MACRO ECONOMICS

Year	Subject Title	Sem.	Sub Code
2018 -19 Onwards	MACRO ECONOMICS	V	18BEC52C

COURSE OUTCOMES :

On completion of the course, the students should be able to

CO1 Identify the basic concepts and theories of macroeconomics.

CO2 Understand the law of markets, consumption function, investment function and multiplier

CO3 Comprehend Keynesian theories of employment

CO4 Understand the IS and LM model

CO5 Understand the different phases of trade cycle and Keynes view.

OBJECTIVES:

To provide the knowledge of basic concepts on the functioning of the whole economy.

UNIT-I

Nature and scope of macroeconomics - Circular flow of income - National income - Measurements and importance - Difficulties and Problems of Measurement of National Income - Classical theory of output and employment - Say's law of markets.

UNIT-II

Keynesian Theory of Employment - Aggregate Demand and Aggregate Supply - Equilibrium - Difference between Classical and Keynesian theories.

UNIT-III

Consumption function - Keynesian Psychological Law of Consumption Relationship between APC and MPC - Factors determining Consumption Function - Keynesian Multiplier Working of Static and Dynamic Multiplier - Leakages and Limitations.

UNIT-IV

Investment Function - Marginal Efficiency of Capital - Rate of Interest. Factors affecting MEC, Equilibrium between Saving and Investment- Accelerator – Working of Accelerator and Multiplier - Assumptions and Limitations - Leverage Effect.

UNIT-V

General Equilibrium – Goods and Money Sectors-Shifts in IS and LM function - Trade Cycle - Phases of Trade Cycle - Keynes's View of Trade Cycle.

TEXT BOOK

1. Sankaran S., Macro Economics, Margham Publishers, Chennai, 2008.

REFERENCES

1. K.R. Gupta, R.K. Mandal & Amit Gupta, Macro Economics, Atlantic Publishers 2008.

2. R.D. Gupta, Post Keynesian Economics, KalyaniPublishers, 1997.

3. Edward Shapiro, Macro Economics, Galgotia Publishers, New Delhi, 2010,

4. Gardner Ackley, Macro Economics Theory, Collier – Mac Millan Publishers, 1961.

UNIT 1

NATURE OF MACROECONOMICS:

Macroeconomics is the study of aggregates or averages covering the entire economy, such as total employment, national income, national output, total investment, total consumption, total savings, aggregate supply, aggregate demand, and general price level, wage level, and cost structure.

In other words, it is aggregative economics which examines the interrelations among the various aggregates, their determination and causes of fluctuations in them. Thus in the words of Professor Ackley, "Macroeconomics deals with economic affairs in the large, it concerns the overall dimensions of economic life. It looks at the total size and shape and functioning of the "elephant" of economic experience, rather than working of articulation or dimensions of the individual parts. It studies the character of the forest, independently of the trees which compose it."

Macroeconomics is also known as the theory of income and employment, or simply income analysis. It is concerned with the problems of unemployment, economic fluctuations, inflation or deflation, international trade and economic growth. It is the study of the causes of unemployment, and the various determinants of employment.

SCOPE OF MACRO ECONOMICS:

(1) To Understand the Working of the Economy:

The study of macroeconomic variables is indispensable for understanding the working of the economy. Our main economic problems are related to the behaviour of total income, output, employment and the general price level in the economy.

These variables are statistically measurable, thereby facilitating the possibilities of analysing the effects on the functioning of the economy. As Tinbergen observes, macroeconomic concepts help in "making the elimination process understandable and transparent". For instance, one may not agree on the best method of measuring different prices, but the general price level is helpful in understanding the nature of the economy.

(2) In Economic Policies:

Macroeconomics is extremely useful from the point of view of economic policy. Modern governments, especially of the underdeveloped economies, are confronted with innumerable national problems. They are the problems of overpopulation, inflation, balance of payments, general underproduction, etc.

The main responsibility of these governments rests in the regulation and control of overpopulation, general prices, general volume of trade, general outputs, etc. Tinbergen says: "Working with macroeconomic concepts is a bare necessity in order to contribute to the solutions of the great problems of our times." No government can solve these problems in terms of individual behaviour. Let us analyse the use of macroeconomic study in the solution of certain complex economic problems.

(i) In General Unemployment:

The Keynesian theory of employment is an exercise in macroeconomics. The general level of employment in an economy depends upon effective demand which in turn depends on aggregate demand and aggregate supply functions.

Unemployment is thus caused by deficiency of effective demand. In order to eliminate it, effective demand should be raised by increasing total investment, total output, total income and total consumption. Thus, macroeconomics has special significance in studying the causes, effects and remedies of general unemployment.

(ii) In National Income:

The study of macroeconomics is very important for evaluating the overall performance of the economy in terms of national income. With the advent of the Great Depression of the 1930s, it became necessary to analyse the causes of general overproduction and general unemployment.

This led to the construction of the data on national income. National income data help in forecasting the level of economic activity and to understand the distribution of income among different groups of people in the economy.

(iii) In Economic Growth:

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 expec-tations. 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 vari-ables: the marginal efficiency of capital, the rate of interest and the propen-sity 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 cata-strophic 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. Gradu-ally 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 effi-ciency 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.

(3) For Understanding the Behaviour of Individual Units:

For understanding the behaviour of individual units, the study of macroeconomics is imperative. Demand for individual products depends upon aggregate demand in the economy. Unless the causes of deficiency in aggregate demand are analysed, it is not possible to understand fully the reasons for a fall in the demand of individual products.

The reasons for increase in costs of a particular firm or industry cannot be analysed without knowing the average cost conditions of the whole economy. Thus, the study of individual units is not possible without macroeconomics.

Conclusion:

We may conclude that macroeconomics enriches our knowledge of the functioning of an economy by studying the behaviour of national income, output, investment, saving and consumption. Moreover, it throws much light in solving the problems of unemployment, inflation, economic instability and economic growth.

Definition of National Income

The total net value of all goods and services produced within a nation over a specified period of time, representing the sum of wages, profits, rents, interest, and pension payments to residents of the nation.

Measures of National Income

For the purpose of measurement and analysis, national income can be viewed as an aggregate of various component flows. The most comprehensive measure of aggregate income which is widely known is Gross National Product at market prices.

Gross and Net Concept

Gross emphasizes that no allowance for capital consumption has been made or that depreciation has yet to be deducted. Net indicates that provision for capital consumption has already been made or that depreciation has already been deducted.

National and Domestic Concepts

The term national denotes that the aggregate under consideration represents the total income which accrues to the normal residents of a country due to their participation in world production during the current year.

It is also possible to measure the value of the total output or income originating within the specified geographical boundary of a country known as domestic territory. The resulting measure is called "domestic product".

Market Prices and Factor Costs

The valuation of the national product at market prices indicates the total amount actually paid by the final buyers while the valuation of national product at factor cost is a measure of the total amount earned by the factors of production for their contribution to the final output.

- GNP at market price = GNP at factor cost + indirect taxes - Subsidies.
- NNP at market price = NNP at factor cost + indirect taxes - Subsidies

Gross National Product and Gross Domestic Product

For some purposes we need to find the total income generated from production within the territorial boundaries of an economy irrespective of whether it belongs to the inhabitants of that nation or not. Such an income is known as Gross Domestic Product (GDP) and found as –

GDP = GNP - Nnet Factor Income From Abroad

Net Factor Income from Abroad = Factor Income Received From Abroad - Factor Income Paid Abroad

Net National Product

The NNP is an alternative and closely related measure of the national income. It differs from GNP in only one respect. GNP is the sum of final products. It includes consumption of goods, gross investment, government expenditures on goods and services, and net exports.

GNP = NNP – Depreciation

NNP includes net private investment while GNP includes gross private domestic investment.

Personal Income

Personal income is calculated by subtracting from national income those types of incomes which are earned but not received and adding those types which are received but not currently earned.

Personal Income = NNP at Factor Cost – Undistributed Profits – Corporate Taxes + Transfer Payments

Disposable Income

Disposable income is the total income that actually remains with individuals to dispose off as they wish. It differs from personal income by the amount of direct taxes paid by individuals.

Disposable Income = Personal Income − Personal taxes

Value Added

The concept of value added is a useful device to find out the exact amount that is added at each stage of production to the value of the final product. Value added can be defined as the difference between the value of output produced by that firm and the total expenditure incurred by it on the materials and intermediate products purchased from other business firms.

Methods of Measuring National Income

Let's have a look at the following ways of measuring national income −

Product Approach

In product approach, national income is measured as a flow of goods and services. Value of money for all final goods and services is produced in an economy during a year. Final goods are those goods which are directly consumed and not used in further production process. In our economy product approach benefits various sectors like forestry, agriculture, mining etc to estimate gross and net value.

Income Approach

In income approach, national income is measured as a flow of factor incomes. Income received by basic factors like labor, capital, land and entrepreneurship are summed up. This approach is also called as income distributed approach.

Expenditure Approach

This method is known as the final product method. In this method, national income is measured as a flow of expenditure incurred by the society in a particular year. The expenditures are classified as personal consumption expenditure, net domestic investment, government expenditure on goods and services and net foreign investment.

These three approaches to the measurement of national income yield identical results. They provide three alternative methods of measuring essentially the same magnitude.

What is Circular Flow of Income?

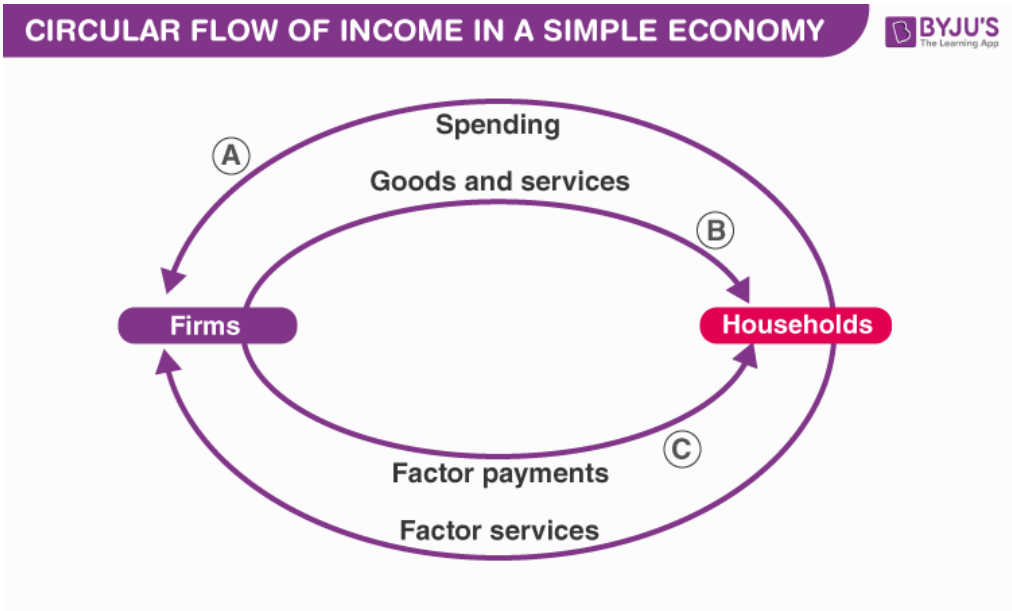
The circular flow means the unending flows of production of goods and services, income and expenditure in an economy. It shows the redistribution of income in a circular manner between the production unit and households.

These are Land, Labour, Capital and Entrepreneurship

- The contribution made by fixed natural resources (called 'land'), payment for which is called 'rent'
- The contribution made by a human worker (labour), payment for which is called 'wage'.
- The contribution made by capital, payment for which is called 'interest'.
- The contribution made by entrepreneurship, payment for which is 'profit'.

Circular Flow Of Income In Two Sector Economy

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



Explanation:

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

Methods of Calculating National Income

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

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

Let us look into the details of each of these methods.

Value Added Method

The value added method is also known as the product method or output method, and its primary objective is calculating the national income by taking into account the value added to a product during the various stages of production.

Therefore, the formula for calculating national income by value added method can be expressed as:

National Income (NI) = (NDPfc) + Net factor income from abroad

Expenditure Method

The expenditure method of national income calculation is based on the expenditures taking place in the economy. The expenditures that happen in an economy can be done by individuals, households, business enterprises and government.

Therefore, the formula for calculating national income by expenditure method can be expressed as:

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

Or

National Income (NI) = C + G + I + NX

Income Method

The third method of calculating national income is the income method, and it is based on the income generated by the individuals by providing services to other people in the country either individually or by using assets at disposal.

The income method takes into consideration the income generated from land, capital in the form of rent, interest, wages and profit.

The National income by income method is calculated by adding up the wages, interest earned on capital, profits earned, rent obtained from land and income generated by self-employed in an economy. It is known as Net Domestic Product at Factor Cost or NDPfc.

The addition of Net factor income from abroad to the Net Domestic Product at Factor Cost gives the National Income.

It can be expressed in a formula as :

NNPfc = (NDPfc) + Net factor income from abroad

DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME:

The following points highlight the eight major difficulties in the measurement of national income.

The difficulties are:

Difficulty # 1. Prevalence of Non-Monetized Transactions:

There are certain transactions in India in which a considerable part of output does not come into the market at all.

For example: Agriculture in which a major part of output is consumed at the farm level itself. The national income statistician, therefore, has to face the problem of finding a suitable measure for this part of output.

Difficulty #2. Illiteracy:

The majority of people in India are illiterate and they do not keep any accounts about the production and sales of their products. Under the circumstances the estimates of production and earned incomes are simply guess work.

Difficulty #3. Occupational Specialisation is Still Incomplete and Lacking:

There is the lack of occupational specialisation in our country which makes the calculation of national income by product method difficult. Besides the crop, farmers are also engaged is supplementary occupations like—dairying, poultry, cloth-making etc. But income from such productive activities is not included in the national income estimates.

Difficulty # 4. Lack of Availability of Adequate Statistical Data:

Adequate and correct produc-tion and cost data are not available in our country. For estimating national income data on unearned incomes and on persons employed in the service are not available. Moreover data on consumption and investment expenditures of the rural and urban population are not available for the estimation of national income. Moreover, there is no machinery for the collection of data in the country.

Difficulty # 5. Value of Inventory Changes:

The value of all inventory changes (i.e., changes in stock etc.) which may be either positive or negative are added or subtracted from the current production of the firm. Remember, if in the change in inventories and not total inventories for the year that are taken into account in national income estimates.

Difficulty # 6. The Calculation of Depreciation:

The calculation of depreciation on capital consumption presents another formidable difficulty. There are no accepted standard rates of depreciation applicable to the various categories of machine. Unless from the gross national income correct deductions are made for depreciation the estimate of net national income is bound to go wrong.

Difficulty # 7. Difficulty of Avoiding the Double Counting System:

The very important difficulty which a calculator has to face in measurement is the difficulty of avoiding double counting.

For example: If the value of the output of sugar and sugar cane are counted separately, the value of the sugarcane utilised in the manufacture of sugar will have been counted twice, which is not proper. This must be avoided for a correct measurement.

Difficulty # 8. Difficulty of Expenditure Method:

The application of expenditure method in the calculation of national income has become a difficult task and it is full of difficulties. Because in this method it is difficult to estimate all personal as well as investment expenditures.

CLASSICAL THEORY OF EMPLOYMENT AND OUTPUT (WITH DIAGRAM):

To build up a classical macroeconomic model, here we will consider a particular framework within which the classical system can be studied. This framework is composed of an aggregate production function, the labour market, the money market, and the goods market.

1. Employment-Output Determination: Labour Market:

Let us first consider the labour market where we deal with production function in which capital stock is fixed and labour is the variable input.

The aggregate production function is: $Y = f(K, L)$ … (3.2)

where K denotes a constant capital stock and L denotes quantities of variable input, labour.

In the classical model, equilibrium level of output is determined by the employment of labour. The level of output and, hence, the level of employment is established in the labour market by the demand for and supply of labour.

Assuming a profit-maximising economy, labour will be demanded up to the point where the revenue earned from selling the total product produced by the marginal unit of labour is equal to the MC of labour. MC of labour is equal to the money wage divided by the marginal product of labour, MPL, i.e.,

$MC = W/MPL$

We know that the MP curve for labour indicates the firm's demand for labour. More labour is demanded at a lower wage. Thus, demand for labour depends inversely on real wage. The aggregate demand curve for labour is the horizontal summation of all individual firm's demand curve for labour. Aggregate labour demand function, shown in equation (3.7), is also inversely related to the real wage rate. That is,

$DL=f(W-p)$ …(3.7)

Like labour demand, aggregate labour supply function also depends on the real wage rate, but in a direct manner. Thus,

$SL=g(W/P)$… (3.8)

These relationships (equations 3.2, 3.7 and 3.8), together with the equilibrium condition for the labour market

$DL = SL$ … (3.9)

determine output, employment and real wage in the classical system.

Equilibrium real wage rate and the equi-librium level of employment are determined at that point where the negative sloping la-bour demand curve cuts the positive sloping labour supply curve. Once we know the equi-librium level of employment from the aggre-gate production function we can derive the equilibrium level of output.

In the lower panel, aggregate produc-tion function has been shown. The intersec-tion between DL and SL curves at point E in the upper part of the figure determines the equilibrium level of employment (LF) at the equilibrium real wage rate (W/P)F. The equilibrium of the classical labour market is one where everyone willing to work at the real wage (W/P)F is able to find work. Inciden-tally, this is the full employment position, de-noted by LE = LF. The corresponding equilib-rium level of output (at the equilibrium level of employment) is YF. This equilibrium out-put level is also called full employment out-put level.

Labour Market Equilibrium

In the classical system, full employment is achieved automatically due to wage-price flex-ibility. For instance, at a real wage (W/P)1 there exists a situation of unemployment. Now, this excess supply of labour (AB) will reduce the real wage rate until labour supply is equal to the labour demand. Ultimately, real wage rate will decline to (W/P)F where ag-gregate labour demand is exactly matched by aggregate labour supply.

It may be added here that the volume of output and employment in the classical system are determined by only supply side of the market for output. Since the classical model is a supply-determined one, it says that equiproportionate increases (or de-creases) in both money wage and the price level will not change labour supply.

2. Price Level Determination: Money Market:

In this section, we analyse the classical theory of aggregate price level determination. To do this, money market is introduced.

How is the general price level determined? Classicists answered this question in terms of the quantity theory of money which deter-mines aggregate demand, which, in turn, de-termines the price level. In the classical model, it is assumed that people hold money solely to facilitate transactions. Obviously, such transactions depend on the volume of money income.

So we can say that the total demand for money in an economy is a func-tion of money national income or output. The supply of money and the demand for money jointly establish equilibrium in the money market. The demand for money equation that will be presented here is the Marshallian cash balance version of the quantity theory of money. It is;

Md = kPY … (3.10)

where Md stands for demand for money, Y the output level, P the price level and k is the fraction of Y that people want to hold to facilitate transaction. Equation 3.10 states that people hold cash balance since there is a gap between money receipts and expenditures.

The supply of money is fixed as it is supplied by the central bank. Thus,

Ms= M …(3.11)

For equilibrium in the money market, = kPY … (3.12)

Equation (3.12) shows a proportional relationship between money stock and the price level. The quantity theory of money says that the quantity of money determines the price level. It is to be remembered here that Y is also fixed due to the existence of full employment in the economy.

Fig. 3.2 represents money market equi-librium where we plot total money stock M on the horizontal axis and the levels of PY on the vertical axis. The vector (OL), the slope of which is (1/k), shows the levels of PY that can be supported by different quantities of money supply. As money supply increases from M1 to M2, the price level rises proportionately from P1to P2.

Money Market Equilibrium

Thus, we see a link between money supply and the price level: an excess money supply means increasing demand for commodities that pulls up the general price level. But money supply does not have any impact on Y which is determined in the real sector and Y is fixed due to full employment. The only way for equilibrium output to change in this classical model can be attributed to a shift in labour demand or labour supply curve.

One essential feature that follows from the classical money market is that money is neutral. This means that changes in money stock affect only absolute prices and money wages proportionately. Real variables such as, output, level of employment and real wage rate remain undisturbed following a change in money supply.

3. Interest Rate Determination: Goods Market:

In the classical model the components of aggregate demand consumption and investment determine equilibrium interest rate. Interest rate that guarantees

that changes in the particular components of demands do not affect the aggregate level of commodity demand. It may be noted here that the interest rate is a 'real' variable in the goods market. The goods market is concerned with the way the fixed output or income is split between saving and consumption. Here we determine equilibrium rate of interest.

Saving implies a choice between present and future consumption. People save in the current period to have larger income or consumption at a future date. Of course, such saving then depends on the rate of interest in the classical system, and not on income as was said by J. M. Keynes.

Classicists assumed that saving (S) is an increasing function of the rate of interest (r), that is,

$S = f(r)$ .....(3.13)

Investment may be defined as the amount of an economy's product that is not consumed. Investment refers to the creation of additional stock of capital. An investment is something that is used to create value in future. An economy considers a number of capital projects in each time period. It undertakes those investment projects that yield a rate of return greater than the market rate of interest. Thus, investment, in the classical system, depends on the market rate of interest.

Investment is an inverse function of the rate of interest, that is,

$I = f(r)$ .....(3.14)

The goods market equilibrium is achieved when saving is equal to investment, i.e.,

$S = I$ .....(3.15)

A flexible interest rate in the classical system always brings equality between savings and investment. Fig. 3.3 shows how equilibrium rate of interest is determined in the classical model, independent of the monetary sector. Saving curve (S) and investment curve (I) are equal to each other at point E where the equilibrium volume of saving (SE) is equal to the equilibrium value of investment (IE). Interest rate is flexible and it adjusts to maintain the equality between saving and investment. The equilibrium interest rate is a real variable and in no way influenced by the quantity of money.

Goods Market Equilibrium

1. Classical Dichotomy:

One important conclusion from the classical model is the classical dichotomy. Quantity of money does not influence the real variables of the system- output, employment, and the interest rate. Quantity of money only influences the price level. This means that the goods market is segmented completely from the remainder of the system. Real sectors cannot influence the monetary sector and, hence, monetary variables. Monetary sector is not concerned with relative prices and real variables.

2. Policy Implications:

The policy implication of this classical model is that monetary policy alone can influence economic activity. What is required for stable price level is the stable money supply since quantity of money determines the price level. Fiscal policy is an impotent instrument to influence aggregate demand.

SAY'S LAW OF MARKET– EXPLAINED

An important element of classical economics is Say's Law of Markets, after J.B. Say, a French economist who first stated the law in a systematic form.

Briefly stated, this law means that 'supply always creates its own demand.' In other words, according to J.B. Say, there cannot be general over-production or general unemployment on account of the excess of supply over demand because whatever is supplied or produced is automatically exchanged for money.

In an exchange economy whatever is produced represents the demand for another product because whatever is produced is easily sold.

Whenever additional production takes place in the economy, necessary purchasing power is also generated at the same time to absorb the additional supply; hence, there is no scope of supply exceeding demand and causing unemployment. This law was the basis of their assumption of full employment in the economy which rested on the plea that income is spent automatically at a rate which will always keep the resources fully employed.

Savings, according to classical are just another form of spending; all income, they believed, is partly spent on consumption and partly on investment. There is no ground to fear a break in the flow of income stream in the economy. Hence there cannot be any general over-production or unemployment.

The classical economists always assumed a state of employment in the economy. The normal situation in an economy, according to them was full employment equilibrium. Less than full employment, they believed, was an abnormal situation. Classical always held that there are no lapses from full employment equilibrium and even if there are any, there is always a tendency to return to full employment. This belief of the classical economists was based on the views of a French economist, J.B. Say (1767-1832).

J.B. Say made popular the ideas of Adam Smith in France and on the European continent. His law of markets which Galbraith described as having had the status of an article of faith with classical economists for over a hundred years is the formal expression of the idea that widespread and involuntary unemployment because of general over-production is impossible. In other words, there cannot be any involuntary unemployment because of a deficiency of effective demand or total demand.

In his analysis of the market mechanism, J.B. Say noted down: "…a product is no sooner created, than it from that instant, affords a market for other products to the full extent of its value. When the producer has put the finishing hand to his product, he is most anxious to sell it immediately, lest the value should vanish in his hands. Nor is he less anxious to dispose of the money he may get for it; for the value of money is also perishable. But the only way of getting rid of money is the purchase of some product or other. Thus, the mere circumstance of the creation of one product immediately opens a vent for other products."

Briefly stated, it means that "supply creates its own demand". He asserted that there cannot be any general over-production or general unemployment in the economy as whatever is produced is automatically consumed. In other words, every producer who brings goods lo the market does so only to exchange them for other goods.

Say believed that people did not work for its own sake but to obtain other goods and services that go to satisfy their wants. To be employed simply meant to work in a field or to start a shop and to sell one's own product in the market. The organisation of the economy was simple under which people

spent on tools and consumer goods. Saving and investment were not separate processes.

The producer sold his product and not his labour. Products were exchanged for products. Ricardo expressed Say's Law of Markets in the following words: "No man produces but with a view to consume or sell, and he never sells but with an intention to purchase some other commodity which may be useful to him, or which contributes to future production. By producing, then tie necessarily becomes either the consumer of his own goods or the purchaser and consumer of the goods of some other person. Productions are always bought by productions; money is only the medium by which the exchange is effected."

Say believed that during the process of production necessary purchasing power is generated which absorbs the additional supply, for example, when a new car is manufactured, necessary purchasing power is simultaneously generated in the form of wages, profits etc. so that the car is used. Hence there is no possibility of the aggregate demand becoming deficient.

"Say's Law, in a very broad way, is description of a free exchange economy. So conceived, it illuminates the truth that the main source of demand is the How of factor incomes generated from the process of production itself. A new productive process, by paying out income to its employed factors, generates demand at the same time that it adds to supply." Say, no doubt, admitted that supply of a particular commodity may exceed its demand temporarily on account of the wrong calculations of businessmen, but general over-production and hence general unemployment is impossible.

He admitted that specific commodities might be overproduced but a general glut in the sense of a general depression was unthinkable, for the very process of production created the required effective demand necessary to absorb total output. If, however, due to some mistake, over-production comes to exist in respect of a particular industry, it will be corrected automatically when businessmen suffer losses and switch over from the production of goods they cannot sell to the production of goods they can sell. Say was supported in his view by Ricardo and Mill for they also held the view that a general glut of the market could not occur.

Assumptions:The orthodox statement as enunciated above is based, more or less, on the following assumptions:

(i) That the free enterprise system based on price mechanism provides a place for growing population and an increase in capital.

(ii) In an expanding economy new firms and workers find their way into the productive process, not by displacing others but by offering their own products in exchange.

(iii) The extent of the market is not limited i.e., incapable of expansion. The extent of the market is as big as the volume of products offered in exchange.

(iv) No necessity on the part of the government to intervene in business matters so that the attainment of automatic adjustment is facilitated.

(v) Flexibility of interest rates and long period were considered essential for its successful working.

J.S. Mill has supported Say's Law and regarded it as extremely important. The older formation of Say's law by David Ricardo and James Mill was cast in terms of a society that has become mostly a matter of the past—a society in which producers were self-employed either as peasant, proprietors, craftsmen, or as individual proprietors.

Mill took note of the depressed state of the market accompanying a crisis. At such times "…everyone dislikes to part with ready money, and many are anxious to procure it at any sacrifice." Depression, Mill said, is "a glut of commodities or a dearth of money. It is a temporary derangement of markets caused by contraction of credit."

Such periodic depressions, Mill felt, do not go to contradict Say's law. Such maladjustments or disturbances do not prove that there are not powerful hidden forces tending to restore full employment equilibrium. Marshall in his Principles (1890), strongly supported Mill's views. Lack of confidence, Marshall felt, was the chief cause of depression. When confidence is shaken, though men have the power to purchase, they may not choose to use it. American orthodox economist, F.M. Taylor, in his Principles (1921) endorsed Say's law. Business depressions, in his opinion, do not disprove Say's law.

He expressed the view that in the short-run the smooth and automatic process of exchange of products may be broken by temporary disturbances but these do not invalidate the efficacy of fundamental forces (which Say's law sought to illuminate) tending automatically towards full employment.

Pigovian Formulation of Say's Law:

Say's Law of Markets, as enunciated above, was put by Pigou in a different form. According to Prof. Pigou, there cannot be any general unemployment in the labour market, if the labour is just prepared to accept a wage according to its marginal productivity. In a free enterprise economy where there is free, perfect and thorough-going competition, if the labourers just accept low wages, unemployment would vanish completely (except seasonal and frictional unemployment).

It is important to note that Pigovian formulation of Say's Law ran in terms of the tendency of the economy, under thorough-going competition, to provide full employment in labour market. According to classical school, basic determinant of the volume of employment at any given time is the level of wages. In a free market economy with "thorough-going competition" the free working of the market forces of supply of labour and demand for labour go to determine the market wage rate, completely ruling out the possibility of unemployment.

If, however, there is unemployment, i.e. if the supply of labour exceeds the demand for labour at any given time, the market wage rates would fall till the supply is equal to demand and full employment equilibrium is restored. Classicals, therefore, held the view that if unemployment persisted for a long time, it must be ascribed to wage rigidity on account of the imperfections of labour market.

Implications of Say's Law:

1. According to Say's Law of markets there is automatic adjustment in the economy as whatever is produced is consumed. In other words, every output brings along with it the necessary purchasing power in circulation which will lead to its sale, so that there is no over-production. Hence, there is no necessity on the part of the government to intervene in business matters as that will come in conflict with the automatic adjustment mechanism of Say's Law of Markets.

2. Since supply creates its own demand, hence general unemployment and over-production are impossible.

3. Again according to Say's Law of Markets as long as there are unemployed resources in the economy it is profitable to employ them because they can pay

their own way. In other words, when the unemployed resources are used, they lead to more production so as to cover their own costs.

4. Another important implication is the mechanism of flexibility in the rate of interest, which brings about equality between savings and investment. To classicals, saving is another form of spending. Therefore, whatever is saved is necessarily invested. Hence, there is no possibility of the deficiency of aggregate demand and the mechanism through which it is maintained is the rate of interest.

5. Further implication of Say's Law of Markets flows from the Pigovian formulation, i.e., wage rate is the mechanism which helps to bring automatic adjustment, i.e., a lowering of the wage rate will lead to full employment under free and perfect competition. The government should, as far as possible, ensure a free market and there should be absolutely no regulation of wage rates.

6. Because goods are exchanged for goods, money acts as a veil and has no independent role to play. Money is only a medium of exchange to facilitate transactions.

Say's Law in Barter and Money Economies:

In a barter economy, where a person gets no money but only goods. Say's Law always holds good. In barter economy, people produce goods either with a view to consuming themselves or to trade them for some other goods required by them; in the process, they definitely create in aggregate the demand for goods which is always equal to aggregate supply of goods produced by them. The price ratios are such as would clear the market of goods. If the price of one good is higher to that of another good, resources would shift from the production of low-priced goods to the production of high-priced goods.

As a result, the price of the first good will rise on account of decreased supply, while of the other goods would tend to fall due to increased supply. In this way price equalization process starts till the equilibrium price comes to prevail in the market—which in a barter economy ensures that all goods are either consumed or exchanged at some positive price.

Say's Law was developed and applied to a society in which producers were self-employed like individual proprietors, artisans, peasant farmers, master craftsmen etc. who either raised the products on their farms or manufactured

them in their workshops. In this early 19th century set up, saving was investment and not a separate or distinct process as it is today.

As stated by Mill, Say's Law is expressed in barter terms. But the classical economists believed that the principle was equally valid if money were introduced into the analysis. In a monetary economy Say's Law is interpreted to mean that money income will automatically and continuously be spent at the same rate at which it is being generated through an act of production. If this is true, then money makes no difference and supply will continue to create demand.

A long line of classical economists believed that although Say's Law was originally set forth for a barter economy (i.e., to supply one good in barter is unavoidable to demand another) yet the law was equally true in a money economy. It is true that one's excess production in a money economy is exchanged in the market for money and not for other goods, it may still be argued that the purpose of production is not to get money as such, but to get money with which to buy the products of others. The introduction of money, made no difference because money was only a medium of exchange. Only a miser will need money for its own sake than for what it will buy.

Thus, according to the proponents of Say's Law, it holds true both under barter economy as well as under money-economy. The law states that income received is always spent on consumption and investment. It other words, money is never hoarded. The money or expenditure stream (MV) remains neutral. In a barter economy, every seller is essentially a buyer. If they sell their produce for money, the money will promptly be spent against other goods.

Money is merely a convenient medium of exchange avoiding the leakages of barter and nothing more. Thus, the law though framed in terms of a barter economy held true for an economy using money also. Money economy behaved in the same way as barter economy, because rational individuals will not hold idle money. In this sense, there is indeed an identity of selling and buying under barter economy and even under money economy.

In his excessive zeal for establishing the practical importance of his thesis, Say expressed himself time and again, as if indeed, the total monetary value of all commodities supplied would have to equal the monetary value of all commodities demanded not only in equilibrium but 'always and necessarily'. This is logically wrong if he actually meant it.

Is Say's Law Still Valid?

From the points enumerated above, it is clear beyond doubt that whatever force Say's Law had during barter economy, it certainly does hold true of modern conditions. It has been completely given up by modern economists in their theoretical and practical work on money and business cycles. Under barter economy where production was primarily for consumption i.e., whatever was produced was exchanged for goods and services. Say's Law had some meaning. But today, when the production is based on future expectations and anticipations of demand, it has little validity, as there is bound to be some over-production, resulting in some type of glut in the market.

Viewed, however, as a broad generalization in micro context, Say's Law presents in a greater measure a picture of the exchange economy, wherein new firms and workers find their way into the productive process by offering their own products in exchange. In J.A. Schumpeter's view, Say never presented the law in the form in which we find it today. What he actually meant was that a good deal of production is always meant to be consumed and the rest which is saved is likely to be invested generally.

This law is not as meaningless as some assume, under the influence of Keynes. Say's Law is still held to be valid. In principle, the economy would always absorb all the commodities, it. was capable of producing. The periodic unemployment associated with the trade cycle was an aberration, a consequence of the unbalanced structure of production caused by too rapid an expansion of the capital goods industries.

Say's Law forms a good argument against the pessimism of those who see a general increase in production leading to a slump. For example, many fear expansion of production in the underdeveloped countries. They apprehend that the world will be flooded with products but they forget and overlook the fact that this greater production automatically leads to a greater money income which provided that it is spent in the right way, creates the market for greater flow of goods, this does not mean that disturbances cannot occur, but these are anything but a necessary consequence of the expansion of productive capacity. Supply does, in fact, tend to create its own demand.

Even today, we know that the law is true to the extent production creates its own demand via payment to the factors of production and their resulting consumption. The very fact that there cannot be any stable equilibrium in the

economy unless Y = C + I shows the validity of Say's Law even under modern conditions and manifests its inherent accuracy. In other words, the sum of expenditures on consumption and investment demand must be high enough as to be equal to income generated (supply). Hence, in a sense Y = C + I, is nothing but an elaboration and application of Say's Law in the long run. In their fondness for the law, people gave misleading and conflicting interpretations.

In this connection, J.A. Schumpeter remarks:

"Most people misunderstood it, some of them liking, others disliking what it was they made of it. And a discussion that reflects little credit on all parties concerned dragged on to this day when people, armed with superior technique, still keep chewing the same old cud each of them opposing his own misunderstanding of the law to the misunderstanding of the other fellow, all of them contributing to make a bogey of it." Prof. Hansen remarks, "History of thought illustrates again and again how a great living principle, tossed about on the sea of controversy is likely to lose its vitality. Too often it may be applied, as a tool of analysis to highly complex problems for which it is unsuited. Misleading conclusions inevitably emerge. This is what happened to Say's Law."