

## UNIT II

### CLASSICAL THEORY OF OUTPUT AND EMPLOYMENT

#### Introduction

This chapter is concerned with Classical theory of output and employment. Economists bears to Keynes's General Theory much the same relation that mercantilism bears to Adam Smith's Wealth of Nations". Just as it would be difficult to understand Adam Smith without knowing something about mercantilist theory, in the same way it is difficult to understand Keynes without knowing something about classical theory. The term „classical economists“ as used by Keynes refers to the traditional or orthodox principles of economics which have been handed down since the time of early 19<sup>th</sup> century. The term „classical economists“ was invented by Karl Marx to refer to Ricardo and his predecessors“ including Adam Smith. But Keynes used the term „classical economists“ to include even the followers of Ricardo, including J.S. Mill, Alfred Marshall and A.C. Pigou.

In those days. i.e. in 19<sup>th</sup> century when the society was simple, economic problems were limited in numbers and less complicated in their nature. Population was like a small factory system and round about, method of production were absent. Naturally the economic idea put forth by economists of those simple days have become irrelevant for today's complex modern society. Many of the principles which were enunciated by the classical economists have become out dated, inapplicable and irrelevant to the modern economy of today. Keynesian economics has nullified the importance of classical ideas and no doubt many of the classical concepts were severely criticized by Keynes“ and his followers.

#### Fundamental ideas of classical Theory

The Classical theory of employment and output revolves round the following fundamental ideas:

- (a) There is laissez faire in the economy.
- (b) There is always full employment in the economy.
- (c) Even if full employment is not found it can be easily achieved through „wage –cut“.
- (d) Micro concepts such as output and employment decisions of a firm or industry is the same for the economy as a whole also. What solutions are applicable for a micro problem are the same for a macro problems also.

- (e) „Money“ is a mere medium of exchange. Money as such does not create any problem in the society. The classical school did not appreciate the connection or interlink age between commodity market where goods are produced and money market where exchange takes place.
- (f) Savings are always equal to investment.
- (g) Interest rate is the very important and powerful factor which brings about an equality between savings and investment.
- (h) Money can never be kept idle. Money is such as precious thing that it should either be used up.
- (i) The classical school considered only „real factors“ and not „monetary factors“. The concept like „real effort“, real savings and „real value“ were not touched upon.
- (j) They did not consider the concept of „inflation“ and its repercussions on employment and output.

So, based on the above said fundamental ideas, the whole classical structure has been built and we are going to consider each one of the above in detail in this chapter.

### 1. Laissez Faire Economy or Free Enterprise Economy

The classical economist fully believed in „Laissez Faire“. This means „noninterference by government in the activities of private individual“. The citizens of a country have full freedom; to start any business of their choice. According to Adam Smith, the father of Economics, Laissez Faire economy ensures efficiency, quality and maximum output. His examples of „baker of bread“ is quite famous in this context. The baker of bread produces bread not because he is interested in feeding the poor or in the welfare of other people, but does so just to earn „profit“ i.e. to become rich; to a mass wealth. While producing bread, with an intention to get profit he automatically benefits the society and relieves the hunger of other individuals. His selfish activity ultimately leads to the welfare of the society. So given full freedom, the society is capable of looking after itself. The Government need not indulge in any business activity. If the government undertakes production then, every body“s business becomes nobody“s business. There arises inefficiency, lack of interest and consequently low production. So the duty of the government is just to maintain law and order provide justice and protect the country from foreign invasion. The Government should be a mere police Government and not „welfare government“. It should not regulate the activities of private individuals in their business. So non-interference is considered to be a

„must for smooth functioning of a society.

Thus classical had full faith in the invisible hand (Price mechanism) profit motive, free and perfect competition or to use Pigovian terminology “thorough-going competition” and the self adjusting nature of the economic system. They believed that if the economic system is allowed to work without any state interference it would automatically do away with the mal adjustments in the economy if there are, any, and would function smoothly ensuring full employment. So a “free enterprise system” or “capitalist system” was advocated by the classical economists.

## 2. Perfect Competition

The classical assumed a state of perfect competition and they did not visualize “imperfect conditions” in the market which lead to exploitation of consumers, wastage of resource, artificial restrictions on output and boosting up of prices due to advertisement war, etc. They thought there will always prevail perfect competition or pure competition. In perfect competition there is free entry and exit. If a producer earns abnormal profits many new entrepreneurs enter into the production of this commodity in order to earn this profit and this leads to competition among the producers who will increase the supply of goods which theory reduces the price level. Every producer earns ultimately only normal profit. The price is a “normal price”. There is an exploitation of consumers. There is no amassing of wealth by the producer also. So perfect competition is an ideal market situation for the country as a whole and that is why classical advocated perfect competition. But now, because of various factors, the market is not characterized by perfect competition but it is dominated only by imperfect competition”. So perfect competition is not a reality in modern days. But many of the classical principles are based on this notion of “perfect competition” which thought will prevail always in the economy. Perfect competition does not exist in modern economy ideas based on this concept have also become irrelevant and inapplicable.

## 3. Assumption of Full Employment

Classical economics is based on the assumption of full employment of labour and other resources within an economy. Full employment is a normal situation and any situation of less than full employment (unemployment) is an abnormal one for them. By full employment they meant situation in which there is no involuntary unemployment though there may be frictional, structural and voluntary unemployment. If there exists such unemployment“s in an economic system, they feel that it is due to the existence of monopolistic conditions in the industry or state intervention in the free working of competitive situations in the market or it may be

attributed to the imperfections of the market due to immobility of productive factors. The best way to ensure full employment is to follow a policy of “Laissez faire”.

#### 4. Resource Allocation

Instead of attempting to explain what determines the volume of employment the classical theory thus assumes full employment, and goes on to explain how a given total volume of resources is allocated in production and how the income derived from production is distributed to the different types of resources participating in production. The market forces which allocate resources in production and determine the rewards in distribution are supply and demand. Expressed in terms of money these values are “prices” and “the pricing system” is the unconscious “planning” mechanism which guides private individuals in pursuit of maximum rewards to allocate economically and fully the total resources of the economic system. This in short is the well known theory of value, distribution and production, which forms the core of classical economic theory.

Thus for the classical school the resources are constant and if more resources are employed in one industry, they are assumed to be drawn away from other industries. The choice is between employment here and employment there and not between employment and unemployment. Addition to total output in one direction are at the expense of deductions from total output somewhere else in the economic system and are not additions to total output resulting from putting to work previously unemployed resources. Where resources are ideally allocated there is no way by which total output can be increased by reallocation. In the long run, of course, because of increases in population and productivity and the discovery of new resources there is an increase in total employment and output.

#### 5. Say’s Law of Markets

Acceptance of full employment as the normal conditions of an exchange economy is justified to classical economists mainly because of J.B. Say’s Law of Markets”, J.B. Say was an early 19<sup>th</sup> century French economist. He said, “supply creates its own demand”. By this he means every producer who brings goods to market does so only in order to exchange them for other goods. Say assumed that the only reason people work and produce is in order to enjoy the satisfaction of consuming. In an exchange economy therefore whatever is produced represents the demand for another product. Additional supply is additional demand. The analysis is carried on in terms of barter. A producer who normally produces „one table“ a day if suddenly produces „two tables“ a day by putting in extra effort, then it means his needs have increased

and he wants to demand some other consumer item by exchanging this extra table. So every supply create its own demand. Let us consider the operation to this law in a money economy. When a resource is put to work, a product (output) is produced and income is paid to those who contribute to its production. The sales receipts cover cost of production and all factors are willing to accept rewards equal to their marginal productivity. For the agent of production the new income from its employment will create the sufficient demand to take out of the market an amount of output equivalent to that produced by virtue of its employment. Misdirected production may result in temporary over supply of some particular items but there can be no general overproduction as long as supply creates its own demand; if overproduction takes place in certain items, then this will be corrected when entrepreneurs shift from the production of things they cannot sell (at a profit) to the production of things they can sell (at a profit). So Say's Law of Market is a denial of the possibility of general overproduction" or „Glut“. It is also a denial of the possibility of deficiency of aggregate demand“.

Say's Law means that there will always be a sufficient rate of spending to maintain full employment. This theory rests on the assumption that income is spent automatically. Even if some proportion of income is saved, it is not an obstacle for full employment. Saving is another form of spending. Saving is spending on producers goods (investment).

In the words of J.B. Say, it is production which created markets for goods, for selling is at the same time, buying and in production men are creating a demand for other goods.

David Ricardo has expressed Say's law as follows: 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 them he necessarily becomes either the consumer of his own goods or the purchaser and consumer of the goods of some other person. Production are always bought by productions or by services, money is only the medium by which the exchange is affected“.

James Mill states Say's Law thus „Consumption is co-existent with production and ... production is the ... sole cause of demand. It never furnishes supply without furnishing demand both at the same time and both to an equal extent; in the words of McConnell. The very act of producing goods generates an amount of income exactly equal to the value of goods produced. To give an example, when a car is produced necessary purchasing power equivalent to the price of the car is simultaneously generated in the form of rents wages, interests and profits, which would ultimately lead to its purchase.

## 6. Pigovain formulation of Say's law

Say's Law of Markets was put in a different form by Pigou. According to Pigou, it labourers are willing to accept wages equal to marginal productivity general unemployment is an impossibility. The base determinant of the volume of employment at any given time is the level of wages. If there is unemployment, i. e., supply of labour exceeds the demand for labour then market wage rates would fall till the supply is equal, to demand and full employment equilibrium is restored. Classical therefore held the view that if

„unemployment“ persisted for a long time, then it must be due to wage rigidity and imperfections in labour market.

## 7. Employment and Output

At a given time, there exists in the economy as a whole a given productive capacity or „productive potential“ which refers to the capacity of the nation to produce goods and services. This productive capacity of course varies in the long run when more resources are found out, when technology changes or when population increases. Symbolically it can be expressed as  $Q = f(N, K, R, T)$  where

„Q“ stands for productive capacity of the economy „N“ stands for the labour force.

„N“ stands for the labour force

„R“ for the stock of natural resources

„K“ for the stock of capital or for man made means of production and

„T“ for the level of technology prevailing in the economy.

So productive capacity of a nation is determined by the amount of labour, capital and resources and the prevailing level of technology. The equation above does not indicate in what proportion these are to be combined. It merely shows that productive capacity is a function of or depends on these factors. The actual output produced at a particular point of time however depends on the extent to which these resources are being used, in other words output is the result of the utilization of productive capacity. This is decided by the production function, which shows a functional relationship between the quantity of input used and the quantity of output produced. Symbolically

$$Y = f(N, R, K, T)$$

Output produced is a function of labour, resources, capital and level of technology.

Given the stock of natural resources capital, and the level of technology, output or income (Y)

is determined by labour input (N) which shows the level of employment. This is shown in the following diagram:

Labour input is measured on the X-axis and output on the Y-axis. The output curve,  $Y_a$  slopes upward because of diminishing marginal productivity. When employment increases from  $N$  to  $N_1$ , output increase from  $Y_1$  to  $Y_2$ . But this increase of  $Y_1$  to  $Y_2$  can be achieved without any increase in employment, i.e., employment remaining as  $N$  when the productive curve itself shifts from  $Y_a$  to  $Y_b$ , Such a shift of the production curve can take place due to changes in capital stock, natural resources, change in technology or a change in the combination of these variables.

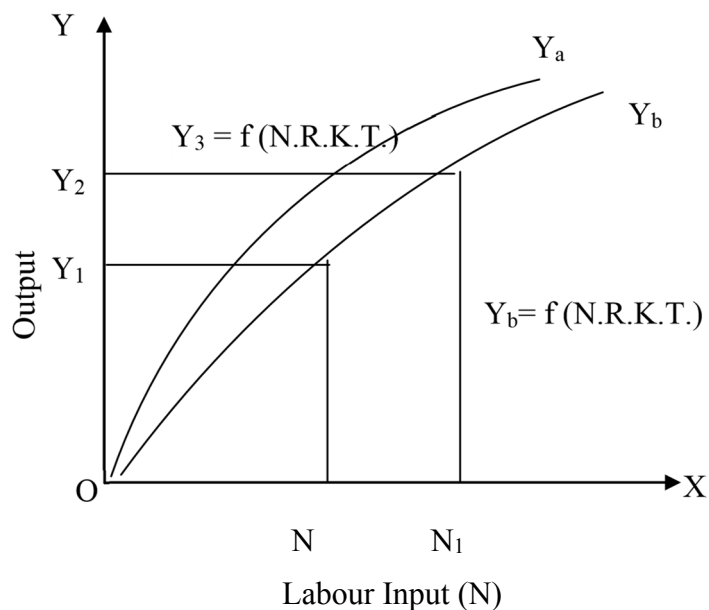


Figure 5.1

The classical school did not formulate a well defined theory of employment as such, they did not explicitly state their ideas with regard to output and employment. They put forth their views with regard to supply of labour, demand for labour, price level, production and such other individual variables. Later economists built up a theory of employment, and gave diagrammatic illustration of classical ideas with regard to employment as given by modern economists.

#### Analysis of Classical theory

Classical economists such as Adam Smith and Ricardo maintained that the growth of income and employment depends on the growth of the stock of fixed capital and inventories of wage goods. But, in the short run, the stock of fixed capital and wage goods inventories are given and constant. According to them, even in the short run full employment of labour force would tend to prevail as the economy would to experience any problem of deficiency of demand. On

the basis of their theory they denied the possibility of the existence of involuntary unemployment in the economy. The short-run classical theory of income and employment can be explained through the following three stages.

1. Determination of income and employment when there is no saving and investment.
2. Determination of income and employment in an economy with saving and investment
3. Determination of income and employment. Introducing money and prices.

1. Determination of income and employment when there is no saving and investment.

According to the classical theory, the magnitude of national income and employment depends on the aggregate production function and the supply and demand for labour. To show this let us assume that the economy produces one homogeneous and divisible good, say corn. Let symbol  $Y$  stand for the output of this good. To produce this good we require two factors of production: (1) Labour which we denote by  $N$  and (2) capital which we denote by  $K$ . Let us further assume that production function is such that it exhibits constant returns to scale, that is, if the quantities of capital ( $K$ ) and labour ( $N$ ) are doubled, the quantity of output,  $Y$ , is also doubled. Thus we have the following production function.

$$Y = F (K,N) \dots\dots(i)$$

The assumption of constant returns to scale implies that if the factors  $K$  and  $N$  are multiplied by some positive number  $\lambda$ , output  $Y$  will also be multiplied by the same number. That is,

$$Y = F ( \lambda K, \lambda N)$$

In the short run the quantity of fixed capital  $K$ , that is, plant and equipment, does not vary. Therefore, with a fixed capital stock, the output  $Y$  (or what is also the income) would increase only when the employment of labour  $N$  increases. That is employment of labour and output(income) rise or fall together. Now, according to classical theory, with a fixed capital stock as the employment of labour increases, marginal product of labour would diminish. This is the famous law of diminishing returns of the classical economics.



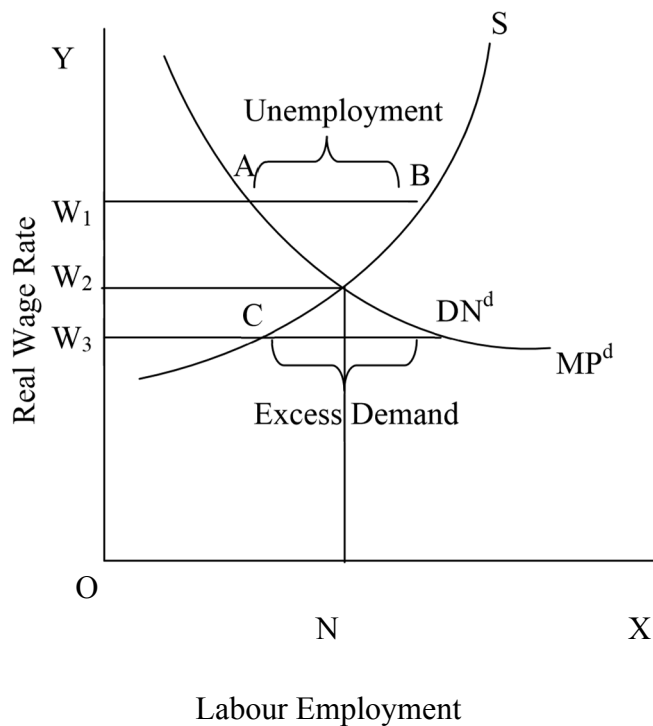


Figure 5.2 Employment and Wages

The demand for labour is derived from this short run production function that is diminishing marginal product of labour. We assume perfect competition. Further, assuming that the firms which undertake the task of production attempt to maximize profits, they will employ labour until the marginal product of labour is equal to the given wage rate. At the lower wage rate, more labour will be demanded or employed by the firms and vice versa. Thus, the demand curve for labour is derived from the marginal product curve of labour. In fact, the former coincides with the latter. Consider Figure 5.3 where MP curve depicts the diminishing marginal product of labour with a given stock of fixed capital. As explained just above, MP curve of labour also represents the demand curve of labour  $N_d$ .

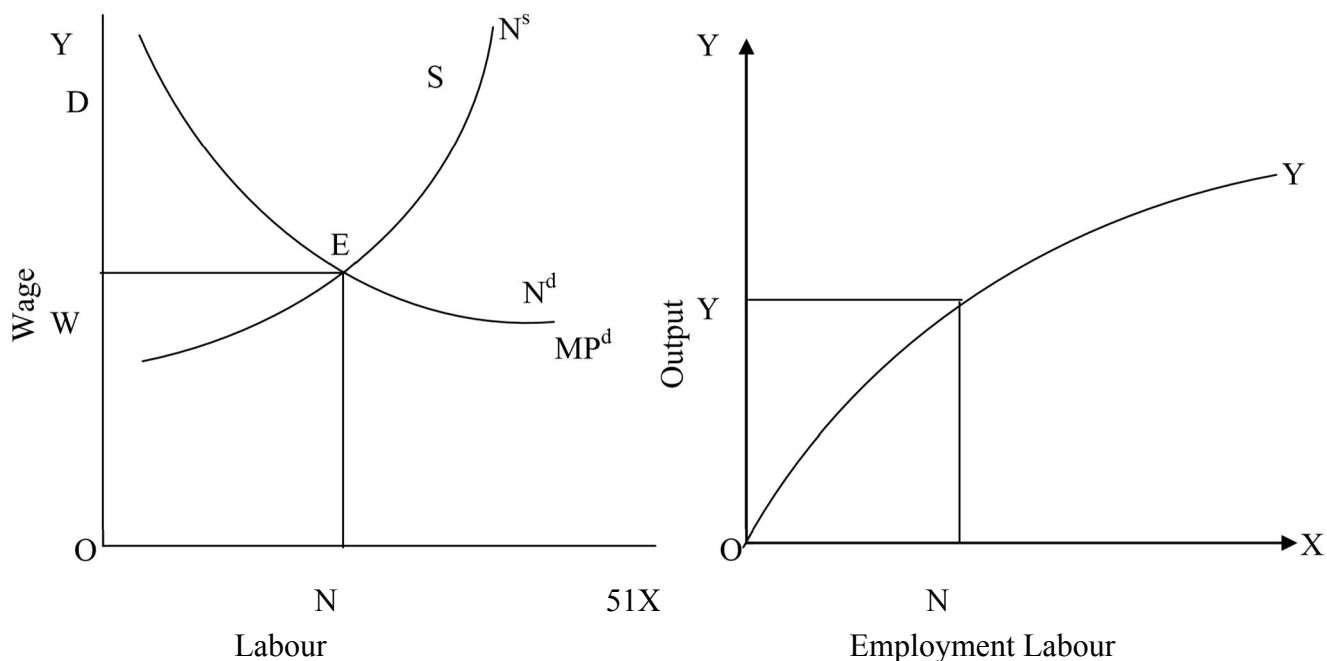
On the other hand, the supply of labour by the households in the economy depends on their pattern of preference between income and leisure. The classical theory assumes that in the short run when population does not vary, supply curve of labour slopes upward. This implies that at a higher wage rate, more labour would be supplied and vice versa. It will be seen from figure 5.2 that supply and demand for labour are in equilibrium at the wage rate  $OW$ . Hence, given the supply and demand curves, the wage rate  $OW$  is determined. It will be seen that  $ON$  labour is employed in this equilibrium situation. This equilibrium between supply of and demand for labour at the wage rate  $OW$  implies that all those who offer their labour services

at this wage rate are in fact employed. There is neither excess supply of labour, nor excess demand for labour. In other words, there is no involuntary unemployment

of labour in this equilibrium situation. If somehow wage rate in the labour market is higher than this equilibrium wage rate  $OW$ , say it is equal to  $OW_1$ , then it will be observed from Figure that excess supply of labour equal to  $AB$  would emerge. In other words, at wage rate  $OW_1$ ,  $AB$  workers will be unemployed.

But given the competition among workers, the excess supply of labour would cause the wage rate to fall to the equilibrium level  $OW$  at which the labour market is cleared. On the contrary, if somehow real wage rate in the labour market is  $OW_2$ , the firms would demand more labour than is offered at this real wage rate. As a result of the competition among the firms to hire labour desired by them, the wage rate would go up to the equilibrium level  $OW$ . At  $OW$  to repeat, all those who offer their labour services are in fact demanded and employed. It therefore follows that at  $OW$ , there is no involuntary unemployment, or, in other words, full employment of labour prevails. Further, it is the wage flexibility (i.e. the changes in the wage rate) which ultimately brings about this full employment situation.

How much output will be produced in this full employment situation can be known from the production function. We depict this in Figure 5.3 where in addition to the supply of and demand for labour, the production function ( $OY$ ) representing the relation between employment of labour ( $N$ ) and total output ( $Y$ ) is shown. It will be seen from the lower-panel of Figure that, given the stock of fixed capital, employment of  $ON$  labour produces  $OY$  output. This output  $OY$  of corn will constitute the income of the society and will be distributed between wages and profits it will be seen from the upper panel of Figure 5.3 that total wages are equal to the area  $ONEW$  and that profits  $WED$ . Thus sum of wages  $ONEW$  as reward for labour and total profits  $WED$  as reward for capital would constitute the total income of the society (and would be equal to the social output  $OY$  produced).



#### Determination of Employment and Output

It follows from about that the quick changes in the real wage rate upward or downward ensures that neither excess supply of labour, nor excess demand for labour will persist and thus equilibrium will be reached with full employment of labour in the economy. Further, given the stock of capital, with this full employment of labour, output and income of the economy equal to  $OY$  are determined.

Now, an important question to inquire is what guarantees that output produced by the full employment of labour and the level of capital (assumed as fixed in the short run) will be actually demanded. If this does not happen, then the problem of insufficient demand for the output (i.e., corn) will emerge which will ultimately lead to reduction in output and employment and hence to the existence of involuntary unemployment.

In the absence of saving and investment which we are assuming here, classical economists ruled out the possibility of deficiency of aggregate demand on the basis of Say's law. Say's law, as mentioned above, states that supply creates its own demand, that is, acts of production of goods create demand equal to the value of output of goods produced. Factors of production earn their incomes during the process of production. Since no part of income is saved as is being assumed here the entire income will be spent on consumer goods produced. Value of output produced will therefore be equal to the income generated in the process of production.

Thus, quantity demanded will be equal to the supply of output produced. In Fig. wages earned by ON quantity of labour employed and profits earned by the entrepreneurs will be spent on OY output Expenditure so made will be equal to the value of output produced.

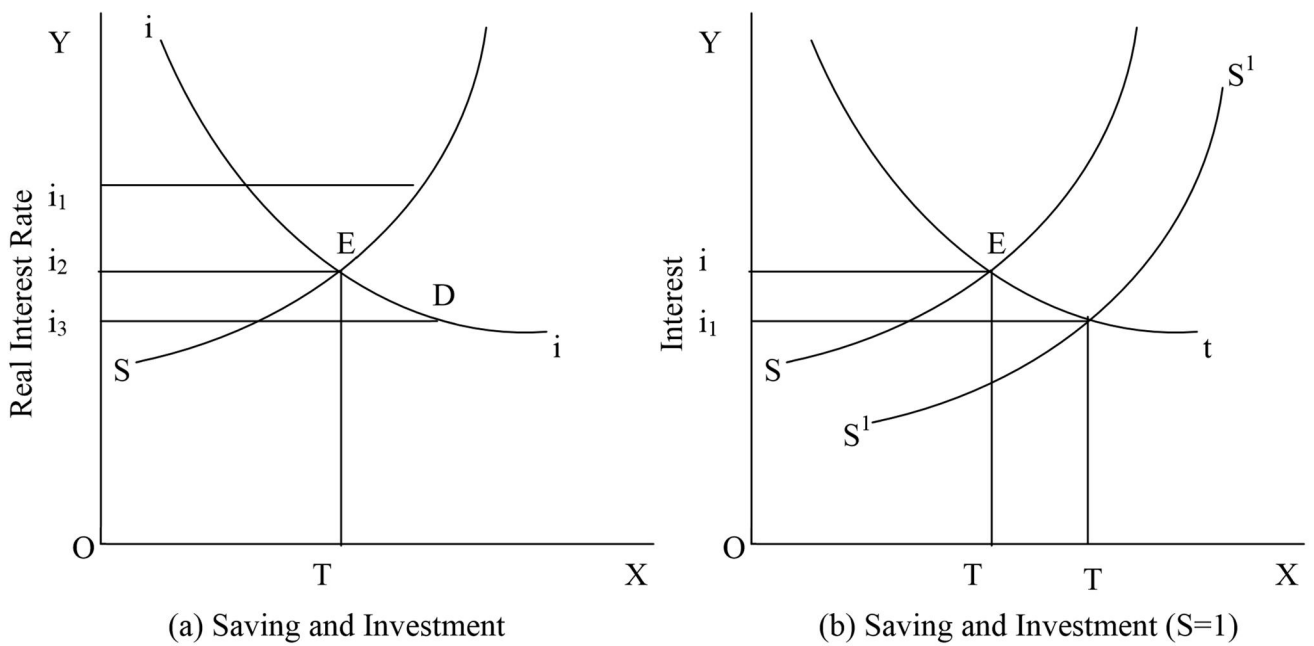
Aggregate demand being equal to aggregate supply, there is no problem of deficiency of demand Say's law that "supply creates its own demand" holds and full employment of labour is guaranteed. In this way classical theory denies the possibility of involuntary unemployment. It needs to be emphasized that under such conditions, two things ensures full employment. First, it is because saving and investment are excluded from the system so that entire income is spent on consumer goods. Second, real wage changes quickly to bring about equilibrium between demand for and supply for labour.

## 2. Determination of income and employment in an economy with saving and investment

In applying Say's law that supply creates its own demand an invalid assumption was made above that entire income earned by the households will be actually spent. Although it is correct that production of an output generates equal amount of income but what is the guarantee that all income earned by factors/ households will be actually spent on goods and services produced in fact, a part of income might be saved. Saving represents a withdrawal of some income from the expenditure flow. This will result in deficiency of demand or expenditure on output of goods produced. Thus, if a part of income is saved (that is, not spent), supply of output produced would not create sufficient demand for itself. This will cause deficiency of aggregate demand which will cause fall in output and employment and the emergence of involuntary unemployment.

S

SS



Changes in rate of interest bring about equality between saving and investment

However classical economists denied the possibility of deficiency of aggregate demand even when apart of income is saved by the households. They showed that Say's law that supply creates its own demand holds good even in the presence of saving. They argued that for every rupee saved by households will be invested by businessmen, that is investment expenditure will be equal to savings done by households. In fact, output produced consists of consumer goods and capital goods. Income earned from production will be partly spent on consumer goods and partly on investment in capital goods. What is not spent on consumer goods is saved and investment expenditure made by businessmen equals this savings. Therefore, there is no deficiency of demand or expenditure and circular flow of income goes on undisturbed. Thus, supply goes on creating its own demand and Say's law applies.

Now the pertinent question is what is the guarantee that investment expenditure will be equal to savings of the households. According to classical economists, it is the changes in the rate of interest that brings about equality between saving and investment. Further, according to them, rate of interest is determined by supply of savings and demand for investment. The investment demand is stipulated to be decreasing function of the rate of interest. At the lower rate of interest, more would be borrowed for investment. On the other hand, the savings of the people are taken to be the increasing function of the rate of interest, that is, higher the rate of interest, the larger the savings and vice versa. The loan market will be in equilibrium at the rate of interest at which the demand for investment is equal to the supply of savings. The changes in rate of interest would cause investment and supply of saving to become equal. This

is illustrated in Figure 5.4 (a). It will be seen that intersection of investment demand curve and the supply of savings curve SS determines the rate of interest  $I$ . At a higher rate of interest". The investment demand is less than the intended supply of savings. Due to the excess supply of savings, the rate of interest would fall to. On the contrary, at a lower rate of interest, say at the demand for investment exceeds the supply of savings. Now, due to the excess demand for investment in the loan market rate of interest would go up. Thus it is at rate of interest that loan market is in equilibrium, i.e. investment is equal to savings ( $I=S$ )

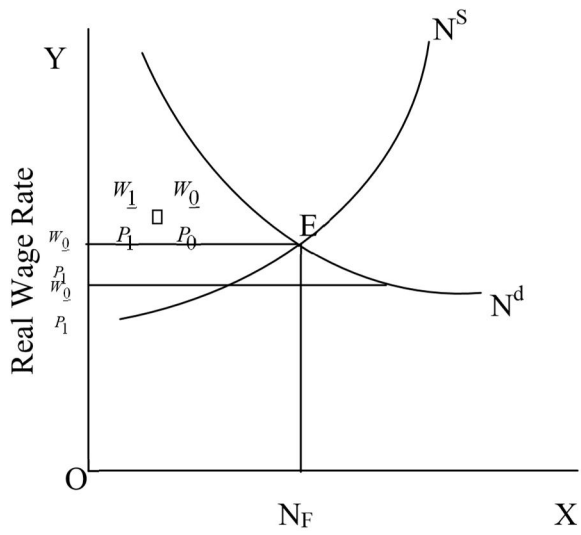
Now according to the classical theory, even if people's savings increase and as a result their consumption demand declines the problem of demand deficiency will not arise. As will be seen from panel (b) of Figure 5.4, as a result of increase in savings the supply of saving curve shifts to the right. With this rightward shift in the saving curve the equilibrium rate of interest falls to  $I$  and at this lower interest, investment demand increases to  $T''$  so that it once again becomes equal to savings.

It follows from above that the equality between investment and savings, brought about by changes in the rate of interest, would guarantee that the aggregate demand for output would be equal to aggregate supply of output. Thus, the problem of deficiency of aggregate demand would not be faced and full employment of labour will prevail.

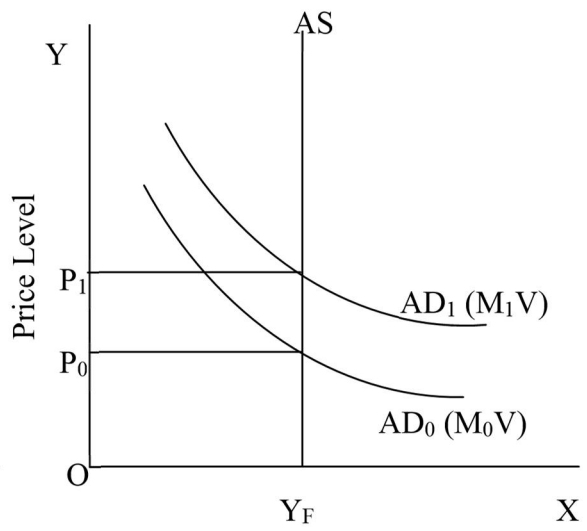
### 3. Determination of income and employment.

Introducing money and prices.

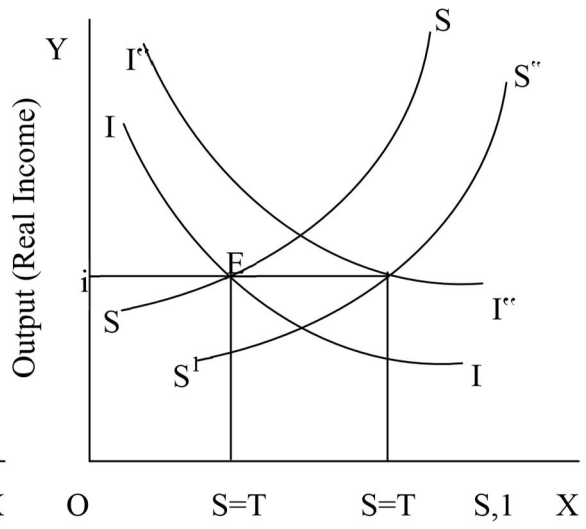
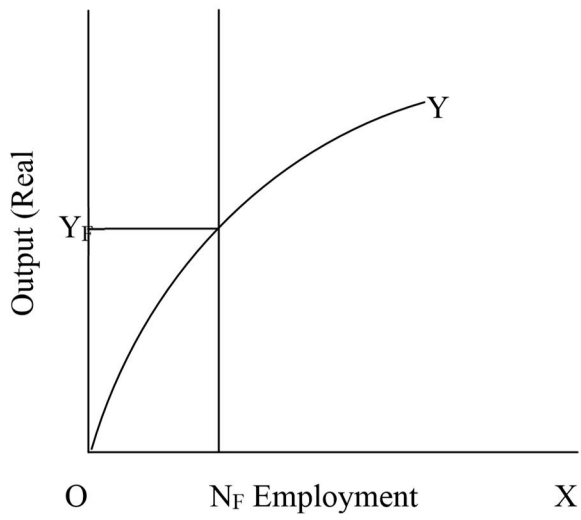
Now, we shall examine how full employment of labour is assured in the classical theory even when assumption of the barter economy is dropped and money is introduced in the system. The introduction of money does not affect the result of the classical theory that problem of deficiency of aggregate demand would not be experienced by the free market system and therefore full employment of labour is guaranteed. The quantity of money, according to the classical theory, determines only the price level of output and in no way affects the real magnitudes of savings and investment.



Panel (a): Labour Market Equilibrium



Panel (c) : Aggregate Output





Now, since quantity of money determines the price level of output, it also affects real wage. It is important to note that the real wage is the ratio of money wages and the price level, that is.

Where, W = Money wage

P = Price level

To begin with, suppose given a certain quantity of money and consequently a price level, labour market is in equilibrium at a certain real wage rate determined by demand for and supply of labour. As explained above, full employment of labour would be prevailing in this situation. Now, if quantity of money increase, according to the classical theory, it will cause a proportionate increase in the price level of output. This is because according to classical theory real output remains unchanged at the level of full employment of labour.

With output remaining the same, increase in money causes only price level to rise.

This follows from Fisher's equation of exchange of the quantity theory of money. According to this,  $MV = PY$

$$MV = PY$$

$$\text{or } P = \frac{MV}{Y}$$

Where P is the price level, M is the quantity of money. V is the velocity of circulation of money, Y is the aggregate output or Gross National Product (GNP). It may be noted that the velocity of circulation of money is the number of times a unit of money is used for purchasing final goods and services. In classical theory V is assumed to be constant because it depends on people's stable habits of holding money and the given modes of payments of wages and salaries. Further, they assume that the aggregate output or gross national product (that is, Y in the equation of exchange) remain constant at full employment level because they believed full employment prevailed in a free market economy in the long run always.

Thus, it follows from the above equation that with both V and Y remaining unchanged increase in M will induce a proportional increase in the price level. For example, if a 15 percent increase in money supply occurs, the classical economists believed that there would be 15 per cent increase in the price level. The rationale of their thinking was with V and Y remaining constant, increase in money supply would cause the people to hold more money than they desire to hold. According to them, since money is held for making transactions of goods and services, they would spend excess money holdings on purchasing goods and services. The aggregate output

of goods and services ( $Y$ ) remaining the same, this new expenditure will push up the price level by the same proportion as the increase in money supply.

Let us go back to the question of determination of real wage rate and consider again panel (a) of Fig. 5.5 depicting labour market equilibrium. With the new higher price level determined after the increase in the quantity of money and, given the money wage, the real

W wage rate (  $\frac{W}{P}$  ) will fall. The fall in the real wage rate would cause some temporary P disturbance in the labour market. At a real wage rate below the equilibrium one, more labour would be demanded by the profit-maximizing firms than is offered at that wage rate (See panel (a) in Figure 5.5). This excess demand for labour at the new real wage rate would cause the money wage rate to rise so that once again the earlier full-employment real wage rate is restored.

According to the classical theory, money performs the function of merely a means for exchange of goods and services and is therefore demanded only for transaction purposes. This means alternative to holding money is the purchase of goods and services. Therefore, demand for and supply of money in the classical system does not determine the rate interest. When the quantity of money increases, it will leave the rate of interest unchanged and hence the amount of output saved and allocated to investment (i.e. real savings and investment) will remain the same. This means the increase in money does not disturb the saving – investment equality and consequently the continuation of full employment equilibrium. However, it may be noted that the higher level of prices of commodities would mean that investment expenditure in money terms will increase in this same proportion as the rise in prices even though the output of commodities allocated for investment purposes remains the same. But this increase in monetary expenditure for investment is matched by the increase in monetary savings brought about by the rise in prices. The higher prices of commodities also mean a proportionate increase in the amount of money received from the sale of commodities so that savers are willing to provide proportionately larger amount of money at given rate of interest. Thus, as shown in Figure 5.5 (Panel d) with the increase in quantity of money, the supply curve of savings and investment demand curve shift by the same proportion so that the same rate of interest is maintained and the same amounts of real savings and investment in terms of commodities take place at the higher price level.

#### Graphic illustration of Complete Classical Model with Money and Prices

We illustrate the complete classical model of income and employment determination in a monetary economy in Fig. 4.5 In panel (a) of this figure labour market equilibrium is shown wherein it will be seen that the intersection of demand for and supply of labour

$W_0$

determines the real wage rate.

$P_0$

At this equilibrium real wage rate the amount of labour  $N_f$  is employed and, as explained above, this is full employment level. As depicted in panel (b) of the figure this full employment level of labour  $N_f$  produces  $Y_f$  level of output (or income). In panel (c) of Figure 5.5 we have shown the relationship between money and prices as explained by quantity theory of money. Thus, given the full-employment output  $Y_f$  and constant velocity of money  $V$ , the quantity of money  $M_0$  will determine the expenditure equal to  $M_0V$  according to which aggregate demand curve (with flexible prices) is  $AD_0$ . It will be seen from panel (c) of Fig. 5.5 that intersection of vertical aggregate supply curve  $AS$  and aggregate demand curve  $AD_0$  determines price level  $P_0$ . It will be observed that with price

$\frac{W_0}{P_0}$  is the real wage rate as determined

by level at  $(P_0)$  the money wage rate is  $W_0$  So that  $P_0$  the intersection of demand for and supply of labour.

Now, a relevant question is how this equilibrium level of real wage rate, price, employment and output (income), will change following the increase in the quantity of money. Suppose the quantity of money increase from  $M_0$  to  $M$ . With the given capital stock (as we are considering the short-run case) and the labour force already fully employed, the output cannot increase. Therefore, as depicted in panel (c) following the increase in money supply to  $M$ , aggregate expenditure will increase to  $M, V$  and thereby causing aggregate demand curve to shift to  $AD_1$ . As a result, price level rises from  $P_0$  to  $P_1$ .

However, as explained above, with the given money wage rate  $W_0$  the rise in price level will cause the fall in real wage rate. As will be seen from panel (a), with price level  $P_1$ ,

$\frac{W_0}{P_1}$   $W^1$ . This will cause temporary disequilibrium in the labour market. At real wage rate falls to  $P_1$

$\frac{W_0}{P_1}$   $W^1$  more labour is demanded than is supplied. Given the competition among the real wage  $P_1$

the firms, this excess demand for labour will cause the money wage rate to rise to  $W_1$  level

$$\frac{W^1}{P_1} = \frac{W^0}{P_0} \text{, so}$$

that the real wage is bid up to the original level.

$$\frac{W^1}{P_1} = \frac{W^0}{P_0}$$

With the real wage rate being quickly restored to the original level, employment of labour  $N_f$  and total output or income  $Y_E$  will remain unaffected. To sum up, the result of increase in money supply is to raise money wages and prices in equal proportion, leaving real wages, employment and output unaffected. The results of decreased money supply can be similarly worked out.

#### Application of the Classical Model

1. In the classical system if supply of labour increase then it causes money wage to fall, employment and hence output increase. The larger output can be sold only at lower prices. At the eventual new equilibrium, money wages will have fallen by more than prices so that real wage is lower, a necessary condition for the higher output and employment. Saving, investment and interest rate remain unchanged.
2. An upward shift in the production function to larger demand of labour at every value of  $W/P$  output increases. Prices fall whether money wages rise, fall or remain the same; it depends on the elasticities of the production function and labour supply and the value of  $M$ . Anyway, even if there is a fall in money wage it is less than fall in prices. In the new equilibrium situation the real wage will necessarily increase.
3. Suppose there is an increase in money supply, this leads to unwanted money balances. This in turn leads to increased demand for output, and in turn for labour services. Prices and wages both increase. In course of time increased price level and a proportionate rise in the money wage maintains equality between the supply and demand for labour at the initial real wage, employment and output. Only money wages and prices would have changed both in the same proportion as the change in the supply of money.
4. Assuming both supply of labour and productivity of labour increase together, then output grows and prices fall. But whether real wage increases or decreases depend on whether labour supply grows faster or less rapidly than labour productivity.
5. If marginal productivity of investment increases then it raises investment function. This leads to higher interest rate along with higher investment and saving. However output and employment remain unchanged.

All the above interlinkage is smooth and ensures full employment because of flexibility in prices, interest rate and wages. If prices and wage rigidities are assumed especially in the downward direction then classical theory of Employment will break.

### Criticism of Classical Analysis

Classical school considered a frictionless society. Many obstacles like presence of trade unions, minimum wage legislation, industrial monopoly, imperfect situations etc., were completely ignored. The fact of the modern world is such that it is full of such artificial obstacles and, as such cannot accept classical ideas as policy prescriptions for its present problems. In the modern world none of the variables especially wages are flexible. There is continuous change in technology, tastes, labour supply and so on. Immobility of factors of production imperfect information on costs and their business conditions, Government interference etc. are the characteristic features of today's economy. These conditions no doubt, invalidate certain results of classical theory.

All the classical concepts were severely and vehemently criticized by Keynes for their inapplicability to macro economic problems and for their irrelevance in modern changed context. The criticism leveled against classical ideas will be discussed in detail in the next chapter before passing on to Keynesian theory of employment. So critical evaluation of classical ideas is postponed for time being one fundamental mistake made by the classical school which invalidate majority of their contributions is that of application of micro principles to macro problems. They failed to integrate money market with value to real market. They failed to think about possibility of rigidities in economic system. They failed to visualize „artificial“ hindrances in the smooth working of the market. They had too much reliance on the automatic and self adjusting characteristic of the economy.

Thus contribution of classical school to the theory of employment and output, though great by itself is inapplicable, and irrelevant to modern economic problems. Keynes in his renowned book “General Theory” severely criticized the classical theory of employment. He criticized Say's law, especially the views of Pigou that a general cut in wages, during depression and unemployment will restore full employment in the economy. As we have said above, according to Say's law, every supply or production creates its own demand, as a result of which problems of over production and unemployment do not arise it is, of course true that supply's creates demand for goods because the various factors which are employed in productive activity earn incomes from it, which are in turn spent on goods. For example, when factors of production are employed in production cloth then the incomes in the form of wages, rent

interest and profits accrue to them which they spend on various goods. But from this it does not follow that the supply of production will create its entire demand. The incomes earned by the various factors of production are equal to the value of output produced, but this does not mean that the whole income received by the factors of production will be spent on goods and services. A part of the income is saved and the saved part does not necessarily create demand for goods and services, if entrepreneurs do not invest equal to the desired savings, then aggregate demand which consists of demand for consumer goods and capital goods, will not be enough to purchase available supply of output. Hence, if aggregate demand is not sufficient to purchase available supply, the producer would be unable to sell their whole output due to which their profits would decline and a result of which they would reduce their level of production giving rise to unemployment in the economy.

In a given period, consumers spend a part of their income on consumption and the rest they save. Likewise, in a period, the entrepreneurs plan to spend on factories and machines, that is, they plan to invest. Aggregate demand is sum of consumption demand and investment demand. But in a free enterprise capitalist economy, the persons who save are often different from those who invest and further that the factors that determine savings are different from the factors which determine investment by the entrepreneurs. People save to provide for their old age, to accumulate money for education and marriage of their children, but investment by entrepreneurs depends upon marginal efficiency of capital (that is, expected rate of profit), rate of interest, population growth and technological progress. We thus see that there is no such mechanism in a free enterprise economy which guarantees that investments made by the entrepreneurs are equal to the savings by the people. Desired savings by the people are generally not equal to the desired investment by entrepreneurs. If the desired investment by entrepreneurs falls short of the amount of savings at full employment level of income, the equilibrium of the economy will be at less than full employment level and as a result of which unemployment will emerge in the economy. In this way, according to Keynes, there is no reason that sum of consumption expenditure and investment expenditure is necessarily equal to the value of output produced. In other words, there is no guarantee that aggregate demand will be equal to aggregate supply forthcoming at full employment level of resources. Hence, it is not necessary that the economy will be in equilibrium at the level of full employment. This invalidates Say's Law, since according to Say's Law over-production and unemployment cannot occur.

Keynes also criticized Pigou's view that a general cut in wages in times of depression will remove employment and that the full employment in the country will be achieved. According

to Keynes, a general cut in wages will not bring about increase in employment because the reduction in wages will reduce the aggregate demand for goods. Keynes put forward the view that wages are not only the costs of production, they are also incomes of the workers which constitute the majority of the population of the country. As a result of a general cut in wages, the income of the workers will fall due to which aggregate demand will decline. As a result of decline in aggregate demand, level of production will have to be reduced and less labour will have to be employed than before. This will create more unemployment rather than reducing it. No doubt, as a result of a general cut in wages, cost of production of industries will fall but with the fall in costs, "the demand for the products will not increase because due to the all-round cut in wages, purchasing power of the working class will decrease. Hence an all-round cut in wages will reduce the level of employment by reducing aggregate demand and will thus deepen the depression. There is a fundamental difference between Keynes and Pigou in respect of the relationship between wages and employment. Pigou thought that level of employment in economy depends upon the level of money wages and therefore reduction in money wages will promote employment. On the other hand, Keynes thought that the level of employment depends upon the aggregate demand and the aggregate demand declines as a result of an all round cut in money wages. According to Keynes, even if the wage rates are perfectly flexible, the unemployment will prevail in the economy if the aggregate demand is deficient.

Classical economists thought that a general cut in wages would reduce the cost of production of various industries but they ignored the fact that a general cut in wages will also reduce the incomes of the people. In view of the fall in incomes and aggregate demand how will manufactures be able to sell their whole output? It is the sales of output that makes the wheel of trade, output and employment going. However, note that the classical theory is valid in the case of an individual industry. With the decline in wages, the cost of the industry will decrease and as a result the prices of its product would fall. The industry will be able to sell a larger amount of output at a lower price because it is not necessary that the goods produced by the industry are to be purchased by the workers employed in that industry whose wages have been reduced. But in the case of the economy as a whole, this is not valid because a general cut in wages will reduce the incomes of the working class and as a result enough demand will not be there for the output produced by the whole economy. This deficiency in demand will reduce the demand for workers as a result of which unemployment will spread among them. The fundamental flaw in Pigou's analysis is that he applied partial equilibrium analysis, which is valid in the case of an individual industry, to the determination of income and employment in the whole economy. The determination of the level of aggregate income and employment in

the economy should be explained with the aid of general equilibrium analysis rather than with partial or particular equilibrium analysis of micro-economics.

Because of the above-mentioned shortcomings of the classical theory, there was a need for development of new theory which could provide a correct explanation of the determination of income and employment in the economy. Capitalist economy cannot automatically attain a state of full employment. Keynes in his famous work “General Theory of Employment, interest and Money” not only criticized the classical theory but also propounded the new one which is still regarded as valid and correct.

### Summary

Classical School believed in free enterprise economy or Capitalistic System, it assumed perfect competitions both in factor market and product market. There is no deviation from full employment. The economy experiences full employment permanently and even if there are occasional slips from full employment they can be corrected because of flexibility of prices, interest and wages. A cut in wage will restore full employment Workers are prepared to accept a reduction in wages. In the production field supply always creates its won demand. When additional goods are produced additional factors are employed, and these factors in turn spend the income creating an equivalent demand. Both capital for labour are function of real wage. Since output is subject to the Law of Diminishing returns, more labour can be employed only at a lower wage. Because of increased number when marginal productivity falls, real wage must also fall to keep up the level employment. Money plays a very passive role. It is a more medium of exchange. The store of value function of money was completely ignored by the classical school. Money as such does not affect other variables in the system. When the quantity of money is doubled prices also are doubled. There is a direct and proportionate connection between money supply and price level. Classical school could not integrate money market with real market and as such these who markets remain loose and as two different compartments with no interlinkage. Savings and investment are always equal and this equality is brought by the flexible interest rate. There are no rigidities in the economic system. All variables are flexible in both directions. This ensures full employment in the economy.