RKDF UNIVERSITY, BHOPAL

Bachelor of Arts (B.A.)
Second Semester

Course	Category	Subject	Subject Code
B.A.	**GE**	**Introductory Macro Economics**	**BA-EC 203**
Total Credit: 6		**Max.Marks:100 (Internal:40+External:60)**	

Course learning outcomes (CLO):

After completing this course, students will be able to understand rational behavior and fundamentals of microeconomics. They will be able to explain consumers and producer's behavior and their optimum decisions. Students will be able to know about the firms and industry, markets and their decisions about optimum production. They will be also able to explain the theory of distribution and concept of economic welfare. Learning microeconomics is an excellent way to gain an understanding of many factors that affect us in the real world, such as methods of buying goods, product pricing and input pricing, Ultimately, learning microeconomics is key in learning about the principles of economics.

Units	Topic	Duration (In Hours)	Marks
I **National Income and Social Accounts**	Meaning of Macro Economics, Circular flow of income in an open economy. Concept and measurement of National Income; National Income Accounting.	18	20
II **Output and Employment**	Say's Law of Markets and the Classical Aggregate Demand and Aggregate Supply Functions; The Principle of Effective Demand;	19	20
III **Consumption Function**	Average and Marginal Propensity to Consume; factors influencing consumption spending; Psychological Law of Consumption-Long-run Consumption Function Absolute IncomeHypothesis; Freidman's Permanent Income Hypothesis,	18	20
IV **Investment Function**	Autonomousand Induced Investment; Marginal Efficiency of Capital, Investment Multiplier and its effectiveness in Multiplier - Accelerator Interaction Model.	18	20
V **Trade Cycles**	Keynesian view on Trade Cycles; Deflation and Reflation definition, types, causes and effect of inflation on different sectors on the economy.	18	20

Part- C Learning Resource
Text Books, Reference Books, Other Resources

Suggested Readings:
1. Ahuja, H.L. (Latest Addition). Principles of Micro Economics, Sultan Chand and Company, New Delhi (Hindi and English Versions)
2. Barla, C.S. (Latest Addition) , Micro Economics, National Publishing House, Jaipur, New Delhi (Hindi and English Versions)
3. Jhingan, M.L. (Latest Addition), Micro Economic, Vrinda Publication, New Delhi (Hindi and English Versions)
4. Karl E. Case and Ray C. fair, (2007), Principles of Economics, 8th Ed., Pearson Education Inc.
5. Koutsoyiannis, A. (1979), Modern Microeconomics, (2nd Edition), Macmillan Press, London.
6. Kreps, David M. (1990), A course in Microeconomic Theory, Princeton University Press. Princeton.
7. Mankiw, G. (2010) Principles of Microeconomics, 6th ed.., South-Western College Publishing, USA.
8. Misra, S.K. and Puri, V.K. (2001) – Advanced Micro Economic Theory, Himalaya publishing House, Bombay (Hindi and English Versions)

Suggestive digital platforms web links
1. https://epgo.inflibnet.ac.in/Home/ view Subject? Catid = 11
2. https://vidyamitra.inflibnet.ac.in/index .php/search?subject%5B%D=F urdamentals +of+microeconomic+theory &domain%5B%5D=Social+Sciences
3. https://www. swayamprabha.gov.in/index. Php/channel profile/profile/7

Suggested equivalent online courses:: http://www.mcafee.cc/Introecon/IEA2007.pdf.

Self-Study Material (OLD)

RKDF UNIVERSITY, BHOPAL
vSecond Semester

Introductory MacroEconomics

National Income and Social Accounts

### Meaning of Macro Economics

Economics is the study of the production, consumption, and transfer of wealth. There are two branches of economics: macroeconomics and microeconomics. Macro is the Greek root meaning large, and micro is the Greek root meaning small. The macroeconomics definition is the branch of economics studying the overall economy on a large scale. Macroeconomics means studying inflation, price levels, economic growth, national income, gross domestic product (GDP), and unemployment numbers. Microeconomics studies things on an individual level, such as a single person, a household, or one industry.

Macroeconomics is a branch of economics that depicts a substantial picture. It scrutinises itself with the economy at a massive scale and several issues of an economy are considered. The issues confronted by an economy and the headway that it makes are measured and apprehended as a part and parcel of macroeconomics. When one speaks of the issues that an economy confronts, inflation, unemployment, increasing tax burden, etc., are all contemplated. This makes it apparent that macroeconomics focuses on large numbers.

Circularflow of income in an open economy

The circular flow model is a method for understanding how money travels throughout an economy and a society as a whole. Once money is introduced into the economy, it circulates in a number of different ways allowing individuals, firms, organizations, and the government to obtain goods and services that they need in order to function properly. The circular flow model shows how money helps to transform the factors of

production into goods and services that are then traded to consumers in exchange for even more money. This money allows firms to continue to produce these goods and services and to also increase its output and ability to make a profit. In addition to consumers and firms, the money is also circulated through the government in the form of taxes, subsidies, etc. This model is ordinarily represented by a visual depiction known as a circular flow chart.
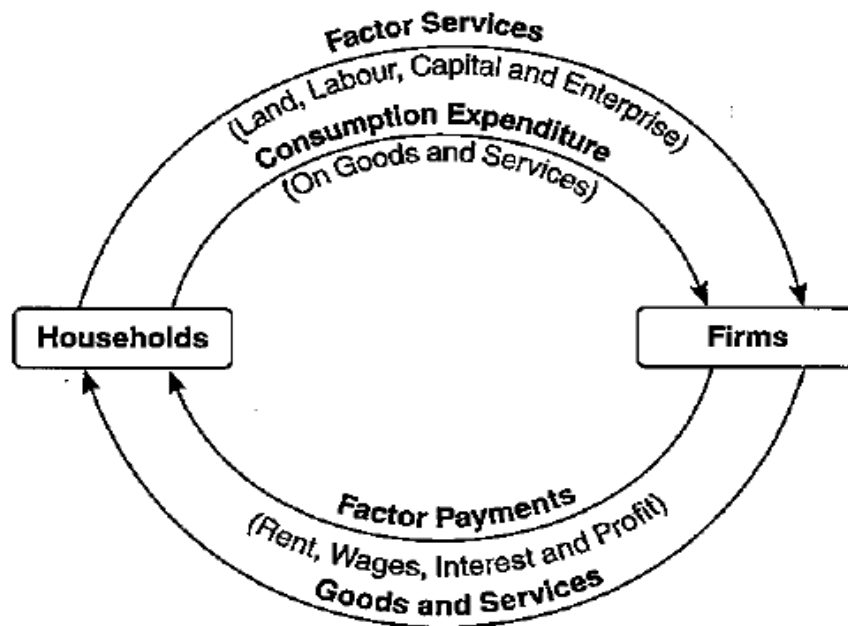
The circular flow means the unending flow of production of goods and services, income, and expenditure in an economy. It shows the redistribution of income in a circular manner between the production unit and households.

These are land, labour, capital, and entrepreneurship

- The payment for the contribution made by fixed natural resources (called land) is known as rent.
- The payment for the contribution made by a human worker is known as wage.
- The payment for the contribution made by capital is known as interest.
- The payment for the contribution made by entrepreneurship is known as profit.
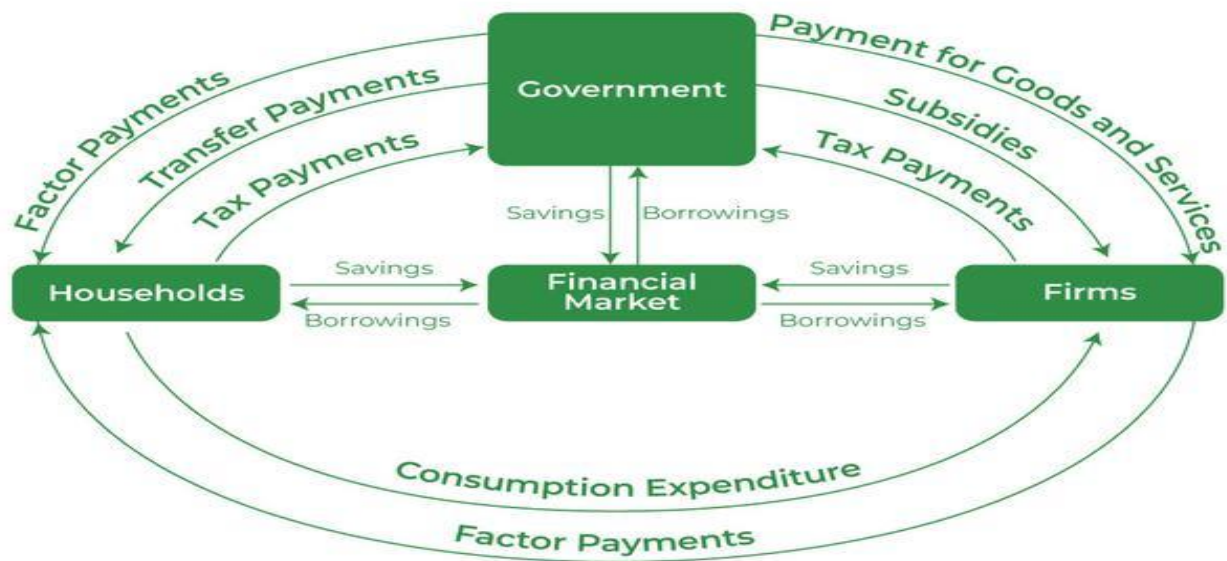
Concept and measurement of National Income

What is National Income?

The value of the commodities and services a nation produces in a fiscal year is referred to as national income. As a result, it represents the sum of all economic activity carried out in a nation over the course of a year and is measured in monetary terms. The terms national dividend, national production, and national expenditure are sometimes used interchangeably with the ambiguous concept of national income.

The equation to calculate national income is as follows:

National Income = C + I + G + (X -M)

Where,

- o   C stands for consumption.
- o   I stand for total investment expenditure
- o   G stands for the expense made by the government
- o   X stands for exports and
- o   M stands for imports.

The positions of X and M are interchangeable depending on whether the trades are trade surplus or deficit.

• It is the sum of income earned by its residents from the factor services rendered to the production units, both within and outside the geographical boundaries of the country.
The total value of final goods and services produced by the normal residents during an accounting year, after adjusting depreciation.

- It is Net National Product (NNP) at Factor Cost (FC)
- It does not include taxes, depreciation and non-factor inputs (raw materials)

Domestic Income – Total value of final goods and services produced within a domestic territory during an accounting year, after adjusting depreciation.

- It is NDP at FC
- Both NNP and NDP can be measured at constant prices (real income) or market prices (nominal income)
- Domestic Income + NFIA = National Income

National: It refers to the residents whose economic interests lie within the country in which they live.

Factor Income: It is the income derived from factors of production such as Land, Labour, Capital and Entrepreneurship.

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

Measurement of National Income – Income Method

Estimated by adding all the factors of production (rent, wages, interest, profit) and the mixed income of self-employed

1. In India, one-third of people are self-employed.
2. This is the 'domestic' income, related to the production within the borders of the country

Measurement of National Income – Production Method

Estimated by adding the value added by all the firms

Value-added = Value of Output – Value of (non-factor) inputs

1. This gives GDP at Market Price (MP) – because it includes depreciation (therefore 'gross') and taxes (therefore 'market price')

2. To reach National Income (that is, NNP at FC)

   - Add Net Factor Income from Abroad: GNP at MP = GDP at MP + NFIA

   - Subtract Depreciation: NNP at MP = GNP at MP – Dep

   - Subtract Net Indirect Taxes: NNP at FC = NNP at MP – NIT

Measurement of National Income – Expenditure Method

The expenditure method to measure national income can be understood by the equation given below:

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

where Y = GDP at MP, C = Private Sector's Expenditure on final consumer goods, G = Govt's expenditure on final consumer goods, I = Investment or Capital Formation, X = Exports, I = Imports, X-M = Net Exports

Any of these methods can be used in any of the sectors – the choice of the method depends on the convenience of using that method in a particular sector.

National income accounting

National income accounting refers to the set of methods and principles that are used by the government for measuring production and income, or in other words economic activity of a country in a given time period.

The various measures of determining national income are GDP (Gross Domestic Product), GNP (Gross National Product), and NNP (Net National Product) along with other measures such as personal income and disposable income.

National income accounting equation

National income accounting equation is an equation that shows the relationship between income and expense of an economy and other categories. It is represented by the following equation:

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

Where

Y = National income

C = Personal consumption expenditure

I = Private investment

G = Government spending

X = Net exports

M = Imports

The most important metrics that are determined by national income accounting are GDP, GNP, NNP, disposable income, and personal income. Let us know more about these concepts briefly in the following lines.

Gross Domestic Product (GDP)

The most important metric that is determined by national income accounting is GDP or the gross domestic product. GDP is defined as the total monetary or the market value of all the final goods and services that are produced within the geographical boundaries of a country.

GDP works as a scorecard that reflects the economic health of a country. It is calculated on an annual basis. GDP helps in estimating the growth rate of a country. GDP can be calculated using the three methods, which are expenditures method, production method, and income method.

The other indicators of national income are derived from GDP.

GDP can be calculated by the following two methods:

1. Expenditure approach
2. Income approach

Calculation of GDP by expenditure approach is,

GDP = C + I + G + (X – M)

Where

GDP = Gross domestic product

C = Personal consumption expenditure

I = Private investment

G = Government spending

X = Net exports

M = Imports

Income approach calculation

GDP = Private consumption + Gross investment + Government investment + Government spending + (Exports – Imports)

Gross National Product (GNP)

Gross national product or GNP is a measure of the total value of all the finished goods and services that is produced by the citizens of a country irrespective of their geographic location. It calculates only the final or finished goods.

It signifies how much the citizens of a country are contributing to the economy. It does not include income earned by foreign nationals within the country.

GNP is calculated using the following formulae:

GNP = C + I + G + X + Z

Where,

C = Consumption

I = Investment

G = Government

X = Net exports

Z = Net factor income from abroad

Net National Product (NNP)

Net national product or NNP is the total value of all goods and services that are produced in a country during a given period of time minus the depreciation. It is represented as follows:

NNP = GNP – Depreciation

Methods of National Income Accounting

There are three methods of measuring national income. They are as follows:

1. Product method: In this method, a country's national income can be calculated by adding the output of all the firms in the economy to determine the nation's output.

2. Income method: This method is used to calculate incomes generated by production. It includes income from employment, rent obtained for buildings, patents, and copyrights, return on capital from the private sector and public sector, depreciation, etc.

3. Expenditure method: In this method, the national income is calculated by adding all the expenditures that are done for purchasing the national output.

Functions of National Income Accounting

The basic functions of national income accounting are as follows:

1. To determine the economic status of a country.

2. To provide a basis of evaluation and reviewing of policies that are under implementation.

Uses of National Income Accounting

Uses of national income accounting are as follows:

1. It reflects the economic performance of an economy and shows its strengths and weaknesses.
2. It helps to determine the structural changes that are appearing in the economy.
3. It helps in comparing nations based on national income.
4. It shows the contribution of each sector towards the growth of the economy.

Output and Employment

Say's Law of Markets

Say's Law of Markets states that supply creates demand, and each supply of goods or items creates an equivalent amount of demand for the goods. It works on the idea one good can increase demand for another. The law thus denies a possible scarcity of aggregate demand.

Say's law of market was given by a French economist Jean - Beptiste Say in the chapter xv, of the Demand or Market for Products in his book Treatise on Political Economy. Say's law of markets is the core of the classical theory of employment. J.B. Say, enunciated the proposition that "supply creates its own demand." Therefore, there cannot be general overproduction and the problem of unemployment in the economy.

On the other hand, if there is general overproduction in the economy, then some labourers may be asked to leave their jobs. There may be the problem of unemployment in the economy for some time. In the long-run, the economy will automatically tend toward full employment. In Say's words, "It is production which creates markets for goods. A product is no sooner created than it, from that instant, affords a market for other products to the full extent of its own value. Nothing is more favourable to the demand of one product, than the supply of another." This definition explains the following important facts about the law:-

Production Creates Market (Demand) for Goods: When producers obtain the various inputs to be used in the production process, they generate the necessary income. For example, producers give wages to labourers for producing goods. The labourers will purchase the goods from the market for their own use. This, in turn, causes the demand for goods produced. In this way, supply creates its own demand.

The Classical Theory of Employment

Introduction: John Maynard Keynes in his General Theory of Employment, Interest and Money published in 1936, made a frontal attack on the classical postulates. He developed a new economics which brought about a revolution in economic thought and policy. The General Theory was written against the background of classical thought. By the "classicists" Keynes meant "the followers of Ricardo, those, that is to say, who adopted and perfected the theory of Ricardian economics." They included, in particular, J.S. Mill, Marshall and Pigou. Keynes repudiated traditional and orthodox economics which had been built up over a century and which dominated economic thought and policy before and during the Great Depression. Since the Keynesian Economics is based on the criticism of classical economics, it is necessary to know the latter as embodied in the theory of employment.

The Classical theory of Employment- The classical economists believed in the existence of full employment in the economy. To them, full employment was a normal situation and any deviation from this regarded as something abnormal. According to Pigou, the tendency of the economic system is to automatically provide full employment in the labour market when the demand and supply of labour are equal. Unemployment results from the rigidity in the wage structure and interference in the working of free market system in the form of trade union legislation, minimum wage legislation etc. Full employment exists "when everybody who at the running rate of wages wishes to be employed." Those who are not prepared to work at the existing wage rate are not unemployed because they are voluntarily unemployed. Thus full employment is a situation where there is no possibility of involuntary unemployment in the sense that people are prepared to work at the current wage rate but they do not find work. The basis of the classical theory is Say's Law of Markets which was carried forward by classical economists like Marshall and Pigou. They explained the determination of output and employment divided into individual markets for labour, goods and money. Each market involves a built-in equilibrium mechanism to ensure full employment in the economy.

Assumptions

The classical theory of output and employment is based on the following assumptions:

- There is the existence of full employment without inflation.

There is a laissez-faire capitalist economy without government interference.

¬ It is a closed economy without foreign trade.

¬ There is perfect competition in labour and product markets.

¬ Labour is homogeneous

¬ Total output of the economy is divided between consumption and investment expenditures.

¬ The quantity of money is given and money is only the medium of exchange.

¬ Wages and prices are perfectly flexible.

¬ There is perfect information on the part of all market participants.

¬ Money wages and real wages are directly related and proportional.

¬ Savings are automatically invested and equality between the two is brought about by the rate of interest

Aggregate Demand and Aggregate Supply Functions

Introduction

In order for a macroeconomic model to be useful, it needs to show what determines total supply or total demand for the economy and how total demand and total supply interact at the macroeconomic level. We have a model like this! It's called *the* aggregate demand/aggregate supply model.

Aggregate supply and demand refers to the concept of supply and demand but applied at a macroeconomic scale. Aggregate supply and aggregate demand are both plotted against the aggregate price level in a nation and the aggregate quantity of goods and services exchanged at a specified price.

Aggregate Supply

The aggregate supply curve measures the relationship between the price level of goods supplied to the economy and the quantity of the goods supplied. In the short run, the supply curve is fairly elastic, whereas, in the long run, it is fairly inelastic (steep). This has to do with the factors of production that a firm is able to change during these two different time intervals.

In the short run, a firm's supply is constrained by the changes that can be made to short run production factors such as the amount of labor deployed, raw material inputs, or overtime hours. However, in the long run, firms are able to open new plants, expand plants or adopt new technologies, indicating that maximum supply is less constrained.

Aggregate Demand

Since consumer demand does not face the same constraints faced by suppliers, there is no relative change in the elasticity of demand itself. Rather, the steepness of the demand curve depends on the price elasticity of demand for the good. Thus, the aggregate demand curve follows a consistent downward slope, whose elasticity is subject to change due to factors such as:

- Changing consumer preferences
- New literature about certain products
- Changes in the rate of inflation
- Changes in interest rates
- Changes in the level of household wealth
- Foreign currency risk

Equilibrium in the aggregate demand/aggregate supply model

Let's begin by looking at the point where aggregate supply equals aggregate demand—the equilibrium. We can find this point on the diagram below; it's where the aggregate supply, AS, and aggregate demand, AD, curves intersect, showing the equilibrium level of real GDP and the equilibrium price level in the economy.

At a relatively low price level for output, firms have little incentive to produce, although consumers would be willing to purchase a high quantity. As the price level for outputs rises, aggregate supply rises and aggregate demand falls until the equilibrium point is reached.

The Principle of Effective Demand

Keynes's Principle of Effective Demand:
The principle of 'effective demand' is basic to Keynes' analysis of income, output and employment. Economic theory has been radically changed with the introduction of this principle. Stated briefly, the Principle of Effective Demand tells us that in the short period, an economy's aggregate income and employment are determined by the level of aggregate demand which is satisfied with aggregate supply.

Total employment depends on total demand. As employment increases, income increases. A fundamental principle about the propensity to consume is that as the real income of the community increases, consumption will also increase but by less than income.

Therefore, in order to have enough demand to sustain an increase in employment there must be an increase in real investment equal to the gap between income and consumption out of that income. In other words, employment can't increase, unless

We can generalize and say; a given level of income and employment cannot be maintained unless investment is sufficient to absorb the saving out of that level of income. This is the core of the principle of effective demand.

Meaning of Effective Demand:
Effective demand manifests itself in the spending of income. It is judged from the total expenditure in the economy. The total demand in the economy consists of consumption goods and investment goods, though consumption goods demand forms a major part of the total demand.

Consumption goes on increasing with increase in income and employment. At various levels of income there are corresponding levels of demand but all levels of demand are not effective. Only that level of demand is effective which is fully met with the forthcoming supply so that entrepreneurs neither have a tendency to reduce nor to expand production.

Effective Demand is the demand for the output as a whole; in other words, out of the various levels of demand, the one which is brought in equilibrium with supply in the economy is called effective demand. It was this theory of effective demand which remained neglected for more than 100 years and came into prominence with the appearance of Keynes' General Theory.

Keynes was interested in the problem of how much people intended to spend at different levels of income and employment, as it was this intended spending that determined the level of consumption and investment. Keynes's view was that people's intentions to spend were translated into aggregate demand. Should aggregate demand, said Keynes,

fall below income businessmen expect to receive, there will be cut backs on production of goods resulting in unemployment. On the opposite, should aggregate demand exceed expectations, production will be stimulated.

In any community, effective demand represents the money actually spent by- people on goods and services. The money which the entrepreneurs receive is paid to the factors of production in the form of wages, rent, interest and profit. As such, effective demand (actual expenditure) equals national income which is the sum of the income receipts of all members of the community.

It also represents the value of the output of the community because the total value of the national output is just the same thing as the receipts of the entrepreneurs from selling goods. Further, all output is either consumption goods or investment goods; we can therefore say that effective demand is equal to national expenditure on consumption plus investment goods.

Thus, effective demand (ED) = national income (Y) = value of national output = Expenditure on consumption goods (C) + expenditure on investment goods (I).

Therefore, ED = Y = C + I= 0 = Employment.

Determinants of Effective Demand:

For an understanding of Keynes' theory of employment and how an equilibrium level of employment is established in the economy, we must know its determinants the aggregate demand function and the aggregate supply function and their inter-relationship.

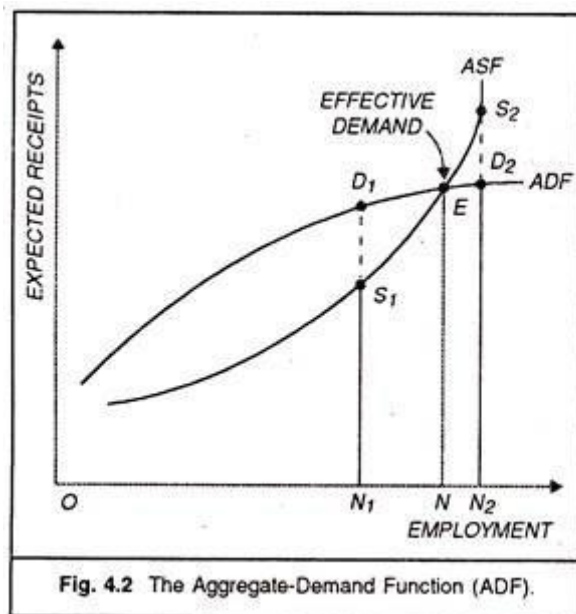1. Aggregate Demand Function, and

2. Aggregate Supply Function.

1. Aggregate Demand Function:

Aggregate Demand Function relates any given level of employment to the expected proceeds from the sale of production out of that volume of employment. What the expected sale proceeds will be depends upon the expected expenditures of the people on

consumption and investment. Every producer in a free enterprise economy tries to estimate the demand for his product and calculate in anticipation the profit likely to be earned out of his sale proceeds.

The sum-total of income payments made to the factors of production in the process of production constitutes his factor costs. Thus, the factor costs and the entrepreneur's profit added to them give us the total income or proceeds resulting from a given amount of employment in a firm. Keynes carried this idea into macro-economics. We can calculate the aggregate income or total sale proceeds. This aggregate income or aggregate proceeds expected from a given amount of employment is called the **"Aggregate Demand Price"** of the output of that amount of employment, i.e., it represents expected receipts when a given volume of employment is offered to workers.

Entrepreneurs make decisions about the amount of employment they will offer to labour on the basis of the expectations of sales and expected profit which, in turn, depend upon the estimate of the total money (income) they will receive by the sale of goods produced at varying levels of employment. The sales proceeds which they expect to receive are the same as they expect the community to spend on their production.

Fig. 4.2 The Aggregate-Demand Function (ADF).

A schedule of the proceeds expected from the sale of outputs resulting from varying amounts of employment is called the aggregate demand schedule or the aggregate demand Junction. The aggregate demand function shows the increase in the aggregate

demand price as the amount of employment and hence output increases. Thus, the aggregate demand schedule is an increasing function of the amount of employment.

Consumption Function

Average and Marginal Propensity to Consume

Marginal Propensity to Consume (MPC)

In economics, the marginal propensity to consume (MPC) is defined as the proportion of an aggregate raise in pay that a consumer spends on the consumption of goods and services, as opposed to saving it. Marginal propensity to consume is a component of Keynesian macroeconomic theory and is calculated as the change in consumption divided by the change in income.

Average Propensity to Consume

Average propensity to consume (APC) measures the percentage of income that is spent rather than saved. This may be calculated by a single individual who wants to know where the money is going or by an economist who wants to track the spending and saving habits of an entire nation.

Propensity to Consume vs. Propensity to Save

The sum of the average propensity to consume and the average propensity to save is always equivalent to one. A household or a nation must either spend or save all of its income.

The inverse of the average propensity to consume is the average propensity to save (APS). That figure is simply the total of income minus spending. The result is known as the savings ratio.

Notably, the savings ratio is normally based on its percentage of disposable income, or after-tax income. Individual determining personal propensities to consume and save should probably use the disposable income figure as well for a more realistic measure.

In either case, the propensity to consume can be determined by dividing average household consumption, or spending, by average household income, or earnings.

Factors influencing consumption spending

The objective and subjective factors affecting consumption spending.

Objective Factors:

The most important objective factors are the following:

1. The Rate of Interest:

Saving directly depends on interest. When the rate of interest rises saving will increase and consumption will fall. In other words, at high rates of interest people often curtail their consumption voluntarily to save more. Thus the rate of interest affects the consumption spending indirectly.

2. Sales Efforts:

Through various sales promotion measures, such as advertising, it is possible to increase the demand for consumer goods. In practice, advertising has the effect of shifting consumer demand from one product to another.

An increase in total demand from one good may be at the expense of another good, but an increase or decrease in the amount of selling effort may affect the total volume of consumer expenditure, given a fixed level of income.

3. Relative Price:

Changes in relative price can only shift demand from one product to another. But, in some cases, relative price changes might affect aggregate consumption.

4. Capital Gains:

Keynes pointed out that, consumption spending might be influenced by capital gains. This implies that real consumption is influenced by the stock of wealth. The rise in American consumption spending in the late 1920s reflected the realised and unrealised capital gains which were being made in the stock market. In fact, an increase in the perceived wealth of the community might stimulate consumption spending.

5. The Volume of Wealth:

The total wealth of consumer is a possible influence on consumer expenditure. This point has been made by A. C. Pigou. He argued that, current utility depends on consumer wealth, current and future (the larger the current wealth the larger, cet. par. will be future wealth, too). The larger the stock of wealth the lower is the marginal utility, and, therefore, the less the strength of desire to add to future wealth through reducing current consumption.

Some economists even argued that, a change in consumers' money holding which represents a mere change in the composition of a given total of wealth might affect consumption. For example, in times of depression and unemployment the central bank can make open market purchase of securities and get money in exchange. More money holding implies more consumption.

Subjective Factors:

Keynes discussed various motives for consumption such as enjoyment, short-sightedness, generosity, miscalculation, ostentation and extravagance. He calls these subjective factors which were liable to significant change in the short run.

Psychological Law of Consumption-Long-run Consumption Function

Keynes's Psychological Law of Consumption:

Further, Keynes put forward a psychological law of consumption, according to which, as income increases consumption increases but not by as much as the increase in income.

In other words, marginal propensity to consume is less than one.

$$1 > \Delta C/\Delta Y > 0$$

While Keynes recognized that many subjective and objective factors including interest rate and wealth influenced the level of consumption expenditure, he emphasized that it is the current level of income on which the consumption spending of an individual and the society depends.

To quote him:

"The amount of aggregate consumption depends mainly on the amount of aggregate income. The fundamental psychological law, upon which we are entitled to depend with great confidence both a priori from our knowledge of human nature and from the detailed facts of experience is that men (and women, too) are disposed, as a rule and on an average to increase their consumption as their income increases, but not by as much as the increase in their income"

In the above statement about consumption behaviour, Keynes makes three points. First, he suggests that consumption expenditure depends mainly on absolute income of the current period, that is, consumption is a positive function of the absolute level of current income. The more income in a period one has, the more is likely to be his consumption expenditure in that period.

In other words in any period the rich people tend to consume more than the poor people do. Secondly, Keynes points out that consumption expenditure does not have a proportional relationship with income. According to him, as the income increases, a smaller proportion of income is consumed. The proportion of consumption to income is called average propensity to consume (APC). Thus, Keynes argues that average propensity to consume (APC) falls as income increases.

The Keynes' consumption function can be expressed in the following form:

$C = a + bY_d$

Where C is consumption expenditure and Y_d is the real disposable income which equals gross national income minus taxes, a and b are constants, where a is the intercept term, that is, the amount of consumption expenditure at zero level of income. Thus, a is autonomous consumption. The parameter b is the marginal propensity to consume (MPC) which measures the increase in consumption spending in response to per unit increase in disposable income. Thus

$MPC = \Delta C / \Delta Y$

It is evident from Fig. 9.1 and 9.3 the behaviour of consumption expenditure as perceived by Keynes implies that marginal propensity to consume (MPC) which is measured by the slope of consumption function curve CC at a point is less than average propensity to consume (APC) which is measured by the slope of the line joining a point on the consumption function curve CC to the origin (that is, MPC < APC).

Fig. 9.1. *Keynesian Linear Consumption Function*
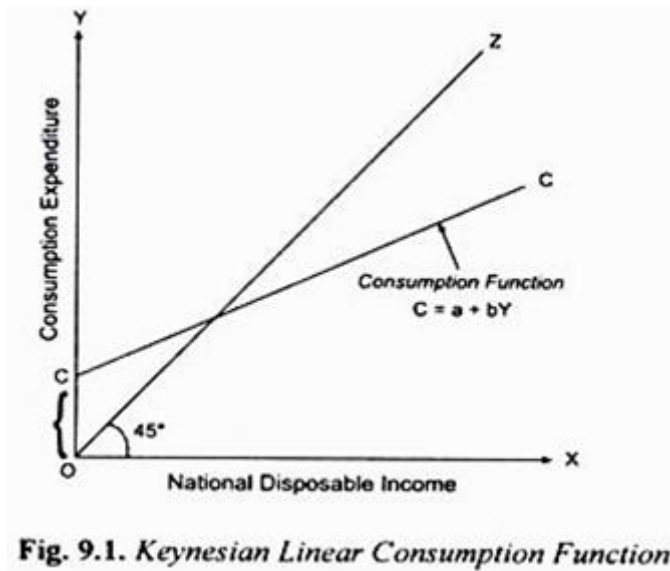
This is because as income rises consumption does not increase proportionately and as income falls consumption does not fall proportionately as people seek to protect their earlier consumption standards. This can be seen from Fig. 9.3 the slope of consumption function curve CC' measuring MPC and the slopes of lines OA and OB which give the APC(i. e C/Y) at points A and B respectively are falling whereas slope of the linear consumption function CC' remains constant.
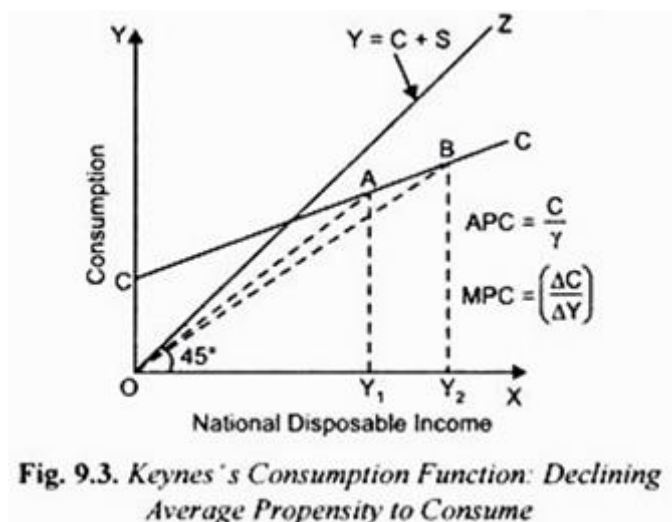

Fig. 9.3. *Keynes's Consumption Function: Declining Average Propensity to Consume*

In Fig. 9.3 we have shown a linear consumption function with an intercept term. In this form of linear consumption function, though marginal propensity to consume (AC/AF) is constant, average propensity to consume (C/F) is declining with the increase in income as indicated by the slopes of the lines OA and OB at levels of income F, and F_2 respectively.

The straight line OB drawn from the origin indicating average propensity to consume at higher income level F_2 has a relatively less slope than the straight line OA drawn from the origin to point/t at lower income level F_r The decline in average propensity to consume as the income increases implies that the proportion of income that is saved increases with the increase in national income of the country.

This result also follows from the studies of family budgets of various families at different income levels. The fraction of income spent on consumption by the rich families is lower than that of the poor families. In other words, the rich families save a higher proportion of their income as compared to the poor families.

The assumption of diminishing average propensity to consume is a significant part of Keynesian theory of income and employment. This implies that as income increases, a progressively larger proportion of national income would be saved. Therefore, to achieve and maintain equilibrium at full-employment level of income, increasing proportion of national income is needed to be invested.

If sufficient investment opportunities are not available, the economy would then run into trouble and in that case it would not be possible to maintain full-employment because aggregate demand will fall short of full-employment output.

Absolute IncomeHypothesis

The absolute income theory states that consumption is primarily a function of absolute level of the current disposable income. The functional relationship between consumption and income is of such a nature that when current income rises, consumption expenditure also rises, but not in the same proportion as the increase in income. Thus, the fraction of increased income that is devoted to consumption declines with successive increases in the level of absolute disposable income. In technical terms it means the marginal propensity to consume

would be less than 1 or

MPC = ΔC/ΔY < 1

Keynes' consumption function has come to be known as the 'absolute income hypothesis' or theory. His statement of the relationship between income and consumption was based on the 'fundamental psychological law'. He said that consumption is a stable function of current income (to be more specific, current disposable income—income after tax payment). Because of the operation of the 'psychological law', his consumption function is such that 0 < MPC < 1 and MPC < APC. Thus, a non- proportional relationship (i.e., APC > MPC) between consumption and income exists in the Keynesian absolute income hypothesis. His consumption function may be rewritten here with the form C = a + bY, where a > 0 and 0 < b < 1. It may be added that all the characteristics of Keynes' consumption function are based not on any empirical observation, but on 'fundamental psychological law', i.e., experience and intuition.

Freidman's Permanent Income Hypothesis

The Permanent Income Hypothesis

The permanent income hypothesis is a theory of consumer spending stating that people will spend money at a level consistent with their expected long-term average <u>income</u>. The level of expected long-term income then becomes thought of as the level of "permanent" income that can be safely spent. A worker will save only if their current income is higher than the anticipated level of permanent income, in order to guard against future declines in income.

Understanding the Permanent Income Hypothesis

The permanent income hypothesis was formulated by the Nobel Prize-winning economist Milton Friedman in 1957. The hypothesis implies that changes in consumption behavior are not predictable because they are based on individual expectations. This has broad implications concerning economic policy.

Under this theory, even if economic policies are successful in increasing income in the economy, the policies may not kick off a multiplier effect in regards to increased consumer spending. Rather, the theory predicts that there will not be an uptick in consumer spending until workers reform expectations about their future incomes.

Milton believed that people will consume based on an estimate of their future income as opposed to what Keynesian economics proposed; people will consume based on their in the moment after-tax income. Milton's basis was that individuals prefer to <u>smooth</u> their consumption rather than let it bounce around as a result of short-term fluctuations in income.

Investment Function

Autonomousand Induced Investment

Autonomous Investment

The investment on which the change in income level does not have any effect and is induced only by profit motive is known as Autonomous Investment. Autonomous Investment is **income inelastic.** It means that if there is a change in income (increase/decrease), the autonomous investment will remain the same. In general, autonomous investments are made by the Government in infrastructural activities.

An autonomous investment is when a government or other body makes an investment in a foreign country without regard to its level of economic growth or the prospects for that investment to generate positive returns. These investments are made primarily for purposes of geopolitical stability, economic aid, improving infrastructure, national or individual security, or humanitarian goals.

The investment which depends upon the profit expectations and has a direct influence of income level on it is known as Induced Investment. Induced Investment is **income elastic.** It means that the induced investment increases when income increases and vice-versa

Autonomous Investment vs. Induced Investment

Autonomous investments stand in contrast to induced investments, which increase or decrease in response to economic growth levels. Induced investments aim to generate a profit. Since they respond to shifts in output, they tend to be more variable than autonomous investments; the latter act as an important stabilizing force, helping to reduce <u>volatility</u> in induced investment.

Marginal Efficiency of Capital

The marginal efficiency of capital is equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital asset during its life just equal to its supply price." – J.M. Keynes, General Theory, Chapter 11.

The marginal efficiency of capital displays the expected rate of return on investment, at a particular given time. The marginal efficiency of capital is compared to the rate of interest. This theory suggests investment will be influenced by:

1. The marginal efficiency of capital
2. The interest rates

Generally, a lower interest rate makes investment relatively more attractive.

If interest rates, were 3%, then firms would need an expected rate of return of at least 3% from their investment to justify the investment.

If the marginal efficiency of capital was lower than the interest rate, the firm would be better off not investing, but saving the money.

Why are interest rates important for determining the marginal efficiency of capital?

To finance investment, firms will either borrow or reduce savings. If interest rates are lower, it's cheaper to borrow, or their savings give a lower return making investment relatively more attractive.   **Marginal Efficiency of Capital**
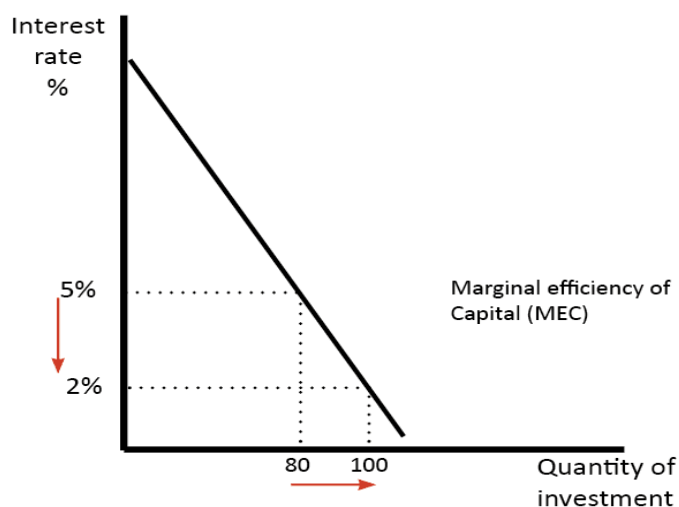
- A cut in interest rates from 5% to 2% will increase investment from 80 to 100.
- The alternative to investing is saving money in a bank; this is the opportunity cost of investment.

If the rate of interest is 5%, then only projects with a rate of return of greater than 5% will be profitable.

How responsive is investment to interest rates?

In Keynesian investment theory, interest rates are one important factor. However, in a liquidity trap, investment may be unresponsive to lower interest rates. In some circumstances, demand for investment is very interest inelastic.
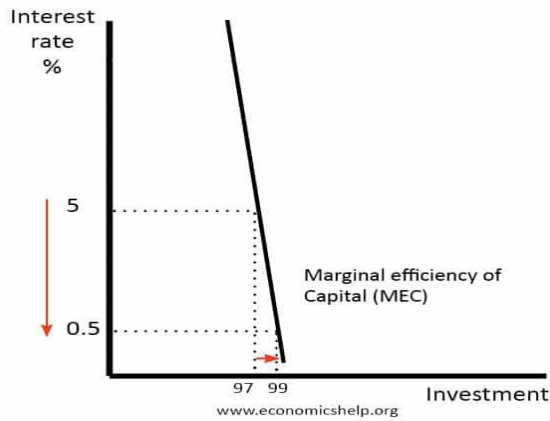
In a liquidity trap, business confidence may be very low. Therefore, despite low-interest rates, firms don't want to invest because they have low expectations of future profits.

Factors which shift the marginal efficiency of capital
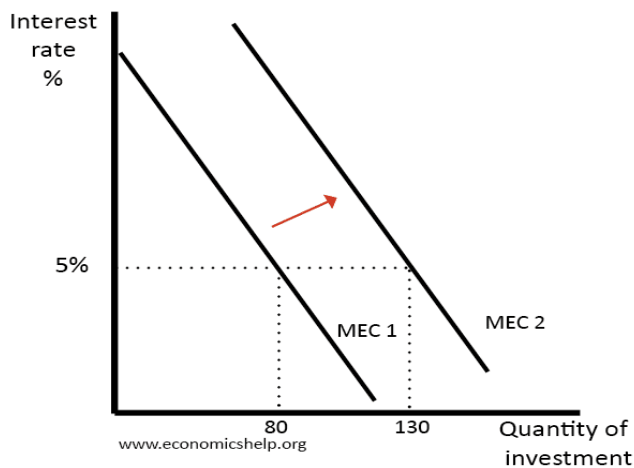
At the same rate of interest rate – more investment projects are demanded. This could reflect an improvement in economic circumstances, which encourage firms to invest.

Multiplier
Multiplier in an Underdeveloped Economy

Multiplier is an important tool of analysis in Keynesian economics. It is the basis of the theory of income generation and the mechanism through which income gets propagated.

Multiplier is the ratio between an initial increment in investment and the final increment in income. The higher the margin propensity to consume, the higher the value of multiplier. It works vigorously in the earlier stages in the cycle, when the economy shows an upward trend and life MPC is high. Thus, in advanced economies, multiplier has been given a key role in the process of revival and then as the main engine that lifts the economy out of depression and places it on the threshold of full employment.

Once the existing capacity is fully utilized, the multiplier works in combination with the accelerator to utilize all the available real resources. From this, one may presume that since MPC is very high in underdeveloped economies, a Small initial investment will result in a much higher increase in income. But the proem of income multiplication does not work so smoothly in an underdeveloped economy. This is because the main instrument, the multiplier, does not work in the simple fashion visualized by Keynes, primarily for the industrial economies.

For an efficient working of the multiplier, the Keynesian assumptions—of involuntary unemployment, of excess capacity, of elastic supply of labour and capital—must be fulfilled. These conditions are obtained in advanced economies only. In an underdeveloped economy a large part of the unemployed labour force is found in the agricultural sector, which is unskilled. Labourers are tied to their family farms and seem to enjoy a real income which gives them probably the same satisfaction as they would get when fully employed.

This type of disguised unemployment can hardly be called involuntary and cannot be removed through employment at the current wage rate. Therefore, higher wages along with other incentives are needed to remove them from their farms. In other words, it means that more output obtained only at a high cost. To the extent additional labour is

not available at the current money wage rate, increases in employment cannot follow from an initial increase in investment and to that extent the absence of involuntary unemployment reduces the magnitude of multiplier in underdeveloped economies.

In an underdeveloped economy, the secondary and tertiary effects on income output and employment do not follow as a result of an initial increase in investment, even though the MPC is very high. Whenever additional investment is made, it leads to a rise in the demand for food and cheap industrial consumer goods amongst the working force and to increased demand of luxury imports amongst the 'rich classes. Agricultural output is inelastic, as least in the short period, whatever little increase in output takes place, it is consumed on the farm itself and is not brought to the market.

Thus, an increase in investment increases income of the farmers in the primary sector in the first round and not in secondary and tertiary sector. Increased investment expenditures result in a contraction of the marketable surplus of the most essential consumables and generate a price spiral. Money incomes may multiply but real incomes do not increase much. The real income multiplier turns into a price multiplier. Therefore, "the income multiplier is much higher is money terms than in real terms, and to that extent prices rise much faster than an increase in aggregate real income the multiplier principle, therefore, works with reference to money income but not with reference to real income of employment."

The line of argument presented above is quite convincing and does corroborate at least Indian experience during the last 20 years. However, it does not mean that the concept of multiplier itself is useless. Contemporary literature on growth economies has made use of many variants of the concept. If we take the case of developing economies, in the long run setting, much of the criticism of the concept seems misplaced. The critics have viewed the operation of the multiplier process in a completely static setting and as a purely short period concept, whereas the very rationale of economic development is long-run dynamic change.

When we take into account longer periods of time, the capacity creating aspect of investment also becomes relevant. The operation of multiplier is only subject to a lag varying from industry to industry. The wider the range of industries over which investment is undertaken, the more pronounced will be the multiplier effect, for the

rounds of expenditures emanating from investment in any one industry could draw upon the output capacity created in a variety of industries.

Multiplier operates in economies where the rate of growth is fast enough to generate capacity at the rate at which demand increases. These economies are developing economies in a state of transition. Here the supply of consumer goods (food, textiles, or small industry consumer goods) is not inelastic as is generally assumed. Rather, immediate production potential lies in this very sector and hence multiplier process will operate.

The multiplying demand has some acceleration effects also, both in the backward and forward direction, called 'linkage effects'. In fact, the whole process of development has to be viewed as an interaction of one type of investment on another type of investment and of investment on national income, with the result that in a developing economy the ultimate multiplicative effect of an initial act of investment on real output would be far higher than the original outlay on investment itself.

The Concept of Accelerator (Samuelson and Hicks Multiplier Accelerator)

Meaning of Accelerator

The multiplier and the accelerator are not rivals: they are parallel concepts. While multiplier shows the effect of changes in investment on changes in income (and employment), the accelerator shows the effect of a change in consumption on private investment.

Multiplier and Accelerator Distinguished

For a clear grasp of the concept of accelerator, it is useful to distinguish between multiplier and accelerator. Multiplier shows the effect of a change in investment on income and employment whereas accelerator shows the effects of a change in consumption on investment. In other words, in the case of multiplier, consumption is dependent upon investment, whereas in the case of accelerator investment is dependent upon consumption.

Further, multiplier depends upon the propensity to consume and accelerator depends upon durability of the machines. In other words, the former is dependent upon

psychological factors, while the latter is dependent upon technological factors. However, even accelerator is psychological in its origin because it is linked to induced investment but it becomes highly technical on the operational plane. The accelerator shows the reaction (effect) of changes in consumption on investment and the multiplier shows the reaction of consumption to increased investment.

Further, another very important point of difference between the multiplier and accelerator is in their working backwards. Multiplier works as rigorously in the reduction of income as it does in its increase. But the working of the accelerator is restricted in the downward direction to the rate of replacement of capital because businessmen can at the most disinvest to the extent of not replacing the wearing-out capital.

Thus, it is clear that at least three basic conditions must operate for a 'pure' accelerator model:

(i) Existing capacity is fully utilised,

(ii) Finances are adequate to permit satisfaction of accelerator-generated demand,

(iii) The change in output is thought to be non-temporary.

Such requirements obviously limit the generality of the principle.

Trade cycle

Keynesian view on Trade Cycles

According to Keynes, business cycle is caused by variations in the rate of investment caused by fluctuations in the Marginal Efficiency of Capital. The term 'marginal efficiency of capital' means the expected profits from new investments. Entrepreneurial activity depends upon profit expectations. In his business cycle theory, Keynes assigns the major role to expectations.

Business cycles are periodic fluctuations of employment, income and output. According to Keynes, income and output depend upon the volume of employment. The volume of

employment is determined by three variables: the marginal efficiency of capital, the rate of interest and the propensity to consume.

In the short period the rate of interest and the propensity to consume are more or less stable. Therefore, fluctuations in the volume of employment are caused by fluctuations in the marginal efficiency of capital.

The Phases:

The course of a business cycle, according to the Keynesian theory, runs as follows. During the period of expansion the marginal efficiency of capital is high. Businessmen are optimistic; investment goes on at a rapid pace; employment is high; and incomes are rising, each increment of investment causing a multiple increase of income.

Towards the end of the period, the high marginal efficiency of capital receives a setback from two directions:

(i) The cost of production of new capital assets increases as shortages and bottlenecks of materials and of labour arise, and

(ii) Owing to the abundance of output, profits are lowered below expectation.

Soon business optimism gives way to scepticism and then to pessimism. The marginal efficiency of capital collapses with catastrophic suddenness. When businessmen find the investment expected to yield 10% yield only 3%, reducing incomes still further.

The downward movement proceeds cumulatively, because every decrement of investment causes a multiple decrement in income. The economy proceeds towards a crisis and depression. Recovery begins when confidence revives, that is, when the marginal efficiency of capital again increases.

This will happen after the period of time necessary for (i) the wearing out and obsolescence of part of the durable capital and (ii) the exhaustion of excess stock of consumer goods accumulated during the depression. Gradually the growing scarcity of capital goods and consumer goods increases profits and expectation of profits.

The marginal efficiency of capital revives and expansion commences. The time period of a cycle is fairly regular because the average time required for the wearing out, obsolescence and exhaustion of capital and consumer goods is more or less the same in every epoch.

Criticisms:

However, Keynes' theory is not free from defects. Its main weaknesses are listed below:

1. Keynes based his theory only on internal causes of a trade cycle. Moreover, he has developed his explanation with the help of multiplier principle alone. He has ignored induced investment and the acceleration effect. A complete explanation of a trade cycle must consider external causes of a trade cycle and the role of the accelerator in causing investment and income fluctuations.

2. Keynes has not explained clearly the determinants of 'marginal efficiency of capital' which influence the investment decisions of entrepreneurs.

3. Keynes does not attach due importance to the rate of interest. He considers the rate of interest only as an item of the cost of production of goods. He, on the other hand, holds that rate of interest does not exercise any influence on investment decisions.

4. The periodical aspect or the phases of the business cycle is left in darkness in Keynes' theory. Keynes has mainly discussed the problems of economic depression, with which he was primarily concerned.

Deflation and Reflation definition

DEFLATION

To understand "what is deflation", first, we need to understand what inflation is and why deflation is its opposite. Deflation is referred to as a decline in the general price of goods as well as the services in any given economy. It is considered a harmful situation in an economy. It can be a direct or indirect result of certain actions like government spending, corporate investment, money supply, and consumer spending.

Deflation takes place only when the rate of inflation falls even below zero percent, thus pointing out a negative rate of inflation. The outcome of such a situation is an increase in the actual value of money relative to services and goods.

What is deflation: that can be explained using examples only? Deflation is a situation that is caused by a decline in aggregate demand or a hike in the supply of certain goods and services, or if there is a lack of funds. When the prices of certain goods and services react by falling lower than the last point, the consumers of such goods and services tend to restrain their expenditure until the prices fall. This leads to lower production of goods at the factories, a deflationary spiral, and a lesser amount of investment. An example of deflation is when the situation that took place in the US Great Depression, where the demand for services and goods dropped at the same moment, and the money supply was in decline. It can cause the movement of the wealth of people far away from the borrowers, which most of the people are, and can cause under efficient investment because of the confusing pricing signals.

Deflation can be countered in a lot of different ways and techniques, but the methods still stay debatable among all the economic camps. At the core of the subject, introducing more and more capital into a given economy will generally reverse the effects of this situation since it points out the only controllable part of such an equation.

REFLATION

The word Reflation refers to a monetary or fiscal policy that is designed to increase the output, diminishing the stains of deflation and stimulating spending. Examples of conditions like this include printing more money, lowering the interest rates at which money is granted, and lowering the taxes on goods and services provided by private firms and the government. It can also be used to give a detailed description of the first phase of the economic healing, which follows the contraction.

The reflation trade usually involves buying cyclical stocks by selling government bonds since they benefit a lot from the economic growth, which is almost the opposite of deflation. This is what had been going on until the day of the Fed's announcement on the date 16th of June, which prompted the traders of that time to jump from these reflation trades. They were worried because they thought that the tightening of the monetary policy could be a hurdle in

the global economic recovery of the state. This resulted in situations where commodities plunged, energy stocks underperformed, flattening the yield curve and gold sank.

STAGFLATION

Out of all the others, this situation is the most dangerous of all, and it is caused by the result of a typical supply shock. It signifies stagnant economic output as well as high inflation at one particular time. It is harmful because, with slow economic growth and a high amount of unemployment, the people residing in that economy would not be able to earn enough money to afford the increased prices of goods and services. This type of phenomenon was observed in the 1970s, and even with the prevailing economic theories, it is difficult to explain.

HYPERINFLATION

Hyperinflation is described as the excessive, control, and rapid growth of general prices in an economy. It is a very rapidly growing inflation that scales up more than 50% per month. It is a very rare phenomenon in developed economies, and it has occurred many times in world history in countries like Argentina, Germany, Hungary, Russia, and China. A situation like this occurs when there is a more than 50% hike in price every month throughout a certain time. It results in the increased expenditure of money by businesses and consumers due to higher prices.

DISINFLATION

It is the slowing of the rate of inflation temporarily, and it is used to give details on cases where the inflation rate has been reduced over a short period. A GDP deflator is used to measure inflation. Deflation is mostly used by the Federal Reserve to show a period of slowing inflation, and it should not be confused with the term deflation.

Conclusion

The above information explains deflation, stagflation, Hyperinflation, Reflation, and disinflation. These terms are extremely important for you to know. They can help you understand the economic situation in the country as well as how your money is getting affected.

Types, causes and effect of inflation on different sectors on the economy

Inflation is when the prices of goods and services keep increasing over a certain period. It results in a decline in the purchasing power of customers. It aims to gauge the effect of increasing prices on the economy in a financial year.

Demand Pull Inflation

This is when the aggregate demand in an economy exceeds the aggregate supply. This increase in the aggregate demand might occur due to an increase in the money supply or income or the level of public expenditure.

This concept is associated with full employment when altering the supply is not possible. Take a look at the graph below:

Fig. 1 - Demand Pull Inflation
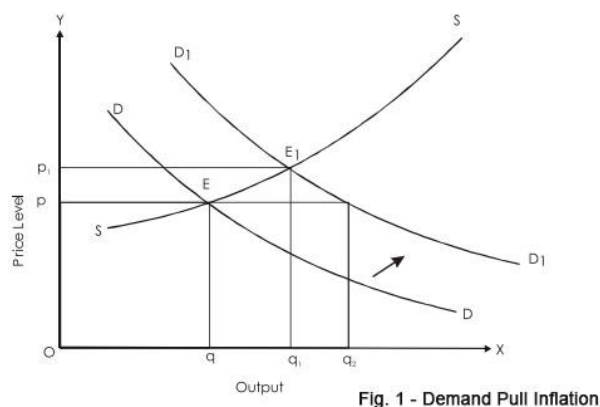
In the graph above, SS is the aggregate supply curve and DD is the aggregate demand curve. Further,

- Op is the equilibrium price

- Oq is the equilibrium output

Exogenous causes shift the demand curve to the right to D_1D_1. Therefore, at the current price (Op), the demand increases by qq_2. However, the supply is Oq.

Hence, the excess demand for qq_2 puts pressure on the price, increasing it to Op_1. Therefore, there is a new equilibrium at this price, where demand equals supply. As you can see, the excess demand is eliminated as follows:

- The price rises which leads to a fall in demand and a rise in supply.

Learn more about the Impact of Inflation here in detail.

Cost-Push Inflation

Supply can also cause inflationary pressure. If the aggregate demand remains unchanged but the aggregate supply falls due to exogenous causes, then the price level increases. Take a look at the graph below:
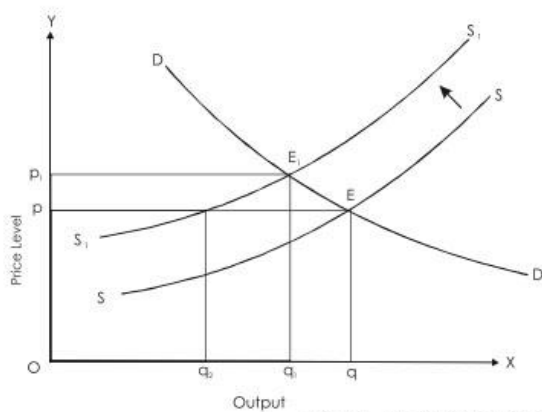

Fig. 2 - Cost-Push Inflation

In the graph above, the equilibrium price is Op and the equilibrium output is Oq. If the aggregate supply falls, then the supply curve SS shifts left to reach S_1S_1.

Now, at the price Op, the demand is Oq but the supply is Oq_2 which is lesser than Oq. Therefore, the prices are pushed high till a new equilibrium is reached at Op_1.

At this point, there is no excess demand. Hence, you can see that inflation is a self-limiting phenomenon.

Open Inflation

This is the simplest form of inflation where the price level rises continuously and is visible to people. You can see the annual rate of increase in the price level.

Repressed Inflation

Let's say that there is excess demand in an economy. Typically, this leads to an increase in price.

However, the Government can take some repressive measures like price control, rationing, etc. to prevent the excess demand from increasing the prices.

Hyper-Inflation

In hyperinflation, the price level increases at a rapid rate. In fact, you can expect prices to increase every hour. Usually, this leads to the demonetization of an economy.

Creeping and Moderate Inflation

- **Creeping** – In this case, the price level increases very slowly over an extended period of time.

- **Moderate** – In this case, the rise in the price level is neither too fast nor too slow – it is moderate.

True Inflation

This takes place after the full employment of all the factor inputs of an economy. When there is full employment, the national output becomes perfectly inelastic. Therefore, more money simply implies higher prices and not more output.

Semi-Inflation

Even before full employment, an economy might face inflationary pressure due to bottlenecks from certain sectors of the economy.

Inflation is an economic indicator that indicates the rate of rising prices of goods and services in the economy. Ultimately it shows the decrease in the buying power of the rupee. It is measured as a percentage. This quantitative economic measure the rate of change in prices of selected goods and services over a period of time. Inflation indicates how much the average price has changed for the selected basket of goods and services. It is expressed as a percentage. Increase in inflation indicates a decrease in the purchasing power of the economy.