it gives little or no return, individuals, households as well as firms hold money because it is liquid and offers the most convenient way to accomplish their day to day transactions.

When we study demand for money, our interest is in why consumers and firms hold money as opposed to an asset with a higher rate of return. One might think why is it important to study about demand for money? Demand for money has an important role in the determination of interest, prices and income in an economy. Understanding money demand and how various factors affect that demand is the basic requirement in setting a target for the monetary authority.

The role of money in the macro economy is usually examined in a supply/demand framework. Before we go into the theories of demand for money, we shall have a quick look at some important variables on which demand for money depends on. The quantity of nominal money or how much money people would like to hold in liquid form depends on many factors, such as income, general level of prices, rate of interest, real GDP, and the degree of financial innovation etc. Higher the income of individuals, higher the expenditure; richer people hold more money to finance their expenditure. The quantity which people desire to hold is directly proportional to the prevailing price level; higher the prices, higher should be the holding of money. As mentioned above, one may hold his wealth in any form other than money, say as an interest yielding asset. It follows that the opportunity cost of holding money is the interest rate a person could earn on other assets. Therefore, higher the interest rate, higher would be opportunity cost of holding cash and lower the demand for money. Innovations such as internet banking,

Change
and
modify

application based transfers and automated teller machines reduce the need for holding liquid money. Just as households do, firms also hold money essentially for the same basic reasons.

1.4 THEORIES OF DEMAND FOR MONEY

1.4.1 Classical Approach: The Quantity Theory of Money (QTM)

The quantity theory of money, one of the oldest theories in Economics, was first propounded by Irving Fisher of Yale University in his book 'The Purchasing Power of Money' published in 1911 and later by the neoclassical economists. Both versions of the QTM demonstrate that there is strong relationship between money and price level and the quantity of money is the main determinant of the price level or the value of money. In other words, changes in the general level of commodity prices or changes in the value or purchasing power of money are determined first and foremost by changes in the quantity of money in circulation.

Fisher's version, also termed as 'equation of exchange' or 'transaction approach' is formally stated as follows:

$$MV = PT$$

Where, M = the total amount of money in circulation (on an average) in an economy

V = transactions velocity of circulation i.e. the average number of times across all transactions a unit of money (say Rupee) is spent in purchasing goods and services

P = average price level ($P = MV/T$)

T = the total number of transactions.

(Later economists replaced T by the real output Y).

Subsequently, Fisher extended the equation of exchange to include demand (bank) deposits (M') and their velocity (V') in the total supply of money. Thus, the expanded form of the equation of exchange becomes:

$$MV + M'V' = PT$$

Where M' = the total quantity of credit money

V' = velocity of circulation of credit money

The total supply of money in the community consists of the quantity of actual money (M) and its velocity of circulation (V). Velocity of money in circulation (V) and the velocity of credit money (V') remain constant. T is a function of national income. Since full employment prevails, the volume of transactions T is fixed in the short run. Briefly put, the total volume of transactions (T) multiplied by the price level (P) represents the demand for money. The demand for money (PT) is equal to the supply of money (MV + M'V). In any given period, the total value of transactions made is equal to PT and the value of money flow is equal to MV + M'V.

We shall now look into the classical idea of the demand for money. Fisher did not specifically mention anything about the demand for money; but the same is embedded in his theory as dependent on the total value of transactions undertaken in the economy. That is people would hold money in a quantity proportional to total transactions irrespective of interest rate. Thus, there is an aggregate demand for money for transactions purpose and more the number of transactions people want, greater will be the demand for money. The total volume of transactions multiplied by the price level (PT) represents the demand for money.

1.4.2 The Cambridge approach

In the early 1900s, Cambridge Economists Alfred Marshall, A.C. Pigou, D.H. Robertson and John Maynard Keynes (then associated with Cambridge) put forward a fundamentally different approach to quantity theory, known as cash balance approach. The Cambridge version holds that money increases utility in the following two ways:

1. enabling the possibility of split-up of sale and purchase to two different points of time rather than being simultaneous, and
2. being a hedge against uncertainty.

While the first above represents transaction motive, just as Fisher envisaged, the second points to money's role as a temporary store of wealth. Since sale and purchase of commodities by individuals do not take place simultaneously, they need a 'temporary abode' of purchasing power as a hedge against uncertainty. As such, demand for money also involves a precautionary motive in Cambridge approach. Since money gives utility in its store of wealth and precautionary modes, one can say that money is demanded for itself.

Now, the question is how much money will be demanded? The answer is: it depends partly on income and partly on other factors of which important ones are wealth and interest rates. The former determinant of demand i.e. income, points to transactions demand such that higher the income, the greater the quantity of purchases and as a consequence greater will be the need for money as a temporary abode of value to overcome transactions costs. The demand for money was primarily determined by the need to conduct transactions which will have a positive relationship to the money value of aggregate expenditure. Since the latter is equal to money national income, the Cambridge money demand function is stated as:

New Addition

$$M_d = k PY$$

Where

M_d = is the demand for money balances,

Y = real national income

P = average price level of currently produced goods and services

PY = nominal income

k = proportion of nominal income (PY) that people want to hold as cash balances

The term 'k' in the above equation is called 'Cambridge k' is a parameter reflecting economic structure and monetary habits, namely the ratio of total transactions to income and the ratio of desired money balances to total transactions. The equation above explains that the demand for money (M) equals k proportion of the total money income.

New Addition

Thus we see that the neoclassical theory changed the focus of the quantity theory of money to money demand and hypothesized that demand for money is a function of only money income. Both these versions are chiefly concerned with money as a means of transactions or exchange, and therefore, they present models of the transaction demand for money.

1.4.3 The Keynesian Theory of Demand for Money

Keynes' theory of demand for money is known as 'Liquidity Preference Theory'. 'Liquidity preference', a term that was coined by John Maynard Keynes in his masterpiece 'The General Theory of Employment, Interest and Money'

(1936), denotes people's desire to hold money rather than securities or long-term interest-bearing investments.

According to Keynes, people hold money (M) in cash for three motives:

- (i) Transactions motive ,
- (ii) Precautionary motive, and
- (iii) Speculative motive.

(a) The Transactions Motive

The transactions motive for holding cash relates to 'the need for cash for current transactions for personal and business exchange.' The need for holding money arises because there is lack of synchronization between receipts and expenditures. The transaction motive is further classified into income motive and business (trade) motive, both of which stressed on the requirement of individuals and businesses respectively to bridge the time gap between receipt of income and planned expenditures.

Keynes did not consider the transaction balances as being affected by interest rates. The transaction demand for money is directly related to the level of income. The transactions demand for money is a direct proportional and positive function of the level of income and is stated as follows:

$$L_r = kY$$

Where

- L_r is the transactions demand for money,
- k is the ratio of earnings which is kept for transactions purposes
- Y is the earnings.

Keynes considered the aggregate demand for money for transaction purposes as the sum of individual demand and therefore, the aggregate transaction demand for money is a function of national income.

(b) The Precautionary Motive

Many unforeseen and unpredictable contingencies involving money payments occur in our day to day life. Individuals as well as businesses keep a portion of their income to finance such unanticipated expenditures. The amount of money demanded under the precautionary motive depends on the size of income,

prevailing economic as well as political conditions and personal characteristics of the individual such as optimism/ pessimism, farsightedness etc. Keynes regarded the precautionary balances just as balances under transactions motive as income elastic and by itself not very sensitive to rate of interest.

(c) The Speculative Demand for Money

The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. According to Keynes, people demand to hold money balances to take advantage of the future changes in the rate of interest, which is the same as future changes in bond prices. It is implicit in Keynes theory, that the 'rate of interest', i , is really the return on bonds. Keynes assumed that the expected return on money is zero, while the expected returns on bonds are of two types, namely:

- (i) the interest payment
- (ii) the expected rate of capital gain.

The market value of bonds and the market rate of interest are inversely related. A rise in the market rate of interest leads to a decrease in the market value of the bond, and vice versa. Investors have a relatively fixed conception of the 'normal' or 'critical' interest rate and compare the current rate of interest with such 'normal' or 'critical' rate of interest.

If wealth-holders consider that the current rate of interest is high compared to the 'normal or critical rate of interest', they expect a fall in the interest rate (rise in bond prices). At the high current rate of interest, they will convert their cash balances into bonds because:

- (i) they can earn high rate of return on bonds
- (ii) they expect capital gains resulting from a rise in bond prices consequent upon an expected fall in the market rate of interest in future.

Conversely, if the wealth-holders consider the current interest rate as low, compared to the 'normal or critical rate of interest', i.e., if they expect the rate of interest to rise in future (fall in bond prices), they would have an incentive to hold their wealth in the form of liquid cash rather than bonds because:

- (i) the loss suffered by way of interest income forgone is small,

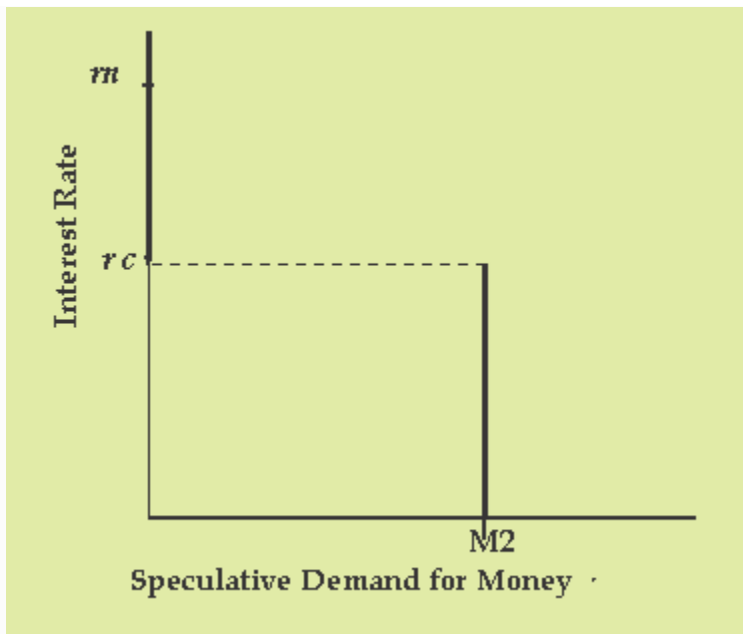
- (ii) they can avoid the capital losses that would result from the anticipated increase in interest rates, and
- (iii) the return on money balances will be greater than the return on alternative assets
- (iv) If the interest rate does increase in future, the bond prices will fall and the idle cash balances held can be used to buy bonds at lower price and can thereby make a capital-gain.

Summing up, so long as the current rate of interest is higher than the critical rate of interest, a typical wealth-holder would hold in his asset portfolio only government bonds, and if the current rate of interest is lower than the critical rate of interest, his asset portfolio would consist wholly of cash. When the current rate of interest is equal to the critical rate of interest, a wealth-holder is indifferent to holding either cash or bonds. The inference from the above is that the speculative demand for money and interest are inversely related.

The speculative demand for money of individuals can be diagrammatically presented as follows:

Figure: 2.1.1

Individual's Speculative Demand for Money

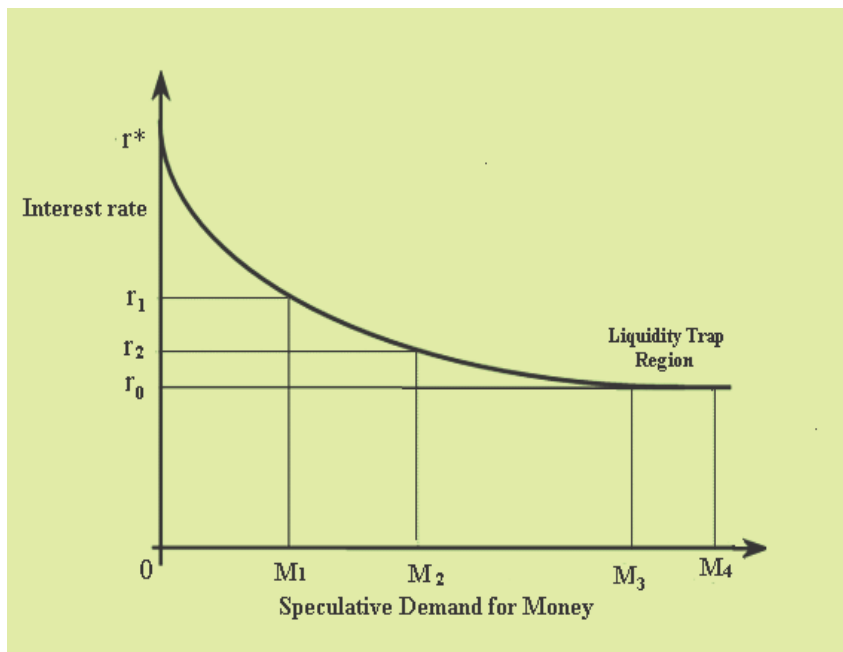


The discontinuous portfolio decision of a typical individual investor is shown in the figure above. When the current rate of interest r_n is higher than the critical rate of interest r_c , the entire wealth is held by the individual wealth-holder in the form of government bonds. If the rate of interest falls below the critical rate of interest r_c , the individual will hold his entire wealth in the form of speculative cash balances.

When we go from the individual speculative demand for money to the aggregate speculative demand for money, the discontinuity of the individual wealth-holder's demand curve for the speculative cash balances disappears and we obtain a continuous downward sloping demand function showing the inverse relationship between the current rate of interest and the speculative demand for money as shown in figure below:

Figure: 2.1.2

Aggregate Speculative Demand for Money



According to Keynes, higher the rates of interest, lower the speculative demand for money, and lower the rate of interest, higher the speculative demand for money.

The concept of Liquidity TrapNew
Addition

At a very high interest rate, say r^* , the opportunity cost of holding money (in terms of foregone interest) is high and therefore, people will hold no money in speculative balances. When interest rates fall to very low levels, the expectation is that since the interest rate is very low it cannot go further lower and that in all possibility it will move upwards. When interest rates rise, the bond prices will fall (interest rates and bond prices are inversely related). To hold bonds at this low interest rate is to take the almost certain risk of a capital loss (as the interest rate rises and bond prices fall). Therefore, the desire to hold bonds is very low and approaches zero, and the demand to hold money in liquid form as alternative to bond holding approaches infinity. In other words, investors would maintain cash savings rather than hold bonds. The speculative demand becomes perfectly elastic with respect to interest rate and the speculative money demand curve becomes parallel to the X axis. This situation is called a 'Liquidity trap'.

New
Addition

In such a situation, the monetary authority is unable to stimulate the economy with monetary policy. Since the opportunity cost of holding money is zero, even if the monetary authority increases money supply to stimulate the economy, people would prefer to hoard money. Consequently, excess funds may not be converted into new investment. The liquidity trap is synonymous with ineffective monetary policy.

Empirical evidence of liquidity trap is found during the global financial crisis of 2008 in the United States and Europe. Short-term interest rates moved close to zero. Some economists argued that these developed economies were in a liquidity trap. Even tripling of the monetary base in the US between 2008 and 2011 failed to produce significant effect on the domestic prices.

The sum of the transaction and precautionary demand, and the speculative demand, is the total demand for money. To sum up, an increase in income increases the transaction and precautionary demand for money and a rise in the rate of interest decreases the demand for speculative demand money.



1.5 POST-KEYNESIAN DEVELOPMENTS IN THE THEORY OF DEMAND FOR MONEY

Most post-Keynesian theories of demand for money emphasize the store-of-value or the asset function of money.

1.5.1 Inventory Approach to Transaction Balances

Baumol (1952) and Tobin (1956) developed a deterministic theory of transaction demand for money, known as Inventory Theoretic Approach, in which money or 'real cash balance' was essentially viewed as an inventory held for transaction purposes.

Inventory models assume that there are two media for storing value:

- (a) money and
- (b) an interest-bearing alternative financial asset.

There is a fixed cost of making transfers between money and the alternative assets e.g. broker charges. While relatively liquid financial assets other than money (such as, bank deposits) offer a positive return, the above said transaction cost of going between money and these assets justifies holding money.

Baumol used business inventory approach to analyze the behaviour of individuals. Just as businesses keep money to facilitate their business transactions, people also hold cash balance which involves an opportunity cost in terms of lost interest. Therefore, they hold an optimum combination of bonds and cash balance, i.e., an amount that minimizes the opportunity cost.

Baumol's propositions in his theory of transaction demand for money hold that receipt of income, say Y takes place once per unit of time, but expenditure is spread at a constant rate over the entire period of time. Excess cash over and above what is required for transactions during the period under consideration will be invested in bonds or put in an interest-bearing account. Money holdings on an average will be lower if people hold bonds or other interest yielding assets.

Just as businesses would like to hold an optimal inventory to reduce cost, individuals would like to keep optimal inventory of money and thus ensure minimum cost of money holding. The more cash the individual holds, the less would be the cost on account of broker's fee; but then the opportunity cost in terms of interest forgone would be more. The opposite would be the case if an individual holds less money. Therefore the individual faces a trade off which he should resolve by choosing the level of optimal money holding that would minimise the interest income foregone and broker's fee.

New
Addition

The higher the income, the higher is the average level or inventory of money holdings. The level of inventory holding also depends upon the carrying cost, which is the interest forgone by holding money and not bonds, net of the cost to

the individual of making a transfer between money and bonds, say for example brokerage fee. The individual will choose the number of times the transfer between money and bonds takes place in such a way that the net profits from bond transactions are maximized.

The average transaction balance (money) holding is a function of the number of times the transfer between money and bonds takes place. The more the number of times the bond transaction is made, the lesser will be the average transaction balance holdings. In other words, the choice of the number of times the bond transaction is made determines the split of money and bond holdings for a given income.

The inventory-theoretic approach also suggests that the demand for money and bonds depend on the cost of making a transfer between money and bonds e.g. the brokerage fee. An increase the brokerage fee raises the marginal cost of bond market transactions and consequently lowers the number of such transactions. The increase in the brokerage fee raises the transactions demand for money and lowers the average bond holding over the period. This result follows because an increase in the brokerage fee makes it more costly to switch funds temporarily into bond holdings. An individual combines his asset portfolio of cash and bond in such proportions that his overall cost of holding the assets is minimized.

1.5.2 Friedman's Restatement of the Quantity Theory

Milton Friedman (1956) extended Keynes' speculative money demand within the framework of asset price theory. Friedman treats the demand for money as nothing more than the application of a more general theory of demand for capital assets. Demand for money is affected by the same factors as demand for any other asset, namely

1. Permanent income.
2. Relative returns on assets. (which incorporate risk)

Friedman maintains that it is *permanent income*– and not *current income* as in the Keynesian theory – that determines the demand for money. Permanent income which is Friedman's measure of wealth is the present expected value of all future income. To Friedman, money is a good as any other durable consumption good and its demand is a function of a great number of factors.

Friedman identifies the following four determinants of the demand for money. The nominal demand for money:

- is a function of total wealth, which is represented by permanent income divided by the discount rate, defined as the average return on the five asset classes in the monetarist theory world, namely money, bonds, equity, physical capital and human capital.
- is positively related to the price level, P . If the price level rises the demand for money increases and vice versa.
- rises if the opportunity costs of money holdings (i.e. returns on bonds and stock) decline and vice versa.
- is influenced by inflation, a positive inflation rate reduces the real value of money balances, thereby increasing the opportunity costs of money holdings.

1.5.3 The Demand for Money as Behaviour toward Risk

In his classic article, 'Liquidity Preference as Behaviour towards Risk' (1958), Tobin established that the risk-avoiding behaviour of individuals provided the foundation for the liquidity preference and for a negative relationship between the demand for money and the interest rate. The risk-aversion theory is based on the principles of portfolio management. According to Tobin, the optimal portfolio structure is determined by

- (i) the risk/reward characteristics of different assets
- (ii) the taste of the individual in maximizing his utility consistent with the existing opportunities

In his theory which analyzes the individual's portfolio allocation between money and bond holdings, the demand for money is considered as a store of wealth. Tobin hypothesized that an individual would hold a portion of his wealth in the form of money in the portfolio because the rate of return on holding money was more certain than the rate of return on holding interest earning assets and entails no capital gains or losses. It is riskier to hold alternative assets vis-à-vis holding just money alone, because government bonds and equities are subject to market price volatility, while money is not. Thus, bonds pay an expected return of r , but as asset, they are unlike money because they are risky; and their actual return is uncertain. Despite this, the individual will be willing to face this risk because the expected rate of return from the alternative financial assets exceeds that of money.

According to Tobin, the rational behaviour of a risk-averse economic agent induces him to hold an optimally structured wealth portfolio which is comprised of both bonds and money. The overall expected return on the portfolio would be higher if the portfolio were all bonds, but an investor who is 'risk-averse' will be willing to exercise a trade-off and sacrifice to some extent the higher return for a reduction in risk.

Tobin's theory implies that the amount of money held as an asset depends on the level of interest rate. An increase in the interest rate will improve the terms on which the expected return on the portfolio can be increased by accepting greater risk. In response to the increase in the interest rate, the individual will increase the proportion of wealth held in the interest-bearing asset, say bonds, and will decrease the holding of money. Within Tobin's framework, an increase in the rate of interest can be considered as an increase in the payment received for undertaking risk. When this payment is increased, the individual investor is willing to put a greater proportion of the portfolio into the risky asset, (bonds) and thus a smaller proportion into the safe asset, money. His analysis implies that the demand for money as a store of wealth will decline with an increase in the interest rate. Tobin's analysis also indicates that uncertainty about future changes in bond prices, and hence the risk involved in buying bonds, may be a determinant of money demand. Just as Keynes' theory, Tobin's theory implies that the demand for money as a store of wealth depends negatively on the interest rate.



1.6 CONCLUSION

We have discussed the important theories pertaining to demand for money. All the theories have provided significant insights into the concept of demand for money. While the transactions version of Fisher focused on the supply of money as determining prices, the cash balance approach of the Cambridge University economists established the formal relationship between demand for real money and the real income. Keynes developed the money demand theory on the basis of explicit motives for holding money and formally introduced the interest rate as an additional explanatory variable that determines the demand for real balances. The post-Keynesian economists developed a number of models to provide alternative explanations to confirm the formulation relating real money balances with real income and interest rates. However, we find that all these theories establish a positive relation of demand for money to real income and an inverse relation to the rate of return on earning assets, i.e. the interest rate. However, the

propositions in these theories need to be supported by empirical evidence. As countries differ in respect of various determinants of demand for money, we cannot expect any uniform pattern of behaviour. Broadly speaking, real income, interest rates and expectations in respect to inflation are significant predictors of demand for money.

SUMMARY

- Money refers to assets which are commonly used and accepted as a means of payment or as a medium of exchange or for transferring purchasing power.
- Money is totally liquid, has generalized purchasing power and is generally acceptable in settlement of all transactions and in discharge of other kinds of business obligations including future payments.
- The functions of money are: acting as a medium of exchange to facilitate easy exchanges of goods and services, providing a 'common measure of value' or 'common denominator of value', serving as a unit or standard of deferred payments and facilitating storing of value both as a temporary abode of purchasing power and as a permanent store of value.
- Money should be generally acceptable, durable, difficult to counterfeit, relatively scarce, easily transported, divisible without losing value and effortlessly recognizable.
- The demand for money is derived demand and is a decision about how much of one's given stock of wealth should be held in the form of money rather than as other assets such as bonds.
- Both versions of the theory of money, namely, the classical approach and the neoclassical approach demonstrate that there is strong relationship between money and price level and the quantity of money is the main determinant of the price level or the value of money.
- Keynes' theory of demand for money is known as the 'liquidity preference theory'. 'Liquidity preference', is a term that was coined by John Maynard Keynes in his masterpiece 'The General Theory of Employment, Interest and Money' (1936).
- According to Keynes, people hold money (M) in cash for three motives: the transactions, precautionary and speculative motives.

- The transaction motive for holding cash is directly related to the level of income and relates to 'the need for cash for the current transactions for personal and business exchange.'
- The amount of money demanded under the precautionary motive is to meet unforeseen and unpredictable contingencies involving money payments and depends on the size of the income, prevailing economic as well as political conditions and personal characteristics of the individual such as optimism/pessimism, farsightedness etc.
- The speculative motive reflects people's desire to hold cash in order to be equipped to exploit any attractive investment opportunity requiring cash expenditure. The speculative demand for money and interest are inversely related.
- So long as the current rate of interest is higher than the critical rate of interest (r_c), a typical wealth-holder would hold in his asset portfolio only government bonds while if the current rate of interest is lower than the critical rate of interest, his asset portfolio would consist wholly of cash.
- Liquidity trap is a situation where the desire to hold bonds is very low and approaches zero, and the demand to hold money in liquid form as an alternative approaches infinity. People expect a rise in interest rate and the consequent fall in bond prices and the resulting capital loss. The speculative demand becomes perfectly elastic with respect to interest rate and the speculative money demand curve becomes parallel to the X axis.
- Baumol (1952) and Tobin (1956) developed a deterministic theory of transaction demand for 'real cash balance', known as Inventory Theoretic Approach, in which money is essentially viewed as an inventory held for transaction purposes.
- People hold an optimum combination of bonds and cash balance, i.e., an amount that minimizes the opportunity cost.
- The optimal average money holding is: a positive function of income Y , a positive function of the price level P , a positive function of transactions costs c , and a negative function of the nominal interest rate i .
- Milton Friedman (1956) extending Keynes' speculative money demand within the framework of asset price theory holds that demand for money is affected by the same factors as demand for any other asset, namely, permanent income and relative returns on assets.

New
Addition

- The nominal demand for money is positively related to the price level, P ; rises if bonds and stock returns, r_b and r_e , respectively decline and vice versa; is influenced by inflation; and is a function of total wealth
- The Demand for Money as Behaviour toward 'aversion to risk' propounded by Tobin states that money is a safe asset but an investor will be willing to exercise a trade-off and sacrifice to some extent, the higher return from bonds for a reduction in risk
- According to Tobin, rational behaviour induces individuals to hold an optimally structured wealth portfolio which is comprised of both bonds and money and the demand for money as a store of wealth depends negatively on the interest rate.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. Choose the incorrect statement
 - (a) Anything that would act as a medium of exchange is money
 - (b) Money has generalized purchasing power and is generally acceptable in settlement of all transactions
 - (c) Money is a totally liquid asset and provides us with means to access goods and services
 - (d) Currency which represents money does not necessarily have intrinsic value.
2. Money performs all of the three functions mentioned below, namely
 - (a) medium of exchange, price control, store of value
 - (b) unit of account, store of value, provide yields
 - (c) medium of exchange, unit of account, store of value
 - (d) medium of exchange, unit of account, income distribution
3. Demand for money is
 - (a) Derived demand
 - (b) Direct demand
 - (c) Real income demand

- (d) Inverse demand
4. Higher the -----, higher would be -----of holding cash and lower will be the -----
- (a) demand for money, opportunity cost, interest rate
 - (b) price level , opportunity cost, interest rate
 - (c) real income , opportunity cost, demand for money
 - (d) interest rate, opportunity cost, demand for money
5. The quantity theory of money holds that
- (a) changes in the general level of commodity prices are caused by changes in the quantity of money
 - (b) there is strong relationship between money and price level and the quantity of money is the main determinant of the price
 - (c) changes in the value of money or purchasing power of money are determined first and foremost by changes in the quantity of money in circulation
 - (d) All the above
6. The Cambridge approach to quantity theory is also known as
- (a) Cash balance approach
 - (b) Fisher's theory of money
 - (c) Classical approach
 - (d) Keynesian Approach
7. Fisher's approach and the Cambridge approach to demand for money consider
- (a) money's role in acting as a store of value and therefore, demand for money is for storing value temporarily.
 - (b) money as a means of exchange and therefore demand for money is termed as for liquidity preference
 - (c) money as a means of transactions and therefore, demand for money is only transaction demand for money.
 - (d) None of the above

8. Real money is
 - (a) nominal money adjusted to the price level
 - (b) real national income
 - (c) money demanded at given rate of interest
 - (d) nominal GNP divided by price level
9. The precautionary money balances people want to hold
 - (a) as income elastic and not very sensitive to rate of interest
 - (b) as income inelastic and very sensitive to rate of interest
 - (c) are determined primarily by the level of transactions they expect to make in the future.
 - (d) are determined primarily by the current level of transactions
10. Speculative demand for money
 - (a) is not determined by interest rates
 - (b) is positively related to interest rates
 - (c) is negatively related to interest rates
 - (d) is determined by general price level
11. According to Keynes, if the current interest rate is high
 - (a) people will demand more money because the capital gain on bonds would be less than return on money
 - (b) people will expect the interest rate to rise and bond price to fall in the future.
 - (c) people will expect the interest rate to fall and bond price to rise in the future.
 - (d) Either a) or b) will happen
12. The inventory-theoretic approach to the transactions demand for money
 - (a) explains the negative relationship between money demand and the interest rate.
 - (b) explains the positive relationship between money demand and the interest rate.

- (c) explains the positive relationship between money demand and general price level
 - (d) explains the nature of expectations of people with respect to interest rates and bond prices
13. According to Baumol and Tobin's approach to demand for money, the optimal average money holding is:
- (a) a positive function of income Y and the price level P
 - (b) a positive function of transactions costs c ,
 - (c) a negative function of the nominal interest rate i
 - (d) All the above
14. _____ considered demand for money is as an application of a more general theory of demand for capital assets
- (a) Baumol
 - (b) James Tobin
 - (c) J M Keynes
 - (d) Milton Friedman
15. The nominal demand for money rises if
- (a) the opportunity costs of money holdings – i.e. bonds and stock returns, r_B and r_E , respectively- decline and vice versa
 - (b) the opportunity costs of money holdings – i.e. bonds and stock returns, r_B and r_E , respectively- rises and vice versa
 - (c) the opportunity costs of money holdings – i.e. bonds and stock returns, r_B and r_E , respectively remain constant
 - (d) b) and c) above

II. Short Answer Type Questions

1. Define money.
2. What is meant by the term "legal tender,"
3. Write notes on the function of money as a medium of exchange,
4. Outline how money is useful as a 'common denominator of value'.

5. Examine the relationship between purchasing power of money and general price level
6. Critically examine money's function as standard of deferred payment
7. List the general characteristics that money should possess?
8. Explain the concept of demand for money.
9. Why do we say that money demand is derived demand?
10. Why is it important to study about demand for money?
11. Explain how higher the interest rate affect the demand for money.
12. Describe the main postulates of quantity theory of money
13. Describe the Keynesian view of different motives of holding cash
14. Compare transaction demand for money according to Keynes and Baumol & Tobin

III. Long answer Type Questions

1. Define money and describe its nature and characteristics
2. Explain the functions performed by money
3. 'The quantity theory of money is not a theory about money at all, rather it is a theory of the price-level' Elucidate
4. Describe the various theories related to demand for money
5. Define 'real cash balance'. Describe the Inventory Theoretic Approach to demand for money
6. Explain why bond prices move inversely to market interest rates
7. Distinguish between classical and Cambridge version of quantity theory of money
8. Explain the Keynesian theory of demand for money. What motives did Keynes ascribe to demand for money? Illustrate your answer.
9. List out the factors that determine the demand for money in the Baumol-Tobin analysis of transactions demand for money? How does a change in each factor affect the quantity of money demanded?
10. To what extent does Friedman's Restatement of the Quantity Theory explain the demand for money?

11. What factors determine demand for money in Friedman's modern quantity theory? How does each of the factors affect demand for money?
12. Examine the influence of different variables on demand for money according to Inventory Theoretic Approach?
13. 'Risk-avoiding behaviour of individuals provided the foundation for the liquidity preference and for a negative relationship between the demand for money and the interest rate' Elucidate with examples
14. Critically examine the post Keynesian theories of demand for money.

IV. Application Oriented Question

1. (a) Why should you hold money balances?
 (b) Will you choose to hold only interest bearing assets?
 (c) What would your choice be if you can pay for nearly all transactions through online transfers?
 (d) Do you think money is a unique store of value?
2. (a) Calculate M
 Velocity 19
 Price 108.5
 Volume of transactions 120 billion
 (b) What will be the effect on money supply if velocity is 25?
3. (a) Calculate velocity of money
 Money Supply 5000 billion
 Price 110
 Volume of transaction 200
 (b) What will be the outcome if volume of transaction increases to 225?

New
Addition

ANSWERS/HINTS

I. Multiple Choice Type Questions

1. (a) 2. (c) 3. (a) 4. (d) 5. (d) 6. (a)
 7. (c) 8. (a) 9. (a) 10. (c) 11. (c) 12. (a)

13. (d) 14. (d) 15. (a)

II. Short answer Type Questions

1. Assets which are commonly used and accepted as a means of payment or as a medium of exchange or of transferring purchasing power. Also defined as the set of liquid financial assets, the variation in the stock of which will have impact on aggregate economic activity.
2. They serve by law as means of payment –legally bound to accept in settlement of obligations
3. Money facilitate easy exchanges of goods and services increases the ease of trade and reduces the inefficiency and transaction costs involved in a barter exchange
4. The monetary unit is the unit of measurement in terms of which the value of all goods and services is measured and expressed.
5. Value of money is linked to its purchasing power. Purchasing power is the inverse of the average or general level of prices as measured by the consumer price index.
6. Money facilitates recording of deferred promises to pay. Money is the unit in terms of which future payments are contracted or stated.
7. Money should be generally acceptable, durable, difficult to counterfeit, relatively scarce, uniform, easily transported, divisible without losing value, elastic in supply and effortlessly recognizable.
8. The demand for money is a decision about how much of one's given stock of wealth should be held in the form of money rather than as other assets such as bonds. Demand for money is actually demand for liquidity and a demand to store value.
9. Demand for money is in the nature of derived demand; it is demanded for its purchasing power. Basically people demand money because they wish to have command over real goods and services with the use of money
10. Demand for money has an important role in the determination of interest, prices and income in an economy.
11. Important determinant of demand for money. Higher the interest rate, higher would be opportunity cost of holding cash and lower the demand for money.

12. The main postulates of the theory are: the proportionality of m and p , the active or causal role of m , neutrality of money on real variables, exogenous nature of nominal money supply and the monetary theory of the price level.
13. According to Keynes, people hold money in cash for three motives: the transactions, precautionary and speculative motives.
14. In contrast to the Keynesian demand for transaction balances which is interest-inelastic, the transaction demand of Baumol and Tobin is interest-elastic.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1.
 - (a) Transaction, precautionary and speculative demand – depends on the nature of the holder- institutional payments mechanisms and the gap between receipt and use of money, amount of income and changes in incomes, general level of prices, cost of conversion from near money to money etc.
 - (b) Not always- Partly held in assets- Depends on costs in terms of time and resources to keep moving in and out of bonds or other assets, the levels of interest payments, expectations about bond prices, future price levels- concept of speculative demand for money

- (c) Depends on financial infrastructure, how costless and immediate are transfers, preferences, attitude towards risks and the opportunity costs.
- (d) Financial assets other than money are also performing the function of store of value. Just as money has, the financial assets have fixed nominal value over time and represent generalized purchasing power. Therefore, money is not a unique store of value.
2. (a) $MV = PT$,
 $M \times 19 = 108.5 \times 120$; Therefore M **685.26**
- (b) For $V = 25$, with given p and T , M will be **520.8**
3. (a) $MV = PT$;
 $5000 \times V = 110 \times 200$, Therefore $V = 4.4$
- (b) If Volume of transaction 225, then $V = 4.95$

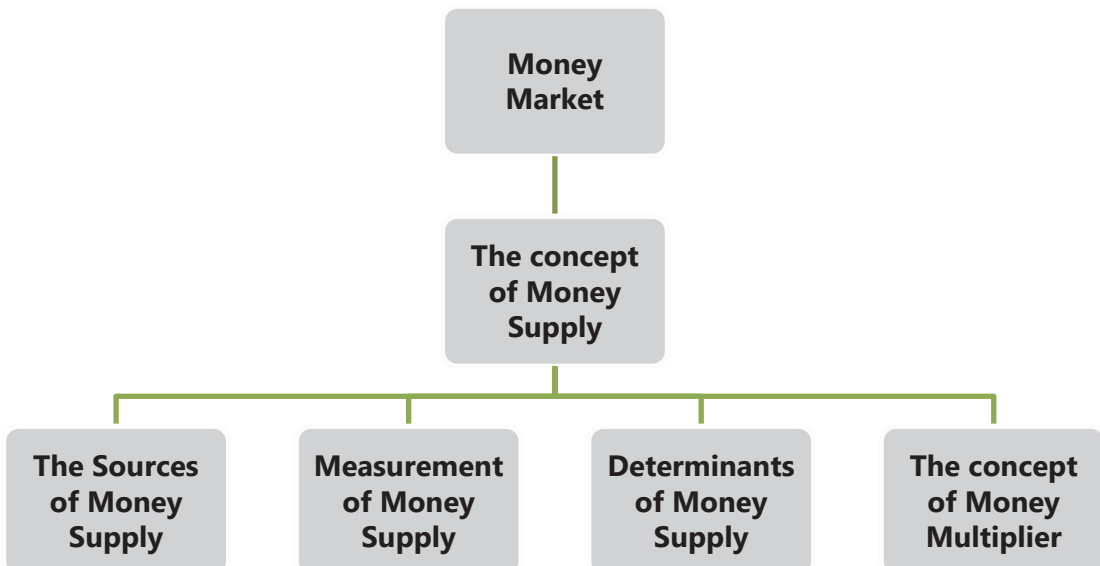
UNIT II: CONCEPT OF MONEY SUPPLY

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define money supply and describe its different components
- ❑ List out the need for and rationale of measuring money supply
- ❑ Elucidate the different sources of money supply
- ❑ Illustrate the various measures of money supply
- ❑ Distinguish between money multiplier and credit multiplier, and
- ❑ Describe the different determinants of money supply

UNIT OVERVIEW





2.1 INTRODUCTION

In the previous unit, we have discussed the theories related to demand for money. Money plays a crucial role in the smooth functioning of an economy. Money supply is considered as a very important macroeconomic variable responsible for changes in many other significant macroeconomic variables in an economy and is therefore considered as a matter of considerable interest to the economists and policy makers.

Economic stability requires that the supply of money at any time should to be maintained at an optimum level. A pre-requisite for achieving this is to accurately estimate the stock of money supply on a regular basis and appropriately regulate it in accordance with the monetary requirements of the country. In this unit, we shall look into various aspects related to the supply of money.

The term money supply denotes the total quantity of money available to the people in an economy. The quantity of money at any point of time is a measurable concept. It is important to note two things about any measure of money supply:

- (i) The supply of money is a stock variable i.e. it refers to the total amount of money at any particular point of time. It is the change in the stock of money (say, increase or decrease per month or year,), which is a flow.
- (ii) The stock of money always refers to the stock of money available to the 'public' as a means of payments and store of value. This is always smaller than the total stock of money that really exists in an economy.

The term 'public' is defined to include all economic units (households, firms and institutions) except the producers of money (i.e. the government and the banking system). The government, in this context, includes the central government and all state governments and local bodies; and the banking system means the Reserve Bank of India and all the banks that accept demand deposits (i.e. deposits from which money can be withdrawn by cheque mainly CASA deposits). The word 'public' is inclusive of all local authorities, non-banking financial institutions, and non-departmental public-sector undertakings, foreign central banks and governments and the International Monetary Fund which holds a part of Indian money in India in the form of deposits with the RBI. In other words, while discussing the definition of 'supply of money' and the standard measures of money, interbank deposits and money held by the government and the banking system are not included.



2.2 RATIONALE OF MEASURING MONEY SUPPLY

The empirical analysis of money supply is important for two reasons:

1. It facilitates analysis of monetary developments in order to provide a deeper understanding of the causes of money growth.
2. It is essential from a monetary policy perspective as it provides a framework to evaluate whether the stock of money in the economy is consistent with the standards for price stability and to understand the nature of deviations from this standard. The central banks all over the world adopt monetary policy to stabilise price level and GDP growth by directly controlling the supply of money. This is achieved mainly by managing the quantity of monetary base. The success of monetary policy depends to a large extent on the controllability of the monetary base and the money supply.



2.3 THE SOURCES OF MONEY SUPPLY

The supply of money in the economy depends on:

- (a) the decision of the central bank based on the authority conferred on it, and
- (b) the supply responses of the commercial banking system of the country to the changes in policy variables initiated by the central bank to influence the total money supply in the economy.

The central banks of all countries are empowered to issue currency and, therefore, the central bank is the primary source of money supply in all countries. In effect, high powered money issued by monetary authorities is the source of all other forms of money. The currency issued by the central bank is 'fiat money' and is backed by supporting reserves and its value is guaranteed by the government.

The currency issued by the central bank is, in fact, a liability of the central bank and the government. Therefore, in principle, it must be backed by an equal value of assets mainly consisting of gold and foreign exchange reserves. In practice, however, most countries have adopted a 'minimum reserve system' wherein the central bank is empowered to issue currency to any extent by keeping only a certain minimum reserve of gold and foreign securities.

The second major source of money supply is the banking system of the country. The total supply of money in the economy is also determined by the extent of credit created by the commercial banks in the country. Banks create money supply in the process of borrowing and lending transactions with the public. Money so created by the commercial banks is called 'credit money'. The high powered money and the credit money broadly constitute the most common measure of money supply, or the total money stock of a country. (For a brief note on the process of creation of credit money, refer to Box 1, end of this chapter).

The Crypto currencies face significant legislative uncertainties and are not legally recognized in India as currency. Hence, these are not categorized as money.

New
Addition



2.4 MEASUREMENT OF MONEY SUPPLY

There is virtually a profusion of different types of money, especially credit money, and this makes measurement of money supply a difficult task. Different countries follow different practices in measuring money supply. The measures of money supply vary from country to country, from time to time and from purpose to purpose. Reference to such different measures is beyond the scope of this unit. Just as other countries do; a range of monetary and liquidity measures are compiled and published by the RBI. Money supply will change if the magnitude of any of its constituents changes.

In this unit, we shall be concentrating on the Indian case only and in the following discussion, we shall focus on the alternative measures of money supply prepared and published periodically by the Reserve Bank of India.

Since July 1935, the Reserve Bank of India has been compiling and disseminating monetary statistics. Till 1967-68, the RBI used to publish only a single 'narrow measure of money supply' (M_1) defined as the sum of currency and demand deposits held by the public. From 1967-68, a 'broader' measure of money supply, called 'aggregate monetary resources' (AMR) was additionally published by the RBI. From April 1977, following the recommendations of the Second Working Group on Money Supply (SWG), the RBI has been publishing data on four alternative measures of money supply denoted by M_1 , M_2 , M_3 and M_4 besides the reserve money. The respective empirical definitions of these measures are given below:

M_1 = Currency notes and coins with the people + demand deposits with the banking system (Current and Saving deposit accounts) + other deposits with the RBI.

M_2 = M_1 + savings deposits with post office savings banks.

M_3 = M_1 + time deposits with the banking system.

M_4 = M_3 + total deposits with the Post Office Savings Organization (excluding National Savings Certificates).

The RBI regards these four measures of money stock as representing different degrees of liquidity. It has specified them in the descending order of liquidity, M_1 being the most liquid and M_4 the least liquid of the four measures.

We shall briefly discuss the important components of each. Modify

- Currency consists of paper currency as well as coins.
- Demand deposits comprise the current-account deposits and the demand deposit portion of savings deposits, all held by the public. These are also called CASA deposits and these are cheapest sources of finance for a commercial bank.
- It should be noted that it is the net demand deposits of banks, and not their total demand deposits that get included in the measure of money supply. The total deposits include both deposits from the public as well as inter-bank deposits. Money is deemed as something held by the 'public'. Since inter-bank deposits are not held by the public, they are netted out of the total demand deposits to arrive at net demand deposits.
- 'Other deposits' with the RBI are its deposits other than those held by the government (the Central and state governments), and include demand deposits of quasi-government institutions, other financial institutions, balances in the accounts of foreign central banks and governments, and accounts of international agencies such as IMF and the World Bank.

Empirically, whatever the measure of money supply, the 'other deposits' of the RBI constitute a very small proportion (less than one per cent) of the total money supply.

Following the recommendations of the Working Group on Money (1998), the RBI has started publishing a set of four new monetary aggregates on the basis of the

balance sheet of the banking sector in conformity with the norms of progressive liquidity. The new monetary aggregates are:

Reserve Money = Currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI
= Net RBI credit to the Government + RBI credit to the Commercial sector + RBI's Claims on banks + RBI's net Foreign Exchange assets + Government's Currency liabilities to the public - RBI's net non - monetary Liabilities

NM1 = Currency with the public + Demand deposits with the banking system + 'Other' deposits with the RBI.
NM2 = NM1 + Short-term time deposits of residents (including and up to contractual maturity of one year).
NM3 = NM2 + Long-term time deposits of residents + Call/Term funding from financial institutions

In the monetary literature, money is usually defined in alternative ways ranging from narrow to broad money.

- Empirically M₁ (narrow money) is defined as the sum of currency held by the public, demand deposits of the banks and other deposits with the RBI. Banks include commercial and co-operative banks.
- Reserve money is comprised of the currency held by the public, cash reserves of banks and other deposits with the RBI.
- On comparison, we find that there is difference between M1 and reserve money. Bank reserves, which are a component of the monetary base, are not included in M1. In addition, bank deposits, which are a component of M1, are not a part of the monetary base. Reserves are commercial banks' deposits with the central bank for maintaining cash reserve ratio (CRR) and as working funds for clearing adjustments.

Reserve money, also known as central bank money, base money or high-powered money, needs a special mention as it plays a critical role in the determination of the total supply of money. Reserve money determines the level of liquidity and

price level in the economy and, therefore, its management is of crucial importance to stabilize liquidity, economic growth, and price level in an economy.

The central bank also measures macroeconomic liquidity by formulating various 'liquidity' aggregates in addition to the monetary aggregates. While the instruments issued by the banking system are included in 'money', instruments, those which are close substitutes of money but are issued by the non-banking financial institutions are also included in liquidity aggregates.

L1 = NM3 + All deposits with the post office savings banks (excluding National Savings Certificates).

L2 = L1 + Term deposits with term lending institutions and refinancing institutions (FIs) + Term borrowing by FIs + Certificates of deposit issued by FIs.

L3 = L2 + Public deposits of non-banking financial companies

2.5 DETERMINANTS OF MONEY SUPPLY

There are two alternate theories in respect of determination of money supply. According to the first view, money supply is determined *exogenously* by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activities which affect people's desire to hold currency relative to deposits, rate of interest, etc. The current practice is to explain the determinants of money supply based on 'money multiplier approach' which focuses on the relation between the money stock and money supply in terms of the monetary base or high-powered money. **The monetary base is the sum of currency in circulation and bank reserves.** This approach holds that total supply of nominal money in the economy is determined by the joint behaviour of the central bank, the commercial banks and the public. Before we discuss the determinants of money supply, it is necessary that we know the concept of money multiplier.

New
Addition

2.6 THE CONCEPT OF MONEY MULTIPLIER

The money supply is defined as

$$M = m \times MB$$

Where M is the money supply, m is money multiplier and MB is the monetary base or high powered money. From the above equation we can derive the money multiplier (m) as

$$\text{Money Multiplier (m)} = \frac{\text{Money supply}}{\text{Monetary base}} \dots$$

Money multiplier m is defined as a ratio that relates the changes in the money supply to a given change in the monetary base. It is the ratio of the stock of money to the stock of high powered money. It denotes by how much the money supply will change for a given change in high-powered money. The money-multiplier process explains how an increase in the monetary base causes the money supply to increase by a multiplied amount. For instance, if there is an injection of Rs.100 Cr through an open market operation by the central bank of the country and if it leads to an increment of Rs.500 Cr. of final money supply, then the money multiplier is said to be 5. Hence, the multiplier indicates the change in monetary base which is transformed into money supply.

New Addition

The multiplier indicates what multiple of the monetary base is transformed into money supply. In other words, money and high powered money are related by the money multiplier. We make two simplifying assumptions as follows;

- Banks never hold excess reserves.
- Individuals and non-bank corporations never hold currency.

What determines the size of the money multiplier? The money multiplier is the reciprocal of the reserve ratio. Deposits, unlike currency held by people, keep only a fraction of the high-powered money in reserves and the rest is lent out and culminate in money creation. If R is the reserve ratio in a country for all commercial banks, then each unit of (say Rupee) money reserves generates $1/R$ money.

New Addition

Therefore, for any value of R, the Money Multiplier is $\frac{1}{R}$

For example, if $R = 10\%$, the value of money multiplier will be 10. If the reserve ratio is only 5 %, then money multiplier is 20. Thus, the higher the reserve ratio, the less of each deposit banks loan out, and the smaller the money multiplier.

If some portion of the increase in high-powered money finds its way into currency, this portion does not undergo multiple deposit expansion. The size of the money multiplier is reduced when funds are held as cash rather than as

New Addition

demand deposits. In other words, as a rule, an increase in the monetary base that goes into currency is not multiplied, whereas an increase in monetary base that goes into supporting deposits is multiplied.



2.7 THE MONEY MULTIPLIER APPROACH TO SUPPLY OF MONEY

The money multiplier approach to money supply propounded by Milton Friedman and Anna Schwartz, (1963) considers three factors as immediate determinants of money supply, namely:

- (a) the stock of high-powered money (H)
- (b) the ratio of reserves to deposits or reserve-ratio $r = \{\text{Reserves/Deposits } R/D\}$ and
- (c) the ratio of currency to deposits, or currency-deposit ratio $c = \{C/D\}$

You may note that these represent the behaviour of the central bank, behaviour of the commercial banks and the behaviour of the general public respectively. We shall now describe how each of the above contributes to the determination of aggregate money supply in an economy.

a) The Behaviour of the Central Bank

The behaviour of the central bank which controls the issue of currency is reflected in the supply of the nominal high-powered money. Money stock is determined by the money multiplier and the monetary base (H) is controlled by the monetary authority. If the behaviour of the public and the commercial banks remains unchanged over time, the total supply of nominal money in the economy will vary directly with the supply of the nominal high-powered money issued by the central bank.

b) The Behaviour of Commercial Banks

By creating credit, the commercial banks determine the total amount of nominal demand deposits. The behaviour of the commercial banks in the economy is reflected in the ratio of their cash reserves to deposits known as the 'reserve ratio'. If the required reserve ratio on demand deposits increases while all the other variables remain the same, more reserves would be needed. This implies that banks must contract their loans, causing a decline in deposits and hence in the money supply. If the required reserve ratio falls, there will be greater expansions of deposits because the same level of reserves can now support more

New
Addition

deposits and the money supply will increase. To sum up, smaller the reserve ratio larger will be the money multiplier.

In actual practice, however, the commercial banks keep only the required fraction of their total deposits in the form of cash reserves. However, for the commercial banking system as a whole, the actual reserves ratio may be greater than the required reserve ratio since the banks keep a higher than the statutorily required percentage of their deposits in the form of cash reserves as a buffer against unexpected events requiring cash.

The excess reserves (ER) which are funds that a bank keeps back beyond what is required by regulation form a very important determinant of money supply. 'Excess reserves' are the difference between total reserves (TR) and required reserves (RR). Therefore, $ER = TR - RR$. If total reserves are Rs 800 billion, whereas the required reserves are Rs 600 billion, then the excess reserves are Rs 200 billion.

New
Addition

The additional units of high-powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation of money. Therefore, if the central bank injects money into the banking system and these are held as excess reserves by the banking system, there will be no effect on deposits or currency and hence no effect on money supply.

When the costs of holding excess reserves rise, we should expect the level of excess reserves to fall; when the benefits of holding excess reserves rise, we would expect the level of excess reserves to rise. Two primary factors namely market interest rates and expected deposit outflows affect these costs and benefits and hence in turn affect the excess reserves ratio.

We know that the cost to a bank while holding excess reserves is in terms of its opportunity cost, i.e. the interest that could have been earned on loans or securities if the bank had chosen to invest in them instead of excess reserves. If interest rate increases, it means that the opportunity cost of holding excess reserves rises because the banks have to sacrifice possible higher earnings and hence the desired ratio of excess reserves to deposits falls. Conversely, a decrease in interest rate will reduce the opportunity cost of excess reserves, and excess reserves will rise. Therefore, we conclude that the banking system's excess reserves ratio r is negatively related to the market interest rate.

If banks fear that deposit outflows are likely to increase (that is, if expected deposit outflows increase), they will want more assurance against this possibility

and will increase the excess reserves ratio. Conversely, a decline in expected deposit outflows will reduce the benefit of holding excess reserves and excess reserves will fall.

As we know, money is mostly held in the form of deposits with commercial banks. Therefore, money supply may become subject to 'shocks' on account of behaviour of commercial banks which may present variations overtime either cyclically and more permanently. For instance, in times of financial crises, banks may be unwilling to lend to the small and medium scale industries who may become credit constrained facing a higher risk premia on their borrowings. The rising interest rates on bank credit to the commercial sector reflecting higher risk premia can co-exist with the lowering of policy rates by the central bank. The lower credit demand can lead to a sharp deceleration in monetary growth at a time when the central bank pursues an easy monetary policy. (Refer Box *1 below)

c) The Behaviour of the Public

We shall now turn to the next determinant viz. the behaviour of the public represented by the currency-deposit ratio c . The payment habits of the public determine how much currency is held relative to deposits. The public, by their decisions in respect of the amount of nominal currency in hand (how much money they wish to hold as cash) is in a position to influence the amount of the nominal demand deposits of the commercial banks. The behaviour of the public influences bank credit through the decision on ratio of currency to the money supply designated as the 'currency ratio'.

New
Addition

What would be the behaviour of money supply when depositors decide to increase currency holding, with all other variables unchanged? In other words, you decide to keep more money in your pocket and less money in your bank. That means you are converting some of your demand deposits into currency. If many people like you do so, technically we say there is an increase in currency ratio.

As we know, demand deposits undergo multiple expansions while currency in your hands does not. Hence, when bank deposits are being converted into currency, banks can create only less credit money. The overall level of multiple expansion declines, and therefore, money multiplier also falls. Hence, we conclude that money multiplier and the money supply are negatively related to the currency ratio c .

The currency-deposit ratio (c) represents the degree of adoption of banking habits by the people. This is related to the level of economic activities or the GDP

growth and is influenced by the degree of financial sophistication in terms of ease and access to financial services, availability of a richer array of liquid financial assets, financial innovations, institutional changes etc.

The smaller the currency-deposit ratio, the larger would be the money multiplier. This is because a smaller proportion of high powered money is being used as currency and therefore, a larger proportion is available to be reserves which get transformed into money.

New Addition

The time deposit-demand deposit ratio i.e. how much money is kept as time deposits compared to demand deposits, also has an important implication for the money multiplier and, hence for the money stock in the economy. An increase in TD/DD ratio means that greater availability of free reserves and consequent enlargement of volume of multiple deposit expansion and monetary expansion.

To summarise the money multiplier approach, the size of the money multiplier is determined by the required reserve ratio (r) at the central bank, the excess reserve ratio (e) of commercial banks and the currency ratio (c) of the public. The lower these ratios are, the larger the money multiplier is. In other words, the money supply is determined by high powered money (H) and the money multiplier (m) and varies directly with changes in the monetary base, and inversely with the currency and reserve ratios. Although these three variables do not completely explain changes in the nominal money supply, nevertheless they serve as useful devices for analysing such changes. Consequently, these variables are designated as the 'proximate determinants' of the nominal money supply in the economy.

We may now rewrite the money multiplier including the above variables.

$$M = C+D \tag{1}$$

$$H = C+ \text{reserves} \tag{2}$$

Where C is currency and D is deposits which are assumed to be demand deposits. We summarise the behaviour of the public, banks and the central bank by three variables namely, currency-deposit ratio $c = C/D$, reserve-ratio $r = \text{Reserves}/D$, and the stock of high-powered money (H)

Rewriting equation (1) and (2) above as

$$M = (c+1) D,$$

$$H = (c+ r) D$$

New Addition

$$M = \frac{1+c}{r+c} \times H = m \times H$$

New
Addition

$$m = \frac{1+c}{r+c}$$

When there are excess reserves, the money multiplier m is expressed as

$$m = \frac{1+c}{r+e+c}$$

$$\text{Money Supply } M = \frac{1+c}{r+e+c} \times H$$

The money multiplier is a function of:

- the currency ratio set by depositors c which depends on the behaviour of the public
- excess reserves ratio set by banks e , and
- the required reserve ratio set by the central bank r , which depends on prescribed CRR and the balances necessary to meet settlement obligations.

A simple example will explain the concept

Numerical Illustration

- In Gladys land,

$$r = 10\% = 0.10$$

Currency = 400 billion

Deposits = 800 billion

Excess Reserves = 0.8 billion = 800 million

Money Supply is $M = \text{Currency} + \text{Deposits} = 1200$ billion

$c = C/D = 400 \text{ billion} / 800 \text{ billion} = 0.5$ or depositors hold 50 percent of their money as currency

New
Addition

$e = 0.8 \text{ billion} / 800 \text{ billion} = 0.001$ or banks hold 0.1% of their deposits as excess reserves.

$$m = \frac{1 + c}{r + e + c}$$

Multiplier

$$, = 1 + 0.5 / 0.1 + 0.001 + 0.5 = 1.5 / 0.601 = 2.5$$

Therefore, a 1 unit increase in H leads to a 2.50 units increase in M.

The simple deposit multiplier in this example would be $1/r = 1/0.1 = 10$

The difference is due to inclusion of currency and excess reserves in calculating the multiplier.

- (b) If the reserve ratio is increased to 15 percent, the value of the money multiplier will be,

$$= 1 + 0.5 / 0.15 + 0.001 + 0.5 = 1.5 / 0.651 = 2.3$$

Obviously, r and m are negatively related: m falls when r rises, and m rises when r falls. The reason is that less multiple deposit creation can occur when r rises, while more multiple deposit creation can occur when r falls.

New Addition

2.8 Monetary Policy and Money Supply

New Section

If the central bank of a country wants to stimulate economic activity it does so by infusing liquidity into the system. Let us take the example of open market operations (OMO) by central banks. Purchase of government securities injects high powered money (monetary base) into the system. Assuming that banks do not hold excess reserves and people do not hold more currency than before, and also that there is demand for loans from businesses, the credit creation process by the banking system in the country will create money to the tune of

$$\Delta \text{Money supply} = \frac{1}{R} \times \Delta \text{Reserves}$$

The effect of an open market sale is very similar to that of open market purchase, but in the opposite direction. In other words, an open market purchase by central bank will reduce the reserves and thereby reduce the money supply.

Is it possible that the value of money multiplier is zero? It may happen when the interest rates are too low and the banks prefer to hold the newly injected reserves as excess reserves with no risk attached to it.



2.9 EFFECT OF GOVERNMENT EXPENDITURE ON MONEY SUPPLY

Whenever the central and the state governments' cash balances fall short of the minimum requirement, they are eligible to avail of a facility called Ways and Means Advances (WMA)/overdraft (OD) facility. When the Reserve Bank of India lends to the governments under WMA /OD, it results in the generation of excess reserves (*i.e.*, excess balances of commercial banks with the Reserve Bank). This happens because when government incurs expenditure, it involves debiting the government balances with the Reserve Bank and crediting the receiver (for e.g., salary account of government employee) account with the commercial bank. The extra reserves thus created can potentially lead to an increase in money supply through the money multiplier process.

The Credit Multiplier

The Credit Multiplier also referred to as the deposit multiplier or the deposit expansion multiplier, describes the amount of additional money created by commercial bank through the process of lending the available money it has in excess of the central bank's reserve requirements. The deposit multiplier is, thus inextricably tied to the bank's reserve requirement. This measure tells us how much new money will be created by the banking system for a given increase in the high-powered money. It reflects a bank's ability to increase the money supply.

The credit multiplier is the reciprocal of the required reserve ratio. If reserve ratio is 20%, then credit multiplier = $1/0.20 = 5$.

$$\text{Credit Multiplier} = \frac{1}{\text{Required Reserve Ratio}}$$

The existence of the credit multiplier is the outcome of fractional reserve banking. It explains how increase in money supply is caused by the commercial banks' use of depositors' funds to lend money. When a bank uses the deposited money for lending, the bank generates another claim on a given amount of deposited money. For example, if A deposits ₹ 1000/ in cash at a bank (Bank X), this constitutes the bank's current total cash deposits. If the required reserve is 10 percent, the bank would lend ₹ 900/ to B. By lending B ₹ 900/, the bank creates a deposit for ₹ 900/ that B can now use. It is as though B owns ₹ 900/. This in turn means that A will continue to have a claim against ₹ 1000/ while B will have a claim against ₹ 900/. The bank has ₹ 1000/ in cash against claims of ₹ 1900/. In short, the bank has created ₹ 900/ out of "thin air" since these ₹ 900/ are not

supported by any genuine money. At any time, the fractional reserve commercial banks have more cash liabilities than cash in their vaults.

Now suppose B buys goods worth ₹ 900/ from C and pays C by cheque. C places the cheque with his bank, Bank Y. After clearing the cheque, Bank Y will have an increase in cash of ₹ 900/, which it may take advantage of and use to lend out ₹ 810/ to D which may again be deposited in another bank, say Bank Z. Again 10 per cent of ₹ 810 (₹ 81) has to be kept as required reserves and the remaining ₹ 719/ can be lent out, say to E. This sequence keeps on continuing until the initial deposit amount ₹ 1,000 grows exactly by the multiple of required reserves (in this case, 10%). Ultimately, the expanded credit availability would be $1000 + 900$ (90% of 1000) + 810 (90% of 900) + 729 (90% of 810) + (90% of 719) + This summation would end with an amount which is equivalent to $1/10\%$ of 1000, which is ₹ 10,000. Thus, in our example, the initial deposit is capable of multiplying itself out 10 times. In short, we find that the fact that banks make use of demand deposits for lending it sets in motion a series of activities leading to expansion of money that is not backed by money proper. It is interesting to know that there is no difference between the type of money created by commercial banks and that which are issued by the central bank.

The deposit multiplier and the money multiplier though closely related are not identical because:

- a) generally banks do not lend out all of their available money but instead maintain reserves at a level above the minimum required reserve.
- b) all borrowers do not spend every Rupee they have borrowed. They are likely to convert some portion of it to cash.

We need to keep in mind that creating money through credit by banks does not mean creating wealth. Money creation is not the same as wealth creation.

New Addition

* 1 NOTE

While the Reserve Bank of India was pursuing all possible measures to encourage lending to combat the negative outcomes of COVID pandemic, the banks were risk averse to lending and were comfortable parking funds under reverse repo despite the very low reverse repo rate of 3.35 per cent. The average deposit of funds in the overnight reverse repo window in India increased more than three times – from an average of Rs 2.4-lakh crore during the March quarter to Rs 7-lakh crores during the June quarter. In the month of May, banks parked nearly ₹ 8-lakh crores under reverse repo on a daily average basis.

New Addition

Numerical illustrationsNew
Addition**Illustration 1**

Calculate Narrow Money (M_1) from the following data

Currency with public	₹ 90000 crore
Demand Deposits with Banking System	₹ 200000 crore
Time Deposits with Banking System	₹ 220000 crore
Other Deposits with RBI	₹ 280000 crore
Saving Deposits of Post office saving banks	₹ 60000 crore

Solution

$M_1 = \text{Currency with public} + \text{Demand Deposits with Banking System} + \text{Other Deposits with the RBI}$

$$= 90000 \text{ crore} + 200000 \text{ crore} + 280000 \text{ crore} = \mathbf{57\ 0000\text{crore}}$$

Illustration 2New
Addition

Compute credit multiplier if the required reserved ratio is 10% and 12.5% for every ₹ 1, 00,000 deposited in the banking system. What will be the total credit money created by the banking system in each case?

Solution

Credit Multiplier is the reciprocal of required reserved ratio.

$$\text{Credit Multiplier} = \frac{1}{\text{Required Reserverd Ratio}}$$

$$\text{For RRR} = 0.10 \text{ i.e. } 10\% \text{ the credit multiplier} = \frac{1}{0.10} = 10$$

$$\text{For RRR} = 0.125 \text{ i.e. } 12.5\% \text{ the credit multiplier} = \frac{1}{0.125} = 8$$

$$\text{Credit creation} = \text{Initial deposits} * \frac{1}{RRR}$$

For RRR 0.10 credit creation will be $1, 00,000 \times 1/0.10 = \text{Rs, } 10, 00,000$

For RRR 0.125 credit creation will be $1, 00,000 \times 1/0.125 = \text{Rs, } 8, 00,000$

Illustration 3

New
Addition

Calculate currency with the Public from the following data (₹ Crore)

1.1 Notes in Circulation	2496611
1.2 Circulation of Rupee Coin	25572
1.3 Circulation of Small Coins	743
1.4 Cash on Hand with Banks	98305

Solution

Currency with the Public (1.1 + 1.2 + 1.3 - 1.4) = (2496611+25572+743) - 98305
= **2424621**

Illustration 4

New
Addition

Calculate M2 from the following data

	(₹ Crore)
Notes in Circulation	2420964
Circulation of Rupee Coin	25572
Circulation of Small Coins	743
Post Office Saving Bank Deposits	141786
Cash on Hand with Banks	97563
Deposit Money of the Public	1776199
Demand Deposits with Banks	1737692
'Other' Deposits with Reserve Bank	38507
Total Post Office Deposits	14896
Time Deposits with Banks	178694

Solution

M2 = M1+ Post Office Saving Bank Deposits

where M1 = (Notes in Circulation + Circulation of Rupee Coin + Circulation of Small Coins - Cash on Hand with Banks) + Deposit Money of the Public

= (2420964+25572+743+97563- 97563) +1776199 = **4125915**

M2 = M1+ Post Office Saving Bank Deposits = 4125915 +141786= **4267701**

Illustration 5New
Addition

If the required reserve ratio is 10 percent, currency in circulation is ₹ 400 billion, demand deposits are ₹ 1000 billion, and excess reserves total ₹ 1 billion, find the value of money multiplier

Solution

$$r = 10\% = 0.10$$

Currency = 400 billion

Deposits = 1000 billion

Excess Reserves = 1 billion

Money Supply is $M = \text{Currency} + \text{Deposits} = 1400$ billion

$$c = C/D =$$

$400 \text{ billion}/1000 \text{ billion} = 0.4$ or depositors hold 40 percent of their money as currency

$e = 1 \text{ billion}/1000 \text{ billion} = 0.001$ or banks hold 0.1% of their deposits as excess reserves.

Multiplier

$$= 1 + 0.4/0.1 + 0.001 + 0.4 = 1.5/0.501 = 2.79$$

Therefore, a 1 unit increase in MB leads to a 2.79 units increase in M.

SUMMARY

- The measures of money supply vary from country to country, from time to time and from purpose to purpose.
- The high-powered money and the credit money broadly constitute the most common measure of money supply, or the total money stock of a country.
- High powered money is the source of all other forms of money. The second major source of money supply is the banking system of the country. Money created by the commercial banks is called 'credit money'.
- Measurement of money supply is essential from a monetary policy perspective because it enables a framework to evaluate whether the stock of money in the economy is consistent with the standards for price stability, to

understand the nature of deviations from this standard and to study the causes of money growth.

- The stock of money always refers to the total amount of money at any particular point of time i.e. it is the stock of money available to the 'public' as a means of payments and store of value and does not include inter-bank deposits.
- The monetary aggregates are:
 - $M1 = \text{Currency and coins with the people} + \text{demand deposits of banks (Current and Saving accounts)} + \text{other deposits of the RBI};$
 - $M2 = M1 + \text{savings deposits with post office savings banks},$
 - $M3 = M1 + \text{net time deposits of banks and}$
 - $M4 = M3 + \text{total deposits with the Post Office Savings Organization (excluding National Savings Certificates).}$
- Following the recommendations of the Working Group on Money (1998), the RBI has started publishing a set of four new monetary aggregates as: Reserve Money = Currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI, $NM1 = \text{Currency with the public} + \text{Demand deposits with the banking system} + \text{'Other' deposits with the RBI}$, $NM2 = NM1 + \text{Short-term time deposits of residents (including and up to contractual maturity of one year)}$, $NM3 = NM2 + \text{Long-term time deposits of residents} + \text{Call/Term funding from financial institutions}$
- The Liquidity aggregates are:
 - $L1 = NM3 + \text{All deposits with the post office savings banks (excluding National Savings Certificates).}$
 - $L2 = L1 + \text{Term deposits with term lending institutions and refinancing institutions (FIs)} + \text{Term borrowing by FIs} + \text{Certificates of deposit issued by FIs.}$
- The Reserve money, also known as central bank money, base money or high powered money determines the level of liquidity and price level in the economy.
- The money multiplier approach showing relation between the money stock and money supply in terms of the monetary base or high-powered money holds that total supply of nominal money in the economy is determined by

the joint behaviour of the central bank, the commercial banks and the public.

- $M = m \times MB$; Where M is the money supply, m is money multiplier and MB is the monetary base or high powered money. It shows the relationship between the reserve money and the total money stock.
- The money multiplier is a function of the currency ratio which depends on the behaviour of the public, excess reserves ratio of the banks and the required reserve ratio set by the central bank.
- The additional units of high-powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to the creation of deposits.
- When the required reserve ratio falls, there will be greater multiple expansions for demand deposits.
- Excess reserves ratio e is negatively related to the market interest rate i. If interest rate increases, the opportunity cost of holding excess reserves rises, and the desired ratio of excess reserves to deposits falls.
- An increase in time deposit-demand deposit ratio (TD/DD) means that greater availability of free reserves for banks and consequent enlargement of volume of multiple deposit expansion and monetary expansion.
- When the Reserve Bank lends to the governments under WMA /OD it results in the generation of excess reserves (*i.e.*, excess balances of commercial banks with the Reserve Bank).

TEST YOUR KNOWLEDGE

I. Multiple Choice Type Questions

1. Reserve money is also known as
 - (a) central bank money
 - (b) base money
 - (c) high powered money
 - (d) all the above

2. Choose the correct statement from the following
 - (a) Money is deemed as something held by the public and therefore only currency held by the public is included in money supply.
 - (b) Money is deemed as something held by the public and therefore inter-bank deposits are included in money supply.
 - (c) Since inter-bank deposits are not held by the public, therefore inter-bank deposits are excluded from the measure of money supply.
 - (d) Both (a) and (c) above.
3. Reserve Money is composed of
 - (a) currency in circulation + demand deposits of banks (Current and Saving accounts) + Other deposits with the RBI.
 - (b) currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI.
 - (c) currency in circulation + demand deposits of banks + Other deposits with the RBI.
 - (d) currency in circulation + demand and time deposits of banks + Other deposits with the RBI.
4. M1 is the sum of
 - (a) currency and coins with the people + demand deposits of banks (Current and Saving accounts) + other deposits of the RBI.
 - (b) currency and coins with the people + demand and time deposits of banks (Current and Saving accounts) + other deposits of the RBI.
 - (c) currency in circulation + Bankers' deposits with the RBI + Other deposits with the RBI
 - (d) none of the above
5. Under the ' minimum reserve system' the central bank is
 - (a) empowered to issue currency to any extent by keeping an equivalent reserve of gold and foreign securities.
 - (b) empowered to issue currency to any extent by keeping only a certain minimum reserve of gold and foreign securities.

- (c) empowered to issue currency in proportion to the reserve money by keeping only a minimum reserve of gold and foreign securities.
 - (d) empowered to issue currency to any extent by keeping a reserve of gold and foreign securities to the extent of ₹ 350 crores
6. The primary source of money supply in all countries is
- (a) the Reserve Bank of India
 - (b) the Central bank of the country
 - (c) the Bank of England
 - (d) the Federal Reserve
7. The supply of money in an economy depends on
- (a) the decision of the central bank based on the authority conferred on it.
 - (b) the decision of the central bank and the supply responses of the commercial banking system.
 - (c) the decision of the central bank in respect of high powered money.
 - (d) both a) and c) above.
8. Banks in the country are required to maintain deposits with the central bank
- (a) to provide the necessary reserves for the functioning of the central bank
 - (b) to meet the demand for money by the banking system
 - (c) to meet the central bank prescribed reserve requirements and to meet settlement obligations.
 - (d) to meet the money needs for the day to day working of the commercial banks
9. If the behaviour of the public and the commercial banks is constant, then
- (a) the total supply of nominal money in the economy will vary directly with the supply of the nominal high-powered money issued by the central bank
 - (b) the total supply of nominal money in the economy will vary directly with the rate of interest and inversely with reserve money

- (c) the total supply of nominal money in the economy will vary inversely with the supply of high powered money
 - (d) all the above are possible
10. Under the fractional reserve system
- (a) the money supply is an increasing function of reserve money (or high powered money) and the money multiplier.
 - (b) the money supply is an decreasing function of reserve money (or high powered money) and the money multiplier.
 - (c) the money supply is an increasing function of reserve money (or high powered money) and a decreasing function of money multiplier.
 - (d) none of the above as the determinants of money supply are different
11. The money multiplier and the money supply are
- (a) positively related to the excess reserves ratio e .
 - (b) negatively related to the excess reserves ratio e .
 - (c) not related to the excess reserves ratio e .
 - (d) proportional to the excess reserves ratio e .
12. The currency ratio represents
- (a) the behaviour of central bank in the issue of currency.
 - (b) the behaviour of central bank in respect cash reserve ratio.
 - (c) the behaviour of the public.
 - (d) the behaviour of commercial banks in the country.
13. The size of the money multiplier is determined by
- (a) the currency ratio (c) of the public,
 - (b) the required reserve ratio (r) at the central bank, and
 - (c) the excess reserve ratio (e) of commercial banks.
 - (d) all the above
14. ----- tells us how much new money will be created by the banking system for a given increase in the high-powered money.
- (a) The currency ratio

- (b) The excess reserve ratio (e)
 - (c) The credit multiplier
 - (d) The currency ratio (c)
15. The money multiplier will be large
- (a) for higher currency ratio (c), lower required reserve ratio (r) and lower excess reserve ratio (e)
 - (b) for constant currency ratio (c), higher required reserve ratio (r) and lower excess reserve ratio (e)
 - (c) for lower currency ratio (c), lower required reserve ratio (r) and lower excess reserve ratio (e)
 - (d) None of the above
16. The ratio that relates the change in the money supply to a given change in the monetary base is called the
- (a) required reserve ratio.
 - (b) money multiplier.
 - (c) deposit ratio.
 - (d) discount rate.
17. For a given level of the monetary base, an increase in the required reserve ratio will denote
- (a) a decrease in the money supply.
 - (b) an increase in the money supply.
 - (c) an increase in demand deposits.
 - (d) Nothing precise can be said
18. For a given level of the monetary base, an increase in the currency ratio causes the money multiplier to _____ and the money supply to _____.
- (a) decrease; increase
 - (b) increase; decrease
 - (c) decrease; decrease
 - (d) increase; increase

19. If commercial banks reduce their holdings of excess reserves
- (a) the monetary base increases.
 - (b) the monetary base falls.
 - (c) the money supply increases.
 - (d) the money supply falls.

II. Short Answer Type Questions

- (a) Explain the nature of currency issue under minimum reserve system
- (b) Define 'credit money'.
- (c) List the components of M1
- (d) Distinguish between M1 and M2
- (e) What is the rationale behind inclusion of net demand deposits of banks in money supply measurement?
- (f) Define 'Reserve Money'
- (g) Write a note on two major components Reserve money?
- (h) Describe the term 'cash reserve ratio' (CRR)
- (i) Write a note on the liquidity aggregates compiled by RBI
- (j) Define 'money multiplier'
- (k) What is the nature of relationship between money multiplier and the money supply?
- (l) What would be the effect on money multiplier if banks hold excess reserves?
- (m) What effect does government expenditure have on money supply?
- (n) What is the value of the money multiplier in a system of 100% reserve banking?
- (o) Define credit multiplier. How is it calculated?

III. Long Answer Type Questions

1. Define money supply. Describe the different components of money supply.
2. Explain the concept of money multiplier and bring out its impact on money supply.

3. Explain the factors which determine excess reserves held by banks? How do changes in each such factor affect the excess reserves, money multiplier, and money supply?
4. Explain the money multiplier approach to money supply?
5. Describe with illustrations how changes in high powered money, required reserves, excess reserves and currency ratio, influence the moneysupply in an economy?
6. Describe the different determinants of money supply in a country.

IV. Application Oriented Question (Just for Practice)

1. Prepare separate graphs using excel on 'Money Stock: Components and Sources' and 'Reserve Money: Components and Sources' for four previous months from the weekly statistical supplements published by Reserve Bank of India. Identify the trends in each.
2. Compute Reserve Money from the following data published by RBI

Components	(In billions of ₹) As on 7 July 2017
Currency in Circulation	15428.40
Bankers' Deposits with RBI	4596.18
'Other' Deposits with RBI	183.30

3. Compute M3 from the following data published by RBI

Components	(In billions of ₹) As on 31 March, 2017
Currency with the Public	12637.1
Demand Deposits with Banks	14,106.3
Time Deposits with Banks	101,489.5
'Other' Deposits with Reserve Bank	210.9

4. What will be the total credit created by the commercial banking system for an initial deposit of ₹ 1000/ for required reserve ratio 0.02, 0.05 and 0.10 percent respectively? Compute credit multiplier

5. How would each of the following affect money multiplier and money supply?
- (i) Commercial banks in India decide to hold more excess reserves
 - (ii) Fearing shortage of money in ATMs, people decide to hoard money
 - (iii) Banks open large number ATMs all over the country
 - (iv) E banking becomes very common and nearly all people use them
 - (v) During festival season , people decide to use ATMs very often
 - (vi) If banks decide to keep 100% reserves. What would be the effect on money multiplier and money supply?
 - (vii) Suppose banks need to keep no reserves only 0% reserves are there.

ANSWERS/HINTS

I. Multiple Choice Questions

1. (d) 2. (c) 3. (b) 4. (a) 5. (b) 6. (b)
 7. (b) 8. (c) 9. (a) 10. (a) 11. (b) 12. (c)
 13. (d) 14. (c) 15. (c) 16. (b) 17. (a) 18. (c)
 19. (c)

II. Short Answer Type Questions

- (a) Under the 'minimum reserve system' the central bank is empowered to issue currency to any extent by keeping only a certain minimum reserve of gold and foreign securities.
- (b) 'Credit money' refers to the fraction of money supply created by commercial banks in the process of borrowing and lending transactions with the public.
- (c) M1 is composed of currency and coins with the people, demand deposits of banks (current and saving accounts) and other deposits of the RBI.
- (d) M2 includes M1(as above) as well as savings deposits with post office savings banks

- (e) Money is deemed as something held by the 'public'. Since inter-bank deposits are not held by the public, they are netted out of the total demand deposits to arrive at net demand deposits.
- (f) Reserve Money is composed of currency in circulation, bankers' deposits with
- (g) the RBI and other deposits with the RBI **This answer is part of f**

Answer of g (h) Reserve money has two major components – currency in circulation and reserves. Currency in circulation comprises currency with the public and cash in hand with banks. Reserves are bank deposits with the central bank.

Answer of h (i) Banks in the country are required to maintain deposits with the central bank to meet the central bank prescribed reserve requirements or cash reserve ratio (CRR) as also to meet settlement obligations. They represent balances maintained by banks in the current account with the Reserve Bank of India.

Answer of i (j) The liquidity aggregates are: L1 which is composed of NM3, all deposits with the post office savings banks (excluding National Savings Certificates), L2 which comprises of L1, term deposits with term lending institutions and refinancing institutions (FIs), term borrowing by FIs and certificates of deposit issued by FIs and L3 consisting of L2 and Public deposits of non-banking financial companies

Answer of j (k) The money supply is defined as $M = m \times MB$ where M is the money supply, m is money multiplier and MB is the monetary base or high powered money. Money multiplier m is defined as a ratio that relates the change in the money supply to a given change in the monetary base.

Answer of k (l) The multiplier indicates what multiple of the monetary base is transformed into money supply. The link from reserve money to money supply is through the money multiplier. The multiplier process operates as long as banks have excess reserves.

Answer of l (m) The additional units of high-powered money that goes into 'excess reserves' of the commercial banks do not lead to any additional loans, and therefore, these excess reserves do not lead to creation of deposits. In other words, excess reserves may be considered as an idle component of reserves and therefore has no effect on money multiplier.

Answer of m (n) When the Reserve Bank lends to the governments under WMA /OD it results in the generation of excess reserves (*i.e.*, excess balances of commercial

banks with the Reserve Bank). The excess reserves thus created can potentially lead to an increase in money supply through the money multiplier process.

Answer
of n

- (o) If banks keep the whole deposits as reserve, deposits simply replace currency as reserves and therefore no new extra claims will be created and no new money will be created by banks.

Answer
of o

- (p) The Credit Multiplier also referred to as the deposit multiplier or the deposit expansion multiplier, describes the amount of additional money created by commercial bank through the process of lending the available money it has in excess of the central bank's reserve requirements. It is the reciprocal of the required reserve ratio. If reserve ratio is 20%, then credit multiplier = $1/0.20 = 5$.

$$\text{Credit Multiplier} = \frac{1}{\text{Required Reserve Ratio}}$$

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1. From the RBI website, collect the relevant information from the 'publications (weekly) page.
2. Reserve Money = Currency in Circulation + Bankers' Deposits with RBI + 'Other' Deposits with

3. $RBI15428.40 + 4596.18 + 183.30 = 20207.88$ **Part of answer 2**

Answer
to
Question
3

4. $M3 = 128,443.9$ Currency with the Public + Demand Deposits with Banks + Time Deposits with Banks + 'Other' Deposits with Reserve Bank
 $= 12637.1 + 14,106.3 + 101,489.5 + 210.9 = 128,443.8$

4. Credit Multiplier = $1 / \text{Required Reserve Ratio}$

$1000 \times 1/0.02 = 50,000$

$1000 \times 1/0.05 = 20,000$

$1000 \times 1/0.10 = 10,000$

5. (i) Excess reserves are those reserves that the commercial banks hold with the central bank in addition to the mandatory reserve requirements. Excess reserves result in an increase in reserve-deposit ratio of banks; less money for lending reduces money multiplier; money supply declines.
- (ii) When people hold more money, it increases the currency-deposit ratio; reduces money multiplier; money supply declines.
- (iii) ATMs let people to withdraw cash from the bank as and when needed, reduces cost of conversion of deposits to cash and makes deposits relatively more convenient. People hold less cash and more deposits, thus reducing the currency-deposit ratio; increasing the money multiplier causing the money supply to increase
- (iv) See (iii) above
- (v) If people, for any reason, are expected to withdraw money from ATMs with more frequency, then banks will want to keep more reserves. This will raise the reserve ratio, and lower the money multiplier. As a result money supply will decline
- (vi) If banks decides to keep 100% reserves, then the Money multiplier = $1 / \text{required reserve ratio} = 1/100\% = 1$. No additional money supply as there is no credit creation
- (vii) If the required reserve ratio is 0 %, then money multiplier is infinite and there will be unlimited money creation. There will be chaos with spiraling prices as money supply is too much and real output cannot increase.

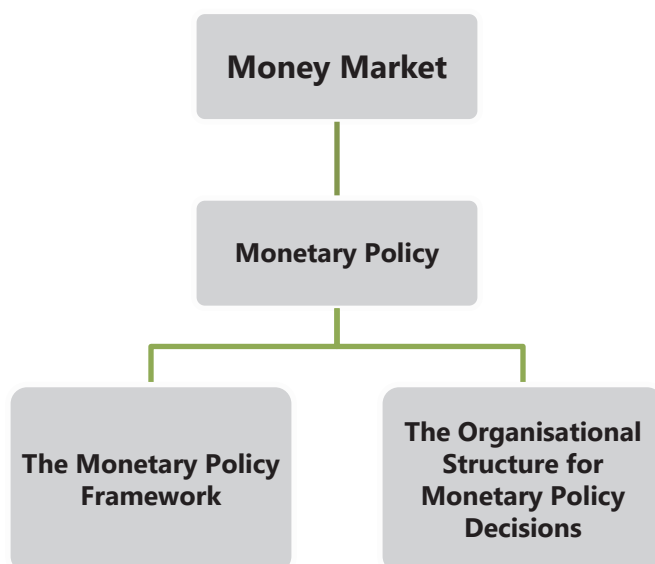
UNIT III: MONETARY POLICY

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define monetary policy and describe its objectives
- ❑ Elucidate different components of the monetary policy framework
- ❑ Illustrate the analytics of monetary policy
- ❑ Explain the operating procedures and instruments of monetary policy, and
- ❑ Describe the organizational structure for monetary policy decisions

UNIT OVERVIEW





3.1 INTRODUCTION

As citizens of a free nation, we have many dreams about what ought to be the state of affairs in our economy. We value stable prices and low rates of inflation. We share a quest for well-being through high levels of growth which ensure jobs and prosperity and we work towards it. Unfortunately, in reality, we live in a crisis prone economy with nightmares of financial downturns, of being laid-off or being battered by financial crises. We observe that the Reserve Bank of India is occasionally manipulating policy rates for manoeuvring liquidity conditions with reasons thereof explicitly notified. In fact, we have only a limited understanding of the monetary phenomena which could strengthen or paralyse the domestic economy. The discussion that follows is an attempt to throw light on the well-acknowledged monetary measures undertaken by governments to fight economic instability.



3.2 MONETARY POLICY DEFINED

Monetary policy refers to the use of monetary policy instruments which are at the disposal of the central bank to regulate the availability, cost and use of money and credit to promote economic growth, price stability, optimum levels of output and employment, balance of payments equilibrium, stable currency or any other goal of government's economic policy. In other words, monetary policy is essentially a programme of action undertaken by the monetary authorities, normally the central bank, to control and regulate the demand for and supply of money with the public and the flow of credit with a view to achieving predetermined macroeconomic goals.

Monetary policy encompasses all actions of the central bank which are aimed at directly controlling the money supply and indirectly at regulating the demand for money. Monetary policy is in the nature of 'demand-side' macroeconomic policy and works by stimulating or discouraging investment and consumption spending on goods and services. It is no surprise that monetary policy is regarded as an indispensable policy instrument in an economy.



3.3 THE MONETARY POLICY FRAMEWORK

The central bank, in its execution of monetary policy, functions within an articulated monetary policy framework which has three basic components, viz.

- (i) the objectives of monetary policy,

- (ii) the analytics of monetary policy which focus on the transmission mechanisms, and
- (iii) The operating procedure which focuses on the operating targets and instruments.

3.3.1 The Objectives of Monetary Policy

The objectives set for monetary policy are important because they provide explicit guidance to policy makers. Monetary policy of a country is in fact a reflection of its economic policy and therefore, the objectives of monetary policy generally coincide with the overall objectives of economic policy.

There are significant differences among different countries in respect of the selection of objectives, implementation procedures and tools of monetary policy either due to differences in the underlying economies or due to differences in the financial systems and in the infrastructure of financial markets. Coverage of aspects related to monetary policies of different countries would be beyond the scope of this unit. Therefore, the following discussions relate to the monetary policy situations in the context of Indian economy.

In the pre-Keynesian period, monetary policy, with its conventional objective of establishment and maintenance of stability in prices, was the single well-acknowledged instrument of macroeconomic policy. The Great Depression in 1930s and the associated economic crises marked a turning point resulting in a major shift in the objective of governments' economic policy in favour of maintenance of full employment, more generally described as economic stability. The most commonly pursued objectives of monetary policy of the central banks across the world are maintenance of price stability (or controlling inflation) and achievement of high level of economy's growth and maintenance of full employment

The Reserve Bank of India Act, 1934, in its preamble sets out the objectives of the Bank as 'to regulate the issue of bank notes and the keeping of reserves with a view to securing monetary stability in India and generally to operate the currency and credit system of the country to its advantage'. It is to be noted that though price stability as an objective is not explicitly spelt out, the monetary policy in India has evolved towards maintaining price stability and ensuring adequate flow of credit to the productive sectors of the economy. Price stability, as we know, is a necessary precondition for sustainable growth. Fundamentally, the primary objective of monetary policy has been maintenance of a judicious balance between price stability and economic growth.

Multiple objectives, all of which are equally desirable, such as rapid economic growth, debt management, moderate long-term interest rates, exchange rate stability and external balance of payments equilibrium were incorporated as objectives of monetary policy by policy makers in later years. The need for simultaneous achievement of several objectives brings in the possibility of conflict among the different monetary policy objectives. For example, there is often a conflict between the objectives of holding down both inflation and unemployment; a policy targeted at controlling inflation is very likely to generate unemployment. As such, based on the set national priorities, the monetary policymakers have to exercise appropriate trade-offs to balance the conflicting objectives.

Given the development needs of developing countries, the monetary policy of such countries also incorporate explicit objectives such as:

- (i) maintenance of economic growth,
- (ii) ensuring an adequate flow of credit to the productive sectors,
- (iii) sustaining a moderate structure of interest rates to encourage investments, and
- (iv) creation of an efficient market for government securities.

Considerations of financial and exchange rate stability have assumed greater importance in India recently on account of increasing openness of the economy and the progressive economic and financial sector reforms.

3.3.2 Analytics of Monetary Policy

As we are aware, just as fiscal policy, monetary policy is intended to influence macro-economic variables such as aggregate demand, quantity of money and credit, interest rates etc, so as to influence overall economic performance. The process or channels through which the change of monetary aggregates affects the level of product and prices is known as 'monetary transmission mechanism'. It describes how policy-induced changes in the nominal money stock or in the short-term nominal interest rates impact real variables such as aggregate output and employment.

Generally central banks use the short-term interest rate as the policy instrument. Therefore, monetary policy transmission is the process through which a change in the policy rate gets transmitted primarily to the short-term money market rate and subsequently to the entire range of interest rates namely, banks' deposit and lending rates and interest rates in bond markets. These interest rate changes

New
Addition

affect macro economic variables such as consumption, investment and exports which in turn influence aggregate demand, output and employment.

New
Addition

Although we know that monetary policy does influence output and inflation, we are not certain about how exactly it does so, because the effects of such policy are visible often after a time lag which is not completely predictable

There are mainly five different mechanisms through which monetary policy influences the price level and the national income. These are:

- (a) the interest rate channel,
- (b) the exchange rate channel,
- (c) the quantum channel (e.g., relating to money supply and credit),
- (d) the asset price channel i.e. via equity and real estate prices. and
- (e) the expectations channel

New
Addition

We shall have a brief discussion on each of the above transmission mechanisms. According to the traditional Keynesian interest rate channel, a contractionary monetary policy-induced increase in interest rates increases the cost of capital and the real cost of borrowing for firms with the result that they cut back on their investment expenditures. Similarly, households facing higher real borrowing costs, cut back on their purchases of homes, automobiles, and all types of durable goods. A decline in aggregate demand results in a fall in aggregate output and employment. Conversely, an expansionary monetary policy induced decrease in interest rates will have the opposite effect through decreases in cost of capital for firms and cost of borrowing for households.

In open economies, additional real effects of a policy-induced change in the short-term interest rate come about through the exchange rate channel. Changes in monetary policy cause differences between domestic and foreign interest rates leading to capital flows (inflow or outflow) and exchange rate. Typically, the exchange rate channel works through expenditure switching between domestic and foreign goods. Appreciation of the domestic currency makes domestically produced goods more expensive compared to foreign-produced goods. This causes net exports to fall; correspondingly domestic output and employment also fall.

Two distinct credit channels- the bank lending channel and the balance sheet channel- also allow the effects of monetary policy actions to spread through the real economy. Credit channel operates by altering access of firms and households to bank credit. Most businesses and people mostly depend on bank

for borrowing money. "An open market operation" that leads first to a contraction in the supply of bank reserves and then to a contraction in bank credit requires banks to cut back on their lending. This, in turn makes the firms that are especially dependent on banks loans to cut back on their investment spending. Thus, there is decline in the aggregate output and employment following a monetary contraction.

Now we shall look into how the balance sheet channel works. Logically, as a firm's cost of credit rises, the strength of its balance sheet deteriorates. A direct effect of monetary policy on the firm's balance sheet comes through an increase in interest rates leading to an increase in the payments that the firm must make to repay its floating rate debts. An indirect effect occurs when the same increase in interest rates works to reduce the capitalized value of the firm's long-lived assets. Hence, a policy-induced increase in the short-term interest rate not only acts immediately to depress spending through the traditional interest rate channel, it also acts, possibly with a time-lag, to raise each firm's cost of capital through the balance sheet channel. These together aggravate the decline in output and employment.

The standard asset price channel suggests that asset prices respond to monetary policy changes and consequently affect output, employment and inflation. A policy-induced increase in the short-term nominal interest rates makes debt instruments more attractive than equities in the eyes of investors leading to a fall in equity prices. If stock prices fall after a monetary tightening, it leads to reduction in household financial wealth, leading to fall in consumption, output, and employment.

Finally, changes in monetary policy may have impact on people's expectations about inflation and therefore on aggregate demand. This in turn affects employment and output in the economy.

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The manner in which these different channels function in a given economy depends on:

- (i) the stage of development of the economy, and
- (ii) the underlying financial structure of the economy

3.3.3 Operating Procedures and Instruments

The operating framework relates to all aspects of implementation of monetary policy. It primarily involves three major aspects, namely,

- (i) choosing the operating targets,

- (ii) choosing the intermediate targets, and
- (iii) choosing the policy instruments.
- The operating targets refer to the financial variables that can be controlled by the central bank to a large extent through the monetary policy instruments (reserve money and short-term money market interest rates or weighted average call rate (WACR)).
- The intermediate targets (e.g. monetary aggregates and short-term and long-term interest rates) are variables which the central bank can hope to influence to a reasonable degree through the operating targets. The intermediate targets display a predictable and stable relationship with the goal variables (e.g. stability, growth etc.)
- The monetary policy instruments are the various tools that a central bank can use to influence money market and credit conditions and pursue its monetary policy objectives. The day-to-day implementation of monetary policy by central banks through various instruments is referred to as 'operating procedures'. For example, liquidity management is the operating procedure of the Reserve Bank of India

For implementing monetary policy, a central bank can act directly, using its regulatory powers, or indirectly, using its influence on money market conditions as the issuer of reserve money (currency in circulation and deposit balances with the central bank).

In general, the direct instruments comprise of:

- (a) the required cash reserve ratios and liquidity reserve ratios prescribed from time to time.
- (b) directed credit which takes the form of prescribed targets for allocation of credit to preferred sectors (for e.g. Credit to priority sectors), and
- (c) administered interest rates wherein the deposit and lending rates are prescribed by the central bank.

The indirect instruments mainly consist of:

- (a) Repos
- (b) Open market operations
- (c) Standing facilities, and
- (d) Market-based discount window.

We shall now discuss in detail how these instruments are put to use for meeting the stated objectives of monetary policy.

1. Cash Reserve Ratio (CRR)

Cash Reserve Ratio (CRR) refers to the average daily balance that a bank is required to maintain with the Reserve Bank of India as a share of its total net demand and time liabilities (NDTL). This percentage will be notified from time to time by the Reserve Bank. The RBI may set the ratio in keeping with the broad objective of maintaining monetary stability in the economy. This requirement applies uniformly to all scheduled banks in the country irrespective of its size or financial position. Non-Bank Financial Institutions (NBFIs) are outside the purview of this reserve requirement.

The Reserve Bank does not pay any interest on the CRR balances maintained by the scheduled commercial banks (SCBs) with effect from the fortnight beginning March 31, 2007; however, failure of a bank to meet its required reserve requirements would attract penalty in the form of penal interest charged by the RBI.

CRR has, in recent years, assumed significance as one of the important quantitative tools aiding in liquidity management. Higher the CRR with the RBI, lower will be the liquidity in the system and vice versa. During slowdown in the economy, the RBI reduces the CRR in order to enable the banks to expand credit and increases the supply of money available in the economy. In order to contain credit expansion during period's high inflation, the RBI increases the CRR. The cash reserve ratio as on 20th September, 2020 was 3.00 percent

Change

2. Statutory Liquidity Ratio (SLR)

The Statutory Liquidity Ratio (SLR) is a prudential measure. As per the Banking Regulations Act 1949, all scheduled commercial banks in India are required to maintain a stipulated percentage of their total Demand and Time Liabilities (DTL) / Net DTL (NDTL) in one of the following forms:

- (i) Cash
- (ii) Gold, or
- (iii) Investments in un-encumbered Instruments that include:
 - (a) Treasury-bills of the Government of India.

- (b) Dated securities including those issued by the Government of India from time to time under the market borrowings programme and the Market Stabilization Scheme (MSS).
- (c) State Development Loans (SDLs) issued by State Governments under their market borrowings programme.
- (d) Other instruments as notified by the RBI. These include mainly the securities issued by PSEs.

While CRR has to be maintained by banks as cash with the RBI, the SLR requires holding of assets in one of the above three categories by the bank itself. The banks which fail to meet its SLR obligations are liable to be imposed penalty in the form of a penal interest payable to RBI. As on 20th September, 2020, the SLR was 18 per cent.

Change
and
Modify

The SLR is also a powerful tool for controlling liquidity in the domestic market by means of manipulating bank credit. Changes in the SLR chiefly influence the availability of resources in the banking system for lending. A rise in the SLR which is resorted to during periods of high liquidity, tends to lock up a rising fraction of a bank's assets in the form of eligible instruments, and this reduces the credit creation capacity of banks. A reduction in the SLR during periods of economic downturn has the opposite effect. The SLR requirement also facilitates a captive market for government securities.

3. Liquidity Adjustment Facility (LAF)

A central bank is a 'bankers' bank.' It provides liquidity to banks when the latter face shortage of liquidity. This facility is provided by the Central Bank through its discount window. The scheduled commercial banks can borrow from the discount window against the collateral of securities like commercial bills, government securities, treasury bills, or other eligible papers. This type of support earlier took the form of refinance of loans given by commercial banks to various sectors (e.g. exports, agriculture etc). By varying the terms and conditions of refinance, the RBI could employ the sector-specific refinance facilities as an instrument of credit policy to encourage /discourage lending to particular sectors. In line with the financial sector reforms, the system of sector-specific refinance schemes (except export credit refinance scheme) was withdrawn. From June 2000, the RBI has introduced Liquidity Adjustment Facility (LAF).

The Liquidity Adjustment Facility (LAF) enables the RBI to modulate short-term liquidity under varied financial market conditions to ensure stable conditions in the overnight (call) money market. It is extended by the Reserve Bank of India to

the scheduled commercial banks (excluding RRBs) and primary dealers to avail of liquidity in case of requirement (or park excess funds with the RBI in case of excess liquidity) on an overnight basis against the collateral of government securities including state government securities. The LAF consists of overnight as well as term repo auctions. The aim of term repo is to help develop the inter-bank term money market. This move is expected to set market based benchmarks for pricing of loans and deposits, and hence improve transmission of monetary policy.

The introduction of LAF is an important landmark since it triggered a rapid transformation in the monetary policy operating environment in India. As a key element in the operating framework of the RBI, its objective is to assist banks to adjust their day to day mismatches in liquidity. Currently, the RBI provides financial accommodation to the commercial banks through repos/reverse repos under the Liquidity Adjustment Facility (LAF).

Repurchase Options or in short 'Repo', is defined as 'an instrument for borrowing funds by selling securities with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed'. **The repo rate is the (fixed) interest rate at which the Reserve Bank provides overnight liquidity to banks against the collateral of government and other approved securities under the liquidity adjustment facility (LAF).** In other words, repo is a money market instrument, which enables collateralised short term borrowing and lending through sale/purchase operations in debt instruments.

New
Addition

The Repo transaction in India has two elements: - in the first, the seller sells securities and receives cash while the purchaser buys securities and parts with cash. In the second, the securities are repurchased by the original holder. The user pays to the counter party the amount originally received, plus the return on the money for the number of days for which the money was used, which is mutually agreed. All these transactions are reported on the electronic platform called the Negotiated Dealing System (NDS). The Clearing Corporation of India Ltd. (CCIL) has put in an anonymous online repo dealing system in India, with an anonymous order matching electronic platform. Repo or repurchase option is a collateralised lending. Repo operations thus inject liquidity into the system.

The policy rate *

You might have read in business dailies about the 'policy rate'. In India, the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF) is considered as the policy rate. (It may be noted that

India has many other repo rates in operation). The RBI uses the single independent 'policy rate' which is the repo rate (in the LAF window) for balancing liquidity. The policy rate is in fact, the key lending rate of the central bank in a country. A change in the policy rate gets transmitted through the money market to the entire the financial system and alters all other short term interest rates in the economy, thereby influencing aggregate demand – a key determinant of the level of inflation and economic growth. If the RBI wants to make it more expensive for banks to borrow money, it increases the repo rate. Similarly, if it wants to make it cheaper for banks to borrow money, it reduces the repo rate. In other words, an increase in the repo rate will lead to liquidity tightening and vice-versa, other things remaining constant.

The Monetary Policy committee (MPC) at its meeting on May 22, 2020 has decided to reduce the policy repo rate under the liquidity adjustment facility (LAF) by 40 bps to 4.0 per cent from 4.40 per cent with immediate effect; accordingly, the marginal standing facility (MSF) rate and the Bank Rate stand reduced to 4.25 per cent from 4.65 per cent; and the reverse repo rate under the LAF stands reduced to 3.35 per cent from 3.75 per cent.

Change

*Learners are requested to refer the RBI website (www.rbi.org.in) for up-to-date information on the prevailing policy rates.

'Reverse Repo Rate: The (fixed) interest rate at which the Reserve Bank absorbs liquidity, on an overnight basis, from banks against the collateral of eligible government securities under the LAF. It is a monetary policy instrument and in effect it absorbs the liquidity from the system. This operation takes place when the RBI borrows money from commercial banks by selling them securities (which RBI permits) with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed. The interest rate paid by the RBI for such borrowings is called the "Reverse Repo Rate". Thus, reverse repo rate is the rate of interest paid by the RBI on its borrowings from commercial banks. The 'repo rate' and the reverse repo rate' are changed only through the announcements made during the Monetary Policy Statements of the RBI. From May, 2011 onwards, the reverse repo rate is not announced separately, it will be linked to repo rate. The Reserve Bank also conducts variable interest rate reverse repo auctions, as necessitated under the market conditions.

Change

There are three types of repo markets operating in India namely:

- (i) Repo on sovereign securities

- (ii) Repo on corporate debt securities ,and
- (iii) Other Repos

In addition to the existing overnight LAF (repo and reverse repo) and MSF, from October 2013, the Reserve Bank has introduced 'Term Repo' (repos of duration more than a day) under the Liquidity Adjustment Facility (LAF) for 14 days and 7 days tenors. LAF is conducted at a fixed time on a daily basis on all working days in Mumbai (excluding Saturdays).

4. Marginal Standing Facility (MSF)

The Reserve Bank of India, being a bankers' bank, acts as a lender of last resort. The Marginal Standing Facility (MSF) announced by the Reserve Bank of India (RBI) in its Monetary Policy, 2011-12 refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit (a fixed per cent of their net demand and time liabilities deposits (NDTL) *liable to change every year*) at a penal rate of interest. This provides a safety valve against unexpected liquidity shocks to the banking system. The scheme has been introduced by RBI with the main aim of reducing volatility in the overnight lending rates in the inter-bank market and to enable smooth monetary transmission in the financial system.

Banks can borrow through MSF on all working days except Saturdays, between 7.00 pm and 7.30 pm, in Mumbai. The minimum amount which can be accessed through MSF is ₹1 crore and more will be available in multiples of ₹1 crore.

The MSF would be the last resort for banks once they exhaust all borrowing options including the liquidity adjustment facility on which the rates are lower compared to the MSF. The MSF rate being a penal rate automatically gets adjusted to a fixed per cent above the repo rate. MSF is at present aligned with the Bank rate. Practically, MSF represents the upper band of the interest corridor with repo rate at the middle and reverse repo at the lower band. In fact, the MSF rate and reverse repo rate determine the corridor for the daily movement in the weighted average call money rate.

5. Market Stabilisation Scheme (MSS)

This instrument for monetary management was introduced in 2004 following a MoU between the Reserve Bank of India (RBI) and the Government of India (GoI) with the primary aim of aiding the sterilization operations of the RBI. (Sterilization is the process by which the monetary authority sterilizes the effects of significant

foreign capital inflows on domestic liquidity by off-loading parts of the stock of government securities held by it). Surplus liquidity of a more enduring nature arising from large capital inflows is absorbed through sale of short-dated government securities and treasury bills. Under this scheme, the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities for absorbing excess liquidity from the market arising from large capital inflows.

Bank Rate

Under Section 49 of the Reserve Bank of India Act, 1934, the Bank Rate has been defined as 'the standard rate at which the Reserve Bank is prepared to buy or re-discount bills of exchange or other commercial paper eligible for purchase under the Act'. The bank rate once used to be the policy rate in India i.e. the key interest rate based on which all other short term interest rates moved. Discounting/rediscounting of bills of exchange by the Reserve Bank has been discontinued on introduction of Liquidity Adjustment Facility (LAF). As a result, the bank rate has become dormant as an instrument of monetary management.

The bank rate has been aligned to the Marginal Standing Facility (MSF) rate and, therefore, as and when the MSF rate changes alongside policy repo rate changes, the bank rate also changes automatically. Briefly put, MSF assumed the role of bank rate and currently the bank rate is purely a signalling rate and most interest rates are delinked from the bank rate. Now, bank rate is used only for calculating penalty on default in the maintenance of Cash Reserve Ratio (CRR) and the Statutory Liquidity Ratio (SLR).

6. Open Market Operations

Open Market Operations (OMO) is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis. When the RBI feels there is excess liquidity in the market, it resorts to sale of securities thereby sucking out the rupee liquidity. Similarly, when the liquidity conditions are tight, the RBI will buy securities from the market, thereby releasing liquidity into the market.



3.4 THE ORGANISATIONAL STRUCTURE FOR MONETARY POLICY DECISIONS

We have discussed above the instruments of monetary policy. An understanding of the organisational structure for monetary policy decisions is necessary to understand the way monetary policy is conducted in India.

3.4.1 The Monetary Policy Framework Agreement

The Reserve Bank of India (RBI) Act, 1934 was amended on June 27, 2016, for giving a statutory backing to the Monetary Policy Framework Agreement (MPFA) and for setting up a Monetary Policy Committee (MPC). The Monetary Policy Framework Agreement is an agreement reached between the Government of India and the Reserve Bank of India (RBI) on the maximum tolerable inflation rate that the RBI should target to achieve price stability. The amended RBI Act (2016) provides for a statutory basis for the implementation of the 'flexible inflation targeting framework'.

Announcement of an official target range for inflation is known as inflation targeting. The Expert Committee under Urijit Patel to revise the monetary policy framework, in its report in January, 2014 suggested that RBI abandon the 'multiple indicator' approach and make inflation targeting the primary objective of its monetary policy. The inflation target is to be set by the Government of India, in consultation with the Reserve Bank, once in every five years. Accordingly,

- The Central Government has notified 4 per cent Consumer Price Index (CPI) inflation as the target for the period from August 5, 2016 to March 31, 2021 with the upper tolerance limit of 6 per cent and the lower tolerance limit of 2 per cent.
- The RBI is mandated to publish a Monetary Policy Report every six months, explaining the sources of inflation and the forecasts of inflation for the coming period of six to eighteen months.
- The following factors are notified by the central government as constituting a failure to achieve the inflation target:
 - (a) The average inflation is more than the upper tolerance level of the inflation target for any three consecutive quarters; or
 - (b) The average inflation is less than the lower tolerance level for any three consecutive quarters.

The choice of CPI was made because it closely reflects cost of living and has larger influence on inflation expectations compared to other anchors. With this step, India is following countries such as the New Zealand, the USA, the UK, European Union, and Brazil. In recent times many countries are moving away from this approach and are targeting nominal GDP growth.

3.4.2. The Monetary Policy Committee (MPC)

An important landmark in India's monetary history is the constitution of an empowered six-member Monetary Policy Committee (MPC) in September, 2016 consisting of the RBI Governor (Chairperson), the RBI Deputy Governor in charge of monetary policy, one official nominated by the RBI Board and the remaining three central government nominees representing the Government of India who are persons of ability, integrity and standing, having knowledge and experience in the field of Economics or banking or finance or monetary policy.

The Committee is required to meet at least four times a year and the decisions adopted by the MPC are published after conclusion of every meeting of the MPC. Based on the review of the macroeconomic and monetary developments in the economy, the MPC shall determine the policy rate required to achieve the inflation target. The fixing of the benchmark policy interest rate (repo rate) is made through debate and majority vote by this panel of experts.

New
Addition

With the introduction of the Monetary Policy Committee, the RBI will follow a system which is more consultative and participative similar to the one followed by many of the central banks in the world. The new system is intended to incorporate:

- diversity of views,
- specialized experience,
- independence of opinion,
- representativeness, and
- accountability.

The Reserve Bank's Monetary Policy Department (MPD) assists the MPC in formulating the monetary policy. The views of key stakeholders in the economy and analytical work of the Reserve Bank contribute to the process for arriving at the decision on the policy repo rate.

The Financial Markets Operations Department (FMOD) operationalises the monetary policy, mainly through day-to-day liquidity management operations.

The Financial Markets Committee (FMC) meets daily to review the liquidity conditions so as to ensure that the operating target of monetary policy (weighted average lending rate) is kept close to the policy repo rate.

Before the constitution of the MPC, a Technical Advisory Committee (TAC) on monetary policy with experts from Monetary Economics, Central Banking, Financial Markets and Public Finance advised the RBI on the standpoint of monetary policy. However, its role was only advisory in nature. With the formation of MPC, the TAC on Monetary Policy ceased to exist.

3.5 CONCLUSION

The theoretical exposition of monetary policy might appear uncomplicated. However, the choice of a monetary policy action is rather complicated in view of the surrounding uncertainties and the need for exercising complex judgment to balance growth and inflation concerns. Additional complexities arise in the case of an emerging market like India. There are many challenges which need to be addressed, such as rudimentary and non-competitive financial systems, lack of integrated money and interbank markets, external uncertainties and issues related to operational autonomy of the central bank. Explicit inflation targeting requires a good degree of operational autonomy for the central bank and a system in which there is a good coordination between fiscal and monetary authorities.

Monetary and Macro financial policies during COVID pandemic

New
Addition

Unprecedented monetary and macro financial policies were announced by the RBI to deal with the extremely uncertain economic environment caused by the COVID pandemic. Following are the major initiatives till June 30th, 2020.

1. The Reserve Bank of India (RBI) reduced the repo and reverse repo rates by 115 and 155 basis points (bps) to 4.0 and 3.35 percent, respectively, and announced liquidity measures across three measures comprising
 - Long Term Repo Operations (LTROs),
 - a cash reserve ratio (CRR) cut of 100 bps, and
 - an increase in marginal standing facility (MSF) to 3 percent of the Statutory Liquidity Ratio (SLR), extended till end-September.
2. Relief to both borrowers and lenders (extended through end-August) and the Securities and Exchange Board of India (SEBI) temporarily relaxed the norms related to debt default on rated instruments and reduced the

- required average market capitalization of public shareholding and minimum period of listing.
3. Facility to help with state government's short-term liquidity needs, and relaxed export repatriation limits.
 4. Introduced regulatory easing measures to promote credit flows to the retail sector and micro, small, and medium enterprises (MSMEs)
 5. Provided regulatory forbearance on asset classification of loans to MSMEs and real estate developers (later extended to loans from NBFCs).
 6. CRR maintenance for all additional retail loans has been exempted, and the priority sector classification for bank loans to NBFCs has been extended for on-lending for FY 2020/21.
 7. During April 17-20, the RBI, along with additional monetary easing, announced:
 - (a) A TLTRO-2.0 (funds to be invested in investment grade bonds, commercial paper, and non-convertible debentures of NBFCs);
 - (b) Special refinance facilities for rural banks, housing finance companies, and small and medium-sized enterprises;
 - (c) A temporary reduction of the Liquidity Coverage Ratio (LCR) and restriction on banks from making dividend payouts;
 - (d) Standstill on asset classifications during the three-month loan moratorium period with 10 percent provisioning requirement, and an extension of the time period for resolution timeline of large accounts under default by 90 days.
 8. State's Ways and Means Advance (WMA) limits have been increased by 60 percent and the limit for the central government's WMA for the remaining part of first half of the FY 2020/21 has been revised up to 2.0 trillion.
 9. Financial institutions required to assess the impact on their asset quality, liquidity, and other parameters from the COVID-19 shock and take immediate contingency measures.
 10. Special liquidity facility for mutual funds (SLF-MF) and a fixed-rate 90-day repo operation for banks exclusively for meeting the liquidity requirements of mutual funds, along with regulatory easing for liquidity support availed under the facility, extended to banks' own deployed resources; and the SEBI reduced broker turnover fees and filing fees on offer documents for public issue, rights issue and buyback of shares.

11. Measures targeting businesses:

- (i) A collateral-free lending program with 100 percent guarantee,
- (ii) Subordinate debt for stressed MSMEs with partial guarantee, and
- (iii) Partial credit guarantee scheme for public sector banks on borrowings of non-bank financial companies, housing finance companies (HFCs), and micro finance institutions.

The government also announced

- (i) A Fund of Funds for equity infusion in MSMEs, and
- (ii) A special purpose vehicle (SPV) to purchase short-term debt of the eligible non-bank financial companies and housing finance companies, fully guaranteed by the government and managed by a public sector bank.

12. Further regulatory easing, including the increase in the large exposure limit, relaxation of some of the norms for state government financing, credit support to the exporters and importers and extension of the tenor of the small business refinancing facilities.

13. Extended the benefit under interest subvention and prompt repayment incentive schemes for short-term agricultural loans until August 31, 2020.

14. The GST council announced that it would halve the interest rate charged on overdue filings of small businesses.

15. Directed banks to assign zero percent risk weight on the credit facilities extended under the emergency credit line guarantee scheme.

16. On exchange rate and balance of payments

- A second FX swap (\$2 billion dollars, 6 months, auction-based) in addition to the previous one with equal volume and tenor.
- The limit for FPI investment in corporate bonds has been increased to 15 percent of outstanding stock for FY 2020/21.
- Restriction on non-resident investment in specified securities issued by the Central Government has been removed.
- Foreign direct investment policy has been adjusted requiring that an entity of a country that shares a land border with India can invest only after receiving the government approval.

Source: IMF Policy Tracker- Key economic responses governments are taking to limit the human and economic impact of the COVID-19 pandemic

SUMMARY

- Monetary policy refers to the use of monetary policy instruments which are at the disposal of the central bank to regulate the availability, cost and use of money and credit so as to promote economic growth, price stability, optimum levels of output and employment, balance of payments equilibrium, stable currency or any other goal of government's economic policy.
- The monetary policy framework which has three basic components, viz. the objectives of monetary policy, the analytics of monetary policy which focus on the transmission mechanism, and the operating procedure which focuses on the operating targets and instruments.
- Though multiple objectives are pursued, the most commonly pursued objectives of monetary policy of the central banks across the world has become maintenance of price stability (or controlling inflation) and achievement of economic growth.
- The process or channels through which the evolution of monetary aggregates affects the level of production and price level is known as 'monetary transmission mechanism' i.e how they impact real variables such as aggregate output and employment.
- There are mainly four different mechanisms, namely, the interest rate channel, the exchange rate channel, the quantum channel, and the asset price channel.
- A contractionary monetary policy-induced increase in interest rates increases the cost of capital and the real cost of borrowing for firms and households who respond by cut back on their investment and consumption respectively.
- The exchange rate channel works through expenditure switching between domestic and foreign goods on account of appreciation / depreciation of the domestic currency with its impact on net exports and consequently on domestic output and employment.
- Two distinct credit channels- the bank lending channel and the balance sheet channel- operate by altering access of firm and household to bank credit and by the effect of monetary policy on the firm's balance sheet respectively.

- Asset prices generate important wealth effects that impact, through spending, output and employment.
- The operating framework of monetary policy relates to all aspects of implementation namely, choosing the operating target, choosing the intermediate target, and choosing the policy instruments.
- The day-to-day implementation of monetary policy by central banks through various instruments is referred to as 'operating procedures'.
- Monetary policy instruments are the various tools that a central bank can use to influence money market and credit conditions and pursue its monetary policy objectives. There are direct instruments and indirect instruments.
- The Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank irrespective of its size or financial position.
- The Statutory Liquidity Ratio (SLR) is what the scheduled commercial banks in India are required to maintain as a stipulated percentage of their total Demand and Time Liabilities (DTL) / Net DTL (NDTL) in Cash, Gold or approved investments in securities.
- On the basis of the recommendations of Narsimham Committee on banking sector reforms the RBI introduced Liquidity Adjustment Facility (LAF) under which RBI provides financial accommodation to the commercial banks through repos/reverse repos.
- Repurchase Options or in short Repo, is defined as 'an instrument for borrowing funds by selling securities with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed'.
- In India, the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF) is considered as the 'policy rate'.
- Repo or repurchase option is a collateralised lending because banks borrow money from Reserve bank of India to fulfil their short term monetary requirements by selling securities to RBI with an explicit agreement to repurchase the same at predetermined date and at a fixed rate. The rate charged by RBI for this transaction is called the 'repo rate'.

- Reverse Repo is defined as an instrument for lending funds by purchasing securities with an agreement to resell the securities on a mutually agreed future date at an agreed price which includes interest for the funds lent.
- The Marginal Standing Facility (MSF) refers to the facility under which scheduled commercial banks can borrow additional amount of overnight money from the central bank over and above what is available to them through the LAF window by dipping into their Statutory Liquidity Ratio (SLR) portfolio up to a limit
- Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities
- Bank Rate refers to “the standard rate at which the Reserve Bank is prepared to buy or re-discount bills of exchange or other commercial paper eligible for purchase under the Act.
- OMOs is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a regular basis.
- The Monetary Policy Committee (MPC) consisting of six members shall determine the policy rate to achieve the inflation target through debate and majority vote by a panel of experts.
- The Monetary Policy Framework Agreement is an agreement reached between the Government of India and the Reserve Bank of India (RBI) to keep the Consumer Price Index (CPI) inflation rate between 2 to 6 per cent.
- Choice of a monetary policy action is rather complex in view of the surrounding uncertainties and the need for exercising trade-offs between growth and inflation concerns. Additional complexities arise in the case of an emerging market like India where inflation is influenced by factors such as international petroleum prices and food prices.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. Which of the following is the function of monetary policy?
 - (a) regulate the exchange rate and keep it stable

- (b) regulate the movement of credit to the corporate sector
 - (c) regulate the level of production and prices
 - (d) regulate the availability, cost and use of money and credit
2. The main objective of monetary policy in India is _____:
- (a) reduce food shortages to achieve stability
 - (b) economic growth with price stability
 - (c) overall monetary stability in the banking system
 - (d) reduction of poverty and unemployment
3. The monetary transmission mechanism refers to
- (a) how money gets circulated in different sectors of the economy post monetary policy
 - (b) the ratio of nominal interest and real interest rates consequent on a monetary policy
 - (c) the process or channels through which the evolution of monetary aggregates affects the level of product and prices
 - (d) none of the above
4. A contractionary monetary policy-induced increase in interest rates
- (a) increases the cost of capital and the real cost of borrowing for firms
 - (b) increases the cost of capital and the real cost of borrowing for firms and households
 - (c) decreases the cost of capital and the real cost of borrowing for firms
 - (d) has no interest rate effect on firms and households
5. During deflation
- (a) the RBI reduces the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy
 - (b) the RBI increases the CRR in order to enable the banks to expand credit and increase the supply of money available in the economy
 - (c) the RBI reduces the CRR in order to enable the banks to contract credit and increase the supply of money available in the economy

- (d) the RBI reduces the CRR but increase SLR in order to enable the banks to contract credit and increase the supply of money available in the economy
6. Which of the following statements is correct?
- (a) The governor of the RBI in consultation with the Ministry of Finance decides the policy rate and implements the same
 - (b) While CRR has to be maintained by banks as cash with the RBI, the SLR requires holding of approved assets by the bank itself
 - (c) When repo rates increase, it means that banks can now borrow money through open market operations (OMO)
 - (d) None of the above
7. RBI provides financial accommodation to the commercial banks through repos/reverse repos under
- (a) Market Stabilisation Scheme (MSS)
 - (b) The Marginal Standing Facility (MSF)
 - (c) Liquidity Adjustment Facility (LAF).
 - (d) Statutory Liquidity Ratio (SLR)
8. ----- is a money market instrument, which enables collateralised short term borrowing and lending through sale/purchase operations in debt instruments.
- (a) OMO
 - (b) CRR
 - (c) SLR
 - (d) Repo
9. In India, the term 'Policy rate' refers to
- (a) The bank rate prescribed by the RBI in its half yearly monetary policy statement
 - (b) The CRR and SLR prescribed by RBI in its monetary policy statement
 - (c) the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF)

- (d) the fixed repo rate quoted for sovereign securities in the overnight segment of Marginal Standing Facility(MSF)
10. Reverse repo operation takes place when
- (a) RBI borrows money from banks by giving them securities
 - (b) banks borrow money from RBI by giving them securities
 - (c) banks borrow money in the overnight segment of the money market
 - (d) RBI borrows money from the central government
11. The Monetary Policy Framework Agreement is on
- (a) the maximum repo rate that RBI can charge from government
 - (b) the maximum tolerable inflation rate that RBI should target to achieve price stability.
 - (c) the maximum repo rate that RBI can charge from the commercial banks
 - (d) the maximum reverse repo rate that RBI can charge from the commercial banks
12. An open market operation is an instrument of monetary policy which involves buying or selling of _____from or to the public and banks
- (a) bonds and bills of exchange
 - (b) debentures and shares
 - (c) government securities
 - (d) none of these
13. Which statement (s) is (are) true about Monetary Policy Committee?
- I. The Reserve Bank of India (RBI) Act, 1934 was amended on June 27, 2016, for giving a statutory backing to the Monetary Policy Framework Agreement and for setting up a Monetary Policy Committee
 - II. The Monetary Policy Committee shall determine the policy rate through debate and majority vote by a panel of experts required to achieve the inflation target.
 - III. The Monetary Policy Committee shall determine the policy rate through consensus from the governor of RBI

- IV. The Monetary Policy Committee shall determine the policy rate through debate and majority vote by a panel of bankers chosen for the purpose
- (a) I only
 - (b) I and II only
 - (c) III and IV
 - (d) III only

II Short Answer Type Questions

1. Define monetary policy.
2. Describe the objectives of monetary policy?
3. What is meant by the term monetary policy framework?
4. Define 'monetary transmission mechanism'.
5. Explain the transmission of monetary policy outcomes through interest rate channel?
6. Distinguish between the bank lending channel and the balance sheet channel of monetary transmission?
7. How do asset prices respond to monetary policy?
8. What is meant by the term 'monetary policy instruments'?
9. What is the distinction between direct and indirect instruments of monetary policy?
10. Write notes on Cash Reserve Ratio (CRR) Explain the operation of CRR
11. Distinguish between CRR and Statutory Liquidity Ratio (SLR)
12. What are the eligible securities for SLR?
13. Explain the functioning of SLR?
14. What is the role of Liquidity Adjustment Facility (LAF)?
15. Define 'repo'
16. What is meant by 'policy rate'?
17. Define 'Reverse Repo'
18. What role does Market Stabilisation Scheme (MSS) play in our economy?

19. Assess the role of Bank Rate as an instrument of monetary policy
20. Open Market Operations
21. Outline the role of Monetary Policy Committee (MPC)

III Long Answer Type Questions

1. Explain the objectives of monetary policy in an economy. Assess the instruments and targets of monetary policy of the Reserve Bank of India.
2. Make a critical evaluation of the latest monetary policy statement of the Reserve Bank of India.
3. Explain the operational procedure of the monetary policy in India.
4. A central bank is a 'bankers' bank.' Elucidate the statement with illustrations
5. Describe the organisational structure for monetary policy decisions in India
6. Outline different components the monetary policy framework for India
7. Critically examine the different instruments of monetary policy.

IV Application Oriented Question

1. What will be the nature of the monetary policy undertaken by RBI in the following?
 - (i) Increases repo rate by 50 basis points
 - (ii) Reduces the cash reserve ratio
 - (iii) Increases the supply of currency and coins
 - (iv) Terminates marginal standing facility
 - (v) Increases the interest rates chargeable by commercial banks
 - (vi) Sells securities in the open market
 - (vii) Initiates reverse repo operation
 - (viii) Changes in the SLR
2. Write a brief note about the reasons why the policy rates were changed /not changed in the recent monetary policy announcement by the RBI

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (d) 2. (b) 3. (c) 4. (b) 5. (a) 6. (b)
7. (c) 8. (d) 9. (c) 10. (a) 11. (b) 12. (c)
13. (b)

II Short Answer Type Questions

1. Instruments which are at the disposal of the central bank to regulate the availability, cost and use of money and credit so as to attain predetermined objectives, mainly growth with stability
2. The most commonly pursued objectives of monetary policy: maintenance of price stability (or controlling inflation) and achievement of economic growth. Context-specific multiple objectives are pursued such as moderate long term interest rates, exchange rate stability and external balance of payments equilibrium etc.
3. The operating framework relates to all aspects of implementation of monetary policy
4. Different mechanisms through which monetary policy is able to influence the price level and the national income
5. A monetary policy-induced change in interest rates generate corresponding changes in the cost of capital and the real cost of borrowing for firms and households who respond by changing on their investment and purchase expenditures respectively affecting aggregate demand and employment.
6. Two distinct credit channels- the bank lending channel and the balance sheet channel- operate by altering access of firms and households to bank credit and by the effect of monetary policy on the firm's balance sheet respectively.
7. Asset prices generate important wealth effects that impact, through spending, output and employment.
8. Monetary policy instruments are the various tools that a central bank can use to influence money market and credit conditions and pursue its monetary policy objectives.

9. Direct instruments presuppose one-to-one correspondence between the instrument (such as a credit ceiling) and the policy objective (such as a specific amount of domestic credit outstanding), while indirect instruments act through the market by adjusting the underlying demand for, and supply of, bank reserves
10. Cash Reserve Ratio (CRR) refers to the fraction of the total net demand and time liabilities (NDTL) of a scheduled commercial bank in India which it should maintain as cash deposit with the Reserve Bank. Higher the CRR, lower the credit creation capacity of banks. Reduce CRR during deflation - banks to expand credit and increase the supply of money available in the economy - increase the CRR to contain credit expansion during - inflation.
11. While CRR has to be maintained by banks as cash with the RBI, the SLR requires holding of assets in one of the above three categories by the bank itself.
12. Cash, Gold, or investments in un-encumbered Instruments that include: treasury-bills, dated securities, State Development Loans (SDLs) issued by State Governments under their market borrowings programme and other instruments as notified by the RBI
13. Changes in SLR chiefly influence the availability of resources in the banking system for lending. A rise in SLR - during periods of high liquidity - to lock up a rising fraction of a bank's assets in the form of eligible instruments - reduces the credit creation capacity of banks. A reduction in SLR during periods of economic downturn has the opposite effect.
14. The Liquidity Adjustment Facility (LAF) is a facility extended by the Reserve Bank of India to the scheduled commercial banks (excluding RRBs) and primary dealers to avail of liquidity in case of requirement (or park excess funds with the RBI in case of excess liquidity) on an overnight basis against the collateral of government securities including state government securities.
15. Repo, is defined as 'an instrument for borrowing funds by selling securities with an agreement to repurchase the securities on a mutually agreed future date at an agreed price which includes interest for the funds borrowed'
16. The policy rate is the fixed repo rate quoted for sovereign securities in the overnight segment of Liquidity Adjustment Facility (LAF).

17. Reverse Repo" is defined as an instrument for lending funds by purchasing securities with an agreement to resell the securities on a mutually agreed future date at an agreed price which includes interest for the funds lent.
18. Under the Market Stabilisation Scheme (MSS) the Government of India borrows from the RBI (such borrowing being additional to its normal borrowing requirements) and issues treasury-bills/dated securities that are utilized for absorbing from the market excess liquidity of a more enduring nature arising from large capital inflows.
19. The bank rate has been aligned to the Marginal Standing Facility (MSF) rate and, therefore, as and when the MSF rate changes alongside policy repo rate changes, the bank rate also changes automatically. Now bank rate is used only for calculating penalty on default in the maintenance of Cash Reserve Ratio (CRR) and the Statutory Liquidity Ratio (SLR).
20. Open Market Operations (OMO) is a general term used for market operations conducted by the Reserve Bank of India by way of sale/ purchase of Government securities to/ from the market with an objective to adjust the rupee liquidity conditions in the market on a durable basis.
21. The Monetary Policy Committee (MPC) consisting of six members shall determine the policy rate to achieve the inflation target through debate and majority vote by a panel of experts.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Hints to Application Oriented Questions

- (i) Contractionary monetary policy
- (ii) Expansionary monetary policy
- (iii) Expansionary monetary policy
- (iv) Contractionary monetary policy
- (v) Contractionary monetary policy
- (vi) Contractionary monetary policy
- (vii) Absorbs the liquidity in the system
- (viii) Influence the availability of resources in the banking system for lending

INTERNATIONAL TRADE



UNIT I: THEORIES OF INTERNATIONAL TRADE

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define international trade and describe how it differs from internal trade
- ❑ Elucidate the arguments in favor of and against liberal trade
- ❑ Explain the mercantilists' views on international trade
- ❑ Illustrate how trade can be based on absolute advantage
- ❑ Describe the Ricardian theory of comparative advantage
- ❑ Explain the basis of trade according to modern theory of trade

UNIT OVERVIEW**1.1 INTRODUCTION**

International trade is the exchange of goods and services as well as resources between countries. It involves transactions between residents of different countries. As distinguished from domestic trade or internal trade which involves exchange of goods and services within the domestic territory of a country using domestic currency, international trade involves transactions in multiple currencies. Compared to internal trade, international trade has greater complexity as it involves heterogeneity of customers and currencies, differences in legal systems, business practices and political systems, more elaborate documentation, exchange rate risks, complex procedures and formalities, high operating costs, issues related to shipping, insurance and transportation and diverse restrictions and interventions from governments in the form of taxes, regulations, duties, tariffs, quotas, trade barriers, standards, and restraints to movement of specified goods and services. At present, liberal international trade is an integral part of international relations and has become an important engine of growth in developed as well as developing countries.

Change

While some economists and policy makers argue that there are net benefits from keeping markets open to international trade and investments, others feel that

trade generates a number of adverse consequences on the welfare of citizens. As students of Economics, we need to have an objective understanding of the claims put forth by both sections. We shall first examine the arguments in support of international trade.

- (i) International trade is a powerful stimulus to economic efficiency and contributes to economic growth and rising incomes. The wider market made possible owing to trade induces companies to reap the quantitative and qualitative benefits of extended division of labour. As a result, they would enlarge their manufacturing capabilities and benefit from economies of large scale production. The gains from international trade are reinforced by the increased competition that domestic producers are confronted with on account of globalization of production and marketing, requiring businesses to compete against global businesses. Competition from foreign goods compels manufacturers, especially in developing countries, to enhance efficiency and profitability by adoption of cost reducing technology and business practices. Efficient deployment of productive resources to their best use is a direct economic advantage of foreign trade. Greater efficiency in the use of natural, human, industrial and financial resources ensures productivity gains. Since international trade also tends to decrease the likelihood of domestic monopolies, it is always beneficial to the community.
- (ii) Trade provides access to new markets and new materials and enables sourcing of inputs and components internationally at competitive prices. This reflects in innovative products at lower prices and wider choice in products and services for consumers. Also, international trade enables consumers to have access to wider variety of goods and services that would not otherwise be available. It also enables nations to acquire foreign exchange reserves necessary for imports which are crucial for sustaining their economies.
- (iii) International trade enhances the extent of market and augments the scope for mechanization and specialisation. Trade necessitates increased use of automation, supports technological change, stimulates innovations, and facilitates greater investment in research and development and productivity improvement in the economy.
- (iv) Exports stimulate economic growth by creating jobs, which could potentially reduce poverty, and augmenting factor incomes and in so doing raising standards of livelihood and overall demand for goods and services. Trade

also provides greater stimulus to innovative services in banking, insurance, logistics, consultancy services etc.

- (v) Employment generating investments, including foreign direct investment, inevitably follow trade. For emerging economies, improvement in the quality of output of goods and services, superior products, finer labour and environmental standards etc. enhance the value of their products and enable them to move up the global value chain.
- (vi) Opening up of new markets results in broadening of productive base and facilitates export diversification so that new production possibilities are opened up. Countries can gainfully dispose off their surplus output and, thus, prevent undue fall in domestic prices caused by overproduction. Trade also allows nations to maintain stability in prices and supply of goods during periods of natural calamities like famine, flood, epidemic etc.
- (vii) Trade can also contribute to human resource development, by facilitating fundamental and applied research and exchange of know-how and best practices between trade partners.
- (viii) Trade strengthens bonds between nations by bringing citizens of different countries together in mutually beneficial exchanges and, thus, promotes harmony and cooperation among nations.

Despite being a dynamic force, which has an enormous potential to generate overall economic gains, liberal global trade and investments are often criticized as detrimental to national interests. The major arguments put forth against trade openness are:

- (i) Possible negative labour market outcomes in terms of labour-saving technological change that depress demand for unskilled workers, loss of labourers' bargaining power, downward pressure on wages of semi-skilled and unskilled workers and forced work under unfair circumstances and unhealthy occupational environments.
- (ii) International trade is often not equally beneficial to all nations. Potential unequal market access and disregard for the principles of fair trading system may even amplify the differences between trading countries, especially if they differ in their wealth. Economic exploitation is a likely outcome when underprivileged countries become vulnerable to the growing political power of corporations operating globally. The domestic entities can be easily outperformed by financially stronger transnational companies.

- (iii) International trade is often criticized for its excessive stress on exports and profit-driven exhaustion of natural resources due to unsustainable production and consumption. Substantial environmental damage and exhaustion of natural resources in a shorter span of time could have serious negative consequences on the society at large.
- (iv) Probable shift towards a consumer culture and change in patterns of demand in favour of foreign goods, which are likely to occur in less developed countries, may have an adverse effect on the development of domestic industries and may even threaten the survival of infant industries. Trade cycles and the associated economic crises occurring in different countries are also likely to get transmitted rapidly to other countries.
- (v) Risky dependence of underdeveloped countries on foreign nations impairs economic autonomy and endangers their political sovereignty. Such reliance often leads to widespread exploitation and loss of cultural identity. Substantial dependence may also have severe adverse consequences in times of wars and other political disturbances.
- (vi) Welfare of people may often be ignored or jeopardized for the sake of profit. Excessive exports may cause shortages of many commodities in the exporting countries and lead to high inflation (e.g. onion price rise in 2014; export ban on all non-basmati rice in an attempt to reign in soaring prices and to ensure sufficient stocks for domestic consumption as global reserve levels hit a 25-year low). Also, import of harmful products or international trade in hazardous chemicals may cause health hazards and environmental damage in those countries which do not have sufficient infrastructure or capacity to scrutinize such imports.
- (vii) Too much export orientation may distort actual investments away from the genuine investment needs of a country.
- (viii) Instead of cooperation among nations, trade may breed rivalry on account of severe competition
- (ix) Finally, there is often lack of transparency and predictability in respect of many aspects related to trade policies of trading partners. There are also many risks in trade which are associated with changes in governments' policies of participating countries, such as imposition of an import ban, high import tariffs or trade embargoes.

New
Addition



1.2 IMPORTANT THEORIES OF INTERNATIONAL TRADE

You might have noticed that many goods and services are imported by us because they are simply not produced in our country for various reasons and therefore not available domestically. However, we do import many things which can be produced or are being produced within our country. Why do we do so? Is it beneficial to engage in international trade? The theories of international trade which we discuss in the following sections provide answers to these and other related questions.

1.2.1 The Mercantilists' View of International Trade

Mercantilism, which was the policy of Europe's great powers, was based on the premise that national wealth and power are best served by increasing exports and collecting precious metals in return. Mercantilists also believed that the more gold and silver a country accumulates, the richer it becomes. Mercantilism advocated maximizing exports in order to bring in more "specie" (money in the form of precious metals rather than notes) and minimizing imports through the state imposing very high tariffs on foreign goods. This view argues that trade is a 'zero-sum game', with winners who win, does so only at the expense of losers and one country's gain is equal to another country's loss, so that the net change in wealth or benefits among the participants is zero. The arguments put forth by mercantilists were later proved to have many shortcomings by later economists. Although it is still very important theory which explains policies followed by many big and fast-growing economies in Asia.

1.2.2 The Theory of Absolute Advantage

Adam Smith was the first to put across the possibility that international trade is not a zero-sum game. According to Adam Smith who supported unrestricted trade and free international competition, absolute cost advantage is the determinant of mutually beneficial international trade. The absolute cost advantage theory points out that a country will specialize in the production and export of a commodity in which it has an absolute cost advantage. In other words, exchange of goods between two countries will take place only if each of the two countries can produce one commodity at an absolutely lower production cost than the other country.

Smith's thoughts on the principle of division of labour constitute the basis for his theory of international trade and therefore, the value of goods is determined by measuring the labour incorporated in them. The theory is generally presented with an example of a hypothetical two countries and two commodities model (2x2 model). Absolute advantage exists between nations when they differ in their ability to produce goods. Each nation can produce one good with less expenditure of human labour or more cheaply than the other. As a result, each nation has an absolute advantage in the production of one good. Absolute advantage can be explained with a simple numerical example given in table 4.1.1:

Table 4.1.1

Output per Hour of Labour

Commodity	Country A	Country B
Wheat (bushels/hour)	6	1
Cloth (yards/hour)	4	5

As can be seen from the above table, one hour of labour time produces 6 bushels and 1 bushel of wheat respectively in country A and country B. On the other hand, one hour of labour time produces 4 yards of cloth in country A and 5 in country B. Country A is more efficient than country B, or has an absolute advantage over country B in production of wheat. Similarly, country B is more efficient than country A, or has an absolute advantage over country A in the production of cloth. If both nations can engage in trade with each other, each nation will specialize in the production of the good, it has an absolute advantage in and obtain the other commodity through international trade. Therefore, country A would specialise completely in production of wheat and country B in cloth.

If country A exchanges six bushels of wheat (6W) for six yards of country B's cloth (6C), then country A gains 2C or saves half an hour or 30 minutes of labour time (since the country A can only exchange 6W for 4C domestically). Similarly, the 6W that country B receives from country A is equivalent to or would require six hours of labour time to produce in country B. These same six hours can produce 30C in country B (6 hours x 5 yards of cloth per hour). By being able to exchange 6C (requiring a little over one hour to produce in the country B) for 6W, country B gains 24C, or saves nearly five hours of work.

This example shows trade is advantageous, although gains may not be distributed equally, because their given resources are utilised more efficiently, and, therefore, both countries can produce larger quantities of commodities which they specialize in. By specialising and trading freely, global output is, thus, maximized and more of both goods are available to the consumers in both the countries. If they specialise but do not trade freely, country A's consumers would have no wheat, and country B's consumers would have no cloth. That is not a desirable situation.

The theory discussed above gives us the impression that mutually gainful trade is possible only when one country has absolute advantage and the other has absolute disadvantage in the production of at least one commodity. What happens if a country had higher productivity in both commodities compared to another country? Let us now think of a situation where country A makes both wheat and cloth with fewer resources than country B. In other words, country A has absolute advantage in the production of both commodities and country B has absolute disadvantage in the production of both commodities. This is the question that Ricardo attempted to answer when he formalized the concept of 'comparative advantage' to espouse the argument that even when one country is technologically superior in both goods, it could still be advantageous for them to trade.

1.2.3 The Theory of Comparative Advantage

David Ricardo developed the classical theory of comparative advantage in his book 'Principles of Political Economy and Taxation' published in 1817. The law of comparative advantage states that even if one nation is less efficient than (has an absolute disadvantage with respect to) the other nation in the production of all commodities, there is still scope for mutually beneficial trade. The first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which its absolute disadvantage is greater (this is the commodity of its comparative disadvantage). Comparative advantage differences between nations are explained by exogenous factors which could be due to the differences in national characteristics. Labour differs in its productivity internationally and different goods have different labour requirements, therefore comparative labour productivity advantage was Ricardo's predictor of trade.

The theory can be explained with a simple example given in table 4.1.2:

Table 4.1.2
Output per Hour of Labour

Commodity	Country A	Country B
Wheat (bushels/hour)	6	1
Cloth (yards/hour)	4	2

Table 4.1.2 differs from table 4.1.1 only in one respect; i.e., in this example, country B can produce only two yards of cloth per hour of labour. Country B has now absolute disadvantage in the production of both wheat and cloth. However, since B's labour is only half as productive in cloth but six times less productive in wheat compared to country A, country B has a comparative advantage in cloth. On the other hand, country A has an absolute advantage in both wheat and cloth with respect to the country B, but since its absolute advantage is greater in wheat (6:1) than in cloth (4:2), country A has a comparative advantage in production and exporting wheat.

In a two-nation, two-commodity world, once it is established that one nation has a comparative advantage in one commodity, then the other nation must necessarily have a comparative advantage in the other commodity. Put in other words, country A's absolute advantage is greater in wheat, and so country A has a comparative advantage in producing and exporting wheat. Country B's absolute disadvantage is smaller in cloth, so its comparative advantage lies in cloth production. According to the law of comparative advantage, both nations can gain if country A specialises in the production of wheat and exports some of it in exchange for country B's cloth. Simultaneously, country B should specialise in the production of cloth and export some of it in exchange for country A's wheat.

How do these two countries gain from trade by each country specializing in the production and export of the commodity of its comparative advantage? We need to show that both nations can gain from trade even if one of them (in this case country B) is less efficient than the other in the production of both commodities.

Assume that country A could exchange 6W for 6C with country B. Then, country A would gain 2C (or save half an hour of labour time) since the country A could only exchange 6W for 4C domestically. We need to show now that country B would also gain from trade. We can observe from table 4.1.2 that the 6W that the

country B receives from the country A would require six hours of labour time to produce in country B. With trade, country B can instead use these six hours to produce 12C and give up only 6C for 6W from the country A. Thus, the country B would gain 6C or save three hours of labour time and country A would gain 2C. However, the gains of both countries are not likely to be equal.

However, we need to recognize that this is not the only rate of exchange at which mutually beneficial trade can take place. Country A would gain if it could exchange 6W for more than 4C from country B; because 6W for 4C is what it can exchange domestically (both require the same one hour labour time). The more C it gets, the greater would be the gain from trade.

Conversely, in country B, $6W = 12C$ (in the sense that both require 6 hours to produce). Anything less than 12C that country B must give up to obtain 6W from country A represents a gain from trade for country B. To summarize, country A gains to the extent that it can exchange 6W for more than 4C from the country B. Country B gains to the extent that it can give up less than 12C for 6W from country A. Thus, the range for mutually advantageous trade is $4C < 6W < 12C$.

The spread between 12C and 4C (i.e., 8C) represents the total gains from trade available to be shared by the two nations by trading 6W for 6C. The closer the rate of exchange is to $4C = 6W$ (the domestic or internal rate in country A), the smaller is the share of the gain going to country A and the larger is the share of the gain going to country B. Alternatively, the closer the rate of exchange is to $6W = 12C$ (the domestic or internal rate in country B), the greater is the gain of country A relative to that of country B. However, if the absolute disadvantage that one nation has with respect to another nation is the same in both commodities, there will be no comparative advantage and no trade.

Ricardo based his law of comparative advantage on the 'labour theory of value', which assumes that the value or price of a commodity depends exclusively on the amount of labour going into its production. This is quite unrealistic because labour is not the only factor of production, nor is it used in the same fixed proportion in the production of all commodities.

In 1936, Haberler resolved this issue when he introduced the opportunity cost concept from Microeconomic theory to explain the theory of comparative advantage in which no assumption is made in respect of labour as the source of value. Opportunity cost is basically the value of the forgone option. It is the 'real' cost in microeconomic terms, as opposed to cost given in monetary units. According to the opportunity cost theory, the cost of a commodity is the amount

of a second commodity that must be given up to release just enough resources to produce one extra unit of the first commodity.

The opportunity cost of producing one unit of good X in terms of good Y may be computed as the amount of labour required to produce one unit of good X divided by the amount of labour required to produce one unit of good Y. That is, how much Y do we have to give up in order to produce one more unit of good X. Logically, the nation with a lower opportunity cost in the production of a commodity has a comparative advantage in that commodity (and a comparative disadvantage in the second commodity).

In the above example, we find that country A must give up two-thirds of a unit of cloth to release just enough resources to produce one additional unit of wheat domestically. Therefore, the opportunity cost of wheat is two-thirds of a unit of cloth (i.e., $1W = 2/3C$ in country A). Similarly, in country B, we find that $1W = 2C$, and therefore, the opportunity cost of wheat (in terms of the amount of cloth that must be given up) is lower in country A than in country B, and country A would have a comparative (cost) advantage over country B in wheat.

In a two-nation, two-commodity world, if country A has a comparative advantage in wheat, then country B will have a comparative advantage in cloth. Therefore, country A should consider specializing in producing wheat and export some of it in exchange for cloth produced in country B. By such specialization and trade, both nations will be able to consume more of both commodities than what would have been possible without trade.

In summary, international differences in relative factor-productivity are the cause of comparative advantage and a country exports goods that it produces relatively efficiently. This fact points to a tendency towards complete specialization in production. Ricardo demonstrated that for two nations without input factor mobility, specialization and trade could result in increased total output and lower costs than if each nation tried to produce in isolation. Trade generates welfare gains and both countries can potentially gain from trade. Therefore, international trade need not be a zero-sum game.

However, the Ricardian theory of comparative advantage suffers from many limitations. Its emphasis is on supply conditions and excludes demand patterns. Moreover, the theory does not examine why countries have different costs. The theory of comparative advantage also does not answer the important question: Why does a nation have comparative advantage in the production of a

commodity and comparative disadvantage in the production of another? The answer to this question is provided by the Heckscher-Ohlin theory.

1.2.4 The Heckscher-Ohlin Theory of Trade

The Heckscher-Ohlin theory of trade, (named after two Swedish economists, Eli Heckscher and his student Bertil Ohlin), also referred to as Factor-Endowment Theory of Trade or Modern Theory of Trade, is considered as a very important theory of international trade. In view of the contributions made by P. A. Samuelson, this theory is also sometimes referred to as Heckscher-Ohlin-Samuelson theorem.

The Heckscher-Ohlin (H-O) model studies the case that two countries have different factor endowments under identical production function and identical preferences. The difference in factor endowment results in two countries having different factor prices in the beginning. Consequently, H-O model implies that the two countries will have different cost functions.

The Heckscher-Ohlin theory of trade states that comparative advantage in cost of production is explained exclusively by the differences in factor endowments of the nations. In a general sense of the term, 'factor endowment' refers to the overall availability of usable resources including both natural and man-made means of production. Nevertheless, in the exposition of the modern theory, only the two most important factors—labour and capital—are taken into account.

According to this theory, international trade is but a special case of inter-regional trade. Different regions have different factor endowments, that is, some regions have abundance of labour, but scarcity of capital; whereas other regions have abundance of capital, but scarcity of labour. Different goods have different production functions, that is, factors of production are combined in different proportions to produce different commodities. While some goods are produced by employing a relatively larger proportion of labour and relatively small proportion of capital, other goods are produced by employing a relatively small proportion of labour and relatively large proportion of capital. Thus, each region is suitable for the production of those goods for whose production it has relatively abundant supply of the requisite factors. A region is not suitable for production of those goods for whose production it has relatively scarce or zero supply of essential factors. Hence different regions have different capacity to produce different commodities. Therefore, difference in factor endowments is the main cause of international trade as well as inter-regional trade.

According to Ohlin, the immediate cause of inter-regional trade is that goods can be bought cheaper in terms of money than they can be produced at home and this is the case of international trade as well. The cause of difference in the relative prices of goods is the difference the amount of factor endowments, like capital and labour, between two countries.

The theory states that a country's exports depend on endowment of resources i.e. whether the country is capital-abundant or labour-abundant. If a country is a capital abundant one, it will produce and export capital-intensive goods relatively more cheaply than other countries. Likewise, a labour-abundant country will produce and export labour-intensive goods relatively more cheaply than another country. The labour-abundant countries have comparative cost advantage in the production of goods which require labour-intensive technology and by the same reasoning; capital-abundant countries have comparative cost advantage in the production of goods that need capital-intensive technology.

The Heckscher-Ohlin theory of foreign trade can be stated in the form of two theorems namely, Heckscher-Ohlin Trade Theorem and Factor-Price Equalization Theorem.

The Heckscher-Ohlin Trade Theorem establishes that a country tends to specialize in the export of a commodity whose production requires intensive use of its abundant resources and imports a commodity whose production requires intensive use of its scarce resources.

The 'Factor-Price Equalization' Theorem states that international trade tends to equalize the factor prices between the trading nations. In the absence of foreign trade, it is quite likely that factor prices are different in different countries. International trade equalizes the absolute and relative returns to homogenous factors of production and their prices. In other words, the wages of homogeneous labour and returns to homogeneous capital will be the same in all those nations which engage in trading.

The factor price equalisation theorem postulates that if the prices of the output of goods are equalised between countries engaged in free trade, then the price of the input factors will also be equalised between countries. This implies that the wages and rents will converge across the countries with free trade, or in other words, trade in goods is a perfect substitute for trade in factors. The Heckscher-Ohlin theorem, thus, puts forth that foreign trade eliminates the factor price differentials. The factor price equalization theorem is in fact a corollary to the

Heckscher-Ohlin trade theory. It holds true only as long as Heckscher-Ohlin Theorem holds true.

The basic assumption of the Heckscher-Ohlin theorem is that the two countries share the same production technology and that markets are perfectly competitive. The opening up to trade for a labour-abundant country, will increase the price of labour-intensive goods, say clothes, and, thus, lead to an expansion of clothes production. As there is demand for exports of clothes in foreign markets, the demand for factors of production increases in the clothes sector. Because clothes are labour-intensive goods, an increasing demand for labour in the factor market will attract labour from the capital-intensive industry, within the country, say machine, tools. The expanding clothes industry absorbs relatively more labour than the amount released by the contracting machine tools industry. The price of labour goes up, and whilst its relative price increases, the relative price of capital declines. As a result, capital returns decrease in relation to wage rate and the factors of production will become more capital-intensive in both sectors leading to a decline in the marginal productivity of capital and an increase in that of labour in both sectors. Similarly, when country B increases its specialization in the production of capital-intensive commodity, its demand for capital increases causing capital returns to increase in relation to wage rate. This means that specialization leads to change in relative factor prices.

When the prices of the output of goods are equalized between countries as they move to free trade, then the prices of the factors (capital and labour) will also be equalized between countries. It means that product mobility and factor mobility become perfect substitutes.

With trade, whichever factor receives the lowest price before two countries integrate economically and effectively become one market, will therefore tend to become more expensive relative to other factors in the economy, while those with the highest price will tend to become cheaper. This process will continue till factor prices are equalised between the trading nations.

New
Addition

The table 4.1.3 presents, though not exhaustive, a comparison of the theory of comparative costs and modern theory.

Table 4.1.3

Comparison of Theory of Comparative Costs and Modern Theory

Theory of Comparative Costs	Modern Theory
The basis is the difference between countries is comparative costs	Explains the causes of differences in comparative costs as differences in factor endowments
Based on labour theory of value	Based on money cost which is more realistic.
Considered labour as the sole factor of production and presents a one-factor (labour) model	Widened the scope to include labour and capital as important factors of production. This is 2-factor model and can be extended to more factors.
Treats international trade as quite distinct from domestic trade	International trade is only a special case of inter-regional trade.
Studies only comparative costs of the goods concerned	Considers the relative prices of the factors which influence the comparative costs of the goods
Attributes the differences in comparative advantage to differences in productive efficiency of workers	Attributes the differences in comparative advantage to the differences in factor endowments.
Does not take into account the factor price differences	Considers factor price differences as the main cause of commodity price differences
Does not provide the cause of differences in comparative advantage.	Explains the differences in comparative advantage in terms of differences in factor endowments.
Normative; tries to demonstrate the gains from international trade	Positive; concentrates on the basis of trade

1.2.5 New Trade Theory – An Introduction

New Trade Theory (NTT) is an economic theory that was developed in the 1970s as a way to understand international trade patterns. NTT helps in understanding why developed and big countries are trade partners when they are trading similar goods and services. These countries constitute more than 50% of world trade.

This is particularly true in key economic sectors such as electronics, IT, food, and automotive. We have cars made in the India, yet we purchase many cars made in other countries.

These are usually products that come from large, global industries that directly impact international economies. The mobile phones that we use are a good example. India produces them and also imports them. NTT argues that, because of substantial economies of scale and network effects, it pays to export phones to sell in another country. Those countries with the advantages will dominate the market, and the market takes the form of monopolistic competition.

Monopolistic competition tells us that the firms are producing a similar product that isn't exactly the same, but awfully close. According to NTT, two key concepts give advantages to countries that import goods to compete with products from the home country:

- **Economies of Scale:** As a firm produces more of a product, its cost per unit keeps going down. So if the firm serves domestic as well as foreign market instead of just one, then it can reap the benefit of large scale of production consequently the profits are likely to be higher.
- **Network effects** refer to the way one person's value for a good or service is affected by the value of that good or service to others. The value of the product or service is enhanced as the number of individuals using it increases. This is also referred to as the 'bandwagon effect'. Consumers like more choices, but they also want products and services with high utility, and the network effect increases utility obtained from these products over others. A good example will be Mobile App such as What's App and software like Microsoft Windows.

SUMMARY

- International trade is the exchange of goods and services as well as resources between countries and involves greater complexity compared to internal trade.
- Trade can be a powerful stimulus to economic efficiency, contributes to economic growth and rising incomes, enlarges manufacturing capabilities, ensures benefits from economies of large scale production, and enhances competitiveness and profitability by adoption of cost reducing technology and business practices.

- Efficient deployment of productive resources to their best use, productivity gains, decrease in the likelihood of domestic monopolies, cost-effective sourcing of inputs and components internationally, innovative products at lower prices and wider choice in products and services for consumers are claimed as benefits of trade.
- Enhanced foreign exchange reserves, increased scope for mechanization and specialisation, research and development, creation of jobs, reduction in poverty, augmenting factor incomes, raising standards of livelihood, increase in overall demand for goods and services and greater stimulus to innovative services are other benefits of trade.
- There are also other possible positive outcomes of trade in the form of prospects of employment generating investments, improvement in the quality of output, superior products, labour and environmental standards, broadening of productive base, export diversification, stability in prices and supply of goods, human resource development and strengthening of bonds between nations.
- The arguments against trade converge on negative labour market outcomes, economic exploitation, profit-driven exhaustion of natural resources, shift towards a consumer culture, risky dependence, shortages resulting in inflation, disregard for welfare of people, quick transmission of trade cycles, rivalries and risks in trade associated with changes in governments' policies of participating countries.
- Mercantilism advocated maximizing exports in order to bring in more precious metals and minimizing imports through the state imposing very high tariffs on foreign goods.
- According to Adam Smith's Absolute Cost Advantage theory, a country will specialize in the production and export of a commodity in which it has an absolute cost advantage.
- Ricardo's theory of comparative advantage states that a nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which its absolute disadvantage is greater (this is the commodity of its comparative disadvantage).

- Haberler resolved the issue of dependence on labour alone in the case of theory of comparative advantage when he introduced the opportunity cost concept. Opportunity cost which is the value of the forgone option.
- The Heckscher-Ohlin theory of trade, also referred to as Factor-Endowment Theory of Trade or Modern Theory of Trade, states that comparative advantage in cost of production is explained exclusively by the differences in factor endowments.
- A country tends to specialize in the export of a commodity whose production requires intensive use of its abundant resources and imports a commodity whose production requires intensive use of its scarce resources.
- Accordingly, a capital abundant country will produce and export capital-intensive goods relatively more cheaply and a labour-abundant country will produce and export labour-intensive goods relatively more cheaply than other country.
- The Factor-Price Equalization Theorem states that international trade equalizes the factor prices between the trading nations. Therefore, with free trade, wages and returns on capital will converge across the countries.
- NTT is the latest entrant to explain the rising proportion of world trade between the developed and bigger developing economies (such as BRICS), which trade in similar products. These countries constitute more than 50% of world trade.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

- 1 Which of the following does not represent a difference between internal trade and international trade?
 - (a) transactions in multiple currencies
 - (b) homogeneity of customers and currencies
 - (c) differences in legal systems
 - (d) none of the above

2. The theory of absolute advantage states that
 - (a) national wealth and power are best served by increasing exports and decreasing imports
 - (b) nations can increase their economic well-being by specializing in the production of goods they produce more efficiently than anyone else.
 - (c) that the value or price of a commodity depends exclusively on the amount of labour going into its production and therefore factor prices will be the same
 - (d) differences in absolute advantage explains differences in factor endowments in different countries

3. Which of the following theories advocates that countries should produce those goods for which it has the greatest relative advantage?
 - (a) Modern theory of international trade
 - (b) The factor endowment theory
 - (c) The Heckscher-Ohlin Theory
 - (d) None of the above

4. Which of the following holds that a country can increase its wealth by encouraging exports and discouraging imports
 - (a) Capitalism
 - (b) Socialism
 - (c) Mercantilism
 - (d) Laissez faire

5. Given the number of labour hours to produce cloth and grain in two countries, which country should produce grain?

Labour cost (hours) for production of one unit

	Country A	Country B
Cloth	40	80
Grain	80	40

- (a) Country A

- (b) Country B
 (c) Neither A nor B
 (d) Both A and B
6. According to the theory of comparative advantage
- (a) trade is a zero-sum game so that the net change in wealth or benefits among the participants is zero.
 (b) trade is not a zero-sum game so that the net change in wealth or benefits among the participants is positive
 (c) nothing definite can be said about the gains from trade
 (d) gains from trade depends upon factor endowment and utilization
7. Given the number of labour hours to produce wheat and rice in two countries and that these countries specialise and engage in trade at a relative price of 1:1 what will be the gain of country X ?

Labour cost (hours) for production of one unit

	Wheat	Rice
Country X	10	20
Country Y	20	10

- (a) 20 labour hours
 (b) 10 labour hours
 (c) 30 labour hours
 (d) Does not gain anything
8. Assume India and Bangladesh have the unit labour requirements for producing tables and mats shown in the table below. It follows that:

Labour cost (hours) for production of one unit

	India	Bangladesh
Tables	3	8
Mats	2	1

- (a) Bangladesh has a comparative advantage in mats
 - (b) India has a comparative advantage in tables
 - (c) Bangladesh has an absolute advantage in mats
 - (d) All the above are true
9. Comparative advantage refers to
- (a) a country's ability to produce some good or service at the lowest possible cost compared to other countries
 - (b) a country's ability to produce some good or service at a lower opportunity cost than other countries.
 - (c) Choosing a productive method which uses minimum of the abundant factor
 - (d) (a) and (b) above
10. Ricardo explained the law of comparative advantage on the basis of
- (a) opportunity costs
 - (b) the law of diminishing returns
 - (c) economies of scale
 - (d) the labour theory of value

II Short Answer Type Questions

1. Define international trade?
2. What is meant by opportunity cost?
3. How does trade increase economic efficiency?
4. What is meant by absolute advantage?
5. What is the major idea behind Mercantilist's view of trade?
6. What is the essence of the theory of absolute advantage?
7. Mention the core principle of the theory of comparative advantage.
8. What is meant by 'factor endowment' in the theory of international trade?
9. What is the crux of Heckscher-Ohlin theory of international trade?

10. What do you understand by 'factor-price equalization' in the context of international trade?

III Long Answer Type Questions

1. Define international trade and describe how it differs from internal trade?
2. Critically examine the arguments for and against international trade?
3. Do you think international trade is always beneficial? Substantiate your arguments?
4. What are the major arguments against liberal trade?
5. Do you think the developing countries will be disproportionately disadvantaged if they engage in liberal trade?
6. What consequences do you foresee for the industrial sector if a nation has greater openness of trade?
7. Using Ricardian model, explain how two countries can gain from trade? What does the Ricardian model suggest regarding the effect of trade?
8. What are the underlying reasons that explain the differences among nations? Explain the predictions from different theories in international trade.
9. Describe the reasons why international trade is opposed by many people?
10. "Specialization in production always increases the prosperity of a country" Do you agree with the statement? Substantiate your answer.
11. Explain the Heckscher-Ohlin theory of international trade.
12. Compare the classical and modern theories of international trade.
13. What is the basis for international trade according to Ricardo?
14. What are the arguments put forth in the modern theory of international trade?
15. Describe the reasons for the superiority of Heckscher Ohlin theory of international trade over the classical theory of international trade.

IV Application Oriented Questions

1. The price index for exports of Country A in year 2012 (2000 base-year), was 116.1 and the price index for Country A's imports was 120.2 (2000 base-year)

- (i) What do these figures mean?
 - (ii) Calculate the index of terms of trade for Country A
 - (iii) How do you interpret the index of terms of trade for Country A?
2. The table below shows the number of labour hours required to produce wheat and cloth in two countries X and Y.

Commodity	Country X	Country Y
1 unit of cloth	4	1.0
1 unit of wheat	2	2.5

- (i) Compare the productivity of labour in both countries in respect of both commodities
 - (ii) Which country has absolute advantage in the production of wheat?
 - (iii) Which country has absolute advantage in the production of cloth?
 - (iv) If there is trade, which commodity should these countries produce?
 - (v) What are the opportunity costs of each commodity?
- (3) Countries Rose Land and Daisy land have a total of 4000 hours each of labour available each day to produce shirts and trousers. Both countries use equal number of hours on each good each day. Rose Land produces 800 shirts and 500 trousers per day. Daisy land produces 500 shirts and 250 trousers per day.

New
Addition

In the absence of trade:

- i. Which country has absolute advantage in producing
 - a. Shirts
 - b. Trousers
- ii. Which country has comparative advantage in producing
 - a. Shirts
 - b. Trousers

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (b) 2. (b) 3. (d) 4. (c) 5. (b) 6. (b)
7. (b) 8. (d) 9. (b) 10. (d)

II Short Answer Type Questions

1. International trade is the exchange of goods and services as well as resources between countries and involves transactions between residents of different countries.
2. The value of the best foregone alternative that is given up when something is chosen. In production, it is the amount of a second commodity that must be given up to release just enough resources to produce one more unit of the first commodity.
3. Economic efficiency increases due to quantitative and qualitative benefits of extended division of labour, economies of large scale production, betterment of manufacturing capabilities, increased competitiveness and profitability by adoption of cost reducing technology and business practices and decrease in the likelihood of domestic monopolies. Efficient deployment of productive resources natural, human, industrial and financial resources ensures productivity gains.
4. The ability of a country to produce a good at a lower cost, in terms of labour, than another country.
5. Encourage exports and prevent imports and accumulate as much precious metals as possible to become wealthy
6. A trade theory which holds that nations can increase their economic well-being by specializing in goods that they can produce more efficiently than anyone else.
7. A nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which it's absolute disadvantage is greater (this is the commodity of its comparative disadvantage).

8. In a general sense of the term, 'factor endowment' which explains comparative advantage in cost of production, refers to the overall availability of usable resources including both natural and man-made means of production. Differences between countries are explained exclusively by the differences in factor endowments of the nations.
9. A country tends to specialize in the export of a commodity whose production requires intensive use of its abundant resources and imports a commodity whose production requires intensive use of its scarce resources.
10. International trade equalizes the factor prices between trading nations; implies that the wages and rents will converge across the countries with free trade, i.e. if the prices of the output of goods are equalised between countries engaged in free trade, then the price of the input factors will also be equalised between countries.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1. (i) The price index for exports of Country A in year 2012 (2000 base-year), was 116.1 means that compared to year 2000, its export prices were 16.1 percent above the 2000 base year prices.

- (ii) The price index for Country A's imports was 120.2 in year 2012(2000 base-year), means that compared to year 2000, its import prices were 20.2 percent above the 2000 base year prices.
- (iii) The index of the terms of trade for Country A in 2012 would be calculated as follows:

$$\text{Terms of Trade} = \frac{\text{Price index of exports}}{\text{Price index of its imports}} \times 100 = (116.1/120.2) \times 100 = 96.6$$

"Terms of trade" is ratio of the price of a country's export commodity to the price of its import commodity. The figure 96.6 means that each unit of country A's exports in 2012 exchanged for 3.4 percent (3.4 = 100 – 96.6) fewer units of imports than in the base year.

2. (i) Productivity of labour in both countries in respect of both commodities

Productivity of Labour	Country X	Country Y
Units of cloth per hour	0.25	1.0
Units of wheat per hour	0.5	0.4

- (ii) Country X has absolute advantage in the production of wheat because productivity of wheat is higher in country X , or conversely, the number of labour hours required to produce wheat in country X is less compared to country Y
- (iii) Country Y has absolute advantage in the production of cloth because productivity of cloth is higher in country Y , or conversely, the number of labour hours required to produce cloth in country Y is less compared to country X
- (iv) In country X, the opportunity cost is 0.25 units of cloth for 0.5 unit of wheat.
- (v) In country Y the opportunity cost is 0.4 units of wheat for 1 unit of cloth.

3. Goods produced by each country

Country	Shirts	Trousers
Rose Land	800	500
Daisy Land	500	250

Each country has 4000 hours of labour and uses 2000 hours each for both the goods. Therefore, the number of hours spent per unit on each good

Country	Shirts	Trousers
Rose Land	2.5	4
Daisy Land	4	8

Since Rose Land produces both goods in less time, it has absolute advantage in both shirts and trousers.

Comparative advantage; comparing the opportunity costs of both goods we have

Rose Land

Opportunity cost of Shirts = $2.5/4 = 0.625$ trousers

If 4 hours are used up in 1 trouser, trousers given up in 2.5 hours are $(1/4)*2.5 = 0.625$ trousers.

Similarly, Opportunity cost of Trousers = $4/2.5 = 1.6$ shirts

Daisy Land

Opportunity cost of Shirts $4/8 = 0.5$ trousers

Opportunity cost of Trousers $8/4 = 2$ shirts

For producing shirts

Daisy Land has lower opportunity cost for producing shirts ($0.5 < 0.625$), therefore Daisy Land has comparative advantage

For producing Trousers

Rose Land has lower opportunity cost for producing Trousers ($1.6 < 2$), therefore Rose Land has comparative advantage

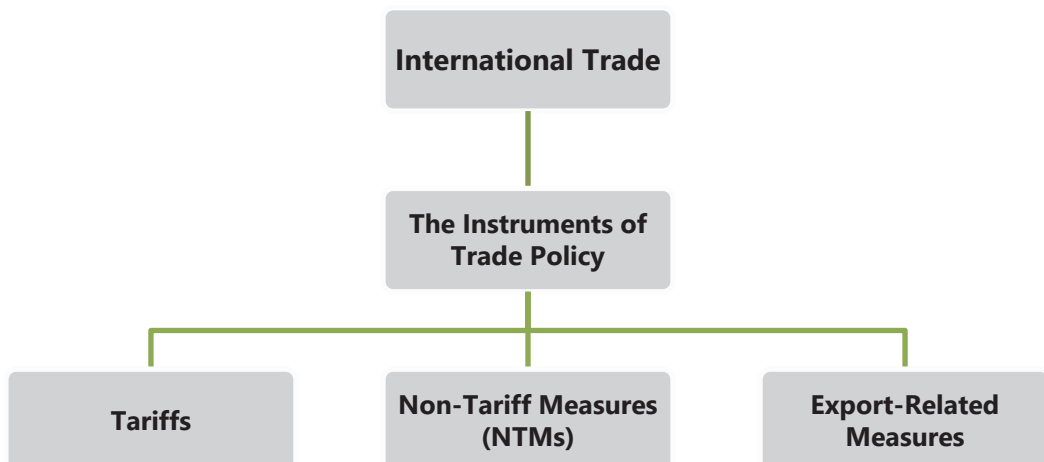
UNIT II: THE INSTRUMENTS OF TRADE POLICY

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define trade policy and describe its objectives
- ❑ Distinguish between different types of trade policy measures
- ❑ Evaluate the use of tariffs as a trade policy instrument
- ❑ Describe the 'trigger price mechanisms' for protection of domestic industry
- ❑ Outline the different Non-Tariff Measures adopted by countries

UNIT OVERVIEW



2.1 INTRODUCTION

Before we go into the subject matter of this unit, we shall take a quick look into a few recent developments in the international trade arena.

21 June 2020: China has lost a dispute to the European Union at the World Trade Organization (WTO) for a market economy status, as the former allowed the dispute to lapse. According to the EU, China subsidizes its industries to a great extent, particularly steel and aluminium, making their sales prices in the international market unfair.

21 June 2020: India argues against farm tariff concessions to ease Covid-19 woes and proposes that only a balanced, inclusive and calibrated response is needed to tackle temporary crisis.

2nd July 2020; China sees India's ban on 59 apps with Chinese links as 'discriminatory', and calls for reversal of the move as it has been discriminatory and selective, and may have violated World Trade Organization (WTO) rules.

8th July 2020: India asked Japan to lower the entry barriers in agricultural and pharmaceutical sectors.

19th July 2020: The WTO to set up dispute panels against India on request from Japan and Taiwan. The panels will look into the request against import duties on mobile phones and ICT products imposed by New Delhi.

15th September 2020: The WTO ruled that the tariffs the USA imposed on Chinese goods in 2018, triggering a trade war, were inconsistent with international trade rules.

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The above vignettes are just a few of the multitudes of episodes that arise almost on a daily basis when countries engage in trade. A glance at similar newspaper reports makes it obvious that governments do not conform to free trade despite the potential efficiency and welfare outcomes it will generate; rather, they employ different devices for restricting the free flow of goods and services across their borders.

As we know, under free trade, buyers and sellers from separate economies voluntarily trade with minimum of state interference. The free interplay of market forces of supply and demand decides prices. Protectionism, on the other hand, is a state policy aimed to protect domestic producers against foreign competition through the use of tariffs, quotas and non-tariff trade policy instruments. Trade

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liberalization refers to opening up of domestic markets to goods and services from the rest of the world by bringing down trade barriers.

In unit 1, we have seen that there are clear efficiency benefits from trade in terms of economic growth, job-creation and welfare. The persuasive academic arguments for open trade presuppose that fair competition, without distortions, is maintained between domestic and foreign producers. However, it is a fact that fair competition does not always exist and unobstructed international trade also brings in severe dislocation to many domestic firms and industries on account of difficult adjustment problems. Therefore, individuals and organisations continue to pressurize policy makers and regulatory authorities to restrict imports or to artificially boost up the size of exports.

Historically, as part of their protectionist measures, governments of different countries have applied many different types of policy instruments, not necessarily based on their economic merit, for restricting free flow of goods and services across national boundaries. While some such measures of government intervention are simple, widespread, and relatively transparent, others are complex, less apparent and frequently involve many types of distortions.

In this unit, we shall describe some of the most frequently used forms of interference with trade. Understanding the uses and implications of the common trade policy instruments, will enable formulation of appropriate policy responses and more balanced dialogues on trade policy issues and international trade agreements.

Trade policy encompasses all instruments that governments may use to promote or restrict imports and exports. Trade policy also includes the approach taken by countries in trade negotiations. While participating in the multilateral trading system and/or while negotiating bilateral trade agreements, countries assume obligations that shape their national trade policies. The instruments of trade policy that countries typically use to restrict imports and/ or to encourage exports can be broadly classified into price- related measures such as tariffs and non-price measures or non-tariff measures (NTMs).

In the following sections, we shall briefly touch upon the different trade policy measures adopted by countries to protect their domestic industries.

2.2 TARIFFS

Tariffs, also known as customs duties, are basically taxes or duties imposed on goods and services which are imported or exported. Different tariffs are generally applied to different commodities. It is defined as a financial charge in the form of a tax, imposed at the border on goods going from one customs territory to another. They are the most visible and universally used trade measures that determine market access for goods. Instead of a single tariff rate, countries have a tariff schedule which specifies the tariff collected on every particular good and service. Import duties being pervasive than export duties, tariffs are often identified with import duties and in this unit, the term 'tariff' would refer to import duties.

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Tariffs are aimed at altering the relative prices of goods and services imported, so as to contract the domestic demand and thus regulate the volume of their imports. Tariffs leave the world market price of the goods unaffected; while raising their prices in the domestic market. The main goals of tariffs are to raise revenue for the government, and more importantly to protect the domestic import-competing industries.

2.2.1 Forms of Import Tariffs

- (i) **Specific Tariff:** Specific tariff is the fixed amount of money per physical unit or according to the weight or measurement of the commodity imported or exported. This tariff can vary according to the type of good imported. Example, a specific tariff of ₹1000/ may be charged on each imported bicycle. The disadvantage of specific tariff as an instrument for protection of domestic producers is that its protective value varies inversely with the price of the import. For example: if the price of the imported cycle is ₹5,000/- and the rate of tariff is 20%; then, if due to inflation, the price of bicycle rises to ₹10,000, the specific tariff is still only 10% of the value of the import. Since the calculation of these duties does not involve the value of merchandise, customs valuation is not applicable in this case.
- (ii) **Ad valorem tariff:** When the duty is levied as a fixed percentage of the value of the traded commodity, it is called as valorem tariff. An ad valorem tariff is levied as a constant percentage of the monetary value of one unit of the imported good. A 20% ad valorem tariff on any bicycle generates a ₹1000/ payment on each imported bicycle priced at ₹5,000/ in the world market; and if the price rises to ₹10,000, it generates a payment of ₹2,000/.

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While *ad valorem* tariff preserves the protective value of tariff on home producer, it gives incentives to deliberately undervalue the good's price on invoices and bills of lading to reduce the tax burden. Nevertheless, *ad valorem* tariffs are widely used across the world.

There are many other variations of the above tariffs, such as:

- (a) **Mixed Tariffs:** Mixed tariffs are expressed either on the basis of the value of the imported goods (an *ad valorem* rate) or on the basis of a unit of measure of the imported goods (a specific duty) depending on which generates the most income (or least income at times) for the nation. For example, duty on cotton: 5 per cent *ad valorem* or ₹ 3000/per tonne, whichever is higher.

Compound Tariff or a Compound Duty is a combination of an *ad valorem* and a specific tariff. That is, the tariff is calculated on the basis of both the value of the imported goods (an *ad valorem* duty) and a unit of measure of the imported goods (a specific duty). It is generally calculated by adding up a specific duty to an *ad valorem* duty. Thus, on an import with quantity q and price p , a compound tariff collects a revenue equal to $t_s q + t_a p q$, where t_s is the specific tariff and t_a is the *ad valorem* tariff. For example: duty on cheese at 5 per cent *ad valorem* plus 100 per kilogram.

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- (b) **Technical/Other Tariff:** These are calculated on the basis of the specific contents of the imported goods i.e. the duties are payable by its components or related items. For example: ₹3000/ on each solar panel plus ₹ 50/ per kg on the battery.
- (c) **Tariff Rate Quotas:** Tariff rate quotas (TRQs) combine two policy instruments: quotas and tariffs. Imports entering under the specified quota portion are usually subject to a lower (sometimes zero) tariff rate. Imports above the quantitative threshold of the quota face a much higher tariff.
- (d) **Most-Favoured Nation Tariffs:** MFN tariffs refer to import tariffs which countries promise to impose on imports from other members of the WTO, unless the country is part of a preferential trade agreement (such as a free trade area or customs union). This means that, in practice, MFN rates are the highest (most restrictive) that WTO members charge each other. Some countries impose higher tariffs on countries that are not part of the WTO.
- (e) **Variable Tariff:** A duty typically fixed to bring the price of an imported commodity up to level of the domestic support price for the commodity.

- (f) **Preferential Tariff:** Nearly all countries are part of at least one preferential trade agreement, under which they promise to give another country's products lower tariffs than their MFN rate. These agreements are reciprocal. A lower tariff is charged from goods imported from a country which is given preferential treatment. Examples are preferential duties in the EU region under which a good coming from one EU country to another is charged zero tariff rate. Another example is the United States - Canada - Mexico (USMCA) Agreement among Canada, Mexico and the USA where the preferential tariff rate is zero on essentially all products. Countries, especially the affluent ones also grant 'unilateral preferential treatment' to select list of products from specified developing countries. The Generalized System of Preferences (GSP) is one such system which is currently prevailing.
- (g) **Bound Tariff:** Under this, a WTO member binds itself with a legal commitment not to raise tariff rate above a certain level. By binding a tariff rate, often during negotiations, the members agree to limit their right to set tariff levels beyond a certain level. The bound rates are specific to individual products and represent the maximum level of import duty that can be levied on a product imported by that member. A member is always free to impose a tariff that is lower than the bound level. Once bound, a tariff rate becomes permanent and a member can only increase its level after negotiating with its trading partners and compensating them for possible losses of trade. A bound tariff ensures transparency and predictability.
- (h) **Applied Tariffs:** An 'applied tariff' is the duty that is actually charged on imports on a Most-Favoured Nation (MFN) basis. A WTO member can have an applied tariff for a product that differs from the bound tariff for that product as long as the applied level is not higher than the bound level.
- (i) **Escalated Tariff** structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e. the tariff on a product increases as that product moves through the value-added chain. For example, a four percent tariff on iron ore or iron ingots and twelve percent tariff on steel pipes. This type of tariff is discriminatory as it protects manufacturing industries in importing countries and dampens the attempts of developing manufacturing industries of exporting countries. This has special relevance to trade between developed countries and developing

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countries. Developing countries are thus forced to continue to be suppliers of raw materials without much value addition.

- (j) **Prohibitive tariff:** A prohibitive tariff is one that is set so high that no imports can enter.
- (k) **Import subsidies:** Import subsidies also exist in some countries. An import subsidy is simply a payment per unit or as a percent of value for the importation of a good (i.e., a negative import tariff).
- (l) **Tariffs as Response to Trade Distortions:** Sometimes countries engage in 'unfair' foreign-trade practices which are trade distorting in nature and adverse to the interests of the domestic firms. The affected importing countries, upon confirmation of the distortion, respond quickly by measures in the form of tariff responses to offset the distortion. These policies are often referred to as "trigger-price" mechanisms. The following sections relate to such tariff responses to distortions related to foreign dumping and export subsidies.
- (m) **Anti-dumping Duties:** An anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value. Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. Dumping may be persistent, seasonal, or cyclical. Dumping may also be resorted to as a predatory pricing practice to drive out established domestic producers from the market and to establish monopoly position. Dumping is an international price discrimination favouring buyer of exports, but in fact, the exporters deliberately forego money in order to harm the domestic producers of the importing country.

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Dumping is unfair and constitutes a threat to domestic producers and therefore when dumping is found, anti-dumping measures may be initiated as a safeguard instrument by imposing additional import duties/tariffs so as to offset the foreign firm's unfair price advantage. This is justified only if the domestic industry is seriously injured by import competition, and protection is in the national interest (that is, the associated costs to consumers would be less than the benefits that would accrue to producers). For example: In January 2017, India imposed anti-dumping duties on colour-coated or pre-painted flat steel products imported into the country from China and

European nations for a period not exceeding six months and for jute and jute products from Bangladesh and Nepal.

- (n) **Countervailing Duties:** Countervailing duties are tariffs that aim to offset the artificially low prices charged by exporters who enjoy export subsidies and tax concessions offered by the governments in their home country. If a foreign country does not have a comparative advantage in a particular good and a government subsidy allows the foreign firm to be an exporter of the product, then the subsidy generates a distortion from the free-trade allocation of resources. In such cases, CVD is charged in an importing country to negate the advantage that exporters get from subsidies to ensure fair and market-oriented pricing of imported products and thereby protecting domestic industries and firms. For example, in 2016, in order to protect its domestic industry, India imposed 12.5% countervailing duty on Gold jewellery imports from ASEAN.

2.2.2 Effects of Tariffs

A tariff levied on an imported product affects both the exporting country and the importing country.

- (i) Tariff barriers create obstacles to trade, decrease the volume of imports and exports and therefore of international trade. The prospect of market access of the exporting country is worsened when an importing country imposes a tariff.
- (ii) By making imported goods more expensive, tariffs discourage domestic consumers from consuming imported foreign goods. Domestic consumers suffer a loss in consumer surplus because they must now pay a higher price for the good and also because compared to free trade quantity, they now consume lesser quantity of the good.
- (iii) Tariffs encourage consumption and production of the domestically produced import substitutes and thus protect domestic industries.
- (iv) Producers in the importing country experience an increase in well-being as a result of imposition of tariff. The price increase of their product in the domestic market increases producer surplus in the industry. They can also charge higher prices than would be possible in the case of free trade because foreign competition has reduced.
- (v) The price increase also induces an increase in the output of the existing firms and possibly addition of new firms due to entry into the industry to

take advantage of the new high profits and consequently an increase in employment in the industry.

- (vi) Tariffs create trade distortions by disregarding comparative advantage and prevent countries from enjoying gains from trade arising from comparative advantage. Thus, tariffs discourage efficient production in the rest of the world and encourage inefficient production in the home country.
- (vii) Tariffs increase government revenues of the importing country by the value of the total tariff it charges.

Trade liberalization in recent decades, either through government policy measures or through negotiated reduction through the WTO or regional and bilateral free trade agreements, has diminished the importance of tariff as a tool of protection. Currently, trade policy is focusing increasingly on not so easily observable forms of trade barriers usually called non-tariff measures (NTMs). NTMs are thought to have important restrictive and distortionary effects on international trade. They have become so invasive that the benefits due to tariff reduction are practically offset by them.



2.3 NON – TARIFF MEASURES (NTMS)

From the discussion above, we have learnt that tariffs constitute the visible barriers to trade and have the effect of increasing the prices of imported merchandise. By contrast, the non-tariff measures which have come into greater prominence than the conventional tariff barriers, constitute the hidden or 'invisible' measures that interfere with free trade.

Non-tariff measures (NTMs) are policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both (UNCTAD, 2010). Non-tariff measures comprise all types of measures which alter the conditions of international trade, including policies and regulations that restrict trade and those that facilitate it. NTMs consist of mandatory requirements, rules, or regulations that are legally set by the government of the exporting, importing, or transit country.

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It should be kept in mind that NTMs are not the same as non-tariff barriers (NTBs). NTMs are sometimes used as means to circumvent free-trade rules and favour domestic industries at the expense of foreign competition. In this case they are called non-tariff barriers (NTBs). In other words, non-tariff barriers are

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discriminatory non-tariff measures imposed by governments to favour domestic over foreign suppliers. NTBs are thus a subset of NTMs that have a 'protectionist or discriminatory intent'. Compared to NTBs, non-tariff measures encompass a broader set of measures.

According to WTO agreements, the use of NTMs is allowed under certain circumstances. Examples of this include the Technical Barriers to Trade (TBT) Agreement and the Sanitary and Phytosanitary Measures (SPS) Agreement, both negotiated during the Uruguay Round. However, NTMs are sometimes used as a means to circumvent free-trade rules and favour domestic industries at the expense of foreign competition. In this case they are called non-tariff barriers (NTBs). It is very difficult, and sometimes impossible, to distinguish legitimate NTMs from protectionist NTMs, especially because the same measure may be used for several reasons.

Depending on their scope and/or design NTMs are categorized as:

I. Technical Measures: Technical measures refer to product-specific properties such as characteristics of the product, technical specifications and production processes. These measures are intended for ensuring product quality, food safety, environmental protection, national security and protection of animal and plant health.

II. Non-technical Measures: Non-technical measures relate to trade requirements; for example; shipping requirements, custom formalities, trade rules, taxation policies, etc.

These are further distinguished as:

- (a) Hard measures (e.g. Price and quantity control measures),
- (b) Threat measures (e.g. Anti-dumping and safeguards) and
- (c) Other measures such as trade-related finance and investment measures.

Furthermore, the categorization also distinguishes between:

- (i) Import-related measures which relate to measures imposed by the importing country, and
- (ii) Export-related measures which relate to measures imposed by the exporting country itself.

- (iii) In addition, to these, there are procedural obstacles (PO) which are practical problems in administration, transportation, delays in testing, certification etc which may make it difficult for businesses to adhere to a given regulation.

2.3.1 Technical Measures

I Sanitary and Phytosanitary (SPS) Measures: SPS measures are applied to protect human, animal or plant life from risks arising from additives, pests, contaminants, toxins or disease-causing organisms and to protect biodiversity.

These include ban or prohibition of import of certain goods, all measures governing quality and hygienic requirements, production processes, and associated compliance assessments. For example; prohibition of import of poultry from countries affected by avian flu, meat and poultry processing standards to reduce pathogens, residue limits for pesticides in foods etc.

II Technical Barriers To Trade (TBT): Technical Barriers to Trade (TBT) which cover both food and non-food traded products refer to mandatory 'Standards and Technical Regulations' that define the specific characteristics that a product should have, such as its size, shape, design, labelling / marking / packaging, functionality or performance and production methods, excluding measures covered by the SPS Agreement. The specific procedures used to check whether a product is really conforming to these requirements (conformity assessment procedures e.g. testing, inspection and certification) are also covered in TBT. This involves compulsory quality, quantity and price control of goods before shipment from the exporting country.

Just as SPS, TBT measures are standards-based measures that countries use to protect their consumers and preserve natural resources, but these can also be used effectively as obstacles to imports or to discriminate against imports and protect domestic products. Altering products and production processes to comply with the diverse requirements in export markets may be either impossible for the exporting country or would obviously raise costs, hurting the competitiveness of the exporting country. Some examples of TBT are: food laws, quality standards, industrial standards, organic certification, eco-labelling, and marketing and label requirements.

2.3.2 Non-technical Measures

These include different types of trade protective measures which are put into operation to neutralize the possible adverse effects of imports in the market of

the importing country. Following are the most commonly practiced measures in respect of imports:

(i) Import Quotas: An import quota is a direct restriction which specifies that only a certain physical amount of the good will be allowed into the country during a given time period, usually one year. Import quotas are typically set below the free trade level of imports and are usually enforced by issuing licenses. This is referred to as a binding quota; a non-binding quota is a quota that is set at or above the free trade level of imports, thus having little effect on trade.

Import quotas are mainly of two types: absolute quotas and tariff-rate quotas. Absolute quotas or quotas of a permanent nature limit the quantity of imports to a specified level during a specified period of time and the imports can take place any time of the year. No condition is attached to the country of origin of the product. For example: 1000 tonnes of fish import which can take place any time during the year from any country. When country allocation is specified, a fixed volume or value of the product must originate in one or more countries. Example: A quota of 1000 tonnes of fish that can be imported any time during the year, but where 750 tonnes must originate in country A and 250 tonnes in country B. In addition, there are seasonal quotas and temporary quotas.

With a quota, the government, of course, receives no revenue. The profits received by the holders of such import licenses are known as 'quota rents'. While tariffs directly interfere with prices that can be charged for an imported good in the domestic market, import quota interferes with the market prices indirectly. Obviously, an import quota always raises the domestic price of the imported good. The license holders are able to buy imports and resell them at a higher price in the domestic market and they will be able to earn a 'rent' on their operations over and above the profit they would have made in a free market.

The welfare effects of quotas are similar to that of tariffs. If a quota is set below free trade level, the amount of imports will be reduced. A reduction in imports will lower the supply of the good in the domestic market and raise the domestic price. Consumers of the product in the importing country will be worse-off because the increase in the domestic price of both imported goods and the domestic substitutes reduces consumer surplus in the market. Producers in the importing country are better-off as a result of the quota. The increase in the price of their product increases producer surplus in the industry. The price increase also induces an increase in output of existing firms (and perhaps the addition of new firms), an increase in employment, and hence an increase in profit.

(ii) Price Control Measures: Price control measures (including additional taxes and charges) are steps taken to control or influence the prices of imported goods in order to support the domestic price of certain products when the import prices of these goods are lower. These are also known as 'para-tariff' measures and include measures, other than tariff measures, that increase the cost of imports in a similar manner, i.e. by a fixed percentage or by a fixed amount. Example: A minimum import price established for sulphur.

(iii) Non-automatic Licensing and Prohibitions: These measures are normally aimed at limiting the quantity of goods that can be imported, regardless of whether they originate from different sources or from one particular supplier. These measures may take the form of non-automatic licensing, or complete prohibitions. For example, textiles may be allowed only on a discretionary license by the importing country. India prohibits import/export of arms and related material from/to Iraq. Further, India also prohibits many items (mostly of animal origin) falling under 60 EXIM codes.

(iv) Financial Measures: The objective of financial measures is to increase import costs by regulating the access to and cost of foreign exchange for imports and to define the terms of payment. It includes measures such as advance payment requirements and foreign exchange controls denying the use of foreign exchange for certain types of imports or for goods imported from certain countries. For example, an importer may be required to pay a certain percentage of the value of goods imported three months before the arrival of goods or foreign exchange may not be permitted for import of newsprint.

(v) Measures Affecting Competition: These measures are aimed at granting exclusive or special preferences or privileges to one or a few limited group of economic operators. It may include government imposed special import channels or enterprises, and compulsory use of national services. For example, a statutory marketing board may be granted exclusive rights to import wheat: or a canalizing agency (like State Trading Corporation) may be given monopoly right to distribute palm oil. When a state agency or a monopoly import agency sells in the domestic market at prices above those existing in the world market, the effect will be similar to an import tariff.

(vi) Government Procurement Policies: Government procurement policies may interfere with trade if they involve mandates that the whole of a specified percentage of government purchases should be from domestic firms rather than foreign firms, despite higher prices than similar foreign suppliers. In accepting

public tenders, a government may give preference to the local tenders rather than foreign tenders.

(vii) Trade-Related Investment Measures: These measures include rules on local content requirements that mandate a specified fraction of a final good should be produced domestically.

- (a) requirement to use certain minimum levels of locally made components, (25 percent of components of automobiles to be sourced domestically)
- (b) restricting the level of imported components, and
- (c) limiting the purchase or use of imported products to an amount related to the quantity or value of local products that it exports. (A firm may import only up to 75 % of its export earnings of the previous year)

(viii) Distribution Restrictions: Distribution restrictions are limitations imposed on the distribution of goods in the importing country involving additional license or certification requirements. These may relate to geographical restrictions or restrictions as to the type of agents who may resell. For example: a restriction that imported fruits may be sold only through outlets having refrigeration facilities.

(ix) Restriction on Post-sales Services: Producers may be restricted from providing after- sales services for exported goods in the importing country. Such services may be reserved to local service companies of the importing country.

(x) Administrative Procedures: Another potential obstruction to free trade is the costly and time-consuming administrative procedures which are mandatory for import of foreign goods. These will increase transaction costs and discourage imports. The domestic import-competing industries gain by such non- tariff measures. Examples include specifying particular procedures and formalities, requiring licenses, administrative delay, red-tape and corruption in customs clearing frustrating the potential importers, procedural obstacles linked to prove compliance etc.

(xi) Rules of origin; Country of origin means the country in which a good was produced, or in the case of a traded service, the home country of the service provider. Rules of origin are the criteria needed by governments of importing countries to determine the national source of a product. Their importance is derived from the fact that duties and restrictions in several cases depend upon the source of imports. Important procedural obstacles occur in the home

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countries for making available certifications regarding origin of goods, especially when different components of the product originate in different countries.

(xii) Safeguard Measures: These are initiated by countries to restrict imports of a product temporarily if its domestic industry is injured or threatened with serious injury caused by a surge in imports. Restrictions must be for a limited time and non-discriminatory.

(xiii) Embargos: An embargo is a total ban imposed by government on import or export of some or all commodities to particular country or regions for a specified or indefinite period. This may be done due to political reasons or for other reasons such as health, religious sentiments. This is the most extreme form of trade barrier.



2.4. EXPORT-RELATED MEASURES

(i) Ban on exports: Export-related measures refer to all measures applied by the government of the exporting country including both technical and non-technical measures. For example, during periods of shortages, export of agricultural products such as onion, wheat etc. may be prohibited to make them available for domestic consumption. Export restrictions have an important effect on international markets. By reducing international supply, export restrictions have been effective in increasing international prices.

(ii) Export Taxes: An export tax is a tax collected on exported goods and may be either specific or ad valorem. The effect of an export tax is to raise the price of the good and to decrease exports. Since an export tax reduces exports and increases domestic supply, it also reduces domestic prices and leads to higher domestic consumption.

(iii) Export Subsidies and Incentives: We have seen that tariffs on imports hurt exports and therefore countries have developed compensatory measures of different types for exporters like export subsidies, duty drawback, duty-free access to imported intermediates etc. Governments or government bodies also usually provide financial contribution to domestic producers in the form of grants, loans, equity infusions etc. or give some form of income or price support. If such policies on the part of governments are directed at encouraging domestic industries to sell specified products or services abroad, they can be considered as trade policy tools.

(iv) Voluntary Export Restraints: Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of that country during a specified period of time. Such restraints originate primarily from political considerations and are imposed based on negotiations of the importer with the exporter. The inducement for the exporter to agree to a VER is mostly to appease the importing country and to avoid the effects of possible retaliatory trade restraints that may be imposed by the importer. VERs may arise when the import-competing industries seek protection from a surge of imports from particular exporting countries. VERs cause, as do tariffs and quotas, domestic prices to rise and cause loss of domestic consumer surplus.

Over the past few decades, significant transformations are happening in terms of growth as well as trends of flows and patterns of global trade. The increasing importance of developing countries has been a salient feature of the shifting global trade patterns. Fundamental changes are taking place in the way countries associate themselves for international trade and investments. Trading through regional arrangements which foster closer trade and economic relations is shaping the global trade landscape in an unprecedented way. Alongside, the trading countries also have devised ingenious policies aimed at protecting their economic interests. The discussions in this unit are in no way comprehensive considering the faster pace of discovery of such protective strategies. Students are expected to get themselves updated on such ongoing changes.

SUMMARY

- Trade policy encompasses all instruments that governments may use to promote or restrict imports and exports.
- Trade policies are broadly classified into price-related measures such as tariffs and non-price measures or non-tariff measures (NTMs).
- Tariff, also known as customs duty is defined as a financial charge in the form of a tax, imposed at the border on goods going from one customs territory to another. Tariffs are the most visible and universally used trade measures.
- A specific tariff is an import duty that assigns a fixed monetary tax per physical unit of the good imported whereas an ad valorem tariff is levied as a constant percentage of the monetary value of one unit of the imported good.

- Mixed tariffs are expressed either on the basis of the value of the imported goods (an ad valorem rate) or on the basis of a unit of measure of the imported goods (a specific duty), depending on desired yields.
- Compound Tariff or a compound duty is a combination of an ad valorem and a specific tariff and is calculated on the basis of both the value of the imported goods (an ad valorem duty) and a unit of measure of the imported goods.
- Tariff rate quotas (TRQs) combine two policy instruments namely quotas and tariffs.
- MFN tariffs are what countries promise to impose on imports from all members of the WTO, unless the country is part of a preferential trade agreement (such as a free trade area or customs union).
- Preferential tariff occurs when a country imposes tariffs lower than its MFN rate on another country's products.
- The bound tariff rate is specific to individual products and represents the maximum level of import duty that can be levied on a product imported by that member.
- An 'applied tariff' is the duty that is actually charged on imports on the most-favoured nation (MFN) basis.
- Escalated tariff structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e. the tariff on a product increases as that product moves through the value-added chain.
- A prohibitive tariff is one that is set so high that no imports will enter.
- Trigger-price mechanisms are quick responses of affected importing countries upon confirmation of trade distortion to offset the distortion. E.g. Anti-dumping duties.
- Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. It hurts domestic producers.
- Anti-dumping measures are additional import duties so as to offset the foreign firm's unfair price advantage.

- Countervailing duties are tariffs to offset the artificially low prices charged by exporters who enjoy export subsidies and tax concessions offered by the governments in their home country.
- Tariff barriers create obstacles to trade, reduce the prospect of market access, make imported goods more expensive, increase consumption of domestic goods, protect domestic industries and increase government revenues
- Non-tariff measures (NTMs) are policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded or prices or both
- Technical Barriers to Trade (TBT) are 'Standards and Technical Regulations' that define the specific characteristics that a product should have, such as its size, shape, design, labelling / marking / packaging, functionality or performance and production methods, excluding measures covered by the SPS Agreement.
- Non-technical measures relate to trade requirements; for example; shipping requirements, custom formalities, trade rules, taxation policies, etc.
- SPS measures are applied to protect human, animal or plant life from risks arising from additives, pests, contaminants, toxins or disease-causing organisms and to protect biodiversity
- An import quota is a direct restriction which specifies that only a certain physical amount of the good will be allowed into the country during a given time period, usually one year.
- The objective of financial measures is to increase import costs by regulating the access to and cost of foreign exchange for imports and to define the terms of payment.
- Government procurement policies may interfere with trade if they involve mandates that the whole of a specified percentage of purchases should be from domestic firms rather than from foreign firms
- In the case of investments, local content requirements that mandate that a specified fraction of a final good be produced domestically may act as a trade barrier.
- Rules of origin are the criteria needed by governments of importing countries to determine the national source of a product.

- Safeguard measures are initiated by countries to temporarily restrict imports of a product its domestic industry is injured by the surge in imports while an embargo is a total ban imposed by government on import or export of some or all commodities to particular country or region for a specified or indefinite period.
- An export tax is a tax collected on exported goods and may be either specific or ad valorem. An export subsidy includes financial contribution to domestic producers in the form of grants, loans, equity infusions or some form of income or price support. Both distort trade.
- Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of that country during a specified period of time. It is imposed based on negotiations to appease the importing country and to avoid the effects of possible trade restraints.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. A specific tariff is
 - (a) a tax on a set of specified imported good
 - (b) an import tax that is common to all goods imported during a given period
 - (c) a specified fraction of the economic value of an imported good
 - (d) a tax on imports defined as an amount of currency per unit of the good
2. A tariff on imports is beneficial to domestic producers of the imported good because
 - (a) they get a part of the tariff revenue
 - (b) it raises the price for which they can sell their product in the domestic market
 - (c) it determines the quantity that can be imported to the country
 - (d) it reduces their producer surplus, making them more efficient

3. A tax applied as a percentage of the value of an imported good is known as
 - (a) preferential tariff
 - (b) ad valorem tariff
 - (c) specific tariff
 - (d) mixed or compound tariff
4. Escalated tariff refers to
 - (a) nominal tariff rates on raw materials which are greater than tariffs on manufactured products
 - (b) nominal tariff rates on manufactured products which are greater than tariffs on raw materials
 - (c) a tariff which is escalated to prohibit imports of a particular good to protect domestic industries
 - (d) none of the above
5. Voluntary export restraints involve:
 - (a) an importing country voluntarily restraining the quantity of goods that can be exported into the country during a specified period of time
 - (b) domestic firms agreeing to limit the quantity foreign products sold in their domestic markets
 - (c) an exporting country voluntarily restraining the quantity of goods that can be exported out of a country during a specified period of time
 - (d) quantitative restrictions imposed by the importing country's government.
6. Anti-dumping duties are
 - (a) additional import duties so as to offset the effects of exporting firm's unfair charging of prices in the foreign market which are lower than production costs.
 - (b) additional import duties so as to offset the effects of exporting firm's increased competitiveness due to subsidies by government
 - (c) additional import duties so as to offset the effects of exporting firm's unfair charging of lower prices in the foreign market

- (d) Both (a) and (c) above
7. A countervailing duty is
- (a) a tariff that aim to offset artificially low prices charged by exporters who enjoy export subsidies and tax concessions in their home country
 - (b) charged by importing countries to ensure fair and market-oriented pricing of imported products
 - (c) charged by importing countries to protect domestic industries and firms from unfair price advantage arising from subsidies
 - (d) All the above
8. Which of the following is an outcome of tariff?
- (a) create obstacles to trade and increase the volume of imports and exports
 - (b) domestic consumers enjoy consumer surplus because consumers must now pay only a lower price for the good
 - (c) discourage domestic consumers from consuming imported foreign goods and encourage consumption of domestically produced import substitutes
 - (d) increase government revenues of the importing country by more than value of the total tariff it charges
9. SPS measures and TBTs are
- (a) permissible under WTO to protect the interests of countries
 - (b) may result in loss of competitive advantage of developing countries
 - (c) increases the costs of compliance to the exporting countries
 - (d) All the above
10. Which of the following is not a non-tariff barrier.
- (a) Complex documentation requirements
 - (b) Import quotas on specific goods
 - (c) Countervailing duties charged by importing country
 - (d) Pre shipment product inspection and certification requirements

11. Under tariff rate quota
 - (a) countries promise to impose tariffs on imports from members other than those who are part of a preferential trade agreement
 - (b) a country permits an import of limited quantities at low rates of duty but subjects an excess amount to a much higher rate
 - (c) lower tariff is charged from goods imported from a country which is given preferential treatment
 - (d) none of the above
12. Non -tariff barriers (NTBs) include all of the following except:
 - (a) import quotas
 - (b) tariffs
 - (c) export subsidies
 - (d) technical standards of products

II Short Answer Type Questions

1. Define trade policy.
2. What is the purpose of trade policy?
3. What are the main types of trade policy instruments?
4. Define 'tariff'?
5. Outline the main goals of tariffs?
6. What is meant by 'specific tariff'?
7. Explain the term '*ad valorem* tariff'?
8. What is meant by 'mixed tariff'?
9. Define 'bound tariff'?
10. What is the purpose of binding a tariff?
11. How does 'escalated tariff structure' work?
12. Define 'dumping'?
13. What is meant by an 'Anti-dumping' measure?
14. Why are countervailing duties imposed?

15. Describe the term 'Non-Tariff measure' (NTM).
16. What is the purpose of SPS measures?
17. What do you understand by the term 'import quota'?
18. Explain the concept of 'local content requirements' in the context of trade policy.
19. What is meant by 'Voluntary Export Restraints'?
20. Outline the meaning of 'Trigger-price mechanism'.

III Long Answer Type Questions

1. Define 'trade policy'. What are the major objectives of trade policy?
2. Distinguish between different types of trade policy measures. What are the effects of each?
3. Evaluate the use of tariffs as a trade policy instrument.
4. Describe the 'trigger price mechanisms' for protection of domestic industry?
5. Outline the different non- tariff measures adopted by countries.
6. 'Governments do not conform to free trade despite the potential efficiency and welfare outcomes it will promote. Elucidate the statement. Give examples.
7. How do import tariffs influence international trade?
8. Distinguish between anti-dumping duties and countervailing duties. What purpose do they serve?
9. Describe different technical barriers to trade (TBT) and their effects on trade?
10. What are the effects of tariff on the importing and exporting countries?
11. How do import quotas affect domestic industries and consumers?
12. Explain the concept of 'Voluntary Export Restraints'. What are the circumstances under which exporters commit to voluntary export restraints?

IV Application Oriented Question

1. (i) Which of the three exporters engage in anticompetitive act in the international market while pricing its export of good X to country D?

- (ii) What would be the effect of such pricing on the domestic producers of good X? Advise remedy available for country D?

Goods X	Country A (in \$)	Country B (in \$)	Country C (in\$)
Average Cost	30.5	29.4	30.9
Price per Unit for domestic Sales	31.2	31.1	30.9
Price charged in country D	31.9	30.6	30.6

2. (i) What do you think the implications on trade will be if India pays an export subsidy of ₹ 400 / on every pair of cotton trousers exported by it to Germany.
- (ii) Suppose Germany charged an equivalent countervailing duty on every pair of cotton trousers imported from India. Do you think world welfare will be affected?

ANSWERS/HINTS

I. Multiple Choice Type Questions

1. (d) 2. (b) 3. (b) 4. (b) 5. (c) 6. (d)
7. (d) 8. (c) 9. (d) 10. (c) 11. (b) 12. (b)

II. Short Answer Type Questions

- Trade policy encompasses all instruments that governments may use to promote or restrict imports and exports.
- The instruments of trade policy are typically used by countries to restrict imports and/ or to encourage exports.
- The instruments of trade policy are broadly classified into price- related measures such as tariffs and non-price measures or non-tariff measures (NTMs).
- Tariffs, also known as customs duties, are basically taxes or duties imposed on goods and services which are imported or exported.
- The main goals of tariffs are to raise revenue for the government and more importantly to protect the domestic import-competing industries.
- A specific tariff is an import duty that assigns a fixed monetary tax per physical unit of the good imported.

7. An *ad valorem* tariff is levied as a constant percentage of the monetary value of one unit of the imported good. A 20% *ad valorem* tariff on imported car.
8. Mixed tariff is a combination of an *ad valorem* and a specific tariff. That is, the tariff is calculated on the basis of both the value of the imported goods (an *ad valorem* duty) and a unit of measure of the imported goods (a specific duty).
9. The bound tariff rate represents the maximum level of import duty/tariff that can be levied by a WTO member on a product imported by that member.
10. By binding a tariff, often during negotiations, the members agree to limit their right to set tariff levels beyond a certain level.
11. Escalated tariff structure refers to the system wherein the nominal tariff rates on imports of manufactured goods are higher than the nominal tariff rates on intermediate inputs and raw materials, i.e. the tariff on a product increases as that product moves through the value-added chain.
12. Dumping occurs when manufacturers sell goods in a foreign country below the sales prices in their domestic market or below their full average cost of the product. It hurts domestic producers.
13. Anti-dumping measures are additional import duties so as to offset the foreign firm's unfair price advantage.
14. Countervailing duties are tariffs which seek to offset artificially low prices charged by exporters who enjoy export subsidies and tax concessions offered by the Governments in their home country.
15. Non-tariff measures (NTMs) are policy measures, other than ordinary customs tariffs, that can potentially have an economic effect on international trade in goods, changing quantities traded, or prices or both.
16. SPS measures are applied to protect human, animal or plant life from risks arising from additives, pests, contaminants, toxins or disease-causing organisms and to protect biodiversity.
17. An import quota is a direct restriction which specifies that only a certain physical amount of the good will be allowed into the country during a given time period, usually one year.

Change

18. Local content requirements mandate that a specified fraction of a final good should be produced domestically.
19. Voluntary Export Restraints (VERs) refer to a type of informal quota administered by an exporting country voluntarily restraining the quantity of goods that can be exported out of a country during a specified period of time.
20. Trigger-price mechanisms are quick responses of affected importing countries upon confirmation of trade distortion to offset the distortion. E.g. Anti-dumping duties.

III Hints to Long Answer Type Questions

New
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1.
 - (i) Dumping by Country B and Country C. B, because it sells at a lower price than that in domestic market; Country C because it is selling at a price which is less than the average cost of production.
 - (ii) Adverse effects on domestic industry as they will lose competitiveness in their markets due to unfair practice of dumping. Country D may prove damage to domestic industries and charge anti-dumping duties on goods imported from Country B and Country C so as to raise the price and make it at par which similar goods produced by domestic firms.

2. (i) Unfair and artificially created price advantage to trousers exporters of India – price does not reflect costs- German trousers industry lose competitiveness and market share as trousers from India are lower priced- Loss of world welfare. German industry can ask for protection by introducing countervailing duties.
- (ii) An equivalent countervailing duty will push the prices of Indian trousers and afford protection to domestic trousers industry. World welfare will be the same as before India introduced export subsidy.

UNIT III: TRADE NEGOTIATIONS

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Distinguish between different types of regional trade agreements
- ❑ Outline the course of the history of trade negotiations
- ❑ Describe the structure and guiding principles of the WTO
- ❑ Give an overview of the WTO agreements
- ❑ List out the major concerns in respect of functioning of the WTO

UNIT OVERVIEW





3.1 INTRODUCTION

The recent years have seen intense bilateral and multilateral negotiations among different nations in the international arena. India, for example, has already become part of 19 such concluded agreements and is currently negotiating more than two dozens of such proposals. Major events in the year 2020, such as Britain's exit from the European Union, the new free trade agreement [which is a successor of the North American Free Trade Agreement (NAFTA)] concluded between Canada, Mexico, and United States, namely United States–Mexico–Canada Agreement (USMCA) and many other unpredictable developments in the trade front due to trade war between the US and China and the global pandemic, make trade negotiations a highly relevant area of study.

Change

International trade negotiations, especially the ones aimed at formulation of international trade rules, are complex interactive processes involving different countries having competing objectives. Trade negotiations are not just face to face discussions; rather they are multilevel or network games and involve intricate and time-consuming processes. They usually involve many parties who have conflicting interests and objectives. National governments are not the sole stakeholders in a trade negotiation. Many interest groups, lobbying groups, pressure groups and Non-Governmental Organizations (NGO) exert their influence on the process. As anyone can guess, the positions taken by each of the negotiating parties would represent their underlying agenda of interests. For example, in trade negotiations, when one of the parties seems to be bargaining for market access through reduction in tariffs, the other (s) may be clamouring on the issue of possible grant of protection to domestic industries.

Before we go into the discussion on multilateral trade negotiations and the related institutions, it is relevant to understand the nature of regional as well as free trade agreements which evolve through negotiations.

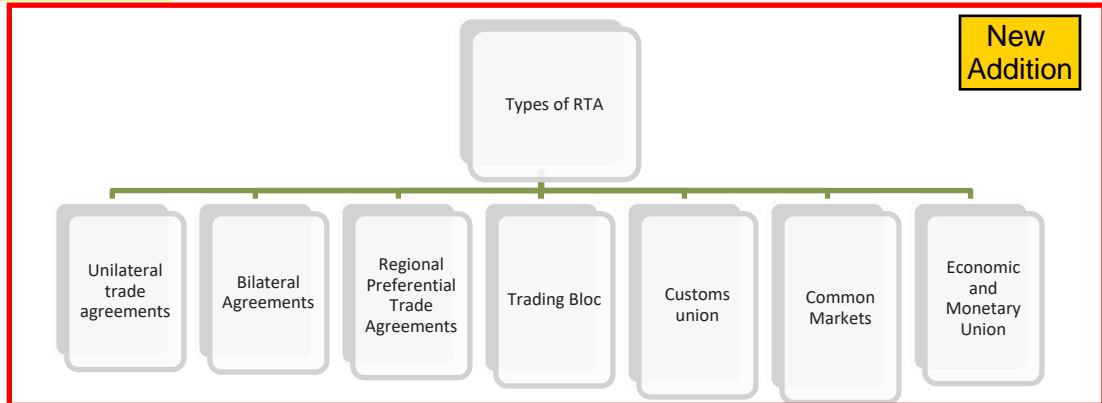


3.2 TAXONOMY OF REGIONAL TRADE AGREEMENTS (RTAs)

Regional Trade Agreements (RTAs) are defined as groupings of countries (not necessarily belonging to the same geographical region), which are formed with the objective of reducing barriers to trade between member countries. In other words, a regional trade agreement (RTA) is a treaty between two or more governments that define the rules of trade for all signatories. As of 1 June 2020, 303 RTAs were in force.

New Addition

Trade negotiations result in different types of agreements which are shown in the chart below-



1. **Unilateral trade agreements** under which an importing country offers trade incentives in order to encourage the exporting country, to engage in international economic activities that will improve the exporting country's economy. E.g. Generalized System of Preferences.
2. **Bilateral Agreements** are agreements which set rules of trade between two countries, two blocs or a bloc and a country. These may be limited to certain goods and services or certain types of market entry barriers. E.g. EU-South Africa Free Trade Agreement; ASEAN-India Free Trade Area.
3. **Regional Preferential Trade Agreements** among a group of countries reduce trade barriers on a reciprocal and preferential basis for only the members of the group. E.g. Global System of Trade Preferences among Developing Countries (GSTP)
4. **Trading Bloc** has a group of countries that have a free trade agreement between themselves and may apply a common external tariff to other countries. Example: Arab League (AL), European Free Trade Association (EFTA)
5. **Free-trade area** is a group of countries that eliminate all tariff and quota barriers on trade with the objective of increasing exchange of goods with each other. The trade among the member states flows tariff free, but the member states maintain their own distinct external tariff with respect to imports from the rest of the world. In other words, the members retain independence in determining their tariffs with non-members. Example: NAFTA.

Change

6. **A customs union** is a group of countries that eliminate all tariffs on trade among themselves but maintain a common external tariff on trade with countries outside the union (thus, technically violating MFN). The common external tariff which distinguishes a customs union from a free trade area implies that, generally, the same tariff is charged wherever a member imports goods from outside the customs union. The EU is a Customs Union; its 27 member countries form a single territory for customs purposes. Other examples are Gulf Cooperation Council (GCC), Southern Common Market (MERCOSUR). New Addition
7. **Common Market:** A Common Market deepens a customs union by providing for the free flow of output and of factors of production (labour, capital and other productive resources) by reducing or eliminating internal tariffs on goods and by creating a common set of external tariffs. The member countries attempt to harmonize some institutional arrangements and commercial and financial laws and regulations among themselves. There are also common barriers against non-members (e.g., EU, ASEAN) Change
8. **Economic and Monetary Union:** For a common market, the free transit of goods and services through the borders increases the need for foreign exchange operations and results in higher financial and administrative expenses of firms operating within the region. The next stage in the integration sequence is formation of some form of monetary union. In an Economic and Monetary Union, the members share a common currency. Adoption of common currency also makes it necessary to have a strong convergence in macroeconomic policies. For example, the European Union countries implement and adopt a single currency. New Addition

There has been significant growth in international trade since the end of the Second World War, mostly due to multilateral trade system which is both a political process and a set of political institutions. It is a political process because it is based on negotiations and bargaining among sovereign governments based on which they arrive at rules governing trade between or among themselves. The political institutions that facilitate trade negotiations, and support international trade cooperation by providing the rules of the game have been the former General Agreements on Tariffs and Trade (GATT) and the World Trade Organization (WTO).



3.3 THE GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT)

Despite wide ranging benefits, a number of countries hinder the free flow of international trade by imposing trade barriers. It was felt necessary that all countries embark on cooperative economic relations for establishing mutual self-interest. The General Agreement on Tariffs and Trade (GATT) provided the rules for much of world trade for 47 years, from 1948 to 1994; but it was only a multilateral instrument governing international trade or a provisional agreement along with the two full-fledged "Bretton Woods" institutions, the World Bank and the International Monetary Fund. The original intention to create an International Trade Organization (ITO) as a third institution to handle the trade side of international economic cooperation did not succeed for want of endorsement by some national legislatures, especially the US.

Eight rounds of multilateral negotiations known as "trade rounds" held under the auspices GATT resulted in substantial international trade liberalization. Though the GATT trade rounds in earlier years contemplated tariff reduction as their core issue, later on the Kennedy Round in the mid-sixties, and the Tokyo Round in the 1970s led to massive reductions in bilateral tariffs, establishment of negotiation rules and procedures on dispute resolution, dumping and licensing. The arrangements were informally referred to as 'codes' because they were not acknowledged by the full GATT membership. A number of codes were ultimately amended in the Uruguay Round and got converted into multilateral commitments accepted by all WTO members. The eighth, the Uruguay Round of 1986-94, was the last and most consequential of all rounds and culminated in the birth of WTO and a new set of agreements.

The GATT lost its relevance by 1980s because

- it was obsolete to the fast-evolving contemporary complex world trade scenario characterized by emerging globalisation
- international investments had expanded substantially
- intellectual property rights and trade in services were not covered by GATT
- world merchandise trade increased by leaps and bounds and was beyond its scope.
- the ambiguities in the multilateral system could be heavily exploited

- efforts at liberalizing agricultural trade were not successful
- there were inadequacies in institutional structure and dispute settlement system
- it was not a treaty and therefore terms of GATT were binding only insofar as they are not incoherent with a nation's domestic rules.



3.4 THE URUGUAY ROUND AND THE ESTABLISHMENT OF WTO

The need for a formal international organization which is more powerful and comprehensive was felt by many countries by late 1980s. Having settled the most ambitious negotiating agenda that covered virtually every outstanding trade policy issue, the Uruguay Round brought about the biggest reform of the world's trading system. Members established 15 groups to work on limiting restrictions in the areas of tariffs, non-tariff barriers, tropical products, natural resource products, textiles and clothing, agriculture, safeguards against sudden 'surges' in imports, subsidies, countervailing duties, trade related intellectual property restrictions, trade related investment restrictions, services and four other areas dealing with GATT itself, such as, the GATT system, dispute settlement procedures and implementation of the NTB Codes of the Tokyo Round, especially on anti-dumping.

The Round started in Punta del Este in Uruguay in September 1986 and was scheduled to be completed by December 1990. However, due to many differences and especially due to heated controversies over agriculture, no consensus was arrived at. Finally, in December 1993, the Uruguay Round, the eighth and the most ambitious and largest ever round of multilateral trade negotiations in which 123 countries participated, was completed after seven years of elaborate negotiations. The agreement was signed by most countries on April 15, 1994, and took effect on July 1, 1995. It also marked the birth of the World Trade Organization (WTO) which is the single institutional framework encompassing the GATT, as modified by the Uruguay Round.

3.5 THE WORLD TRADE ORGANIZATION (WTO)

The most important outcome of the Uruguay Round agreement was the replacement of the General Agreement on Tariffs and Trade (GATT) secretariat with the World Trade Organization (WTO) in Geneva with authority not only in trade in industrial products but also in agricultural products and services. The bulk of the WTO's present operations come from the 1986-94 negotiations called the Uruguay Round and earlier negotiations under the General Agreement on Tariffs and Trade (GATT). Despite the fact that the WTO replaced GATT as an international organization, the General Agreement still exists as the WTO's umbrella treaty for trade in goods, updated as a result of the Uruguay Round negotiations.

The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably.

New
Addition

The WTO has six key objectives:

New
Addition

1. to set and enforce rules for international trade,
2. to provide a forum for negotiating and monitoring further trade liberalization,
3. to resolve trade disputes,
4. to increase the transparency of decision-making processes,
5. to cooperate with other major international economic institutions involved in global economic management, and
6. to help developing countries benefit fully from the global trading system.

The objectives of the WTO Agreements as acknowledged in the preamble of the Agreement creating the World Trade Organization, include "raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services". The WTO, whose primary purpose is to open trade for the benefit of all, does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, assisting developing countries in trade policy issues, through technical assistance and training programmes and cooperating with other international organizations

3.5.1 The Structure of the WTO

The WTO activities are supported by a Secretariat located in Geneva, headed by a Director General. It has a three-tier system of decision making. The WTO's top-level decision-making body is the Ministerial Conference which can take decisions on all matters under any of the multilateral trade agreements. The Ministerial Conference meets at least once every two years. The next level is the General Council which meets several times a year at the Geneva headquarters. The General Council also meets as the Trade Policy Review Body and the Dispute Settlement Body. At the next level, the Goods Council, Services Council and Intellectual Property (TRIPS) Council report to the General Council. These councils are responsible for overseeing the implementation of the WTO agreements in their respective areas of specialisation. The WTO Secretariat maintains working relations with almost 200 international organisations in activities ranging from statistics, research, standard-setting, and technical assistance and training. Numerous specialized committees, working groups and working parties deal with the individual agreements and other areas such as the environment, development, membership applications and regional trade agreements.

The WTO accounting for about 95% of world trade currently has 164 members, of which 117 are developing countries or separate customs territories. Around 24 others are negotiating membership. The WTO's agreements have been ratified in all members' parliaments.

3.5.2 The Guiding Principles of World Trade Organization (WTO)

Right from its inception, the WTO has been driven by a number of fundamental principles which are the foundations of the multilateral trading system. Following are the major guiding principles:

1. **Trade without discrimination:** Most-favoured-nation (MFN): Originally formulated as Article 1 of GATT, this principle states that any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be extended immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties. Under the WTO agreements, countries cannot normally discriminate between their trading partners. If a country lowers a trade barrier or opens up a market, it has to do so for the same goods or services from all other WTO members. Under strict conditions, various permitted exceptions are allowed. For example; countries may enter into free trade agreements and trading may be done

within the group discriminating against goods from outside; a country can raise barriers against products that are considered to be traded unfairly from specific countries; or they may give special market access to developing countries.

2. **The National Treatment Principle (NTP):** The National Treatment Principle is complementary to the MFN principle. GATT Article III requires that with respect to internal taxes, internal laws, etc. applied to imports, treatment not less favourable than that which is accorded to like domestic products must be accorded to all other members. In other words, a country should not discriminate between its own and foreign products, services or nationals. For instance, once imported apples reach Indian market, they cannot be discriminated against and should be treated at par in respect of marketing opportunities, product visibility or any other aspect with locally produced apples.
3. **Freer trade:** Lowering trade barriers for opening up markets is one of the most obvious means of encouraging trade. But by the 1980s, the negotiations had expanded to cover non-tariff barriers on goods, and to the new areas such as services and intellectual property. Since these require adjustments, the WTO agreements permit countries to bring in changes gradually, through "progressive liberalization". Developing countries are generally given longer time to conform to their obligations.
4. **Predictability:** Investments will be encouraged only if the business environment is stable and predictable. The foreign companies, investors and governments should be confident that the trade barriers will not be raised arbitrarily. This is achieved through 'binding' tariff rates, discouraging the use of quotas and other measures used to set limits on quantities of imports, establishing market-opening commitments and other measures to ensure transparency. A country can change its bindings, but only after negotiating with its trading partners, which could mean compensating them for loss of trade.
5. **Principle of general prohibition of quantitative restrictions:** One reason for this prohibition is that quantitative restrictions are considered to have a greater protective effect than tariff measures and are more likely to distort the free flow of trade
6. **Greater competitiveness:** This is to be achieved by discouraging "unfair" practices such as export subsidies, dumping etc. The rules try to establish

what is fair or unfair, and how governments can take action, especially by charging additional import duties intended to compensate for injury caused by unfair trade.

7. **Tariffs as legitimate measures for the protection of domestic industries:** The imposition of tariffs should be the only method of protection, and tariff rates for individual items should be gradually reduced through negotiations 'on a reciprocal and mutually advantageous' basis. Member countries bind themselves to maximum rates and the imposition of tariffs beyond such maximum rates (bound rates) or the unilateral raise in bound rates are banned.
8. **Transparency in Decision Making:** The WTO insists that any decision by members in the sphere of trade or in respect of matters affecting trade should be transparent and verifiable. Such changes in matters of trade or of trade related rules have to be invariably and without delay be notified to all the trading partners. In case of any opposition to such changes, they should be appropriately addressed and any loss occurring to the affected members should be suitably compensated for.
9. **Progressive Liberalization:** Many trade issues of a controversial nature similar to labour standards, non-agricultural market access, etc. on which there was general disagreement among trading partners were left unsettled during the Uruguay Round. These are to be liberalized during consecutive rounds of discussion.
10. **Market Access:** The WTO aims to increase world trade by enhancing market access by converting all non- tariff barriers into tariffs which are subject to country specific limits. Further, in major multilateral agreements like the Agreement on Agriculture (AOA), specific targets have been specified for ensuring market access.
11. **Special privileges to less developed countries:** With majority of WTO members being developing countries and countries in transition to market economies, the WTO deliberations favour less developed countries by giving them greater flexibility, special privileges and permission to phase out the transition period. Also, these countries are granted transition periods to make adjustments to the not so familiar and intricate WTO provisions.
12. **Protection of Health & Environment:** The WTO's agreements support measures to protect not only the environment but also human, animal as

well as plant health with the stipulation that such measures should be non-discriminatory and that members should not employ environmental protection measures as a means of disguising protectionist policies.

13. **A transparent, effective and verifiable dispute settlement mechanism:** Trade relations frequently involve conflicting interests. Any dispute arising out of violation of trade rules leading to infringement of rights under the agreements or misunderstanding arising as regards the interpretation of rules, are to be settled through consultation. In case of failures, the dispute can be referred to the WTO and can pursue a carefully mapped out, stage-by-stage procedure that includes the possibility of a judgment by a panel of experts, and the opportunity to appeal the ruling on legal grounds. The decisions of the dispute settlement body are final and binding.

3.5.3 Overview of the WTO agreements

The WTO agreements cover goods, services and intellectual property and the permitted exceptions. These agreements are often called the WTO's trade rules, and the WTO is often described as "rules-based", a system based on rules. (The rules are actually agreements that the governments negotiated).

The WTO agreements are voluminous and multifaceted. The 'Legal Texts' consist of a list of about 60 agreements, annexes, decisions and understandings covering a wide range of activities. (The list of WTO agreements is given at the end of this unit).

Following are the important agreements under WTO. Since a thorough discussion on the features of each agreement is beyond the scope of this unit, only the major provisions are given below:

1. Agreement on Agriculture aims at strengthening GATT disciplines and improving agricultural trade. It includes specific and binding commitments made by WTO Member governments in the three areas of market access, domestic support and export subsidies.
2. Agreement on the Application of Sanitary and Phytosanitary (SPS) Measures establishes multilateral frameworks for the planning, adoption and implementation of sanitary and phytosanitary measures to prevent such measures from being used for arbitrary or unjustifiable discrimination or for camouflaged restraint on international trade and to minimize their adverse effects on trade.

3. Agreement on Textiles and Clothing replaced the Multi-Fibre Arrangement (MFA) which was prevalent since 1974 and entailed import protection policies. ATC provides that textile trade should be deregulated by gradually integrating it into GATT disciplines over a 10-year transition period.
4. Agreement on Technical Barriers to Trade (TBT) aims to prevent standards and conformity assessment systems from becoming unnecessary trade barriers by securing their transparency and harmonization with international standards. Often excessive standards or misuse of standards in respect of manufactured goods, and safety/environment regulations act as trade barriers.
5. Agreement on Trade-Related Investment Measures (TRIMs) expands disciplines governing investment measures in relation to cross-border investments. It stipulates that countries receiving foreign investments shall not impose investment measures such as requirements, conditions and restrictions inconsistent with the provisions of the principle of national treatment and general elimination of quantitative restrictions. For example: measures such as local content requirements and trade balancing requirements should not be applied on investing corporations.
6. Anti-Dumping Agreement seeks to tighten and codify disciplines for calculating dumping margins and conducting dumping investigations, etc. in order to prevent anti-dumping measures from being abused or misused to protect domestic industries.
7. Customs Valuation Agreement specifies rules for more consistent and reliable customs valuation and aims to harmonize customs valuation systems on an international basis by eliminating arbitrary valuation systems.
8. Agreement on Pre-shipment Inspection (PSI) intends to secure transparency of pre-shipment inspection wherein a company designated by the importing country conducts inspection of the quality, volume, price, tariff classification, customs valuation, etc. of merchandise in the territory of the exporting country on behalf of the importing country's custom office and issues certificates. The agreement also provides for a mechanism for the solution of disputes between PSI agencies and exporters.
9. Agreement on Rules of Origin provides for the harmonization of rules of origin for application to all non-preferential commercial policy instruments. It also provides for dispute settlement procedures and creates the rules of origin committee.

10. Agreement on Import Licensing Procedures relates to simplification of administrative procedures and to ensure their fair operation so that import licensing procedures of different countries may not act as trade barriers.
11. Agreement on Subsidies and Countervailing Measures aims to clarify definitions of subsidies, strengthen disciplines by subsidy type and to strengthen and clarify procedures for adopting countervailing tariffs.
12. Agreement on Safeguards clarify disciplines for requirements and procedures for imposing safeguards and related measures which are emergency measures to restrict imports in the event of a sudden surge in imports.
13. General Agreement on Trade in Services (GATS): This agreement provides the general obligations regarding trade in services, such as most-favoured-nation treatment and transparency. In addition, it enumerates service sectors and stipulates that in the service sectors for which it has made commitments, a member country cannot maintain or introduce market access restriction measures and discriminatory measures that are severer than those that were committed during the negotiations.
14. Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS): This agreement stipulates most-favoured-nation treatment and national treatment for intellectual properties, such as copyright, trademarks, geographical indications, industrial designs, patents, IC layout designs and undisclosed information. In addition, it requires member countries to maintain high levels of intellectual property protection and to administer a system of enforcement of such rights. It also stipulates procedures for the settlement of disputes related to the agreement.
15. Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU) provides the common rules and procedures for the settlement of disputes related to the WTO agreements. It aims to strengthen dispute settlement procedures by prohibiting unilateral measures, establishing dispute settlement panels whose reports are automatically adopted, setting time frames for dispute settlement, establishing the Appellate Body etc. (for details of India's disputes at the WTO, refer box1 below)
16. Trade Policy Review Mechanism (TPRM) provides the procedures for the trade policy review mechanism to conduct periodical reviews of members'

trade policies and practices conducted by the Trade Policy Review Body (TPRB).

17. **Plurilateral Trade Agreements:** Multilateral negotiations are those negotiations involving the entire WTO contracting parties. The Plurilateral trade agreements involve several countries with a common interest but do not involve all WTO countries. Not all the plurilateral agreements are negotiated within the WTO framework. When started within the WTO context, these agreements may come from the failure to find agreement among the entire WTO contracting parties and therefore a smaller group of countries decide to conclude the agreement among them.

New
Addition

- **Agreement on Trade in Civil Aircraft:** The Agreement on Trade in Civil Aircraft entered into force on 1 January 1980. It now has 32 signatories. The agreement eliminates import duties on all aircraft, other than military aircraft, as well as on all other products covered by the agreement.
- **Agreement on Government Procurement:** The fundamental aim of the GPA is to mutually open government procurement markets among its parties. This agreement requires national treatment and non-discriminatory treatment in the area of government procurement and calls for fair and transparent procurement procedures. The agreement covers the procurement of services (in addition to goods) and the procurement by sub-central government entities and government-related agencies (in addition to central government).

Change

New
Addition

All the above-mentioned agreements entered into by the members are not static; they are renegotiated from time to time and new agreements evolve from negotiations. Example: Many agreements were negotiated under the Doha Development Agenda, launched by WTO trade ministers in Doha, Qatar, in November 2001.

3.6 THE DOHA ROUND

The Doha Round, formally the Doha Development Agenda, which is the ninth round since the Second World War was officially launched at the WTO's Fourth Ministerial Conference in Doha, Qatar, in November 2001. The round seeks to accomplish major modifications of the international trading system through lower trade barriers and revised trade rules. The negotiations include 20 areas of trade, including agriculture, services trade, market access for non-agricultural products

(NAMA), trade in services, trade facilitation, environment, geographical indications and certain intellectual property issues. The most controversial topic in the Doha Agenda was agriculture trade.



3.7 25 YEARS OF THE WTO ACHEIVEMENTS AND CONCERNS

The WTO has helped transform international economic relations to a great extent over the past 25 years of its existence.

There has been spectacular growth in world trade in goods and services. Since 1995, the dollar value of world trade has increased nearly four-fold, while the real volume of world trade has expanded by 2.7 times. This is commendable as it outstrips the two-fold increase in world GDP over that period. The average tariffs have almost halved, from 10.5% to 6.4% during this period.

New
Addition

The remarkable increase in global value chains (GVCs) has been made possible by the predictable market conditions fostered by the WTO along with improved communication. Businesses, being assured of the possibility of movement of components and associated services across multiple locations, have been able to disaggregate manufacturing production across countries and regions. At present, trade within these value chains accounts for almost 70% of total merchandise trade.

The rise of global value chains has been a significant factor in enabling rapid catch-up growth in developing economies. Also, these have resulted in increased purchasing power and consumer choice in all countries. For the economies that joined the WTO after its creation, accession involved far-reaching reforms and market-opening commitments and research suggests that these have enabled a lasting boost to national income.

Over the past 25 years, there has been the fastest poverty reduction in history: in 1995, over one in three people living around the world fell below the World Bank's \$1.90 threshold for extreme poverty. Today the extreme poverty rate is less than 10%, the lowest ever.

However, in recent years, apprehensions have been raised in respect of the WTO and its ability to maintain and extend a system of liberal world trade. The major issues are:

- (i) The progress of multilateral negotiations on trade liberalization is very slow and the requirement of consensus among all members acts as a constraint and creates rigidity in the system. As a result, countries find regionalism as a plausible alternative. Moreover, contemporary trade barriers are much more complex and difficult to negotiate in a multilateral forum. Logically, these issues are much easier if discussed on bilateral or regional level.
- (ii) The complex network of regional agreements introduces uncertainties and murkiness in the global trade system.
- (iii) While multilateral efforts have effectively reduced tariffs on industrial goods, the achievement in liberalizing trade in agriculture, textiles, and apparel, and in many other areas of international commerce has been negligible.
- (iv) The negotiations, such as the Doha Development Round, have run into problems, and their definitive success is doubtful.
- (v) Most countries, particularly developing countries are dissatisfied with the WTO because, in practice, most of the promises of the Uruguay Round agreement to expand global trade has not materialized.
- (vi) The developing countries have raised a number of concerns and a few are presented here:
 - The developing countries contend that the real expansion of trade in the three key areas of agriculture, textiles and services has been dismal.
 - Protectionism and lack of willingness among developed countries to provide market access on a multilateral basis has driven many developing countries to seek regional alternatives.
 - The developing countries have raised a number of issues in the Doha Agenda in respect of the difficulties that they face in implementing the present agreements.
 - The North-South divide apparent in the WTO ministerial meets has fuelled the apprehension of developing countries about the prospect of trade expansion under the WTO regime.
 - Developing countries complain that they face exceptionally high tariffs on selected products in many markets and this obstructs their vital

exports. Examples are tariff peaks on textiles, clothing, and fish and fish products.

- Another major issue concerns 'tariff escalation' where an importing country protects its processing or manufacturing industry by setting lower duties on imports of raw materials and components, and higher duties on finished products.
- There is also possible erosion of preferences i.e. the special tariff concessions granted by developed countries on imports from certain developing countries have become less meaningful because of the narrowing of differences between the normal and preferential rates.
- The least-developed countries find themselves disproportionately disadvantaged and vulnerable with regard to adjustments due to lack of human as well as physical capital, poor infrastructure, inadequate institutions, political instabilities etc.
- In recent times, the World Trade Organization and the global trading system are facing serious challenges in terms of unilateral measures and counter measures by some members. Over the past two years, governments have introduced trade restrictions and protectionist actions covering a substantial amount of international trade, affecting \$747 billion in global imports in 2019 alone. New Addition
- The rising uncertainty about market conditions is causing businesses to postpone investment, weighing on growth and the future potential of our economies. Many areas of trade such as e-commerce are still outside the WTO. New Addition
- There are mounting trade tensions as some members do not adhere to the WTO's established procedures. The unilateral tariffs threatened by the U.S. and China are examples. Countries are using the permissible clause of 'national security' as a justification for tariffs. New Addition
- There is an ongoing stalemate in the appointment of members of the Appellate Body of WTO's dispute settlement mechanism. The appellate body is nearly paralyzed because it does not have the three panellists required to sign rulings. New Addition

A Summary of Agreements in the Final Act of the Uruguay Round

1. Agreement Establishing the WTO
2. General Agreement on Tariffs and Trade 1994
3. Uruguay Round Protocol GATT 1994
4. Agreement on Agriculture
5. Agreement on Sanitary and Phytosanitary Measures
6. Decision on Measures Concerning the Possible Negative Effects of the Reform Programme on Least-Developed and Net Food-Importing Developing Countries
7. Agreement on Textiles and Clothing (terminated on 1 January 2005)
8. Agreement on Technical Barriers to Trade
9. Agreement on Trade-Related Investment Measures
10. Agreement on Implementation of Article VI (Anti-dumping)
11. Agreement on Implementation of Article VII (Customs Valuation)
12. Agreement on Pre shipment Inspection
13. Agreement on Rules of Origin
14. Agreement on Import Licensing Procedures
15. Agreement on Subsidies and Countervailing Measures
16. Agreement on Safeguards
17. General Agreement on Trade in Services
18. Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods
19. Understanding on Rules and Procedures Governing the Settlement of Disputes
20. Decision of Achieving Greater Coherence in Global Economic Policy-Making

Box 1: Details of India's disputes at WTO (as on 16.03.2020)New
Addition

India currently has 15 disputes with other members of WTO (4 as Complainant and 11 as respondent)

New
Addition

- A. Disputes where India is a Complaining party (4 cases)
- (i) DS436 (Countervailing duty by United States on Indian steel products)
Respondent- The United States
 - (ii) DS-503(Measures by US concerning non-immigrant visas)
Respondent- The United States
 - (iii) DS-510 (Sub-Federal Renewable energy programmes of US)
Respondent- The United States
 - (iv) DS-547 (Certain measures by US on Steel and Aluminium products)
Respondent- The United States
- B. WTO disputes where India is a Responding Party (11 cases)
- (v) DS-430: (Prohibition by India on Import of poultry and poultry products) Complainant – The United States
 - (vi) DS-456 (India's Measures Relating to Solar Cells and Solar Modules under National Solar Mission dispute) Complainant – The United States
 - (vii) DS-518 (India's safeguard measures on import of iron and steel products) Complainant – Japan
 - (viii) DS-541 (India's Export Promotion Schemes)-Complainant-United States
 - (ix-xi) DS579, DS580 and DS581 (India-Measures Concerning Sugar and Sugarcane)- Complainants- Brazil, Australia and Guatemala, respectively
 - (xii-xiv) DS582 and DS584, DS588 (India-Tariff Treatment on Certain Good in the Information and Communications Technology Sector)- Complainants- EU, Japan and Taiwan, respectively
 - (xv) DS-585 (Additional duties on certain products from US) - Complainant– The United States

Source: Government of India Ministry of Commerce & Industry

SUMMARY

- International trade negotiations, especially the ones aimed at formulation of international trade rules, are complex interactive processes engaged in by countries having competing objectives.
- Regional Trade Agreements (RTAs) are defined as groupings of countries (not necessarily belonging to the same geographical region) which are formed with the objective of reducing barriers to trade between member countries.
- Trade negotiations result in different types of agreements, namely: unilateral trade agreements, bilateral agreements, regional preferential trade agreements, trading bloc, free-trade area, customs union, common market and economic and monetary union.
- The General Agreement on Tariffs and Trade (GATT) provided the rules for most of the world trade for 47 years, from 1948 to 1994.
- Eight multilateral negotiations known as "trade rounds" held under the auspices GATT resulted in substantial international trade liberalization.
- The eighth of the Uruguay Round of 1986-94, was the last and most consequential of all rounds and culminated in the birth of WTO and a new set of agreements replacing the General Agreement on Tariffs and Trade (GATT).
- The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably.
- The WTO does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, cooperating with other international organizations and assisting developing countries in trade policy issues through technical assistance and training programmes.
- The WTO activities are supported by the Secretariat located in Geneva, headed by a Director General. It has a three-tier system of decision making. The top-level decision-making body is the Ministerial Conference, followed by councils namely, the General Council and the Goods Council, Services Council and Intellectual Property (TRIPS) Council.

- The WTO, accounting for about 95% of world trade, currently has 164 members, of which 117 are developing countries or separate customs territories.
- The major guiding principles of the WTO are trade without discrimination, most-favoured-nation treatment(MFN), the national treatment principle (NTP), free trade, predictability, general prohibition of quantitative restrictions, greater competitiveness, tariffs as legitimate measures for protection, transparency in decision making, progressive liberalization, market access and a transparent, effective and verifiable dispute settlement mechanism.
- The important agreements under WTO are on agriculture, (SPS) measures, textiles and clothing, technical barriers to trade (TBT), trade-related investment measures (TRIMs), anti-dumping, customs valuation, pre-shipment inspection (PSI) , rules of origin, import licensing procedures, subsidies and countervailing measures , safeguards, trade in services (GATS), intellectual property rights (TRIPS), settlement of disputes (DSU), trade policy review mechanism (TPRM) and plurilateral trade agreements on trade in civil aircraft and government procurement.
- The Doha Round, formally the Doha Development Agenda, which is the ninth round since the Second World War was officially launched at the WTO's Fourth Ministerial Conference in Doha, Qatar, in November 2001.
- The major issues related to the WTO are in respect of slow progress of multilateral negotiations, uncertainties resulting from regional trade agreements, inadequate or negligible trade liberalisation, and those which are specific to the developing countries, namely, protectionism and lack of willingness among developed countries to provide market access, difficulties that they face in implementing the present agreements, apparent north-south divide, exceptionally high tariffs, tariff escalation, erosion of preferences and difficulties with regards to adjustments.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. Which of the following culminated in the establishment of the World Trade Organization?
 - (a) The Doha Round

- (b) The Tokyo Round
 - (c) The Uruguay Round
 - (d) The Kennedy Round
2. Choose the correct statement
- (a) The GATT was meant to prevent exploitation of poor countries by richer countries
 - (b) The GATT dealt with trade in goods only, while, the WTO covers services as well as intellectual property.
 - (c) All members of the World Trade Organization are required to avoid tariffs of all types
 - (d) All the above
3. The 'National treatment' principle stands for
- (a) the procedures within the WTO for resolving disagreements about trade policy among countries
 - (b) the principle that imported products are to be treated no worse in the domestic market than the local ones
 - (c) exported products are to be treated no worse in the domestic market than the local ones
 - (d) imported products should have the same tariff, no matter where they are imported from
4. 'Bound tariff' refers to
- (a) clubbing of tariffs of different commodities into one common measure
 - (b) the lower limit of the tariff below which a nation cannot be taxing its imports
 - (c) the upper limit on the tariff that a country can levy on a particular good, according to its commitments under the GATT and WTO.
 - (d) the limit within which the country's export duty should fall so that there are cheaper exports

5. The essence of 'MFN principle' is
 - (a) equality of treatment of all member countries of WTO in respect of matters related to trade
 - (b) favour one, country, you need to favour all in the same manner
 - (c) every WTO member will treat all its trading partners equally without any prejudice and discrimination
 - (d) all the above
6. The World Trade Organization (WTO)
 - (a) has now been replaced by the GATT
 - (b) has an inbuilt mechanism to settle disputes among members
 - (c) was established to ensure free and fair trade internationally.
 - (d) (b) and c) above
7. The Agreement on Agriculture includes explicit and binding commitments made by WTO Member governments
 - (a) on increasing agricultural productivity and rural development
 - (b) market access and agricultural credit support
 - (c) market access, domestic support and export subsidies
 - (d) market access, import subsidies and export subsidies
8. The Agreement on Textiles and Clothing
 - (a) provides that textile trade should be deregulated gradually and the tariffs should be increased
 - (b) replaced the Multi-Fiber Arrangement (MFA) which was prevalent since 1974
 - (c) granted rights of textile exporting countries to increase tariffs to protect their domestic textile industries
 - (d) stipulated that tariffs in all countries should be the same
9. The Agreement on Trade-Related Aspects of Intellectual Property Rights
 - (a) stipulates to administer a system of enforcement of intellectual property rights.

- (b) provides for most-favoured-nation treatment and national treatment for intellectual properties
 - (c) mandates to maintain high levels of intellectual property protection by all members
 - (d) all the above
10. The most controversial topic in the yet to conclude Doha Agenda is
- (a) trade in manufactured goods
 - (b) trade in intellectual property rights-based goods
 - (c) trade in agricultural goods
 - (d) market access to goods from developed countries
11. The WTO commitments
- (a) affect developed countries adversely because they have comparatively less agricultural goods
 - (b) affect developing countries more because they need to make radical adjustments
 - (c) affect both developed and developing countries equally
 - (d) affect none as they increase world trade and ensure prosperity to all

II Short Answer Type Questions

1. Define the term Regional Trade Agreements (RTAs). What is its major advantage?
2. What is meant by 'free trade area'?
3. What is the key feature of Monetary Union?
4. What are the peculiarities of the GATT?
5. What are the major functions of the WTO?
6. What do you understand by the term 'Most-favoured-nation' (MFN)?
7. What is meant by 'National Treatment Principle'?
8. How does the WTO agreement ensure market access?
9. Describe the functioning of the dispute settlement mechanism?

10. What is the major aim of the agreement on the 'Application of Sanitary and Phytosanitary (SPS) Measures'?
11. What purpose does the Agreement on Technical Barriers to Trade (TBT) serve?
12. What does the agreement on Trade-Related Investment Measures (TRIMs) stipulate?
13. What do you understand by agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)?

III Long Answer Type Questions

1. Distinguish between different types of regional trade agreements? How are they different from the WTO agreements?
2. Summarize the course of the history of trade negotiations. What are the major areas in which trade negotiations were undertaken?
3. Describe the structure and guiding principles of the World Trade Organization.
4. Give an overview of the WTO agreements.
5. List out the major concerns in respect of functioning of the WTO.
6. Do you agree with the statement that the WTO disproportionately benefits developed nations and impoverished developing nations?
7. What is the objective behind limiting protection by tariffs only? How does it promote international trade?

IV Applications Oriented Question

Case Scenario

India aims to become a global leader in solar energy and for achieving this, the Jawaharlal Nehru National Solar Mission (JNNSM) was launched in 2010. To persuade and to promote producers to participate in the national solar programme, the government planned long-term power purchase agreements with solar power producers, thus effectively guaranteeing the sale of the energy produced as well as the price that solar power producers would obtain. However, there was a stipulation that the producers should use domestically sourced inputs, namely solar cells and modules. India lost the case in DSB and WTO has

ruled against the stipulation of local content requirements by government of India.

Answer the following questions

- (i) How does the 'local content requirements' clause violate the WTO agreements?
- (ii) Do you think Indian domestic solar power industry will be affected when India scraps the local-sourcing regulation as per the ruling of WTO?

ANSWERS/HINTS

I Multiple Choice Type Questions

- | | | | | | | | | | | | |
|----|-----|----|-----|----|-----|-----|-----|-----|-----|----|-----|
| 1. | (c) | 2. | (b) | 3. | (b) | 4. | (c) | 5. | (d) | 6. | (d) |
| 7. | (c) | 8. | (b) | 9. | (d) | 10. | (c) | 11. | (b) | | |

II Short Answer Type Questions

1. Regional Trade Agreements (RTAs) are groupings of countries, which are formed with the objective of reducing barriers to trade between member countries; not necessarily belonging to the same geographical region. They reduce trade barriers on a reciprocal and preferential basis only for the members of the group.
2. Free-trade area is a group of countries that eliminate all tariff barriers on trade with each other and retains independence in determining their tariffs with non-members. Example: NAFTA
3. In a Monetary Union, members share a common currency and macroeconomic policies. For example, the euro zone countries implement and adopt a single currency.
4. General Agreement on Tariffs and Trade (GATT) (1948 to 1994) provided the rules for most of world trade; it was a multilateral instrument governing international trade or a provisional agreement along with the two full-fledged "Bretton Woods" institutions, the World Bank and the International Monetary Fund.
5. The principal objective of the WTO is to facilitate the flow of international trade smoothly, freely, fairly and predictably. The WTO does its functions by acting as a forum for trade negotiations among member governments, administering trade agreements, reviewing national trade policies, assisting

developing countries in trade policy issues, through technical assistance and training programmes and cooperating with other international organizations.

6. Under the WTO agreements, countries cannot normally discriminate between their trading partners. If a country lowers a trade barrier or opens up a market, it has to do so for the same goods or services from all other WTO members.
7. With respect to internal taxes, internal laws, etc. applied to imports, treatment not less favourable than that which is accorded to like domestic products, must be accorded to all other members; i.e. a country should not discriminate between its own and foreign products, services or nationals.
8. The WTO aims to increase world trade by enhancing market access by converting all non- tariff barriers into tariffs which are subject to country specific limits. Further, in major multilateral agreements like the Agreement on Agriculture (AOA), specific targets have been specified for ensuring market access.
9. The disputes can be referred to the WTO and can pursue a carefully mapped out, stage-by-stage procedure that includes the possibility of a judgment by a panel of experts, and the opportunity to appeal the ruling on legal grounds. The decisions of the dispute settlement body are final and binding.
10. To prevent sanitary and phytosanitary measures from being used for arbitrary or unjustifiable discrimination or for camouflaged restraint on international trade and to minimize their adverse effects on trade.
11. Agreement on Technical Barriers to Trade (TBT) aims to prevent standards and conformity assessment systems from becoming unnecessary trade barriers by securing their transparency and harmonization with international standards.
12. Establishes disciplines governing investment measures in relation to cross-border investments by stipulating that countries receiving foreign investments shall not impose investment measures such as requirements, conditions and restrictions inconsistent with the provisions of the principle of national treatment and general elimination of quantitative restrictions.
13. This agreement stipulates most-favoured-nation treatment and national treatment for intellectual properties.

III Hints to Long Answer Type QuestionsNew
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

- (i) Local-sourcing regulation is considered as a protectionist measure inconsistent with India's international obligations under WTO agreement. Discrimination on the basis of the national 'origin' of the cells and modules is a violation of its trade commitment for 'national treatment obligation' under WTO. If the objective is cost reduction and efficiency, then the solar power producers should be free to choose energy-generation equipment and components on the basis of price and quality, irrespective of whether they are manufactured locally or not. By mandatorily requiring solar power producers to buy locally, the government has, it is argued, tried to distort competition. This imposes extra cost, and may possibly be passed on to the final consumers. Therefore, the interests of the consumers will not be protected.
- (ii) The market forces would prevail in respect of solar energy production. The import competing domestic industry of solar panels and modules may face stiff competition from imported items, especially those from China. Indian solar industry is in its infancy. Possibility of subsidized imports and dumping from different countries. India can evoke anti-dumping duties, countervailing duties and safe guards as provided for in WTO agreements. Need for innovation, cost reduction and quality improvement of Indian solar industry to compete with global manufacturers. Since clean energy is a merit good, government may produce and supply it directly - economies of large-scale production can be reaped leading to cost and price reduction.

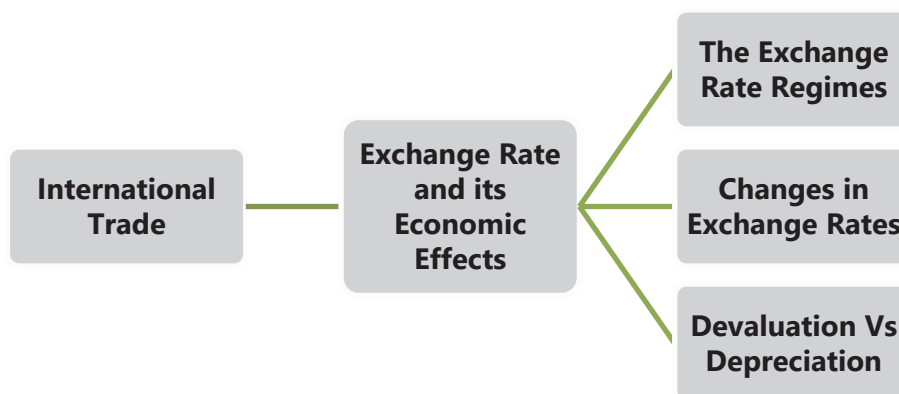
UNIT IV: EXCHANGE RATE AND ITS ECONOMIC EFFECTS

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- ❑ Define exchange rate and describe how it is determined
- ❑ Appraise different types of exchange rate regimes
- ❑ Describe the functioning of the foreign exchange market
- ❑ Explain changes in exchange rates and their impact on the real economy

UNIT OVERVIEW



4.1 INTRODUCTION

Each day we get fascinating news about currency which fuel our curiosity, such as Rupee gains 12 paise against US dollar, Dollar Spot/Forward Rates plummet, Rupee down, Euro holds steady, Pound strengthens etc. Ever wondered what

these jargons mean? We shall try to understand a few fundamentals related to currency transactions in this unit.

In chapter 3, we examined the demand for and supply of domestic currency. It is not domestic currency alone that we need. Households, businesses and governments in India, for example, buy different types of goods and services produced in other countries. Similarly, residents of the rest of the world buy goods and services from residents in India. Foreign investors, businesses, and governments invest in our country, just as our nationals invest in other countries. In the same way, lending, and borrowing also take place internationally. These and similar other transactions give rise to an international dimension of money, which involves exchange of one currency for another. Obviously, this entails market transactions involving determination of price of one currency in terms of another.

4.2 THE EXCHANGE RATE

The term 'Foreign Exchange' refers to money denominated in a currency other than the domestic currency. Similar to any other commodity, foreign exchange has a price. The exchange rate, also known as a foreign exchange (FX) rate, is the price of one currency expressed in terms of units of another currency and represents the number of units of one currency that exchanges for a unit of another. In other words, exchange rate is the rate at which the currency of one country is exchanged for the currency of another country. It is the minimum number of units of one country's currency required to purchase one unit of the other country's currency. It is important to note that the value of a currency is relative as it is always given in terms of another currency.

There are two ways to express nominal exchange rate between two currencies (e.g. the US \$ and Indian Rupee) namely direct quote and indirect quote. The direct form of quotation is also called European Currency Quotation whereas indirect form is known as American Currency Quotation. A direct quote is the number of units of a local currency exchangeable for one unit of a foreign currency. The price of 1 dollar may be quoted in terms of how much rupees it takes to buy one dollar. For example, ₹76/US\$ means that an amount of ₹ 76 is needed to buy one US dollar or ₹76 will be received while selling one US dollar. An indirect quote is the number of units of a foreign currency exchangeable for one unit of local currency; for example: \$ 0.0151 per rupee. A quotation in direct form can easily be converted into a quotation in indirect form and vice-versa. This is done by taking the reciprocal of the given rate.

An exchange rate has two currency components; a 'base currency' and a 'counter currency'. In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency. In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency. As the US dollar is the dominant currency in global foreign exchange markets, the general convention is to apply direct quotes that have the US dollar as the base currency and other currencies as the counter currency.

There may be two pairs of currencies with one currency being common between the two pairs. For instance, exchange rates may be given between a pair, X and Y and another pair, X and Z. The rate between Y and Z is derived from the given rates of the two pairs (X and Y, and, X and Z) and is called 'cross rate'. When there is no difference between the buying and the selling rate, the rate is said to be 'unique' or 'unified'. But it is rarely seen in practice. There are generally two rates – selling rate and buying rate – for any currency when one goes to exchange it in the market. Selling rate is generally higher than the buying rate for a currency. This is the commission of the money exchanger (dealer) to run its operations.



4.3 THE EXCHANGE RATE REGIMES

An exchange rate regime is the system by which a country manages its currency with respect to foreign currencies. It refers to the method by which the value of the domestic currency in terms of foreign currencies is determined. There are two major types of exchange rate regimes at the extreme ends; namely:

- (i) floating exchange rate regime (also called a flexible exchange rate), and
- (ii) fixed exchange rate regime

Under floating exchange rate regime, the equilibrium value of the exchange rate of a country's currency is market-determined i.e. the demand for and supply of currency relative to other currencies determine the exchange rate. There is no predetermined target rate and the exchange rates are likely to change at every moment in time depending on the changing demand for and supply of currency in the market. There is no interference on the part of the government or the central bank of the country in the determination of exchange rate. Any intervention by the central banks in the foreign exchange market (through purchases or sales of foreign currency in exchange for local currency) is intended for only moderating the rate of change and preventing undue fluctuations in the exchange rate, rather than for establishing a particular level for it (for example: India). Nevertheless, in a few countries (for example, New Zealand, Sweden, the

United States), the central banks almost never interfere to administer the exchange rates. Nearly all advanced economies follow floating exchange rate regimes. Some large emerging market economies also follow the system.

A fixed exchange rate, also referred to as pegged exchanged rate, is an exchange rate regime under which a country's Central Bank and/ or government announces or decrees what its currency will be worth in terms of either another country's currency or a basket of currencies or another measure of value, such as gold. For example: a certain amount of rupees per dollar. (When a government intervenes in the foreign exchange market so that the exchange rate of its currency is different from what the market forces of demand and supply would have decided, it is said to have established a "peg" for its currency). In order to sustain a fixed exchange rate, it is not enough that a country pronounces a fixed parity: it must also make concentrated efforts to defend that parity by being willing to buy (or sell) foreign reserves whenever the market demand for foreign currency is lesser (or greater) than the supply of foreign currency. In other words, in order to maintain the exchange rate at the predetermined level, the central bank intervenes in the foreign exchange market.

We are often misled to think that it is common for countries to adopt the flexible exchange rate system. In the real world, there is a spectrum of 'intermediate exchange rate regimes' which are either inflexible or have varying degrees of flexibility that lie in between these two extremes (fixed and flexible). For example, a central bank can implement soft peg and hard peg policies. A soft peg refers to an exchange rate policy under which the exchange rate is generally determined by the market, but in case the exchange rate tends to be move speedily in one direction, the central bank will intervene in the market. With a hard peg exchange rate policy, the central bank sets a fixed and unchanging value for the exchange rate. Both soft peg and hard peg policy require that the central bank intervenes in the foreign exchange market. The tables 4.4.1 and 4.4.2 show respectively, the IMF classifications and definitions of prevalent exchange rate systems and the latest available data (as on April 30, 2018) on the distribution of the 189 IMF members based on their exchange rate regimes.

Table No: 4.4.1**Some Additions****IMF Classifications and Definitions of Exchange Rate Regimes**

Exchange Rate Regimes	Description
Exchange arrangements with no	Currency of another country circulates as sole legal tender or

<p>separate legal tender (13 countries) E.g. Kosovo –Euro Ecuador, El Salvador - US Dollar</p>	<p>member belongs to a monetary or currency union in which same legal tender is shared by members of the union.</p>
<p>Currency Board Arrangements (11 Countries) Hong Kong, Dominica, Grenada etc.- Dollar Bosnia and Herzegovina, Bulgaria-Euro</p>	<p>Monetary regime based on implicit national commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate.</p>
<p>Other conventional fixed peg arrangement (43 Countries) E.g. Oman, Qatar, Saudi Arabia, United Arab Emirates etc. to -US Dollar Mali, Niger, Senegal, Cameroon etc. - Euro</p>	<p>Country pegs its currency (formal or de facto) at a fixed rate to a major currency or a basket of currencies where exchange rate fluctuates within a narrow margin or at most $\pm 1\%$ around central rate.</p>
<p>Pegged exchange rates within horizontal bands (1Country) Tonga</p>	<p>Value of the currency is maintained within margins of fluctuation around a formal or de facto fixed peg that are wider than $\pm 1\%$ around central rate.</p>
<p>Crawling Peg (3 countries) Honduras, Nicaragua, Botswana</p>	<p>Currency is adjusted periodically in small amounts at a fixed, preannounced rate in response to changes in certain quantitative indicators.</p>
<p>Crawl –like arrangement (15 Countries) E.g. Iran, Afghanistan, Costa Rica</p>	<p>Currency is maintained within certain fluctuation margins say ($\pm 1-2\%$) around a central rate that is adjusted periodically</p>
<p>Other Managed Arrangement (13 countries) E.g. Cambodia, Liberia, Zimbabwe</p>	
<p>Floating (35 Countries) E.g. India, Philippines, New Zealand, Malaysia</p>	<p>Monetary authority influences the movements of the exchange rate through intervention in foreign</p>

	exchange markets without specifying a pre-announced path for the exchange rate
Free floating (31 Countries) E.g. US, Canada, Japan, New Zealand, UK	Exchange rate is market determined, with foreign exchange intervention aimed at moderating the rate of change and preventing undue fluctuations in the exchange rate, rather than at establishing a level for it

Table No: 4.4.2

Distribution of IMF Members Based on Exchange Regime

Exchange Rate Arrangement	% of IMF Members	Change
Hard peg	12.5	
No separate legal tender	6.8	
Currency board	5.7	
Soft peg	46.4	
Conventional peg	22.4	
Stabilized arrangement	14.1	
Crawling peg	1.6	
Crawl-like arrangement	7.8	
Pegged exchange rate within horizontal bands	0.5	
Floating	34.4	
Floating	18.2	
Free floating	16.1	
Other managed Arrangements	6.8	

Source: Annual Report on Exchange Arrangements and Exchange Restrictions, 2018 IMF

In an open economy, the main advantages of a fixed rate regime are:

- (i) A fixed exchange rate avoids currency fluctuations and eliminates exchange rate risks and transaction costs that can impede international flow of trade and investments. International trade and investment are less risky under fixed rate regime as profits are not affected by the exchange rate fluctuations.

New
Addition

- (ii) A fixed exchange rate can thus, greatly enhance international trade and investment.
- (iii) A reduction in speculation on exchange rate movements if everyone believes that exchange rates will not change.
- (iv) A fixed exchange rate system imposes discipline on a country's monetary authority and therefore is more likely to generate lower levels of inflation.
- (v) The government can encourage greater trade and investment as stability encourages investment.
- (vi) Exchange rate peg can also enhance the credibility of the country's monetary-policy.
- (vii) However, in the fixed or managed floating exchange rate regimes (where the market forces are allowed to determine the exchange rate within a band), the central bank is required to stand ready to intervene in the foreign exchange market and, also to maintain an adequate amount of foreign exchange reserves for this purpose.

**New
Addition**

Basically, the free floating or flexible exchange rate regime is argued to be efficient and highly transparent as the exchange rate is free to fluctuate in response to the supply of and demand for foreign exchange in the market and clears the imbalances in the foreign exchange market without any control of the central bank or the monetary authority. A floating exchange rate has many advantages:

- (i) A floating exchange rate has the greatest advantage of allowing a Central bank and /or government to pursue its own independent monetary policy.
- (ii) Floating exchange rate regime allows exchange rate to be used as a policy tool: for example, policy-makers can adjust the nominal exchange rate to influence the competitiveness of the tradable goods sector.
- (iii) As there is no obligation or necessity to intervene in the currency markets, the central bank is not required to maintain a huge foreign exchange reserves.

However, the greatest disadvantage of a flexible exchange rate regime is that volatile exchange rates generate a lot of uncertainties in relation to international transactions and add a risk premium to the costs of goods and assets traded across borders. In short, a fixed rate brings in more currency and monetary

stability and credibility; but it lacks flexibility. On the contrary, a floating rate has greater policy flexibility; but less stability.

4.4 NOMINAL VERSUS REAL EXCHANGE RATES

We have been discussing so far about nominal exchange rate which refers to the rate at which a person can trade the currency of one country for the currency of another country. For any country, there are many nominal exchange rates because its currency can be used to purchase many foreign currencies. While studying exchange rate changes, economists make use of indexes that average these many exchange rates. An exchange rate index turns these many exchange rates into a single measure of the international value of currency.

New
Addition

Nominal Exchange Rates can be used to find the domestic price of foreign goods. However, trade flows are affected not by nominal exchange rates, but instead, by real exchange rates. The person or firm buying another currency is interested in what can be bought with it.

The real exchange rate is the rate at which a person can trade the goods and services of one country for the goods and services of another. It describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country. A country's real exchange rate is a key determinant of its net exports of goods and services.

For calculating real exchange rate, in the case of trade in a single good, we must first use the nominal exchange rate to convert the prices into a common currency. The real exchange rate (RER) between two currencies is the product of the nominal exchange rate and the ratio of prices between the two countries. It is calculated as:

$$\text{Real exchange Rate} = \frac{(\text{Nominal exchange Rate}) \times \text{Domestic price}}{\text{Foreign price}}$$

New
Addition

Or

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic Price}}{\text{Foreign price}}$$

Thus, real exchange rate depends on the nominal exchange rate and the prices of the good in two countries measured in the local currencies.

When studying the economy as a whole, we use price indices which measure the price of a basket of goods and services. Real exchange rate will then be:

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic Price Index}}{\text{Foreign price Index}}$$

Another exchange rate concept, the Real Effective Exchange Rate (REER) is the nominal effective exchange rate (a measure of the value of a domestic currency against a weighted average of various foreign currencies) divided by a price deflator or index of costs. An increase in REER implies that exports become more expensive and imports become cheaper; therefore, an increase in REER indicates a loss in trade competitiveness.



4.5 THE FOREIGN EXCHANGE MARKET

The wide-reaching collection of markets and institutions that handle the exchange of foreign currencies is known as the foreign exchange market. In this market, the participants use one currency to purchase another currency. The foreign exchange market operates worldwide and is by far the largest market in the world in terms of cash value traded. Being an over-the-counter market, it is not a physical place; rather, it is an electronically linked network of big banks, dealers and foreign exchange brokers who bring buyers and sellers together.

With no central trading location and no set hours of trading, the foreign exchange market involves enormous volume of foreign exchange being traded worldwide. The participants such as firms, households, and investors who demand and supply currencies represent themselves through their banks and key foreign exchange dealers who respond to market signals transmitted instantly across the world. The foreign exchange markets operate on very narrow spreads between buying and selling prices. But since the volumes traded are very large, the traders in foreign exchange markets stand to make huge profits or losses.

The major participants in the exchange market are central banks, commercial banks, governments, foreign exchange Dealers, multinational corporations that engage in international trade and investments, non-bank financial institutions such as asset-management firms, insurance companies, brokers, arbitrageurs and speculators. The central banks participate in the foreign exchange markets, not to make profit, but essentially to contain the volatility of exchange rate to avoid sudden and large appreciation or depreciation of domestic currency and to maintain stability in exchange rate in keeping with the requirements of national economy. If the domestic currency fluctuates excessively, it causes panic and uncertainty in the business world.

The commercial banks participate in the foreign exchange market either on their own account or for their clients. When they trade on their own account, banks may operate either as speculators or arbitrageurs/or both. The bulk of currency transactions occur in the interbank market in which the banks trade with each other.

Foreign exchange brokers participate in the market as intermediaries between different dealers or banks. Arbitrageurs make profit by discovering price differences between pairs of currencies with different dealers or banks. Speculators, who are bulls or bears, are deliberate risk-takers who participate in the market to make gains which result from unanticipated changes in exchange rates. Other participants in the exchange market are individuals who form only a very insignificant fraction in terms of volume and value of transactions.

Regardless of physical location, and given that the markets are highly integrated, at any given moment, all markets tend to have the same exchange rate for a given currency. This phenomenon occurs because of arbitrage. Arbitrage refers to the practice of making risk-less profits by intelligently exploiting price differences of an asset at different dealing locations. There is potential for arbitrage in the forex market if exchange rates are not consistent between currencies. When price differences occur in different markets, participants purchase foreign exchange in a low-priced market for resale in a high-priced market and makes profit in this process. Due to the operation of price mechanism, the price is driven up in the low-priced market and pushed down in the high-priced market. This activity will continue until the prices in the two markets are equalized, or until they differ only by the amount of transaction costs involved in the operation. Since forex markets are efficient, any profit spread on a given currency is quickly arbitrated away.

In the foreign exchange market, there are two types of transactions:

- (i) current transactions which are carried out in the spot market and the exchange involves immediate delivery, and
- (ii) future transactions wherein contracts are agreed upon to buy or sell currencies for future delivery which are carried out in forward and/or futures markets

Change

Exchange rates prevailing for spot trading (for which settlement by and large takes two days) are called spot exchange rates. The exchange rates quoted in foreign exchange transactions that specify a future date are called forward exchange rates. The currency forward contracts are quoted just like spot rate; however, the actual delivery of currencies takes place at the specified time in

future. When a party agrees to sell euro for dollars on a future date at a forward rate agreed upon, he has 'sold euros forward' and 'bought dollars forward'. A forward premium is said to occur when the forward exchange rate is more than a spot exchange rates. On the contrary, if the forward trade is quoted at a lower rate than the spot rate, then there is a forward discount. Currency futures, though conceptually similar to currency forward and perform the same function, they are distinct in their nature and details concerning settlement and delivery.

While a foreign exchange transaction can involve any two currencies, most transactions involve exchanges of foreign currencies for the U.S. dollars even when it is not the national currency of either the importer or the exporter. On account of its critical role in the forex markets, the dollar is often called a 'vehicle currency'.



4.6 DETERMINATION OF NOMINAL EXCHANGE RATE

As you already know, the key framework for analysing prices is the operation of forces of supply and demand in markets. Usually, the supply of and demand for foreign exchange in the domestic foreign exchange market determine the external value of the domestic currency, or in other words, a country's exchange rate.

Individuals, institutions and governments participate in the foreign exchange market for a number of reasons. On the demand side, people desire foreign currency to:

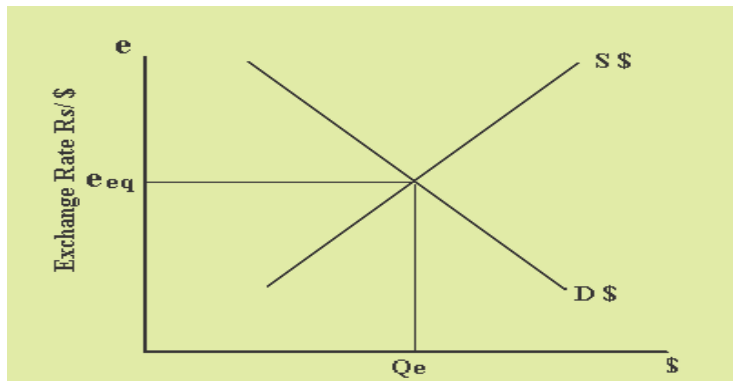
- purchase goods and services from another country
- for unilateral transfers such as gifts, awards, grants, donations or endowments
- to make investment income payments abroad
- to purchase financial assets, stocks or bonds abroad
- to open a foreign bank account
- to acquire direct ownership of real capital, and
- for speculation and hedging activities related to risk-taking or risk-avoidance activity

The participants on the supply side operate for similar reasons. Thus, the supply of foreign currency to the home country results from purchases of home exports, unilateral transfers to home country, investment income payments, foreign direct investments and portfolio investments, placement of bank deposits and speculation.

We shall now look into how the foreign exchange markets work. Similar to any standard market, the exchange market also faces a downward-sloping demand curve and an upward-sloping supply curve.

Figure 4.4.1

Determination of Nominal Exchange Rate



The equilibrium rate of exchange is determined by the interaction of the supply and demand for a particular foreign currency. In figure 4.4.1, the demand curve (D\$) and supply curve (S\$) of dollars intersect to determine equilibrium exchange rate e_{eq} with Q_e as the equilibrium quantity of dollars exchanged.

4.7 CHANGES IN EXCHANGE RATES

Changes in exchange rates portray depreciation or appreciation of one currency. The terms, 'currency appreciation' and 'currency depreciation' describe the movements of the exchange rate. Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies. We shall try to understand this with the help of an example.

For example, the Rupee dollar exchange rate in the month of January is \$1 = ₹70. And, we find that in the month of April it is \$1 = ₹75. What does this

Change

indicate? In April, you will have to exchange a greater amount of Indian Rupees (₹75) to get the same 1 unit of US dollar. As such, the value of the Indian Rupee has gone down or Indian Rupee has depreciated in its value. Rupee depreciation here means that the rupee has become less valuable with respect to the U.S. dollar. Simultaneously, if you look at the value of dollar in terms of Rupees, you find that the value of the US dollar has increased in terms of the Indian Rupee. One dollar will now fetch ₹75 instead of ₹70 earlier. This is called appreciation of the US dollar. You might have observed that when one currency depreciates against another, the second currency must simultaneously appreciate against the first.

Change

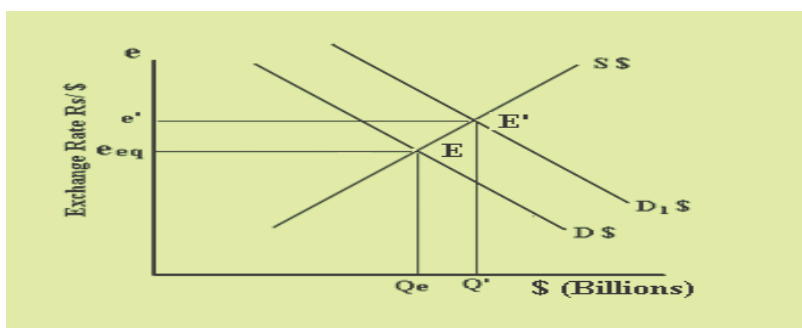
To put it more clearly:

- Home-currency depreciation (which is the same as foreign-currency appreciation) takes place when there is an increase in the home currency price of the foreign currency (or, alternatively, a decrease in the foreign currency price of the home currency). The home currency thus becomes relatively less valuable.
- Home-currency appreciation (or foreign-currency depreciation) takes place when there is a decrease in the home currency price of foreign currency (or alternatively, an increase in the foreign currency price of home currency). The home currency thus becomes relatively more valuable.

Under a floating rate system, if for any reason, the demand curve for foreign currency shifts to the right representing increased demand for foreign currency, and supply curve remains unchanged, then the exchange value of foreign currency rises and the domestic currency depreciates in value. This is illustrated in figure 4.4.2.

Figure 4.4.2

Home-Currency Depreciation under Floating Exchange Rates

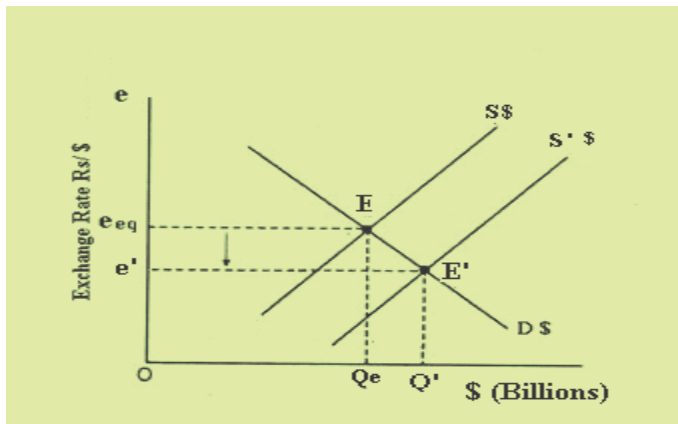


The market initially is in equilibrium at point E with equilibrium exchange rate e_{eq} . An increase in domestic demand for the foreign currency, with supply of dollars remaining constant, is represented by a rightward shift of the demand curve to $D_1\$$. The equilibrium exchange rate rises to e^1 . This indicates that more units of domestic currency (here Indian Rupees) are required to buy one unit of foreign currency (here dollar) and that the domestic currency (the Rupee) has depreciated.

We shall now examine what happens when there is an increase in the supply of dollars in the Indian market. This is illustrated in figure 4.4.3.

Figure 4.4.3

Home-Currency Appreciation under Floating Exchange Rates



An increase in the supply of foreign exchange shifts the supply curve to the right to $S^1 \$$ and as a consequence, the exchange rate declines to e^1 . It means, that lesser units of domestic currency (here Indian Rupees) are required to buy one unit of foreign currency (dollar), and that the domestic currency (the Rupee) has appreciated.

As we are aware, in an open economy, firms and households use exchange rates to translate foreign prices in terms of domestic currency. Exchange rates also permit us to compare the prices of goods and services produced in different countries. Furthermore, import or export prices could be expressed in terms of the same currency in the trading contract. This is the reason why exchange rate movements can affect intentional trade flows.

4.8 DEVALUATION (REVALUATION) VS DEPRECIATION (APPRECIATION)

Devaluation is a deliberate downward adjustment in the value of a country's currency relative to another country's currency or group of currencies or standard. It is a monetary policy tool used by countries that have a fixed exchange rate or nearly fixed exchange rate regime and involves a discrete official reduction in the otherwise fixed par value of a currency. The monetary authority formally sets a new fixed rate with respect to a foreign reference currency or currency basket. In contrast, depreciation is a decrease in a currency's value (relative to other major currency benchmarks) due to market forces of demand and supply under a floating exchange rate and not due to any government or central bank policy actions.

Revaluation is the opposite of devaluation and the term refers to a discrete official increase of the otherwise fixed par value of a nation's currency. Appreciation, on the other hand, is an increase in a currency's value (relative to other major currencies) due to market forces of demand and supply under a floating exchange rate and not due to any government or central bank policy interventions.

4.9 IMPACTS OF EXCHANGE RATE FLUCTUATIONS ON DOMESTIC ECONOMY

The fact that among the macroeconomic variables, exchange rates are perhaps the most closely monitored, analysed and manipulated economic measure, highlights the overwhelming importance of exchange rates in an economy. The unpredictability of the markets caused by exchange rate fluctuations can profoundly determine a country's economic performance. Knowledge about the possible effects of exchange rate fluctuations enables us to have an understanding of the appropriateness of exchange rate policy, especially in developing countries. In the discussion that follows, we shall examine the impact of exchange rate fluctuations on the real economy.

The developments in the foreign exchange markets affect the domestic economy both directly and indirectly. The direct impact of fluctuations in rates is initially felt by economic agents who are directly involved in international trade or international finance. In judging the impacts of exchange rate fluctuations, it

becomes, therefore, necessary to evaluate their effects on trade, investments, consumption output, economic growth and inflation.

- (i) Exchange rates have a very significant role in determining the nature and extent of a country's trade. Changes in import and export prices will lead to changes in import and export volumes, causing changes in import spending and export revenue.
- (ii) Fluctuations in the exchange rate affect the economy by changing the relative prices of domestically-produced and foreign-produced goods and services. All else equal (or other things remaining the same), an appreciation of a country's currency raises the relative price of its exports and lowers the relative price of its imports. Conversely, depreciation lowers the relative price of a country's exports and raises the relative price of its imports. When a country's currency depreciates, foreigners find that its exports are cheaper and domestic residents find that imports from abroad are more expensive. An appreciation has opposite effects i.e foreigners pay more for the country's products and domestic consumers pay less for foreign products. For example; assume that there is devaluation or depreciation of Indian Rupee from $\$1 = ₹ 65/$ to $\$1 = ₹ 70/$. A foreigner who spends ten dollars on buying Indian goods will, post devaluation, get goods worth $₹ 700/$ instead of $₹ 650/$ prior to depreciation. An importer has to pay for his purchases in foreign currency, and, therefore, a resident of India, who wants to import goods worth $\$1$ will have to pay $₹ 70/$ instead of $₹ 65/$ prior to depreciation. Importers will be affected most as they will have to pay more rupees on importing products. On the contrary, exporters will be benefitted as goods exported abroad will fetch dollars which can now be converted to more rupees.
- (iii) Exchange rate changes affect economic activity in the domestic economy. A depreciation of domestic currency primarily increases the price of foreign goods relative to goods produced in the home country and diverts spending from foreign goods to domestic goods. Increased demand, both for domestic import-competing goods and for exports, encourages economic activity and creates output expansion. Overall, the outcome of exchange rate depreciation is an expansionary impact on the economy at an aggregate level. The positive effect of currency depreciation, however, largely depends on whether the switching of demand has taken place in the right direction and in the right amount, as well as on the capacity of the home economy to meet that increased demand by supplying more goods.

- (iv) By lowering export prices, currency depreciation increase the international competitiveness of domestic industries, the volume of exports and promotes trade balance. However, a point to be noted is that the price changes in exports and imports may counterbalance or offset each other only if trade is in balance and terms of trade are not changed. In case the country's imports exceed exports, the net result is a reduction in real income within the country.
- (v) We have seen above that by changing the relative prices, depreciation may increase windfall profits in export and import-competing industries. However, depreciation may also cause contractionary effects. We shall see how it may happen. In an under developed or semi industrialized country, where -inputs (such as oil) and components for manufacturing are mostly imported and cannot be domestically produced, increased import prices will increase firms' cost of production , push domestic prices up and decrease real output.
- (vi) For an economy where exports are significantly high, a depreciated currency would mean a lot of gain. In addition, if exports originate from labour-intensive industries, increased export prices will have positive effect on employment and potentially on wages.
- (vii) Depreciation is also likely to add to consumer price inflation in the short run, directly through its effect on prices of imported consumer goods and also due to increased demand for domestic goods. The impact will be greater if the composition of domestic consumption baskets consists more of imported goods. Indirectly, cost push inflation may result through possible escalation in the cost of imported inputs. In such an inflationary situation, the central bank of the country will have no incentive to cut policy rates as this is likely to increase the burden of all types of borrowers including businesses.
- (viii) When a country's currency depreciates, production for exports and of import substitutes become more profitable. Therefore, factors of production will be induced to move into the tradable goods sectors and out of the non-tradable goods sectors. The reverse will be true when the currency appreciates. These types of resource movements involve economic wastes.
- (ix) A depreciation or devaluation is also likely to affect a country's terms of trade (Terms of trade is the ratio of the price of a country's export commodity to the price of its import commodity). Since the prices of both

exports and imports rise in terms of the domestic currency as a result of depreciation or devaluation, the terms of trade of the nation can rise, fall or remain unchanged, depending on whether price of exports rises by more than, less than or same percentage as the price of imports.

- (x) The fiscal health of a country whose currency depreciates is likely to be affected with rising export earnings and import payments and consequent impact on current account balance. A widening current account deficit is a danger signal as far as growth prospects of the overall economy is concerned. If export earnings rise faster than the imports spending then current account balance will improve.
- (xi) Companies that have borrowed in foreign exchange through external commercial borrowings (ECBs) but have been careless and did not sufficiently hedge these loans against foreign exchange risks, would also be negatively impacted as they would require more domestic currency to repay their loans. A depreciated domestic currency would also increase their debt burden and lower their profits and impact their balance sheets adversely. These would signal investors who will be discouraged from investing in such companies.
- (xii) Countries with foreign currency denominated government debts, currency depreciation will increase the interest burden and cause strain to the exchequer for repaying and servicing foreign debt. Fortunately, India's has small proportion of public debt in foreign currency.
- (xiii) Exchange rate fluctuations make financial forecasting more difficult for firms and larger amounts will have to be earmarked for insuring against exchange rate risks through hedging.
- (xiv) With growth of investments across international boundaries, exchange rates have assumed special significance. Investors who have purchased a foreign asset, or the corporation which floats a foreign debt, will find themselves facing foreign exchange risk. Exchange rate movements have become the single most important factor affecting the value of investments at international level. They are critical to business volumes, profit forecasts, investment plans and investment outcomes. Depreciating currency hits investor sentiments and has radical impact on patterns of international capital flows.
- (xv) Foreign investors are likely to be indecisive or highly cautious before investing in a country which has high exchange rate volatility. Foreign

capital inflows are characteristically vulnerable when local currency weakens. Therefore, foreign portfolio investment flows into debt and equity as well as foreign direct investment flows are likely to shrink. This shoots up capital account deficits affecting the country's fiscal health. If investor sentiments are such that they anticipate further depreciation, there may be large scale withdrawal of portfolio investments and huge redemptions through global exchange traded funds leading to further depreciation of domestic currency. This may result in a highly volatile domestic equity market affecting the confidence of domestic investors. Reduced foreign investments also widen the gap between investments required for growth and actual investments. Over a period of time, unemployment is likely to mount in the economy.

With increasing dependence on imports, Indian economy has always felt the brunt of higher international prices of fuel impacting domestic transportation and overall cost of production which often triggered inflation, increase in oil and fertilizer subsidy bills, costly foreign travel, escalated foreign debt service payments and higher outstanding external commercial borrowings (or ECB) and government's foreign debt.

The other impacts of currency depreciation are:

- (i) Windfall gains for export-oriented sectors (such as IT sector, textile, pharmaceuticals, gems and jewellery in the case of India) because depreciating currency fetches more domestic currency per unit of foreign currency.
- (ii) Remittances to homeland by non-residents and businesses abroad fetches more in terms of domestic currency
- (iii) Depreciation would enhance government revenues from import related taxes, especially if the country imports more of essential goods
- (iv) Depreciation would result in higher amount of local currency for a given amount of foreign currency borrowings of government.
- (v) Depreciation also can have a positive impact on country's trade deficit as it makes imports more expensive for domestic consumers and exports cheaper for foreigners.
- (vi) Depreciation also can have a positive impact on controlling spiralling gold imports (mostly wasteful) and thereby improve trade balance.

An appreciation of currency or a strong currency (or possibly an overvalued currency) makes the domestic currency more valuable and, therefore, can be exchanged for a larger amount of foreign currency. An appreciation will have the following consequences on real economy:

- (i) An appreciation of currency raises the price of exports and, therefore, the quantity of exports would fall. Since imports become cheaper, we may expect an increase in the quantity of imports. Combining these two effects together, the domestic aggregate demand falls and, therefore, economic growth is likely to be negatively impacted.
- (ii) The outcome of appreciation also depends on the stage of the business cycle as well. If appreciation sets in during the recessionary phase, the result would be a further fall in aggregate demand and higher levels of unemployment. If the economy is facing a boom, an appreciation of domestic currency would trim down inflationary pressures and soften the rate of growth of the economy.
- (iii) An appreciation may cause reduction in the levels of inflation because imports are cheaper. Lower price of imported capital goods, components and raw materials lead to decrease in cost of production which reflects on decrease in prices. Additionally, decrease in aggregate demand tends to lower demand pull inflation. Living standards of people are likely to improve due to availability of cheaper consumer goods.
- (iv) With increasing export prices, the competitiveness of domestic industry is adversely affected and therefore, firms have greater incentives to introduce technological innovations and capital-intensive production to cut costs to remain competitive.
- (v) Increasing imports and declining exports are liable to cause larger deficits and worsen the current account. However, the impact of appreciation on current account depends upon the elasticity of demand for exports and imports. Relatively inelastic demand for imports and exports may lead to an improvement in the current account position. Higher the price elasticity of demand for exports, greater would be the fall in demand and higher will be the fall in the aggregate value of exports. This will adversely affect the current account balance.
- (vi) Loss of competitiveness will be insignificant if currency appreciation is because of strong fundamentals of the economy.

From the discussions in this unit, we understand that all countries would desire to have steady exchange rates to eliminate the risks and uncertainties associated with international trade and investments. However, nations may sometimes go for trade-offs with weaker exchange rate to stimulate exports and aggregate demand, or a stronger exchange rate to fight inflation. Learners may keep themselves well-informed on contemporary exchange rate developments and their implications on the economic welfare of countries.

SUMMARY

- Exchange rate is the rate at which the currency of one country exchanges for the currency of another country.
- A direct quote (European Currency Quotation) is the number of units of a local currency exchangeable for one unit of a foreign currency. For example, ₹ 65/US\$.
- An indirect quote (American Currency Quotation) is the number of units of a foreign currency exchangeable for one unit of local currency; for example: \$ 0.0151 per rupee.
- In a direct quotation, the foreign currency is the base currency and the domestic currency is the counter currency. In an indirect quotation, the domestic currency is the base currency and the foreign currency is the counter currency.
- The rate between Y and Z which is derived from the given rates of another set of two pairs of currency (say, X and Y, and, X and Z) is called cross rate.
- An exchange rate regime is the system by which a country manages its currency with respect to foreign currencies.
- There are two major types of exchange rate regimes at the extreme ends; namely floating exchange rate regime, (also called a flexible exchange rate) and fixed exchange rate regime.
- Under floating exchange rate regime, the equilibrium value of the exchange rate of a country's currency is market determined i.e. the demand for and supply of currency relative to other currencies determines the exchange rate.
- A fixed exchange rate, also referred to as pegged exchange rate, is an exchange rate regime under which a country's government announces, or decrees, what its currency will be worth in terms of either another

country's currency or a basket of currencies or another measure of value, such as gold.

- A central bank may implement soft peg policy under which the exchange rate is generally determined by the market or a hard peg where the central bank sets a fixed and unchanging value for the exchange rate.
- A fixed exchange rate avoids currency fluctuations and eliminates exchange rate risks and transaction costs, enhances international trade and investment and lowers the levels of inflation. But the central bank has to maintain an adequate amount of reserves and be always ready to intervene in the foreign exchange market.
- A floating exchange rate allows a government to pursue its own independent monetary policy and there is no need for market intervention or maintenance of reserves. However, volatile exchange rates generate a lot of uncertainties with regard to international transactions.
- The 'real exchange rate' incorporates changes in prices and describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country.

$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic price Index}}{\text{Foreign price Index}}$
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- Real Effective Exchange Rate (REER) is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of various foreign currencies) divided by a price deflator or index of costs.
- The wide-reaching collection of markets and institutions that handle the exchange of foreign currencies is known as the foreign exchange market. Being an over-the-counter market, it is not a physical place; rather, it is an electronically linked network bringing buyers and sellers together and has only very narrow spreads.
- On account of arbitrage, regardless of physical location, at any given moment, all markets tend to have the same exchange rate for a given currency. Arbitrage refers to the practice of making risk-less profits by intelligently exploiting price differences of an asset at different dealing places.
- There are two types of transactions in a forex market: current transactions which are carried out in the spot market and future transactions involving

contracts to buy or sell currencies for future delivery which are carried out in forward and futures markets.

- Generally, the supply of and demand for foreign exchange in the domestic foreign exchange market determine the external value of the domestic currency, or in other words, a country's exchange rate.
- Changes in exchange rates portray depreciation or appreciation of one currency. The terms, 'currency appreciation' and 'currency depreciation' describe the movements of the exchange rate.
- Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies.
- Devaluation is a deliberate downward adjustment by central bank in the value of a country's currency relative to another currency, group of currencies or standard.
- An appreciation of a country's currency cause changes in import and export prices will lead to changes in import and export volumes, causing resulting in import spending and export earnings.
- Exchange rate depreciation lowers the relative price of a country's exports, raises the relative price of its imports, increases demand both for domestic import-competing goods and for exports, leads to output expansion, encourages economic activity, increases the international competitiveness of domestic industries, increases the volume of exports and improves trade balance.
- Currency appreciation raises the price of exports, decrease exports; increase imports, adversely affect the competitiveness of domestic industry, cause larger deficits and worsens the trade balance.

TEST YOUR KNOWLEDGE

I Multiple Choice Type Questions

1. Based on the supply and demand model of determination of exchange rate, which of the following ought to cause the domestic currency of Country X to appreciate against dollar?
 - (a) The US decides not to import from Country X

- (b) An increase in remittances from the employees who are employed abroad to their families in the home country
- (c) Increased imports by consumers of Country X
- (d) Repayment of foreign debts by Country X
2. All else equal, which of the following is true if consumers of India develop taste for imported commodities and decide to buy more from the US?
- (a) The demand curve for dollars shifts to the right and Indian Rupee appreciates
- (b) The supply of US dollars shrinks and, therefore, import prices decrease
- (c) The demand curve for dollars shifts to the right and Indian Rupee depreciates
- (d) The demand curve for dollars shifts to the left and leads to an increase in exchange rate
3. *'The nominal exchange rate is expressed in units of one currency per unit of the other currency. A real exchange rate adjusts this for changes in price levels'.* The statements are
- (a) wholly correct
- (b) partially correct
- (c) wholly incorrect
- (d) None of the above
4. Match the following by choosing the term which has the same meaning

i) floating exchange rate	ii) fixed exchange rate
iii) pegged exchange rate	a. depreciation
iv) devaluation	b. revaluation
v) appreciation	c. flexible exchange rate

- (a) (i c) ; (ii d) ; (iii b); (iv a)
- (b) (i b) ; (ii a) ; (iii d); (iv c)

(c) (i a) ; (ii d) ;(iii b); (iv c)

(d) (i d) ; (ii a) ;(iii b); (iv c)

5. Choose the correct statement

(a) An indirect quote is the number of units of a local currency exchangeable for one unit of a foreign currency

(b) the fixed exchange rate regime is said to be efficient and highly transparent.

(c) A direct quote is the number of units of a local currency exchangeable for one unit of a foreign currency

(d) Exchange rates are generally fixed by the central bank of the country

6. Which of the following statements is true?

(a) Home-currency appreciation or foreign-currency depreciation takes place when there is a decrease in the home currency price of foreign currency

(b) Home-currency depreciation takes place when there is an increase in the home currency price of the foreign currency

(c) Home-currency depreciation is the same as foreign-currency appreciation and implies that the home currency has become relatively less valuable.

(d) All the above

7. An increase in the supply of foreign exchange

(a) shifts the supply curve to the right and as a consequence, the exchange rate declines

(b) shifts the supply curve to the right and as a consequence, the exchange rate increases

(c) more units of domestic currency are required to buy a unit of foreign exchange

(d) the domestic currency depreciates and the foreign currency appreciates

8. Currency devaluation
 - (a) may increase the price of imported commodities and, therefore, reduce the international competitiveness of domestic industries
 - (b) may reduce export prices and increase the international competitiveness of domestic industries
 - (c) may cause a fall in the volume of exports and promote consumer welfare through increased availability of goods and services
 - (d) (a) and (c) above
9. At any point of time, all markets tend to have the same exchange rate for a given currency due to
 - (a) Hedging
 - (b) Speculation
 - (c) Arbitrage
 - (d) Currency futures
10. 'Vehicle Currency' refers to
 - (a) a currency that is widely used to denominate international contracts made by parties because it is the national *currency* of either of the parties
 - (b) a currency that is traded internationally and, therefore, is in high demand
 - (c) a type of currency used in euro area for synchronization of exchange rates
 - (d) a currency that is widely used to denominate international contracts made by parties even when it is not the national *currency* of either of the parties

II Short Answer Type Questions

1. Define exchange rate?
2. Distinguish between direct quote and indirect quote?
3. What do you understand by the term 'cross rate'?
4. What is an 'exchange rate regime'?

5. Which are the major types of exchange rate regimes?
6. How is exchange rate determined under floating exchange rate regime?
7. Define fixed exchange rate?
8. What are the major merits of floating exchange rate?
9. Mention the main demerit of floating exchange rate?
10. Explain the term 'real exchange rate'?
11. Define Real Effective Exchange Rate (REER)?
12. Describe the chief characteristics of foreign exchange market?
13. What is Arbitrage? What is the outcome of Arbitrage?
14. Mention the types of transactions in the forex market?
15. Describe the term currency appreciation?
16. What is meant by devaluation?

III Long Answer Type Questions

1. Distinguish between fixed exchange rate and floating exchange rate? What are the merits and demerits of each?
2. Describe how exchange rate is determined under different exchange rate regimes?
3. Evaluate the relative merits and demerits of different types of exchange rate regimes?
4. What are the characteristic features of foreign exchange market? Who are the participants in the foreign exchange market?
5. Describe the functioning of the foreign exchange market? What are the different roles played by the participants in the foreign exchange market?
6. What do you understand by appreciation and depreciation of currency? How do they affect real economy?
7. Explain the effects of currency depreciation? Do you consider a weak currency is advantageous to a country?
8. Explain the nature of changes in exchange rates and their impact on real economy?

9. *'An overvalued currency is a bane for an economy'*. Do you agree with the statement? Give examples.
10. *'Flexible exchange rates reflect the true fiscal health of the economy'* Elucidate.

IV Application Oriented Questions

- I. Explain the implications of the following on the demand and supply of foreign exchange and the exchange rate in spot foreign exchange market.
 - (i) Merry Land's exports remained more or less stagnant in the years 2005-06 to 2016-17. However, due to heavy thrust on industrialization, import of machinery, raw materials and components as well as associated services of different types increased.
 - (ii) The investors of Merry Land find investments in financial assets in UK highly attractive and the government of Merry Land which has a liberal attitude on foreign investments permits such investments.
 - (iii) Many foreign investors who had previously acquired Roseland's financial assets sell them.
 - (iv) Effect on Country Y if Country X borrows \$ 100 billion from country Y
- II. Explain how the exchange rate value of Indian Rupee will be affected in each of the following cases. What are the possible consequences on exports and imports?
 - (i) The spot exchange rate changes from ₹ 61/ 1\$ to ₹ 64/1\$
 - (ii) The spot exchange rate changes from ₹ 66/ 1\$ to ₹ 63/1\$
- III. In 1983 Australia decided to float its dollar. Assuming free trade, explain the effects of each of the following on the spot exchange rate between AUD and USD.
 - (i) There is a substantial increase demand in Australia for US exports of services. Since Australia manufactures were favoured over others, there is a proportionate increase in exports of Australian products to the US.
 - (ii) Investors in Australia perceive that the returns on investments in the US would be much more lucrative than elsewhere. As a result there is a huge increase in demand for investments in US dollar denominated financial investments

- (iii) Political uncertainties in the US due to presidential elections caused large scale shift of Australian financial investments back in to Australia
- (iv) An epidemic in some parts of Australia made the US evoke SPS measures and ban the entry of a number of food items to the US

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (b) 2. (c) 3. (a) 4. (d) 5. (c) 6. (d)
7. (a) 8. (b) 9. (c) 10. (d)

II Short Answer Type Questions

1. The price of one currency expressed in terms of units of another currency-represents the number of units of one currency that exchanges for a unit of another
2. A direct quote (European Currency Quotation) is the number of units of a local currency exchangeable for one unit of a foreign currency. For example, ₹ 66/US\$. An indirect quote (American Currency Quotation) is the number of units of a foreign currency exchangeable for one unit of local currency; for example: \$ 0.0151 per rupee.
3. The rate between Y and Z which is derived from the given rates of another set of two pairs of currency (say, X and Y, and, X and Z) is called "cross rate".
4. An exchange rate regime is the system by which a country manages its currency with respect to foreign currencies.
5. There are two major types of exchange rate regimes at the extreme ends; namely floating exchange rate regime, (also called a flexible exchange rate) and fixed exchange rate regime.
6. Under floating exchange rate regime, the equilibrium value of the exchange rate of a country's currency is market determined i.e. the demand for and supply of currency relative to other currencies determines the exchange rate.
7. A fixed exchange rate, also referred to as pegged exchange rate, is an exchange rate regime under which a country's government or central bank announces, or decrees, what its currency will be worth in terms of

either another country's currency or a basket of currencies or another measure of value, such as gold.

8. A floating exchange rate allows a government to pursue its own independent monetary policy and there is no need of market intervention or maintenance of reserves.
9. The volatile exchange rates generate a lot of uncertainties in relation to international transactions.
10. The 'real exchange rate' incorporates changes in prices and describes 'how many' of a good or service in one country can be traded for 'one' of that good or service in a foreign country.

$$\text{Real exchange rate} = \text{Nominal exchange rate} \times \frac{\text{Domestic price Index}}{\text{Foreign price Index}}$$

11. Real Effective Exchange Rate (REER) is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of various foreign currencies) divided by a price deflator or index of costs.
12. The wide-reaching collection of markets and institutions that handle the exchange of foreign currencies is known as the foreign exchange market. Being an over-the-counter market, it is not a physical place; rather, it is an electronically linked network bringing buyers and sellers together and has only very narrow spreads.
13. Arbitrage refers to the practice of making risk-less profits by intelligently exploiting price differences of an asset at different dealing places. On account of arbitrage, regardless of physical location, at any given moment, all markets tend to have the same exchange rate for a given currency.
14. There are two types of transactions in a forex market; current transactions which are carried out in the spot market and future transactions involving contracts to buy or sell currencies for future delivery which are carried out in forward and futures markets.
15. Currency appreciates when its value increases with respect to the value of another currency or a basket of other currencies. On the contrary, currency depreciates when its value falls with respect to the value of another currency or a basket of other currencies.
16. Devaluation is a deliberate downward adjustment in the value of a country's currency relative to another currency or group of currencies or standard.

III Hints to Long Answer Type QuestionsNew
Addition

- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.
 - (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
 - (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

- I.
 - (i) Higher demand in Merry Land for foreign exchange (say \$) to make development imports for industrialization ; coupled with no proportionate increase in supply on account of meagre inflow of foreign exchange consequent on stagnant exports for more than a decade, lead to rise in exchange rate and depreciation in the value of domestic currency.
 - (ii) Increased demand for foreign exchange in Australia; the domestic currency depreciates.
 - (iii) Increased demand for foreign exchange; Roseland's domestic currency depreciates
 - (iv) International capital outflow: demand for foreign currency-outflow of foreign exchange, depreciation of domestic currency
- II.
 - (i) The spot exchange rate changes from ₹ 61/ 1\$ to ₹ 64/1\$. It implies depreciation of Rupee and appreciation of Dollar. Exports become cheaper and more attractive to foreigners; imports will be discouraged as they become costlier to import.
 - (ii) The spot exchange rate changes from ₹ 66/ 1\$ to ₹ 63/1\$. This means that Rupee has appreciated in value and dollar has depreciated.

Exports become costlier and so demand for Indian exports may fall; imports become cheaper.

- III. (i) The spot exchange rate between AUD and USD will not be affected as increased demand for foreign currency in each country will be matched by a proportionate increase in the supply of foreign exchange.
- (ii) Investors in Australia would demand more USD for making dollar denominated financial investments in the US. Supply of US dollars remaining the same, being in floating rate, AUD will depreciate and USD will appreciate.
- (iii) Large scale shift of Australian financial investments back to home due to political uncertainties in the US would result in large scale sale of financial assets and capital outflow from the US. This will lead to more inflow of US dollars to Australia and demand remaining the same, depreciation in the value of USD viz a viz AUD.
- (iv) Ban of exports to the US reduces USD inflows to Australia; Supply of USD decreases and demand for USD remaining the same, AUD may depreciate.

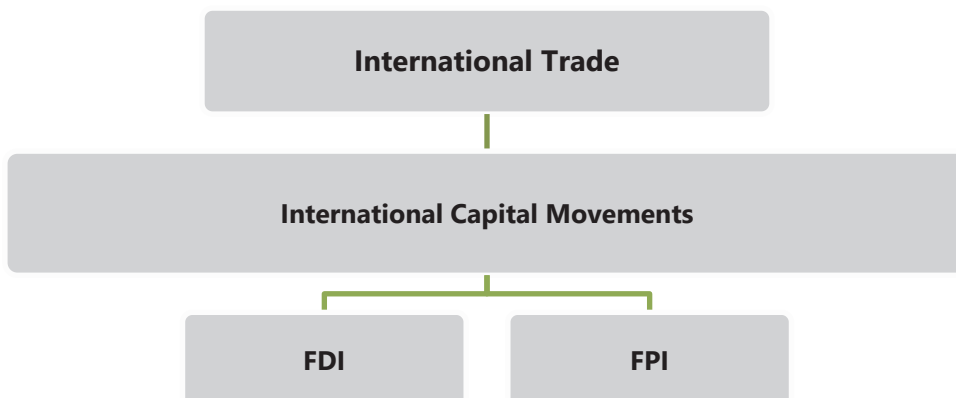
UNIT V: INTERNATIONAL CAPITAL MOVEMENTS

LEARNING OUTCOMES

At the end of this unit, you will be able to:

- Describe the nature and types of foreign capital
- Distinguish between foreign direct investment and foreign institutional investment
- Outline the factors influencing foreign investments
- Elucidate the potential costs and benefits of foreign direct investment
- Explain the state-of-affairs of foreign direct investment in India

UNIT OVERVIEW





5.1 INTRODUCTION

In unit one, our focus was on international trade in goods and services. Lately, we have observed enormous increase in international movement of capital. This phenomenon has received a great deal of attention not only from economists and policy-makers, but also from people in different walks of life- including workers' organisations and members of the civil society. In this unit, we shall look into international capital movements; more precisely, why do capital move across national boundaries and what are the consequences of such capital movements. We shall also briefly touch upon the FDI situation in India.



5.2 TYPES OF FOREIGN CAPITAL

The term 'foreign capital' is a comprehensive one and includes any inflow of capital into the home country from abroad and therefore, we need to be clear about the distinction between movement of capital and foreign investment. Foreign capital may flow into an economy in different ways. Some of the important components of foreign capital flows are:

1. Foreign aid or assistance which may be:
 - (a) Bilateral or direct inter government grants.
 - (b) Multilateral aid from many governments who pool funds with international organizations like the World Bank.
 - (c) Tied aid with strict mandates regarding the use of money or untied aid where there are no such stipulations
 - (d) Foreign grants which are voluntary transfer of resources by governments, institutions, agencies or organizations.
2. Borrowings which may take different forms such as:
 - (a) Direct inter government loans
 - (b) Loans from international institutions (e.g. world bank, IMF, ADB)
 - (c) Soft loans for e.g. from affiliates of World Bank such as IDA
 - (d) External commercial borrowing, and
 - (e) Trade credit facilities
3. Deposits from non-resident Indians (NRI)

4. Investments in the form of :
 - (i) Foreign portfolio investment (FPI) in bonds, stocks and securities, and
 - (ii) Foreign direct investment (FDI) in industrial, commercial and similar other enterprises

A detailed discussion about all types of capital movements is beyond the scope of this unit and therefore, we shall concentrate only on foreign investments.

5.3 FOREIGN DIRECT INVESTMENT (FDI)

International investments are of two types namely, Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). Foreign direct investment (FDI) refers to the act of acquisition or construction of physical capital by a firm from one (source) country in another (host) country. The term sometimes refers to the flow per unit time, and sometimes to the accumulated stock of capital. It is defined as a process whereby the resident of one country (i.e. home/source country) acquires ownership of an asset in another country (i.e. the host country) and such movement of capital involves ownership, control as well as management of the asset in the host country.

Change
and
Modify

Foreign direct investment (FDI), according to IMF manual on 'Balance of payments' is "all investments involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy in an enterprise resident in an economy other than that of the direct investor". This typically occurs through acquisition of more than 10 percent of the shares of the target asset. Direct investment comprises not only the initial transaction establishing the relationship between the investor and the enterprise, but also all subsequent transactions between them and among affiliated enterprises, both incorporated and unincorporated.

According to the IMF and OECD definitions, the acquisition of at least ten percent of the ordinary shares or voting power in a public or private enterprise by non-resident investors makes it eligible to be categorized as foreign direct investment (FDI). India also follows the same pattern of classification. FDI has three components, viz., equity capital, reinvested earnings and other direct capital in the form of intra-company loans between direct investors (parent enterprises) and affiliate enterprises.

Foreign direct investors may be individuals, incorporated or unincorporated private or public enterprises, associated groups of individuals or enterprises,

governments or government agencies, estates, trusts, or other organizations or any combination of the above-mentioned entities. The main forms of direct investments are: the opening of overseas companies, including the establishment of subsidiaries or branches, creation of joint ventures on a contract basis, joint development of natural resources and purchase or annexation of companies in the country receiving foreign capital.

Direct investments are real investments in factories, assets, land, inventories etc. and involve foreign ownership of production facilities. The investor retains control over the use of the invested capital and also seeks the power to exercise control over decision making to the extent of its equity participation. The lasting interest implies the existence of a long-term relationship between the direct investor and the enterprise and a significant degree of influence by the investor on the management of the enterprise.

Based on the nature of foreign investments, FDI may be categorized as horizontal, vertical or conglomerate.

- i) A horizontal direct investment is said to take place when the investor establishes the same type of business operation in a foreign country as it operates in its home country, for example, a cell phone service provider based in the United States moving to India to provide the same service.
- ii) A vertical investment is one under which the investor establishes or acquires a business activity in a foreign country which is different from the investor's main business activity yet in some way supplements its major activity. For example; an automobile manufacturing company may acquire an interest in a foreign company that supplies parts or raw materials required for the company.
- iii) A conglomerate type of foreign direct investment is one where an investor makes a foreign investment in a business that is unrelated to its existing business in its home country. This is often in the form of a joint venture with a foreign firm already operating in the industry, as the investor has no previous experience.

Yet another category of investment is 'two-way direct foreign investments' which are reciprocal investments between countries. These investments occur when some industries are more advanced in one nation (for example, the computer industry in the United States), while other industries are more efficient in other nations (such as the automobile industry in Japan).



5.4 FOREIGN PORTFOLIO INVESTMENT (FPI)

Foreign portfolio investment is the flow of what economists call 'financial capital' rather than 'real capital' and does not involve ownership or control on the part of the investor. Examples of foreign portfolio investment are the deposit of funds in an Indian or a British bank by an Italian company, the purchase of a bond (a certificate of indebtedness) of a Swiss company or the Swiss government by a citizen or company based in France. Unlike FDI, portfolio capital, in general, moves to investment in financial stocks, bonds and other financial instruments and is effected largely by individuals and institutions through the mechanism of capital market. These flows of financial capital have their immediate effects on balance of payments or exchange rates rather than on production or income generation.

Foreign portfolio investment (FPI) is not concerned with either manufacture of goods or with provision of services. Such investors also do not have any intention of exercising voting power or controlling or managing the affairs of the company in whose securities they invest. The sole intention of a foreign portfolio investor is to earn a remunerative return through investment in foreign securities and is primarily concerned about the safety of their capital, the likelihood of appreciation in its value, and the return generated. Logically, portfolio capital moves to a recipient country which has revealed its potential for higher returns and profitability.

Following international standards, portfolio investments are characterised by lower stake in companies with their total stake in a firm at below 10 percent. It is also noteworthy that unlike the FDIs, these investments are typically of short term nature, and therefore, are not intended to enhance the productive capacity of an economy by the creation of capital assets.

Portfolio investors will evaluate, on a separate basis, the prospects of each independent unit in which they might invest and may often shift their capital with changes in these prospects. Therefore, portfolio investments are, to a large extent, expected to be speculative. Once investor confidence is shaken, such capital has a tendency to speedily shift from one country to another, occasionally creating financial crisis for the host country.

Table 4.5.1

Foreign direct investment (FDI) VS Foreign portfolio investment (FPI)

Foreign direct investment (FDI)	Foreign portfolio investment (FPI)
Investment involves creation of physical assets	Investment is only in financial assets
Has a long term interest and therefore remain invested for long	Only short term interest and generally remain invested for short periods
Relatively difficult to withdraw	Relatively easy to withdraw
Not inclined to be speculative	Speculative in nature
Often accompanied by technology transfer	Not accompanied by technology transfer
Direct impact on employment of labour and wages	No direct impact on employment of labour and wages
Enduring interest in management and control	No abiding interest in management and control
Securities are held with significant degree of influence by the investor on the management of the enterprise	Securities are held purely as a financial investment and no significant degree of influence on the management of the enterprise



5.5 REASONS FOR FOREIGN DIRECT INVESTMENT

As we know, economic prosperity and the relative abundance of capital are necessary prerequisites for export of capital to other countries. Many economies and organisations have accumulation of huge mass of reserve capital seeking profitable use. The primary aim of economic agents being maximisation of their economic interests, the opportunity to generate profits available in other countries often entices such entities to make investments in other countries.

The chief motive for shifting of capital between different regions or between different industries is the expectation of higher rate of return than what is possible in the home country. Investment in a host country may be considered as profitable by foreign firms because of some firm-specific knowledge or assets

(such as superior management skills or an important patent) that enable the foreign firm to gainfully outperform the host country's domestic firms. There are many other reasons (as listed below) for international capital movements which have found adequate empirical support. Investments move across borders on account of:

- (i) the increasing interdependence of national economies and the consequent trade relations and international industrial cooperation established among them
- (ii) internationalisation of production and investment of transnational corporations in their subsidiaries and affiliates.
- (iii) desire to reap economies of large-scale operation arising from technological growth
- (iv) lack of feasibility of licensing agreements with foreign producers in view of the rapid rate of technological innovations
- (v) necessity to retain direct control of production knowledge or managerial skill (usually found in monopolistic or oligopolistic markets) that could easily and profitably be utilized by corporations
- (vi) desire to procure a promising foreign firm to avoid future competition and the possible loss of export markets
- (vii) risk diversification so that recessions or downturns may be experienced with reduced severity
- (viii) shared common language or common boundaries and possible saving in time and transport costs because of geographical proximity
- (ix) necessity to retain complete control over its trade patents and to ensure consistent quality and service or for creating monopolies in a global context
- (x) promoting optimal utilization of physical, human, financial and other resources
- (xi) desire to capture large and rapidly growing high potential emerging markets with substantially high and growing population
- (xii) ease of penetration into the markets of those countries that have established import restrictions such as blanket bans, high customs duties or non-tariff barriers which make it difficult for the foreign firm to sell in the host-country market by 'getting behind the tariff wall'.

- (xiii) lower environmental standards in the host country and the consequent relative savings in costs
- (xiv) stable political environment and overall favourable investment climate in the host country
- (xv) higher degree of openness to foreign capital exhibited by the recipient country and the prevalence of preferential investment systems such as special economic zones to encourage direct foreign investments
- (xvi) the strategy to obtain control of strategic raw material or resource so as to ensure their uninterrupted supply at the lowest possible price; usually a form of vertical integration
- (xvii) desire to secure access to minerals or raw material deposits located elsewhere and earn profits through processing them to finished form (Eg.FDI in petroleum)
- (xviii) the existence of low relative wages in the host country because of relative labour abundance coupled with shortage and high cost of labour in capital exporting countries, especially when the production process is labour intensive.
- (xix) lower level of economic efficiency in host countries and identifiable gaps in development
- (xx) tax differentials and tax policies of the host country which support foreign direct investment. However, a low tax burden cannot compensate for a generally fragile and unattractive FDI environment.
- (xxi) inevitability of defensive investments in order to preserve a firm's competitive position
- (xxii) high gross domestic product and high per capita income coupled with their high rate of growth. There are also other philanthropic objectives such as strengthening of socio-economic infrastructure, alleviation of poverty and maintenance of ecological balance of the host country, and
- (xxiii) prevalence of high standards of social amenities and possibility of good quality of life in the host country

Table 4.5.2

Host Country Determinants of Foreign Direct Investment

Economic Determinants	Policy Framework
<p>Market -seeking FDI:</p> <p>Market size and per capita income</p> <p>Market growth</p> <p>Access to regional and global markets</p> <p>Country-specific consumer preferences</p> <p>Structure of markets</p> <p>Resource - or asset-seeking FDI:</p> <p>Raw materials</p> <p>Low -cost unskilled labor</p> <p>Availability of skilled labor</p> <p>Technological, innovative, and other created assets (e.g., brand names)</p> <p>Physical infrastructure</p> <p>Efficiency -seeking FDI:</p> <p>Costs of above physical and human resources and assets</p> <p>(including an adjustment for productivity)</p> <p>Other input costs (e.g., intermediate products, transport costs)</p> <p>Membership of country in a regional integration agreement, which could be conducive to forming regional corporate networks</p>	<p>Economic, political, and social stability</p> <p>Rules regarding entry and operations</p> <p>Standards of treatment of foreign affiliates</p> <p>Policies on functioning and structure of markets (e.g., regarding competition, mergers)</p> <p>International agreements on FDI</p> <p>Privatization policy</p> <p>Trade policies and coherence of FDI and trade policies</p> <p>Tax policy</p> <p>Business Facilitation</p> <p>Investment promotion (including image building and investment-generating activities and investment-facilitation services)</p> <p>Investment incentives</p> <p>"Hassle costs" (related to corruption and administrative efficiency)</p> <p>Social amenities (e.g., bilingual schools, quality of life)</p> <p>After-investment services</p>

Source: *International economics (7th ed) International Economics, Dennis R. Appleyard; Alfred J. Field; Steven L. Cobb (P237)*

Factors in the host country discouraging inflow of foreign investments are infrastructure lags, high rates of inflation, balance of payment deficits, poor literacy and low labour skills, rigidity in the labour market, bureaucracy and

corruption, unfavourable tax regime, cumbersome legal formalities and delays, difficulties in contract enforcement, land acquisition issues, small size of market and lack of potential for its growth, political instability, absence of well-defined property rights, exchange rate volatility, poor track-record of investments, prevalence of non-tariff barriers, stringent regulations, lack of openness, language barriers, high rates of industrial disputes, lack of security to life and property, lack of facilities for immigration and employment of foreign technical and administrative personnel, double taxation and lack of a general spirit of friendliness towards foreign investors.

5.6 MODES OF FOREIGN DIRECT INVESTMENT (FDI)

Foreign direct investments can be made in a variety of ways, such as:

- (i) Opening of a subsidiary or associate company in a foreign country,
- (ii) Equity injection into an overseas company,
- (iii) Acquiring a controlling interest in an existing foreign company,
- (iv) Mergers and acquisitions(M&A)
- (v) Joint venture with a foreign company.
- (vi) Green field investment (establishment of a new overseas affiliate for freshly starting production by a parent company).
- (vii) **Brownfield investments (a form of FDI which makes use of the existing infrastructure by merging, acquiring or leasing, instead of developing a completely new one. For e.g. in India 100% FDI under automatic route is allowed in Brownfield Airport projects.)**

New
Addition

5.7 BENEFITS OF FOREIGN DIRECT INVESTMENT

The benefits from and concerns about FDI are widely discussed and well documented. While recognizing the fact that there are also benefits and costs to the home country from capital outflow, in this unit we focus only on host-country effects of FDI with particular attention to the developing countries. Following are the benefits ascribed to foreign investments:

1. Entry of foreign enterprises usually fosters competition and generates a competitive environment in the host country. The domestic enterprises are

compelled to compete with the foreign enterprises operating in the domestic market. This results in positive outcomes in the form of cost-reducing and quality-improving innovations, higher efficiency and increasing variety of better products and services at lower prices ensuring wider choice and welfare for consumers.

2. International capital allows countries to finance more investment than can be supported by domestic savings. The provision of increased capital to work with labour and other resources available in the host country can enhance the total output/GDP (as well as output per unit of input) flowing from the factors of production.
3. From the perspective of emerging and developing countries, FDI can accelerate growth and foster economic development by providing the much needed capital, technological know-how, management skills, marketing methods and critical human capital skills in the form of managers and technicians. The spill-over effects of the new technologies usually spread beyond the foreign corporations. In addition, the new technology can clearly enhance the recipient country's production possibilities.
4. Competition for FDI among national governments also has helped to promote political and structural reforms important to attract foreign investors, including legal systems and macroeconomic policies.
5. Since FDI involves setting up of production base (in terms of factories, power plants, etc.), it generates direct employment in the recipient country. Subsequent FDI as well as domestic investments propelled in the downstream and upstream projects that come up in multitude of other services, generate multiplier effects on employment and income/GDP.
6. FDI not only creates direct employment opportunities but also, through backward and forward linkages, generate indirect employment opportunities. This impact is particularly important if the recipient country is a developing country with an excess supply of labour caused by population pressure.
7. Foreign direct investments also promote relatively higher wages for skilled jobs. More indirect employment will be generated to people in the lower-end services sector occupations thereby catering to an extent even to the less educated and unskilled persons engaged in those units.

8. Foreign corporations provide better access to foreign markets. Unlike portfolio investments, FDI generally entails people-to-people relations and is usually considered as a promoter of bilateral and international relations. Greater openness to foreign capital leads to higher national dependence on international investors, making the cost of discords higher.
9. There is also greater possibility for the promotion of ancillary units resulting in job creation and skill development for workers.
10. Foreign enterprises possessing marketing information with their global network of marketing are in a unique position to utilize these strengths to promote the exports of developing countries. If the foreign capital produces goods with export potential, the host country is in a position to secure scarce foreign exchange needed to import capital equipments or materials to assist the country's development plans or to ease its external debt servicing.
11. If the host country is in a position to implement effective tax measures, the foreign investment projects also would act as a source of new tax revenue which can be used for development projects.
12. It is likely that foreign investments enter into industries in which economies of scale can be realized so that consumer prices may be reduced. Domestic firms might not always be able to generate the necessary capital to achieve the cost reductions associated with large-scale production.
13. Increased competition resulting from the inflow of foreign direct investments facilitates weakening of the market power of domestic monopolies resulting in a possible increase in output and fall in prices.
14. Since FDI has a distinct advantage over the external borrowings, it is considered to have a favourable impact on the host country's balance of payment position, and
15. Better work culture and higher productivity standards brought in by foreign firms may possibly induce productivity related awareness and may also contribute to overall human resources development.



5.8 POTENTIAL PROBLEMS ASSOCIATED WITH FOREIGN DIRECT INVESTMENT

In the above section, we have seen that a wide variety of benefits may result from an inflow of foreign direct investment. These gains do not occur in all cases, nor do they occur in the same magnitude. Despite the arguments in favour of FDI, many are highly critical of the impact of foreign capital, especially on developing economies. They argue that foreign entities are highly focused on profits and have an eye on exploiting the natural resources and are almost always not genuinely interested in the development needs of host countries. Foreign capital is perceived by the critics as an instrument of imperialism, perpetrator of dependence and source of inequality between and within the nations.

Following are the general arguments put forth against the entry of foreign capital:

- 1) FDIs are likely to concentrate on capital-intensive methods of production and service so that they need to hire only relatively few workers. Such technology is inappropriate for a labour-abundant country as it does not support generation of jobs which is a crucial requirement to address the two fundamental areas of concern for the less developed countries namely, poverty and unemployment
- 2) The inherent tendency of FDI flows to move towards regions or states which are well endowed in terms of natural resources and availability of infrastructure has the potential to accentuate regional disparity. Foreign capital is also criticized for accentuating the already existing income inequalities in the host country.
- 3) In the context of developing countries, it is usually alleged that the inflow of foreign capital may cause the domestic governments to slow down its efforts to generate more domestic savings, especially when tax mechanisms are difficult to implement. If the foreign corporations are able to secure incentives in the form of tax holidays or similar provisions, the host country loses tax revenues.
- 4) Often, the foreign firms may partly finance their domestic investments by borrowing funds in the host country's capital market. This action can raise interest rates in the host country and lead to a decline in domestic investments through 'crowding-out' effect. Moreover, suppliers of funds in developing economies would prefer foreign firms due to perceived lower

Change

risks and such shifts of funds may divert capital away from investments which are crucial for the development needs of the country.

- 5) The expected benefits from easing of the balance of payments situation might remain unrealised or narrowed down due to the likely instability in the balance of payments and the exchange rate. Obviously, FDI brings in more foreign exchange, improves the balance of payments and raises the value of the host country's currency in the exchange markets. However, when imported inputs need to be obtained or when profits are repatriated, a strain is placed on the host country's balance of payments and the home currency leading to its depreciation. Such instabilities jeopardize long-term economic planning. Foreign corporations also have a tendency to use their usual input suppliers which can lead to increased imports. Also, large scale repatriation of profits can be stressful on exchange rates and the balance of payments.
- 6) Jobs that require expertise and entrepreneurial skills for creative decision making may generally be retained in the home country and therefore the host country is left with routine management jobs that demand only lower levels of skills and ability. The argument of possible human resource development and acquisition of new innovative skills through FDI may not be realized in reality.
- 7) High profit orientation of foreign direct investors tend to promote a distorted pattern of production and investment such that production could get concentrated on items of elite and popular consumption and on non-essential items.
- 8) Foreign entities are usually accused of being anti-ethical as they frequently resort to methods like aggressive advertising and anticompetitive practices which would induce market distortions.
- 9) A large foreign firm with deep pockets may undercut a competitive local industry because of various advantages (such as in technology) possessed by it and may even drive out domestic firms from the industry resulting in serious problems of displacement of labour. The foreign firms may also exercise a high degree of market power and exist as monopolists with all the accompanying disadvantages of monopoly. The high growth of wages in foreign corporations can influence a similar escalation in the domestic corporations which are not able to cover this increase with growth of productivity. The result is decreasing competitiveness of domestic

companies which might prove detrimental to the long-term interests of industrial development of the host country.

- 10) FDI usually involves domestic companies 'off-shoring', or shifting jobs and operations abroad in pursuit of lower operating costs and consequent higher profits. This has deleterious effects on employment potential of home country.
- 11) The continuance of lower labour or environmental standards in host countries is highly appreciated by the profit seeking foreign enterprises. This is of great concern because efforts to converge such standards often fail to receive support from interested parties.
- 12) At times, there is potential national security considerations involved when foreign firms function in the territory of the host country, especially when acute hostilities prevail.
- 13) FDI may have adverse impact on the host country's commodity terms of trade (defined as the price of a country's exports divided by the price of its imports). This could occur if the investments go into production of export-oriented goods and the country is a large country in the sale of its exports. Thus, increased exports drive down the price of exports relative to the price of imports.
- 14) FDI is also held responsible by many for ruthless exploitation of natural resources and the possible environmental damage.
- 15) With substantial FDI in developing countries there is a strong possibility of emergence of a dual economy with a developed foreign sector and an underdeveloped domestic sector.
- 16) Perhaps the most disturbing of the various charges levied against foreign direct investment is that a large foreign investment sector can exert excessive amount of power in a variety of ways so that there is potential loss of control by host country over domestic policies and therefore the less developed host country's sovereignty is put at risk. Mighty multinational firms are often criticized of corruption issues, unduly influencing policy making and evasion of corporate social responsibility.

No general assessment can be made regarding whether the benefits of FDI outweigh the costs. Each country's situation and each firm's investment must be examined in the light of various considerations and a judgment about the desirability or otherwise of the investment should be arrived at.

Many safeguards and performance requirements are put in place by developed and developing countries to improve the ratio of benefits to costs associated with foreign capital. A few examples are: domestic content requirements on inputs, reservation of certain key sectors to domestic firms, requirement of a minimum percent of local employees, ceiling on repatriation of profits, local sourcing requirements and stipulations for full or partial export of output to earn foreign exchange.



5.9 FOREIGN DIRECT INVESTMENT IN INDIA

New
Addition

FDI is an important monetary source for India's economic development. The import-substitution strategy of industrialisation followed by India post-independence, stressed on an extremely careful and selective approach while formulating FDI policy. Extensive controls imposed by the government severely restricted the inflow of foreign capital to India. The enactment of the Foreign Exchange Regulation Act (FERA), 1973 consolidated the regulatory framework with stipulations of up to 40 per cent of foreign equity holding in a joint venture. The Industrial Policy announcements of 1980 and 1982 and the Technology Policy Statement (1983) provided for a moderately lenient attitude towards foreign investments by endorsement of manufacturing exports as well as modernisation of industries through liberalised imports of capital goods and technology. This was supplemented by trade liberalisation measures in the form of tariff reduction and shifting of large number of items from import licensing to Open General Licensing (OGL).

The most important shift in investment policy occurred when India embarked upon economic liberalisation and reforms programme in 1991 to raise its growth potential and to integrate with the world economy. Further reforms in subsequent years put in place a series of measures directed towards liberalizing foreign investments and for ensuring access to foreign technology and funding.

The government's strategy favouring foreign investments and the prevalent robust business environment have ensured that foreign capital keeps flowing into the country. The government initiatives such as, automatic approval of FDI, simplification of procedures, setting up of Foreign Investment Promotion Board (FIPB abolished wef May 2017), signing of the Multilateral Investment Guarantee Agency Protocol for protection of foreign investments, permitting use of foreign trade marks and brand names, 100% FDI in multitude of sectors, enactment of Foreign Exchange Management Act (FEMA) 1999, passing of the SEZ Act in 2005, Special Economic Zones (SEZ), support to mergers acquisitions, and green field

investments, and encouragement to foreign technology collaboration agreements are a few such measures .

Apart from being a critical driver of economic growth, foreign direct investment (FDI) is a major source of non-debt financial resource for the economic development of India. According to the latest World Investment Report 2020 by UNCTAD, India jumped from 12th position in 2018 to 9th position in 2019 among the world's largest FDI recipient.

New
Addition

According to the Reserve Bank of India Bulletin, July 2020, the Gross Inflows/Gross Investments to India amounted to US\$ 74390million. The total direct investments India received during May 2020 is US\$2535 million. During the same period, the Foreign Direct Investment by India abroad amounted to US\$ 519 million, making the Net Foreign Direct Investment US\$ 2016 million. During 2019-20, India received the maximum FDI equity inflow from Singapore (US\$ 14.67 billion), followed by Mauritius (US\$ 8.24 billion), Netherlands (US\$ 6.50 billion), USA (US\$ 4.22 billion) and Japan (US\$ 3.22 billion).The services sector (Finance., Banking, Insurance, Non-Finance/Business, Outsourcing, R&D, Courier, Tech. Testing and Analysis, Other) attracted the highest amount of FDI with 17.45 percent of the total; followed by computer software & hardware (7.93%).

New
Addition

Currently, an Indian company may receive foreign direct investment either through 'automatic route' without any prior approval either of the Government or the Reserve Bank of India or through 'government route' with prior approval of the Government.

An Indian Company can receive foreign investment by issue of 'FDI compliant instruments' namely: equity shares, fully and mandatorily convertible preference shares and debentures, partly paid equity shares and warrants. These have to be issued in accordance with the provisions of the Companies Act, 2013 and the SEBI guidelines, as applicable.

All foreign investments are repatriable (net of applicable taxes) except in cases where the investment is made or held on non-repatriation basis or where the sectoral condition specifically mentions non-repatriation. Further, dividends/profits (net of applicable taxes), on foreign investments, being current income can be remitted outside India through an Authorised Dealer bank. Only NRIs are allowed to set up partnership/ proprietorship concerns in India on non-repatriation basis.

In India, foreign investment is prohibited in the following sectors:

- (i) Lottery business including Government / private lottery, online lotteries, etc.
- (ii) Gambling and betting including casinos etc.
- (iii) Chit funds
- (iv) Nidhi company
- (v) Trading in Transferable Development Rights (TDRs)
- (vi) Real Estate Business or Construction of Farm Houses
- (vii) Manufacturing of cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes
- (viii) Activities / sectors not open to private sector investment e.g. atomic energy and railway operations (other than permitted activities).

Foreign technology collaboration in any form including licensing for franchise, trademark, brand name, management contract is also prohibited for lottery business and gambling and betting activities.

With the objective of making India the most open economy in the world for FDI and for providing major impetus to employment and job creation, the FDI regime was radically liberalized on 20-June-2016. Changes introduced in the FDI policy include increase in sectoral caps, bringing more activities under automatic route and easing of conditions for foreign investment. These include easing of FDI in defence sector, e-commerce, in respect of food products manufactured or produced in India, pharmaceuticals (Greenfield and Brownfield), airports (both Greenfield and Brownfield), airport transport services, private security agencies, animal husbandry, establishment of branch offices, liaison office or project office, teleports, direct to home cable networks, mobile TV and head end-in-the sky broadcasting service and single brand retail trading.



5.10 OVERSEAS DIRECT INVESTMENT BY INDIAN COMPANIES

Integration of the Indian economy with the rest of the world is evident not only in terms of higher level of FDI inflows but also in terms of increasing level of FDI outflows. The overseas foreign direct investments by the Indian entrepreneurs are called Out-bound investments. Direct investment outside India means investments, either under the automatic route or the government approval route, by way of

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and
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contribution to the capital or subscription to the memorandum of a foreign entity or by way of purchase of existing shares of a foreign entity either by market purchase or private placement or through stock exchange, signifying a long-term interest in the foreign entity (joint venture (JV) / wholly owned subsidiary (WOS). Indian corporates can also invest overseas other than by way of direct investments. Listed Indian companies can invest up to 50% of their net worth as on the date of the last audited Balance Sheet in overseas companies, listed on a recognized stock exchange, or in the rated debt securities issued by such companies. Outbound investments from India have undergone substantial changes not only in terms of size but also in terms of geographical spread and sectoral composition. The total financial commitment (equity + loan + guarantee issue) on outward Foreign Direct Investment (OFDI) from India stood at US\$ 805.86 million in the month of June, 2020.

The overseas investments have been primarily driven by resource seeking, market seeking or technology seeking motives. Many Indian IT firms like Tata Consultancy Services, Infosys, WIPRO, and Satyam acquired global contracts and established overseas offices in developed economies to be close to their key clients. Recently, there has been a surge in resource seeking overseas investments by Indian companies, especially to acquire energy resources in Australia, Indonesia and Africa. Indian entrepreneurs are also choosing investment destinations in countries such as Mauritius, Singapore, British Virgin Islands, and the Netherlands on account of higher tax benefits they provide.

At present, any Indian investor can make overseas direct investment in any bona-fide activity except in certain real estate activities. This has been made possible by progressive relaxation of the capital controls and simplification of procedures for outbound investments from India. For example, the annual overseas investment ceiling to establish joint ventures (JV) and wholly owned subsidiaries has been raised to US\$ 125,000 from US\$ 75,000. The RBI has also relaxed norms for foreign investment by Indian corporates by raising the borrowing limit.

Policies in respect of foreign investments undergo far reaching changes from time to time. (Learners are expected to keep pace with the modifications in government policy in respect of inbound and outbound foreign investments).

SUMMARY

- Foreign capital may flow into an economy in different ways, such as foreign aid, grants, borrowings, deposits from non-resident Indians, investments in the form of foreign portfolio investment (FPI) and foreign direct investment (FDI)

- Foreign direct investment is defined as a process whereby the resident of one country (i.e. home country) acquires ownership of an asset in another country (i.e. the host country) and such movement of capital involves ownership, control as well as management of the asset in the host country.
- Direct investments are real investments in factories, assets, land, inventories etc. and have three components, viz., equity capital, reinvested earnings and other direct capital in the form of intra-company loans. FDI may be categorized as horizontal, vertical or conglomerate.
- Foreign portfolio investment is the flow of 'financial capital' with stake in a firm at below 10 percent, and does not involve manufacture of goods or provision of services, ownership management or control of the asset on the part of the investor.
- The main reasons for foreign direct investment are profits, higher rate of return, possible economies of large-scale in operation, risk diversification, retention of trade patents, capture of emerging markets, lower host country environmental and labour standards, bypassing of non-tariff and tariff barriers, cost-effective availability of needed inputs and tax and investment incentives.
- Foreign direct investment takes place through opening of a subsidiary or associate company, equity injection, acquiring a controlling interest, mergers and acquisitions (M&A), joint venture and green field investment.
- Benefits of foreign direct investment include positive outcomes of competition such as cost-reducing and quality-improving innovations, higher efficiency, huge variety of better products and services at lower prices, welfare for consumers, multiplier effects on employment, output and income, relatively higher wages, better access to foreign markets, control of domestic monopolies and improvement of balance of payments position.
- Potential problems of foreign direct investment include use of inappropriate capital-intensive methods in a labour-abundant country, increase in regional disparity, crowding-out of domestic investments, diversion of capital resulting in distorted pattern of production and investment, instability in the balance of payments and exchange rate and indiscriminate repatriation of the profits.
- FDIs are also likely to indulge in anti-ethical market distortions, off-shoring or shifting of jobs, overexploitation of natural resources causing

environmental damage, exercising monopoly power, decrease in competitiveness of domestic companies, potentially jeopardizing national security and sovereignty, worsening commodity terms of trade and causing emergence of a dual economy.

- FDI in India (Inbound FDI), mostly a post reform phenomenon, is a major source of non-debt financial resource for economic development. The government has, at different stages, liberalized FDI by increasing sectoral caps, bringing in more activities under automatic route and easing conditions for foreign investment.
- Overseas direct investments by Indian companies (Outbound FDI), made possible by progressive relaxation of capital controls and simplification of procedures, have undergone substantial changes in terms of size, geographical spread and sectoral composition. Outward Foreign Direct Investment (OFDI) from India stood at US\$ 1.86 billion in the month of June 2016.

TEST YOUR KNOWLEDGE

I. Multiple Choice Type Questions

1. Which of the following statements is incorrect?
 - (a) Direct investments are real investments in factories, assets, land, inventories etc. and involve foreign ownership of production facilities.
 - (b) Foreign portfolio investments involve flow of 'financial capital'
 - (c) Foreign direct investment (FDI) is not concerned with either manufacture of goods or with provision of services.
 - (d) Portfolio capital moves to a recipient country which has revealed its potential for higher returns and profitability.
2. Which of the following is a component of foreign capital?
 - (a) Direct inter government loans
 - (b) Loans from international institutions (e.g. World Bank, IMF, ADB)
 - (c) Soft loans for e.g. from affiliates of World Bank such as IDA
 - (d) All the above

3. Which of the following would be an example of foreign direct investment from Country X?
 - (a) A firm in Country X buys bonds issued by a Chinese computer manufacturer.
 - (b) A computer firm in Country X enters into a contract with a Malaysian firm for the latter to make and sell to it processors
 - (c) Mr. Z a citizen of Country X buys a controlling share in an Italian electronics firm
 - (d) None of the above
4. Which of the following types of FDI includes creation of fresh assets and production facilities in the host country?
 - (a) Brownfield investment
 - (b) Merger and acquisition
 - (c) Greenfield investment
 - (d) Strategic alliances
5. Which is the leading country in respect of inflow of FDI to India?
 - (a) Mauritius
 - (b) USA
 - (c) Japan
 - (d) USA
6. An argument in favour of direct foreign investment is that it tends to
 - (a) promote rural development
 - (b) increase access to modern technology
 - (c) protect domestic industries
 - (d) keep inflation under control
7. Which of the following is a reason for foreign direct investment?
 - (a) secure access to minerals or raw materials
 - (b) desire to capture of large and rapidly growing emerging markets
 - (c) desire to influence home country industries

- (d) (a) and (b) above
8. A foreign direct investor
- (a) May enter India only through automatic route
 - (b) May enter India only through government route
 - (c) May enter India only through equity in domestic enterprises
 - (d) Any of the above
9. Foreign investments are prohibited in
- (a) Power generation and distribution
 - (b) Highways and waterways
 - (c) Chit funds and Nidhi company
 - (d) Airports and air transport
10. Which of the following statement is false in respect of FPI?
- (a) portfolio capital in general, moves to investment in financial stocks, bonds and other financial instruments
 - (b) is effected largely by individuals and institutions through the mechanism of capital market
 - (c) is difficult to recover as it involves purely long-term investments and the investors have controlling interest
 - (d) investors also do not have any intention of exercising voting power or controlling or managing the affairs of the company

II. Short Answer Type Questions

1. What are the different types of foreign capital?
2. Define foreign direct investment?
3. Enumerate the components of foreign direct investment?
4. Distinguish between horizontal and vertical foreign direct investment
5. What is meant by foreign portfolio investment?
6. What are the different routes for securing FDI?
7. What is meant by automatic route?

8. Mention the effects of FDI on host country labour.
9. What are the reasons for the speculative nature of foreign portfolio investments?
10. What impact does FDI have on host country employment?
11. Outline the effect of FDI on technology of host country?
12. Enumerate the effect of FDI on domestic industries?
13. Do you think FDI would help prevent formation of monopolies?
14. Do you agree with the argument that FDI is likely to reduce employment?
15. What are the implications of FDI on domestic resource use?
16. Why did India discourage FDIs in its early stages?

III. Long Answer Type Questions

1. What are the different types of foreign capital?
2. Define foreign direct investment (FDI). What are the features of FDI?
3. What are the characteristics of foreign portfolio investments (FPI)?
4. Describe the factors influencing foreign direct investments?
5. Enumerate the host country determinants of foreign direct investment?
6. What are the factors in the host country that discourage inflow of foreign investments?
7. Explain the different modes of effecting foreign direct investment (FDI)?
8. What are the benefits of foreign direct investments to the host country?
9. Critically examine the general arguments put forth against entry of foreign capital.
10. Write a note on foreign direct investment in India.
11. Give an account of overseas direct investments by Indian companies?
12. Distinguish between foreign direct investment and foreign institutional investment?
13. Elucidate the potential costs and benefits of foreign direct investment?
14. Explain the state of affairs of foreign direct investment in India.

15. What are the grounds on which the opponents of foreign investments criticise the flow of FDI to developing countries?
16. Mention two arguments made in favour of FDI to developing economies like India? Illustrate your answer.
17. Which are the sectors in India where FDI is prohibited? Why?
18. "Foreign capital is not a bag of unmixed blessings as far as its impact on the host country is concerned". Comment on this statement.

IV Application Oriented Questions

1. Which of the following is FDI?
 - (i) Claram Joe, a German investor buys 5000 shares of Ford, a US Automobile company.
 - (ii) Annette D, the US Company acquires all the equity shares of Emeline & Co in Alice Land which makes computer components.
 - (iii) A Bulgarian investor Boryana Gergiev pays cash and buys 0.2 % of all outstanding equity shares of Mariette company which makes computer peripherals
 - (iv) Maansi Tech solutions purchase 52% stake in a Sarra, a Jamaican technology firm
 - (v) Kora extends a loan to Christa Victorine, a power producing firm in which it holds 60 percent of equity
 - (vi) Augusta Corp lends pounds 10 million to Lee Sud, a Dutch parts making firm in which it holds 79 percent of equity
2.
 - a) Labour group in your country oppose the flow of FDI into the country on grounds of perceived inequities consequent on FDI. What are their arguments?
 - b) Beth & Sushil are members of the committee for resolution of the issue cited above. What arguments would they put forth to convince the labour groups with respect to welfare implications for labour that may arise from FDI?

ANSWERS/HINTS

I Multiple Choice Type Questions

1. (c) 2. (d) 3. (c) 4. (c) 5. (a) 6. (b)
7. (d) 8. (d) 9. (c) 10. (c)

II Short Answer Type Questions

1. Foreign aid or assistance, multilateral aid from international organizations like the World Bank, borrowings of all types; such as, soft loans, external commercial borrowings, deposits from NRIs, and investments both FPI and FDI.
2. All investments involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy in an enterprise resident in an economy other than that of the direct investor and occur through acquisition of more than 10 percent of the shares of the target asset.
3. FDI has three components, viz., equity capital, reinvested earnings and other direct capital in the form of intra-company loans.
4. A horizontal direct investment is said to take place when the investor establishes the same type of business operation in a foreign country as it operates in its home country, whereas a vertical investment is one under which the investor establishes or acquires a business activity in a foreign country which is different from the investor's main business activity, yet in some way supplements its major activity.
5. Foreign portfolio investment is the flow of 'financial capital' rather than 'real capital' and does not involve ownership, control, or management on the part of the investor.
6. The main forms of direct investments are: the opening of overseas companies, including the establishment of subsidiaries or branches, creation of joint ventures on a contract basis, joint development of natural resources and purchase or annexation of companies in the country receiving foreign capital.
7. Direct investments through 'automatic route' do not need any prior approval either of the Government or of the Reserve Bank of India.

8. Benefits of higher wages, better opportunities for employment and skill enhancement, increased productivity, adverse effects of displacement due to use of capital intensive methods, crowding in jobs requiring low skills, perpetuation of low labour standards and differential treatment.
9. Typically, of short-term nature with no intention to create capital assets; tendency to often speedily shift the capital from one country to another with changes in prospects of returns.
10. Better opportunities for employment, likely to concentrate in less skill requiring jobs, possible displacement due to use of capital-intensive methods
11. Possible state-of-the-art technology transfer, improvement in host country technology (may be inappropriate for a labour abundant nation). Often criticized for transferring outdated technology.
12. Unequal competition, gainfully outperforms the host country's domestic firms, tendency to undercut a competitive local industry, may even drive out domestic firms from the industry, exercise a high degree of market power and exist as monopolists, high growth of wages in foreign corporations can influence a similar escalation in the domestic corporations, decreasing competitiveness, detrimental to the long term interests.
13. Increased competition decreases market power and the chance of formation of monopolies. However, foreign firms may also act as monopolists.
14. Possible due to capital intensive technology which is inappropriate for a labour abundant country; displacement of labour if industries fail or are forced to close down
15. Better and more efficient utilization of available resources, but resources are likely to be unsustainable and overexploited causing environmental damage.
16. Policy of import substitution, extensive controls, selective policy.

III Hints to Long Answer Type Questions

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- I. The length of the answer should relate to the marks allotted.
- II. The answer should be structured in three parts in the following style.
 - (a) Explain the economic fundamentals underlying the action/issue by integrating the course material in innovative ways; not necessarily

confined to one unit. This part provides an opportunity for students to explain their understanding of the underlying theory. The examiner may easily discern the level of cognition of the student. This should be a compulsory component with a reasonably high proportion of marks earmarked.

- (b) Analyse the issue at hand (given the framework and tools) and explain the policy position by applying the fundamentals as explained in (a) above.
- (c) Substantiate with illustrations from current economic scenario

IV Application Oriented Questions

1. Solution:

- i. Not FDI because less than 10 percent (which is the globally accepted criterion)
- ii. FDI since 100 percent shares are bought
- iii. Not FDI because an insignificant part of the total stake is acquired
- iv. FDI because it involves more than 10 percent of the company's shares.
- v. FDI; lending to a company in which Kora has majority stake
- vi. FDI refer (e)above

2. Solution:

- a) Foreign corporates concentrate on capital-intensive methods of production - so they need to hire only relatively few workers, technology inappropriate for a labour-abundant country - does not support generation of jobs or address poverty and unemployment- help accentuate the already existing income inequalities- jobs that require expertise and entrepreneurial skills for creative decision making may generally be retained in the home country and therefore the host country is left with routine management jobs that demand only lower levels of skills and ability. The argument of possible human resource development and acquisition of new innovative skills through FDI may not be realized in reality- may resort to anti-ethical, and anticompetitive practices- 'off -shoring', or shifting jobs - negative effects on employment potential of home country- continuance of lower labour or environmental standards and ruthless labour and natural resources exploitation.

- b) FDI will - accelerate growth and foster economic development – bring in technological know-how, management skills and marketing methods- generate direct employment in the recipient country- Subsequent FDI as well as domestic investments propelled in the downstream and upstream projects that come up in multitude of other services generate multiplier effects on employment and income - generate indirect employment opportunities-- promote relatively higher wages for skilled jobs- more indirect employment will be generated to persons in the lower-end services sector occupations thereby catering to an extent even to the less educated and unskilled engaged in those units- Better work culture and higher productivity standards- induce productivity related awareness and may also contribute to overall human resources development.