of workers or to improve their overall economic conditions were *ineffective and superfluous* and thus the collective bargaining by them was a *futile undertaking.* Therefore, in the leading Nineteenth Century wage theories, the role played by trade unions and collective bargaining in the determination of wages was entirely neglected.

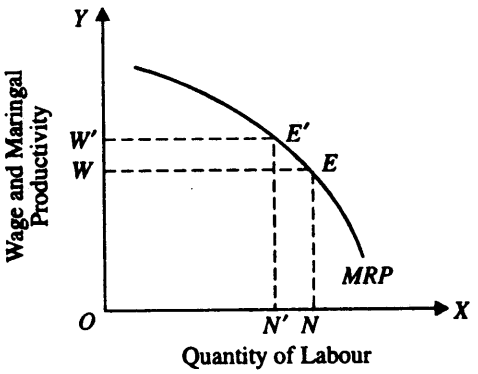

Fig. 29.10. *Marginal Productivity Theory: Trade unions cannot enhance wages without creating unemployment.*

In the marginal productivity theory of wages with its assumption of perfect competition and given supply of labour, trade unions cannot succeed in raising wages or cannot succeed in raising wages without creating unemployment. According to this theory, marginal revenue productivity (*MRP*) curve is the employers' demand curve. Consider Fig. 29.10 where *MRP* is the marginal revenue productivity curve of labour. If *ON* is the available supply of labour, *OW* is the equilibrium wage rate. Now, if the wage rate is increased to *OW'* by the collective bargaining of trade unions, *NN'* amount of workers would be rendered unemployed. If these unemployed workers are free to compete, they would press down the wage back to *OW*. If these *NN'* workers are, for one reason or the other, not free to compete, they will continue to remain unemployed. It is thus clear that, according to marginal productivity theory, trade unions are unable to enhance wages or to enhance wages without creating unemployment.

It is evident from above that in the static marginal productivity theory of wages there was no room for trade unions and collective bargaining in fixing and improving wages of the workers without creating unemployment. The view about the futility of trade unions also prevailed in the early twentieth century, even though many theorists expressed doubts about the correctness of this view. It was only in the 'Thirties' that role of trade of unions and collective bargaining was introduced into the economic theory and significant place was accorded to them in fixing wages of the workers. The realisation of the fact that perfect competition only prevailed in some exceptional cases in the real world led to the reconsideration of whole price and wage theory. But the marginal productivity approach to the wage fixation was maintained; only the marginal productivity approach was extended to conditions of imperfect competition wherein scope for trade unions and collective bargaining in raising wages was shown.

As explained above, there was not much room for the collective bargaining in the marginal productivity theory in its earliest versions. First of all, a bargaining approach to wages was developed which indicated a scope for collective bargaining within the framework of marginal productivity theory. This was done by giving up some of assumptions of marginal productivity theory which had been essential parts of its earlier versions. Then, with the emergence of the theories of imperfect competition, monopsony and oligopoly, bargaining approach within the framework of marginal productivity principle was considerably widened.

When rise in wages increases efficiency of workers, wages can be raised without creating unemployment. To begin with, static assumptions of marginal productivity theory have been challenged. It is accepted that marginal productivity curve is employer's demand curve and that, given the marginal productivity curve, the increase in the wage rate by trade union power will lead to the creation of unemployment. But it is pointed out that when the wage increase is achieved through a successful bargaining, the marginal productivity curve may not remain the same but may shift above due to the rise in efficiency of workers brought about by the higher wage. When efficiency and therefore the marginal productivity curve shifts upward due to the increase in wages of the workers, the unemployment may not be created as a result of the increase in the wage rate secured by the trade union. This is shown in Fig. 29.11. Initially

the marginal productivity curve is *MRP* and the equilibrium wage is *OW* and employment is *ON*. Now suppose the wage is raised to *OW'* by the successful collective bargaining by the trade union. If the marginal productivity curve *MRP* remains unchanged, then at *OW'* wage rate, *ON'* men will be employed, which means that *NN'* number of men will be rendered unemployed. But if the rise in wage brings about a sufficient increase in efficiency and productivity so that the marginal productivity curve shifts upward to the dotted position, then unemployment will not be created. It will be seen from Fig. 29.11 that with the new marginal revenue productivity curve *MRP'*, *ON* men are employed at the higher wage rate *OW'*.

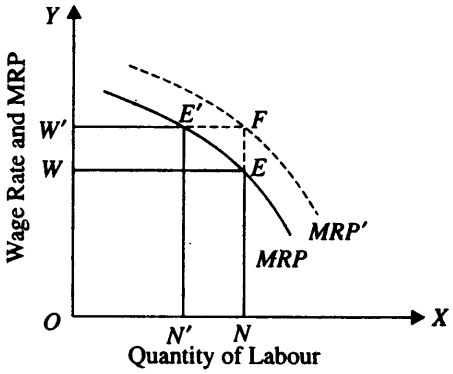

Fig. 29.11. *Increase in Marginal Revenue Productivity or Efficiency as a Result of Rise in Wage Rate*

We thus see that if we consider the effect of the wage bargain on the increase in efficiency or marginal productivity, then the trade unions can succeed in raising wages without creating unemployment. Again, the increase in wages may force the employers to improve the efficiency of production process in which case also the marginal productivity curve shifts upward and as a result at the increased wage rate the same men may be employed. Again, the marginal revenue productivity curve may also be shifted above, if the increase in the wage rate brought about by collective bargaining is passed on to the consumers in the form of higher price of the product. In this case also the danger of unemployment being created will not be very much there and the higher wage rate will become the equilibrium wage rate equal to the new higher marginal revenue productivity. Therefore, the supporters of bargaining approach to wage fixation maintain that it is not so much the movements along a given marginal productivity curve but the shifting of this curve that has to be considered when the impact of a wage bargaining is to be known.

Similarly, *when the wage rate is raised by collective bargaining, the supply of labour may voluntarily fall so that the increased wage becomes the equilibrium wage wothout involuntary unemployment.* Supply of labour can fall because when men are earning higher wage, their women can stop working (that is, women withdraw themselves from labour force and stay at home) and children can be kept at school for a longer time. Further, at higher wages, individuals may work less hours in a week or a smaller number of days in a month or year. Because of the reduction in the supply of labour at the higher wage rate, the higher wage rate may become the 'equilibrium' wage rate without involuntary unemployment.

TRADE UNIONS, COLLECTIVE BARGAINING AND WAGES

Let us explain in detail the effect of trade unions on the determination of wages under conditions of perfect competition in the labour market where a large number of employers face a large number of workers who bargain individually with the formers. As capitalism developed in the industrialised countries, the workers began to be exploited by the capitalist employers. To improve their economic conditions workers organised themselves into unions, which are popularly called trade unions. Trade unions collectively bargain with the employer on behalf of the workers. Indeed, a trade union has a monopoly of selling labour services. Trade unions can have various alternative goals, namely (*a*) *maximising wage rate*, (*b*) *maximising employment*, (*c*) *maximising total wage bill* (that is, output share of labour in the industrial output), and (*d*) *maximising economic rent*. We will explain below the role of trade union in raising wage rate of a class of workers and its effect on employment of labour. In our analysis we assume that, in the absence of a trade union, wage rate of labour is determined by demand for and supply of labour in a competitive labour market.

When trade union of labour comes into existence, it bargains with the employers regarding wage rate to be paid to the workers. Trade unions generally use threats of strike, dharma, etc. to get its demand for higher wages conceded. In case of workers orgainsing themselves into union, the supply of labour is routed through the union. Consider Fig. 29.12, the demand and supply curves of labour in a competitive labour market intersect at point E and determine wage rate equal to OW_1 and level of employment equal to ON_1. Suppose that workers organise themselves into a union which demands a higher wage rate OW_2. Now, all labour will be supplied at wage rate OW_2 and none at any wage rate below it. It will be seen from Fig. 29.12 that at this higher wage rate OW_2, the employers demand only W_2K or ON_0 number of workers. But at this higher wage rate the number of workers who will supply their labour services go up to W_2T or ON_2. Thus KT or N_0N_2 number of workers will become unemployed. Out of these N_0N_1 workers which were already employed are now rendered unemployed and the additional number of workers N_1N_2 offer to supply their services at a higher wage rate OW_2. Thus total unemployment amounts to N_0N_2 and $N_0N_1 + N_1N_2 = N_0N_2$.

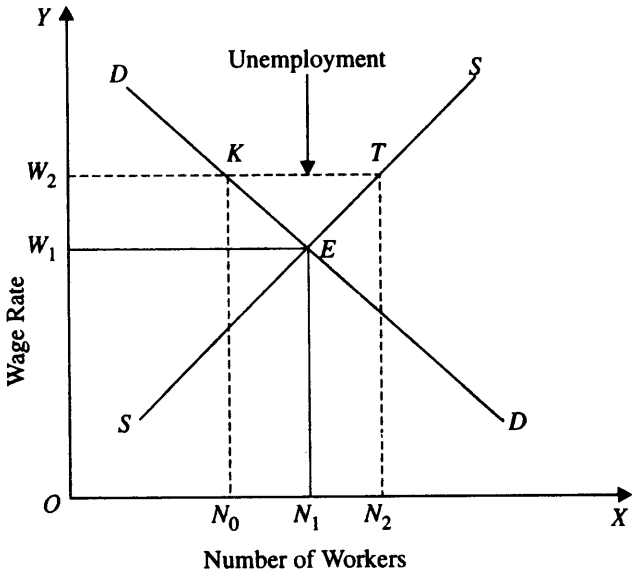

Fig. 29.12. *Raising of Wages by Trade Unions*

It is thus evident that *though trade union has succeeded in raising the wage rate but by creating unemployment.*

Increasing labour demand. An important way to increase wages while avoiding unemployment is to increase the demand for union labour. As is shown in Fig. 29.13, the competitive wage rate determined without any action by trade union is OW_1 and employment level is ON_1. As seen above, if the union raises wage rate to OW_2, the unemployment is created. Now, if along with the higher wage rate OW_2 the union successfully adopts measures to increase labour demand from D_1D_1 to D_2D_2, the adverse effect on employment can be prevented. With the higher labour demand curve D_2D_2 the higher wage rate OW_2 becomes the equilibrium wage rate with ON_2 level of employment. The following measures are adopted by the union to increase labour demand.

1. The most important way to raise labour demand is to *improve its productivity.* With greater labour productivity, value of marginal product (*VMP*) of labour is higher and it becomes profitable for the firms to employ more labour even at a higher wage rate. As has been explained earlier, the value of marginal product (*VMP*) of labour is the demand curve for labour of a firm. With the increase in marginal value productivity, the demand curve for labour shifts to the right.

2. The second way to increase labour demand is *to raise demand for union-made goods.* Though in India it is quite rare, in developed countries like USA, several labour unions appeal to consumers to buy only union-made products through advertisements. Since demand for labour is derived demand, an increase in the demand for the product will increase the demand for labour.

Restriction labour supply. Another way to increase wages while avoiding excess labour supply is the adoption of measures by a labour union to restrict labour supply to its profession.

These measures will therefore cause a shift in the labour supply curve to the left. This is shown in Fig. 29.14, where labour supply curve shifts leftward from SS to $S'S'$ as a result of restriction

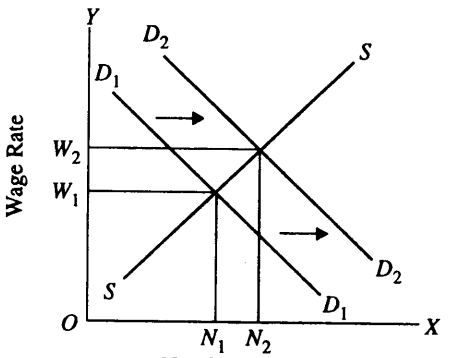

Fig. 29.13. *Raising Labour Demand*

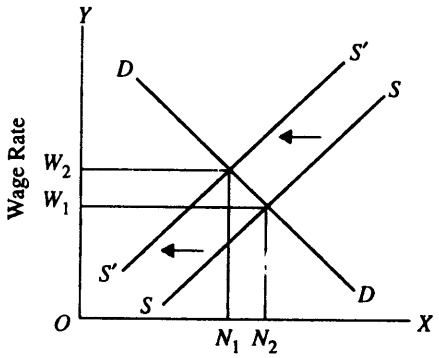

Fig. 29.14. *Restricting Labour Supply*

of labour supply by the union. It will be seen that with the shift of the labour supply curve $S'S'$ the higher wage rate OW_2 becomes the market-clearing wage rate without any excess labour supply or unemployment. While the first way of increasing demand for labour is adopted by industrial unions, the method of restriction of labour supply is often adopted by professional unions such as union of chartered accountants, doctors, lawers etc. and craft unions of carpenters, bricklayers, plumbers, etc.

Trade unions can restrict labour supply for its craft or profession by restricting its membership, fixing high entry fees, difficult qualifying examinations, long apprenticeship periods and other methods of restraining new membership.

Role of Trade Unions in Raising Wages and Removing Exploitation in Case of Monopsony

It is the evident from above that under perfect competition and in the framework of the marginal productivity theory conceived in dynamic terms there is a good room for collective bargaining to raise wages. Further, the realisation that it is not prefect competition, but market structures of imperfect competition, oligopoly, monopoly, monopsony, oligopsony, etc. which mostly prevail in the real world, opened up new vistas for combining the marginal productivity analysis with the bragaining approach to the wage determination. The most striking case in these various forms of imperfect markets is of monopsony when there is a single buyer of labour. The monopsonist, as explained before, working on the marginal productivity principle equates marginal revenue productivity with the marginal wage to be in equilibrium position. In such situation wage rate (*i.e.*, average wage) determined is less than the marginal revenue productivity. It will be seen in Fig. 29.15 that, under monopsony, wage rate OW and employment ON are determined. Under such circumstances, if workers organise themselves into trade unions, they can achieve increase in the wage rate without creating unemployment. Indeed the employment will increase for some increases in the wage rate.

When the trade unions come into existence, the supply of labour is channelled through it and the bargaining with the employer is on the basis of 'all or nothing' at a perticular wage rate demanded, that is, no supply of labour will be offered below the demanded and/or mutually agreed wage rate and the whole supply of labour will be affered at the mutually agreed wage. This means, in other words, that the supply curve at labour under trade union becomes perfectly elastic at the demanded or mutually agreed wage rate. It will be seen in Fig. 29.15 that if the higher wage rate OW' is fixed under collective bargaining and the supply curve of labour assumes the perfectly elastic shape at OW', the new average wage curve AW' will coincide with the marginal wage curve MW'. It will be seen that, given the wage and the supply curve AW'

the employer's equilibrium will be at point F, at which employment ON', which is greater than ON, will be offered by the employer.

It should be carefully noted that a powerful trade union can raise the wage rate up to OW'', that is, equal to the marginal revenue productivity NE at the original level of employment ON. When the wage rate OW'' is fixed under collective bargaining and as a consequence the supply curve of labour becomes perfectly elastic at the level OW'', the employers' equilibrium will be at ON, the original level of employment. Thus, under conditions of monopsony, a strong trade union can raise wage rate to the level of marginal productivity NE without the fear of creating unemployment. In the absence of trade union, the monopsonist would esploit each worker to the extent of LE or WW''. It is, therefore, clear that the workers by organising themselves into the trade union and thereby collectively bargaining with the employer, can raise the wage rate upto the marginal productivity and thus remove monopsonistic exploitation by the monopsonist

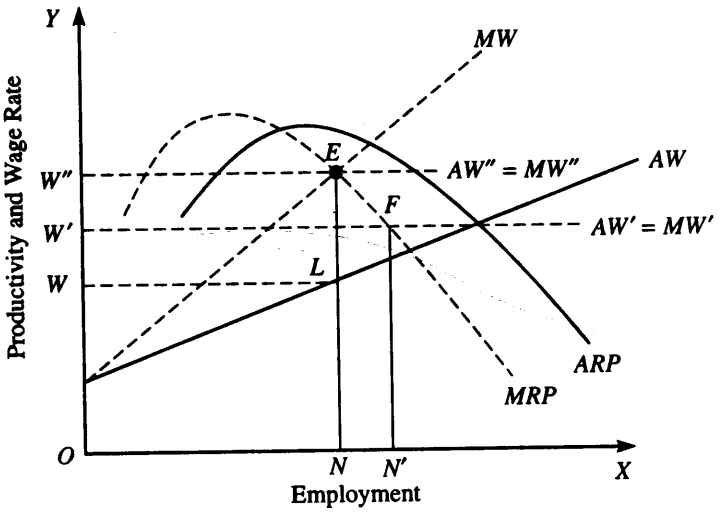

Fig. 29.15. *When there is monopsony in the labour market, increase in the wage rate can be secured by the labour union without creating unemployment.*

Role of Trade Unions to Remove Monopsonistic Discrimination

The role of trade union to improve the lot of the workers can also be seen when there prevail the conditions of *monopsonistic discrimination.* Monopsonistic discrimination is said to prevail when the monopsonist pays different wages to the different workers. Monopsonistic discrimination is quite common in the actual world where workers are unorganised and where due to fear of unemployment they have to accept the essential minimum wage. Under such circumstances, if the workers organise themselves into strong trade unions, they can force the monopsonist to stop discriminaion and pay the same wages to all the workers of a given type and thereby can reduce his excess profits earned because of discrimination.

In developed countries and well-established industries, the organisation of labourers into powerful trade unions and thereby bargaining collectively with the employers, perfect monopsonistic discrimination (that is, discrimination between individual and individual) has vanished. But "group discrimination" is still very common in all countries, developed as well as underdeveloped. By group discrimination we mean the discrimination between different groups or sections of population. Thus for the same work women are generally paid lower wages than men in many countries. In some countries, coloured people are likewise paid less wages than white men for the same work. Boys are also sometimes paid smaller wages than men. The group discrimination can be ended if the discriminated sections organise themselves into powerful trade unions and also by governmental action.

Successful Role of Trade Unions in Case of Collusion anong Employers

There is another special case which reveals that trade union can play a useful and successful role in improving the wages of the workers without causing adverse effects on employment.

This case which is intensely associated with the idea of monopsony is of "*collusion among employers*". When there are a few large firms competing for the same kind of labour, they may realise that increase in the demand for labour of one firm may raise wages so that *all of them* have to pay the higher wage rate. If one firm offers a higher wage to attract workers to itself from the other firms using the same type of labour, the others too will have to raise the wage in order to keep workers with them. Under such circumstances the firms will develop a strong desire to avoid any competitive bidding for labour and spoiling the labour market. This may lead to open or tacit agreement among the firms not to raise wages.

But when there is collusion among firms not to raise wages, then the marginal productivity will not be even equalized with the marginal cost of labour. Under collusion among employers, the wage rate will be maintained at customary or agreed level even though the marginal revenue productivity will stand higher that the wage paid. Although the firm can increase its profits by expanding employment to the point where the marginal revenue productivity of labour equals marginal cost of labour, but in doing so the firm will have to increase the wage rate which is prohibited under collusion. Under such conditons of collusion, the formation of trade union by workers can force the employers to pay the wage rate equal to the marginal productivity. Such a rise in the wage rate to the level of marginal productivity under pressure of trade union would not create any unemployment, because such a rise in the wage rate will only fill up the gap between the marginal revenue productivity and marginal cost of labour, and will therefore not raise the latter above the former.

Trade Unions and Oligopoly in Product Market.

Furthermore, even in case of oligopoly in the product market which so extensively prevails in the capitalist countries, the increase in wage rate by the trade union may be achieved without creating unemployment. It is generally believed that the oligopolist confronts a 'kinked' demand curve (having a kink at the prevailing price of the product), corresponding to which the marginal revenue curve has a discontinuous or broken portion vertically below the kink. In such a case, when the increase in the wage rate occurs due to the collective bargaining by the trade union, the marginal cost curve will shift above, but for a moderate increase in the wage rate it will still cut the marginal revenue curve through its discontinuous portion, indicating thereby that the output remains unchanged despite the increase in the wage rate and consequently the rise in cost. No change in output as a result of increase in the wage rate means that the employment will remain the same, provided the employer does not substitute machinery for labour.

It follows, therefore, that in this case too the collective bargaining can succeed in raising wage rate without adversely affecting employment level. The oligopolistic market situation imposes a certain price and output policy on the employer due to which he is forced to swallow the whole increase in the wage bill following a moderate increase in the wage rate. Thus in the oligopolistic market situation the trade union can succeed in raising wages by making inroads into the profits of the capitalist employer.

Another useful case for trade unions to raise wages without creating unemployment is when the rise in costs as a result of hike in wages can be passed on to consumers. In this way higher wages paid to union labour are recovered by the firms from the consumers. In this case also *VMP* or demand curve of labour shifts upward due to the rise in price of the product. Therefore, in this case too, it is not profitable to reduce employment of labour. It should be noted that higher wages sought by the unions can be shifted to the consumers only when demand for the product is relatively inelastic. Similarly, when firms are making large super-normal or excess prof. ., the trade unions can raise wages and can get some share of these super-normal profits for workers.

It is clear from the above analysis that trade unions are not superfluous and collective bargaining by them not a futile activity. In fact, the trade unions can play a useful role in

raising wages of workers and can save them from exploitation of the employers. Indeed, in many cases, trade unions can raise wages without creating unemployment.

WHY WAGE RATES DIFFER

Under conditions of perfect competition the *identical workers doing the same type of jobs* would get same wages. However, in the real world it is seen that different wages are paid to workers because of the following three factors:

1. *Workers differ* in quality, skill and training.
2. *Jobs differ;* some jobs are dangerous and other pleasant, some require more education and training than others.
3. Some *institutional factors cause imperfections in labour markets* such as discrimination against some workers, such as black race in America, women in many parts of the world, scheduled castes and scheduled tribes in India.

It should be noted that differences in wages of workers do not make demand–supply analysis of wage determination invalid. It is differences in demand and supply conditions in various labour markets that cause differences in wage rates. In other words, there is not one labour market but many—each with its different demand-supply conditions and therefore different equilibrium wage rates. Wages of the workers for whose services demand is relatively high and supply is relatively small are high. On the other hand, wages of workers whose supply is large but demand relatively weak are low. Several factors operate to cause the differences in demand and supply conditions of different types of workers. We explain below these different factors.

1. Differences in Abilities, Skill and Training

The first important factor that causes differences in workers and therefore wages earned by them is that *varous workers differ in abilities, skill and training.* An example will make this clear. Let us consider the wages of computer engineers and unskilled workers. To become computer engineers one requires a lot of education and training to acquire the skill. On the other hand, unskilled workers do not have to spend time and money for obtaining education and

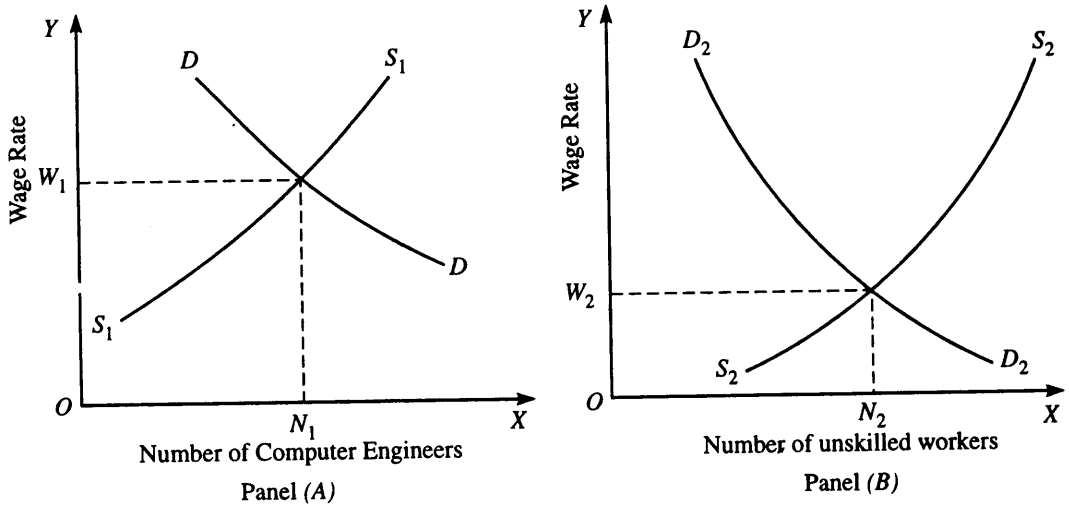

Fig. 29.16. *Differences in Wage Rates*

training. The result is that not only demand for computer professionals is high but also their supply is small. This illustrated in Fig. 29.16. In panel (*A*) of this figure determination of wages of computer engineers is shown. In this panel (*A*) demand for conputer engineers D_1D_1 is high

and supply S_1S_1 relatively small. As is seen from Fig. 29.16 the wage rate of computer engineers determined by these demand and supply curves is OW_1 which is much higher than the wage rate OW_2 of unskilled workers shown in panel (*B*). In panel (*B*) the demand curve D_2D_2 represents the demand for unskilled workers which is low and supply for them depicted by S_2S_2 is relatively large. Therefore, wage rate OW_2 of the unskilled workers is low. It should be noted again that demand for unskilled workers is small because due to lack of skill, education and training their marginal productivity is low and their supply is large because those who cannot spent time and money in acquiring education and training can get employment as unskilled workers. It is thus clear that the difference in wages can be explained through demand-supply analysis.

2. Differences in Jobs or Occupations

The second important factor that causes differences in wages is the differences in the nature of jobs. *Some jobs are more dangerous, risky and dirty than others.* For example, jobs of miners in coal mines is quite dangerous; a blast or some other accident can cause even one's life. The workers working in coal mines are therefore paid higher wages than in a manufacturing industry, say the textile industry, where there does not exist much risk of life. In the U.S.A. coal miners are generally paid 25 per cent more wages than textile workers. It should be noted that the reason for the difference in wages in this case lies on the supply side. At each wage rate, the quantity supplied of workers is smaller for work in coal mines than in a textile industry. This is illustrated in Fig. 29.17 where demand curve *DD* is assumed to be the same for miners and textile workers, considering that all workers are identical. However, the supply curves of workers are different in them. The determination of wages of workers of coal mines and textile workers is illustrated in Fig. 29.17. S_1S_1 is the supply curve of workers for the textile industry, whereas S_2S_2 is the supply curve of workers for coal mines. The supply curve S_2S_2 for coal mine workers shows that at each wage rate, the smaller quantity of workers is supplied to the coal mines due to the dangerous nature of the job in them as compared to the supply of textile workers depicted by the supply curve S_1S_1. It will be seen from this Fig. 29.17 that the intersection of demand curve *DD* and supply curve S_2S_2 of coal miners determines higher wage rate OW_2 whereas the intersection of demand curve *DD* and supply curve of S_1S_1 of textile workers determines a lower wage rate equal to OW_1. *Higher wage rate paid to coal miners is to compensate them for bearing higher risk for working in coal mines.*

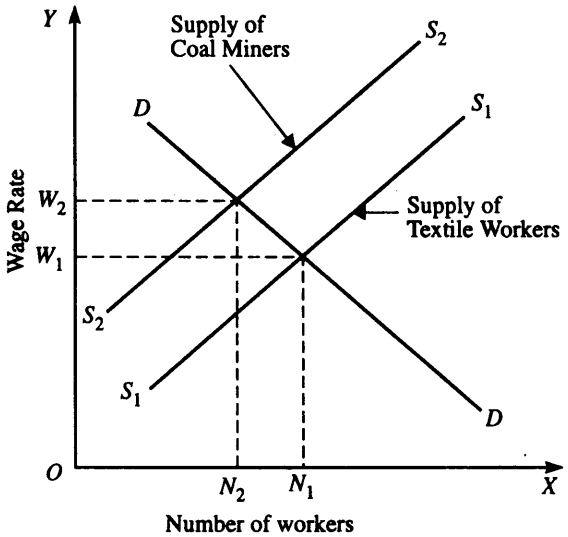

Fig. 29.17. *Determination of Wages of Coal Miners and Textile Workers*

Similarly, in the developed countries sanitation workers are paid higher wages than clerical workers *because of dirty and unpleasant nature* of the sanitation work.

The differences in wages which arise due to the differences in jobs arising due to more dangerous, more dirty, more harsh climate, higher cost of living are called *compensating wage differentials*. Thus compensating wage differentials show higher wages that must be paid to the workers to compensate them for undesirable job characteristics.

3. Institutional Factors Causing Imperfect Labour Market Conditions

Institutional factors such as *discrimination on the basis of sex, race, colour of skin etc.* make labour market imperfect and give rise to differences in wages. In the U.S.A. black workers (Negros) are generally paid less wages than the white workers for the same type of work on account of discrimination practiced between them. In many countries, including India, women are paid less wages than men for the same work. Therefore, demand for *equal pay for equal work* both for men and women has been raised in recent years. Similarly, in the several parts of India, rural workers belonging to scheduled caste and tribes are paid less than high caste workers.

We have explained above only some of the factors causing differences in wage rates. The differences in natural abilities, differences in non-monetary benefits such as job satisfaction, pleasant atmosphere, freedom to choose one's work schedule as in case of a college professor and some other factors account for differences in wage rates.

FIXATION OF MINIMUM WAGES

The way in which labour market works greatly influences the distribution of income in a society. Some workers, especially unskilled ones are poor because they are paid low wages. The skilled workers are relatively rich because they receive high wages. Therefore, the objective of fixation of minimum wages by the Government is to remove the poverty of the unskilled workers by fixing a minimum wage rate at a level higher than the one determined by the working of free labour market. However, it has been argued by some economists that fixation of minimum wages of the unskilled workers by the Government may not improve the economic conditions of the unskilled workers as a whole. The consequences of fixation of minimum wages by the Government is illustrated in Fig. 29.18 where determination of wages of unskilled workers is shown. *DD* and *SS* are demand and supply curves of labour respectively. It will be seen from the figure that in the free-market equilibrium wage rate is determined at the level OW_0 where quantity demanded of labour is equal to its quantity supplied. If this free-market wage rate OW_0 is considered to be too low, the Government may intervene and fix the minimum wage at a higher level OW_1. As a result of the imposition of minimum wage legislation, the employers cannot pay wage rate below the minimum wage rate OW_1.

It is important to note that minimum wage rate is fixed *above the equilibrium wage rate* so as to enable unskilled workers to earn a decent living. The fixation of minimum wage below the free-market equilibrium rate will not serve any purpose and will also have no effect on labour market.

When the minimum wage rate is fixed at a level higher than the equilibrium wage rate OW_0, that is, at OW_1 in Fig. 29.18, although it will increase the wage rate of low-wage workers, it will have other important effects on the labour market and on the economic conditions of the working class. We discuss below the various important effects of fixation of minimum wages.

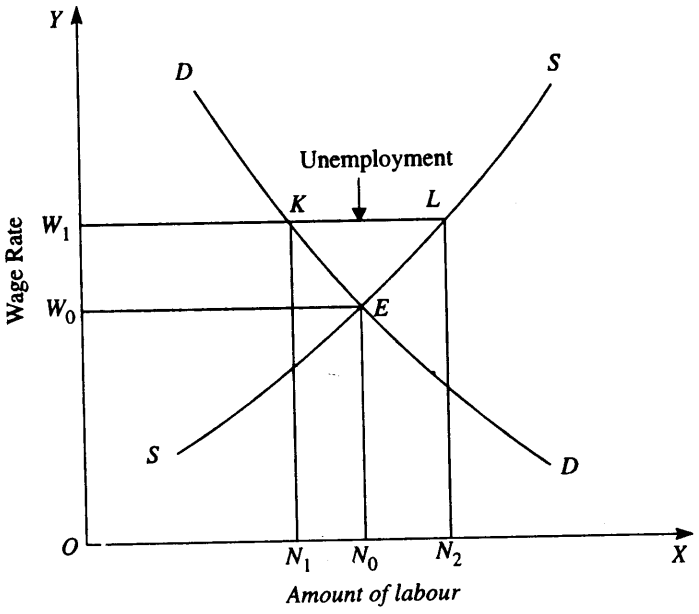

Fig. 29.18. *Fixation of Minimum Wages*

1. **Labour employment.** An important effect of minimum wage rate is on the level of labour employment which can be easily seen from Fig. 29.18. When the minimum wage rate is fixed at the level OW_1, that is, higher than the equilibrium wage rate OW_0, the producers will reduce the quantity demanded of labour to ON_1. This means the number of workers equal to N_0N_1 who were already employed will now be rendered unemployed. In addition to this, as will be seen from Fig. 29.18, at the higher minimum wage rate OW_1, the quantity supplied of labour increases to ON_2 (or W_1L). This means at the higher minimum wage rate OW_1, the additional N_0N_2 workers offer themselves for work, that is, seek employment. With this total number of workers equal to N_1N_2 or KL, ($N_1N_2 = N_0N_1 + N_0N_2$) will become unemployed at the higher minimum wage rate OW_1. It may be emphasised again that the labour surplus or unemployment of workers has come into existence because the minimum wage rate OW_1 has been fixed at a level higher than the equilibrium wage rate (employers employ or demand smaller amount of labour ON_1 at wage rate OW_1) and, secondly, because at the higher wage rate OW_1, the additional number of workers are now willing to work and therefore add to the number of employment seekers who are unable to find jobs.

Since fixation of minimum wages has resulted in the emergence of surplus labour, there will be pressure for wage cutting because the workers who are rendered unemployed will be willing to offer their labour at lower wages than the legally fixed minimum wage rate OW_1. However, an important point to note is that, *unlike the case of maximum price control, this case will not lead to the emergence of a group of black-market operartors who buy at the controlled price (i.e., minimum wage rate) and sell at the lower free-market equilibrium price (i.e., wage rate OW_0) because nothing will be gained by this.*

From the above analysis of the effect of minimum wage rate on employment of labour in case perfect competition prevails in the labour market we reach the following conclusions:

1. The fixation of minimum wage rate will reduce the employment of labour (by the amount N_0N_1 in Fig. 29.18).
2. The fixation of minimum wage will create labour sulplus or unemployment. Some workers will be willing to obtain employment but cannot get it.
3. Some workers who are rendered unemployed will be tempted to evade the law and offer to supply their labour at the wage rate below the legally fixed one.
4. The fixation of minimum wages will not lead to the emergence of black marketers who buy labour at the controlled wage rate and sell it in a black market.

2. Effect on income of workers. If the minimum wage law is effectively enforced, it will raise the incomes of those workers who remain employed. But an important question is to understand to what extent the minimum wage legislation benefits the workers as a whole group. The workers who are able to retain their employment when the minimum wage rate is fixed will definitely become better off. They receive higher wages because minimum wage rate is fixed at a level higher than the market determined wage rate. But those unskilled workers who lose their jobs because at a higher minimum wage rate, employers reduce employment of labour and are unable to find new employment will become worse off as a result of minimum wage legislation. It has been argued by economists that if the total income of the unskilled workers as a whole group increases, then the whole group of unskilled workers gains from the fixation of munimum wages. But even this cannot be said with certainty. This is because the total income of the unskilled workers as a group will increase only when the demand for unskilled workers is *inelastic*. In Fig. 29.18 with the free-market determined wage rate OW_0 and employment of unskilled workers ON_0 at this wage rate, the total income of the workers equals the area OW_0EN_0. With the higher minimum wage rate OW_1 and reduced employment equal to ON_1, the total earnings of the workers will be OW_1KN_1 which will be greater if the elasticity of demand for labour is less than unity. On the contrary, if the demand for labour is *elastic*, the employment of labour falls greatly with the result that the new total income OW_1KN_1 of the workers as a group will decrease.

However, even if the demand for unskilled labour is inelastic and they as a whole group gain from fixation of minimum wage rate, the fact remains that a good number of workers who are rendered unemployed as a result will individually suffer a loss.

Another important thing to note is that all unskilled workers are not identical. Some unskilled workers earn wages only slightly lower than the minimum wage rate fixed while others earn much less that the minimum wage fixed. The employment of those unskilled workers will decline most who are initially paid very low wages because the fixation of a higher minimum wage rate sharply increases the cost of hiring these workers. Thus, it is the most poor among the unskilled workers who are likely to lose their employment when in response to the fixation of the higher minimum wage rate, employers reduce employment of labour. Thus, it has been argued by the ciritcs of minimum wage fixation that some of the poor low-wage workers whom the minimum wage law is intended to help find themselves out of jobs and are therefore hit hardest by this legislation. Thus, as *an anti-poverty measure, fixation of minimum wage miserably fails to achieve its objective.*

Fixation of minimum wage rate in the U.S.A. has also caused *harmful effect on the employment of teenage workers*, that is, employment of workers of the 10 to 19 years of age. It is these teenage workers who are less productive also mostly lose jobs when minimum wage legislation is imposed. Therefore, Professors Banmol and Blinder observe that "the teenage unemployment problem and especially the black teenage unemployment problem will be very difficult to solve as long as the minimum wage remains effective."[3]

Bisides, fixation of minimum wages may have particularly *more harmful effects on those who are victims of discrimination.* In America employers discriminate against blacks, in India employers often discriminate against workers belonging to shceduled castes and scheduled tribes. When minimum wages are imposed, the employers of unskilled workers have more appplicants seeking jobs than the available employment opportunities. As a result, the employers pick and choose among the applicants and often discriminate against blacks in the USA and against Sechdule castes and tribes in India. It is worth nothing that it is the workers belonging to these weaker sections who because of the past discrimination have not been able to acquire skills required for being employed in higher-paid jobs. In case of the USA, most economists believe that the fixation of minimum wage has contributed greatly to the increase in unemployment of black teenage workers.

It is important to understand as to who bears the cost of fixing higher minimum wages. It is generally assumed that the cost of paying higher minimum wages are borne by the employers, that is, the capitalist calss. However, this is not true. When higher minimum wages are imposed, the employers often pass on these higher wages to the consumers in the form of higher prices of goods produced by them. Moreover, the employers often try to shift the cost of higher wages to the suppliers of other inputs which are complementary to labour in the form of lower prices paid for these inputs. It follows, therefore, that the costs of higher minimum wages are more widely spread through the society as whole and not exclusively borne by the employers or business class.

An important effect of fixation of minimum wages is worth mentioning. In our above analysis we have assumed that all workers are covered by minimum wage law. This is however not correct. Minimum wage law does not apply to or cover all jobs or industries. For example, in case of USA, it has been estimated that 15 per cent of workers are not covered by the minimum wage legislation. In India, the percentage of uncovered workers or jobs is much greater. This has an important consequence. When the minimum wage law is imposed in some sectors or industries and as a result employment of workers is reduced in these covered sectors, supply of labour to the uncovered sectors or jobs increases which depresses wages in these uncovered sectors. This means the workers who remain employed in the covered sectors benefit at the expense of the workers employed in the uncovered jobs. Therefore, whether workers as

3. Baumol and Blinder *Economics: Principles and Policy*, Fifth Edition, 1992, p. 774.

a group will receive net gain from minimum wage legislation depends on how large is the uncovered sector.

Another potential effect of minimum wage is *the reduction in the fringe benefits enjoyed by the workers. Fringe benefits are the non-monetary benefits such as medical insurance, sickness benefits, pensionary benefits which workers receive in addition to the money wage.* As a matter of fact, real wage rate is money wage plus these fringe benefits. Now, when as a result of minimum wage law, employers have to pay higher money wage rate, they may reduce fringe benefits offered to their workers so that real wages may not rise much. To the extent the employers are able to reduce the fringe benefits and real wages do not rise as much as money wages, the fall in employment as a result of fixation of minimum wages will be less. Since fixation of minimum wages creates unemployment of labour, workers cannot resist reduction in their fringe benefits.

Lastly, the fall in employment of labour as a result of minimum wage may not fully reflect itself in the reduced number of workers employed but in the form *of reduction in the number of hours worked per day or per week by each worker.* In other words, as a result of reduced employment opportunities, instead of two out of ten workers becoming unemployed, all workers remain employed but each worker now works 80 per cent of the hours which he worked before the fixation of minimum wages. It has however been pointed out by some economists quoting some empirical evidence that since hiring each worker is associated with increase in some overhead costs, the employers prefer to cut back on employment of workers rather than to reduce hours per worker.

The analysis of adverse effect of minimum wage fixation leads us to the conclusion that it cannot be said with certainty that fixation of minimum wages benefits the workers as a whole. Fixation of minimum wages reduce employment opportunities and thereby lead to unemployment of labour, especially of the teenage and young workers. Further, it reduces the fringe benefits of workers and promote discrimination against the blacks, women, secheduled castes and tribes. Of course, some workers who retain jobs benefit from minimum wages. But the main objective of minimum wage legislation is to provide decent living to the low-wage or poor workers. It is believed by many Western exonomists that *minimum wage fails to achieve its objective of removal of poverty of these workers.*

Case for Minimum Wage

In the opinion of the present author, the above analysis of the adverse effects of minimum wage legislation is based upon the assumption of wage determination by demand for and supply of labour in a competitive labour market. Further, the above analysis assumes static conditions. If we remove these assumptions, the beneficial effects of minimum wage legislation can be easily shown. In case of the existence of monopsony in the labour market, workers are exploited by the employers by restricting employment of labour and paying low wages. *Under the monoposonistic conditions in labour market, impostition of minimum wages can lead to the increase in wage rate without creating unemployment.* As a matter of fact, fixation of higher minimum wage can lead to the increase in employment of labour by doing away with monopsonistic employer's motive of restricting employment. This is illustrated in Fig. 29.19 where the curve *VMP* represents value of marginal product of labour. *SL* is the supply curve of labour and *MW* is marginal wage or marginal factor cost curve of labour of the monopsonist. The monopsonist is in equilibrium when he employs *OL* labour and pays *OW* wage rate which is less than the value of marginal product of labour equal to *LE*. Thus, he is exploiting labour by restricting employment.

Now, if minimum wage rate OW_1 is fixed, the monopsonist must pay wage rate OW_1, since payment of wage below it is not permitted by law. With the given minimum wage rate OW_1, the supply curve of labour will now become horizontal straight line and marginal wage curve will coincide with it. With the wage rate OW_1, the monopsonist will maximise profits by employing *ON* labour which is greater than *OL*. Thus, it is clear that in monopsonistic labour

market, fixation of minimum wage rate has led to increase in employment, of labour. What is true of monopsonistic labour market generally applies to oligopsonistic labour markets.

Similarly, if we remove the assumption of static conditions, the unfavourable effect of increase in unemployment of minimum wage rate can be prevented. This is because fixation of *higher minimum wage rate may increase labour productivity*. The increase in labour productivity will cause a shift in the labour demand curve to the right. This will prevent the increase in unemployment which fixation of higher minimum wage rate may create. But the pertinent question is how the fixation of higher minimum wage rate for unskilled workers can result in increase in labour productivity. First, it is argued that higher minimum wage for low-wage unskilled workers *may produce shock effect upon employers*. It has been generally observed that firms using low-wage unskilled workers tend to be inefficient in the use of labour. The imposition of higher minimum wage will provide a shock to them, that is, prompt them to improve labour efficiency so that it is profitable for them to keep employing them. Second, it has been pointed out that the *fixation of higher minimum wages leads to the increase in real incomes of these unskilled workers which may improve their health and vigour* by meeting their basic needs. This is true especially in the case of poor and developing countries like ours where unskilled workers are paid very low wages which are quite inadequate even to meet basic needs. Besides, a higher real income *may increase their motivation* to do more work. The improved health, greater vigour and higher motivation to do more work resulting from higher minimum wages may result in rise in their efficiency and productivity. This will cause a shift in the demand curve for labour to the right which will tend to offset the tendency to reduce labour employment when a higher minimum wage is imposed. This is generally referred to as *economy of high wages*.

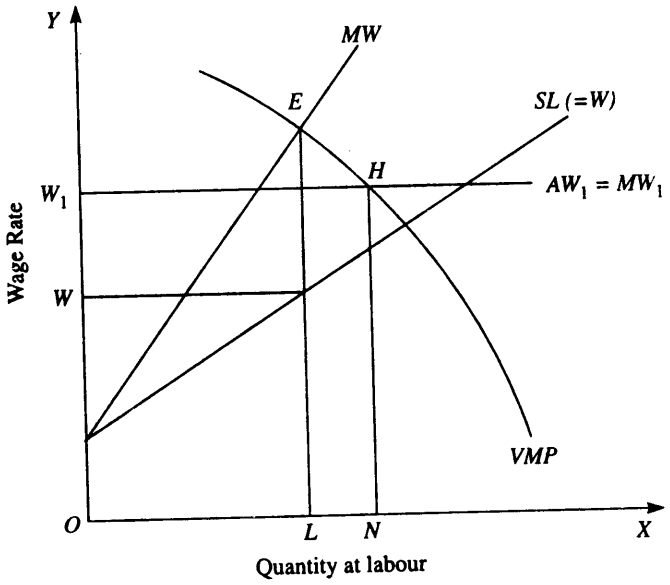

Fig. 29.19. *Effect of Minimum Wage in Case of Monopsonistic Labour Market*

Conclusion

Two opposite views regarding effects of minimum wages have been explained above. Whether or not fixation of minimum wage by the Government has a net beneficial or adverse effect on unskilled workers cannot be decided on the basis of theoretical grounds alone. This is primarily an empirical issue which can be clinched by undertaking empirical research studies. A large number of research studies concerning the effect of minimum wages have been made in the case of the developed countries such as USA. These studies generally conclude that minimum wage legislation causes only small increase in unemployment of unskilled workers, especially of teenage workers and black ones but it benefits many workers. In case of India, there is a need for undertaking research studies regarding the impact of minimum wages on unemployment and poverty of the working class. There is no such studies available in India which help us to draw conclusion about the effect of minimum wages.

QUESTIONS FOR REVIEW

1. How is wage rate determined in a perfectly competitive labour market? Show that the wage rate determined in such a market is equal to the value of marginal (*VMP*) of labour.
2. Show that wage rate in a perfectly competitive labour market will be equal to both the value of marginal product and average revenue product of labour in the long run.
3. How are wages determined in a perfectly competitive labour market? If in such a market trade unions succeed in getting wage rate higher than the competitive equilibrium wage rate, what will be its consequences?
4. A trade union enforces a floor on minimum wage which lies above the market clearing wage. What are economic implications?
5. What is monopsonistic exploitation of labour? How can collective bargaining by trade unions help us increasing wages and employment both? Explain with the help of diagrams.
6. Given the following production function of a firm, where L is the number of workers hired per day (the only variable input) and Q is the quantity of a commodity produced per day and the constant commodity price of P = Rs. 5.00 is assumed.

L	0	1	2	3	4	5
Q		10	18	24	28	30

(*a*) Find the marginal revenue product of labour.

(*b*)How many workers per day will the firm hire, if the wage rate is Rs. 40.00 ?

[**Hints.** First find the *Total Revenue* by multiplying output (Q) with price (Rs. 5). Then find the successive differences in *TR* to find *MRP* of labour. Firm will employ labour where MRP_L = Rs. 40. (**Ans.** 2 workers).

7. Distinguish between monopolistic and monopsonistic exploitation of labour and illustrate diagrammatically.
8. How far are labour unions successful in raising wages and employment under monopsonistic conditions ? Explain
9. What is monopsony? Explain how wages and employment are determined in a monopsonistic labour market.
10. What is meant by exploitation of labour? Show how labour is exploited under monopsony in a labour market.
11. What would be effect of increase in wage rate secured by labour union in monopsonistic labour market? Would it lead to unemployment?
12. Discuss the circumstances under which a trade union can raise wages in an industry without affecting level of employment adversely.
13. Explain the role of trade unions in raising wages of labour. Does it necessarily lead to unemployment? Explain.
14. Is it possible for a labour union to raise wages without reducing employment under conditions of :

    (*i*) Perfect competition in the labour market.

    (*ii*)Monopsony in the labour market.
15. Explain the alternative union strategies in raising wages of labour.

    [**Hints:** There are mainly four strategies which trade unions can adopt to improve wages of workers. First, *using its monopoly power over supply of labour*, trade union can raise wages, if they do not bother about employment. Secondly, the union can raise wages by *increasing*

labour demand through raising productivity or efficiency of labour and also by promoting the demand for the product which labour helps to produce. Thirdly, it can improve wages by restricting the supply of labour. Fourthly, when it faces a monopsonist it can remove exploitation by raising wages without any adverse effect on employment]

16. If a trade union of labour faces a single buyer of labour, how are the wage rate and level of employment determined? Explain.
17. Wages and employment are indeterminate when a monopsonistic employer faces a monopolistic union. Explain.
18. Explain the role of trade unions in raising wages in competitive labour market. Does raising of wage rate necessarily lead to unemployment of labour?
19. If wages are determined by marginal productivity, trade unions are superfluous. Do you agree? Discuss.

30

Theory of Rent

CONCEPTS OF RENT

Having discussed the determination of reward for labor we now turn to explain the determination of rent. *Rent is the price paid for the use of land.* However, in modern economic theory, the term rent is used not only in the sense of reward for the use of land, but also in the sense of surplus earnings of the factors over their transfer earnings. In fact, in the latter sense the concept of rent has been generalised so that it applies to *surplus return over and above the transfer earnings of all factors of production* so that it is no longer peculiarly associated with land. We shall first discuss the determination of land rent and then explain the concept of rent as a surplus return over transfer earnings of the factors.

A distinguishing feature of land is that no human effort or sacrifice has been necessary to make it available to the society. Since land is not producible by man, its supply is absolutely inelastic, although its productivity can be increased by various improvements such as introduction of irrigation facilities etc. However, these improvements are made by the efforts of man and therefore constitute capital goods. As the quantity of land available for use is scarce relative to demand, a price must be paid for its use. This price for the use of land, or what is commonly called *land rent*, is obtained by those people in the society in whom the ownership of land is vested. Since these private owners of land have not incurred any real cost to bring land into existence, the rent which they obtain is a *surplus payment* to them. The whole of the earnings of land *i.e.*, land rent (excluding, of course, the return on capital investment in the form of improvements made on land by the owners) are *surplus*, since land is there in any case and does not require any costs or human efforts to be made to bring it into existence. Thus, the term rent which was originally employed for the price paid for the use of land came to be used for the *surplus earnings of any factor of production in excess of the cost incurred to obtain its service.* The land in its entirety to the whole society, being free gift of nature, does not require any cost to be paid in order to make it available to the society for use in production, the whole earnings of land are therefore regarded as surplus. Thus, *the whole earnings of land from the view point of the society become economic rent.*

It should be noted that rent as a payment to the landlord for hiring or use of land by tenant and the concept of rent as surplus over transfer earnings, which applies to all factors of production, are two different concepts and therefore should not be confused with each other. Modern economists generally call for hiring of land as *land rent* and surplus over transfer earnings as *economic rent.* Thus, one should not confuse economic rent with land rent.

Quasi-Rent. Marshall extended the concept of rent to cover the earnings (net of depreciation and interest charges) of fixed capital equipment like machinery in the short run. The distinguishing characteristic of land is the fact that its supply is perfectly inelastic and therefore its earnings depend mainly upon the demand for it. But, in short-run period, fixed capital equipment like machinery is also perfectly inelastic in supply and cost of its production is not relevant once it has been produced. Thus, in the short period, the earnings of fixed capital equipment

depend mainly upon the demand conditions and are thus similar to land rent and have therefore been called rent by Marshall. Since these capital equipments are not permanently in fixed supply like land, and instead their supply is very much elastic in the long run, Marshall preferred to call their earnings in the short period as *Quasi-Rent* rather than rent.

Now we propose to discuss the above three concepts of rent as mentioned above. We start with Ricardian theory of rent which discusses the problem of payment for the use of land and other natural resources.

RICARDIAN THEORY OF RENT

The Recardian theory of rent follows from the view of classical economists about the operation of law of diminishing returns in agriculture. Ricardo defined rent as follows : "*Rent is that portion of the produce of earth which is paid to the landlord for the use of the "original and indestructible power of soil.*" It should be noticed that land rent, according to Recardian definition, is a payment for the use of only land and is different from contractual rent which also includes the return on capital investment made by the landlord in the form of hedges, drains, wells and the like. When return on he capital investment made by the land owner is deducted from the contractual rent, what is left is pure land rent which is the price for the use of only land or what Ricarddo called, "*the original and indestructible powers of the soil*".

Assumptions of Ricardian Theory

It will greatly help in understanding the Ricardian model of rent determination, if we clearly state the various assumptions made by him. First, Ricardo considers the supply of land from the viewpoint of the whole society and takes the *quantity of land as completely fixed or inelastic in supply*. No amount of higher price for the use of land can call forth an increased supply of it. Thus the total supply of land is perfectly inelastic and unresponsive to any changes in rent. Secondly, *he does not take into account the various alternative uses to which land can be put.* He assumes the land to be used for growing a single composite crop 'corn'. Thus land has been taken to be completely specific to one crop, *i.e.*, corn. In this way, in Ricardian model, either land is to be used for growing of corn or alternatively it has be left idle. There are only two alternative uses of land : its use for growing of corn or no use at all. Thus *he takes the transfer earnings of land as zero.* No land owner would like to leave the land idle and therefore every landlord would prepared to give it for any rent however little it may be provided that perfect competition prevails.

Thirdly, *he assumes that land differs in quality*. There are various grades of land, differing from each other in respect of fertility and location. Some pieces of land are more fertile than others and, as compared to others, some are more well-located or near to the market centres. Fourthly, he assumes that there is perfect competition in the market for land. In other words, there are many land owners who are to give their land on rent and there are many farmers who are to get land on rent for the purpose of growing corn. Further, each individual land owner and farmer has no influence over rent *i.e.*, the price for the use of land.

Given the above assumptions, according to the Ricardian theory, rent arises due to two reasons. First, if land is homogeneous, *i.e.*, of uniform quality and same location, the scarcity of land relative to demand will give rise to rent. Ricardo calls it a *scarcity rent*. Second, when land differs in quality, *i.e.*, in fertility and location, the scarcity of superior grades of land will give rise to *differential rents*. We shall discuss below the emergence of scarcity and differential rents, as conceived in the Ricardian theory.

Scarcity Rent

The emergence of land rent in the Ricardian theory can be easily explained by imagining that a new island is discovered and some people come to settle there. We suppose that all land in this island is completely homogeneous or is of uniform quality. In other words, all tracts of land in this island are equally fertile and equally well-situated. The quantity of land available

for cultivation on this island is fixed and is therefore completely inelastic to changes in the price for its use. Land is to be used for the cultivation of a single crop "corn". Land is assumed to be having no other alternative uses. When the people come to settle on the island, they will use the land for producing corn by applying labour and capital on it. When all the available land is not yet put in use, the *price of the corn will be equal to the average cost of labour and capital*, with the farmers working at the minimum point of the average cost (exclusive of land rent). The price of the corn must at least be equal to the average cost (exclusive of land rent) in the long run if the use of labour and capital is to be worthwhile. Since we are assuming perfect competition in the market for corn, the farmer's equilibrium in the long run will be established at the lowest point of long-run average cost curve (exclusive of rent).

As long as some land is idle, the production of corn will be increased by bringing new land under cultivation. As long as land is not scarce, *i.e.*, some land is yet idle, the price of corn cannot rise *permanently* above the average cost of labour and capital. Since the price of corn is, in long-run equilibrium, equal to the average cost of only labour and capital, as long as all land is not yet in use, *there will be no surplus left to be earned as rent on land.* In other words, it means that so long as there is some available land which is not yet brought into use, farmers will not have to pay any rent to the landlords for the use of their land.

Provided the competition among landlords is perfect (as is the case we are assuming here), the rent will not arise when there is still surplus land for use because the demand for land is relatively less than the supply of it. In other words, land is yet not scarce relative to demand. Price of any things arises only when it is scarce in relation to demand. If any landlord tries to charge any rent then there is still some land lying idle with other landlords, farmers will go to take up that land for cultivation. The landlord need not be paid rent for the use of land since its only alternative use is keeping it idle. To sum up, *so long as land is not scarce, rent cannot arise, since price will equal minimum average (labour and capital) cost per unit of output.* Suppose that the population continues increasing so that the demand for corn becomes so large that all available land is brought under cultivation. If the population of island further increases beyond this, it will raise the demand for the product which will bring about rise in the price level above the minimum average (labour and capital) cost per unit of output.

Ricardian concept of scarcity rent is illustrated in Fig. 30.1. Where *AC* and *MC* curves show average and marginal cost per unit output of corn incurred on labour and capital. Price of corn must be equal to OP_0 if land is to be cultivated at all. Note that price OP_0 is equal to the minimum average cost per unit of corn output on labour and capital. At price OP_0 there is no surplus over cost of production and therefore no rent accrues to the land. In other words, supply of land is not scarce in relation to demand for it upto price of corn equal to OP_0.

Now, if due to the expansion in population, demand for corn increases and as a result price of corn rises to OP_1 land will be more intensively cultivated. With price of corn equal to OP_1, the

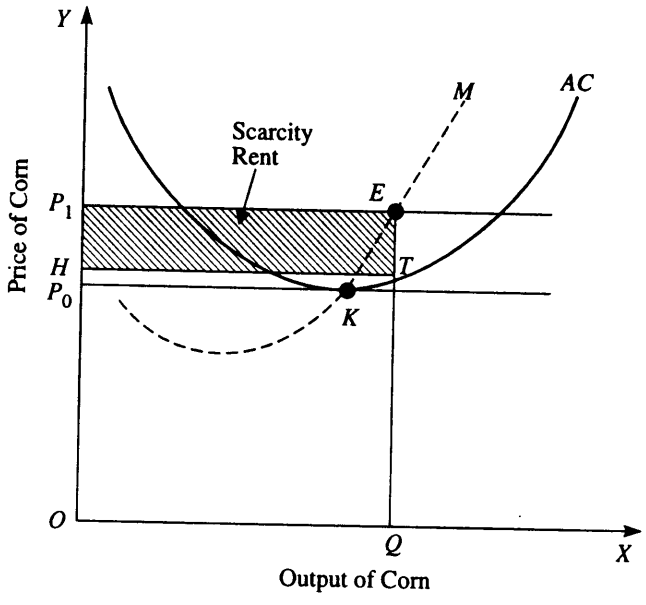

Fig. 30.1. *Scarcity Rent*

equilibrium of the farmer is at point E or at output OQ. It will be seen that with price OP_1, surplus over cost of production equal to P_1ETH (shaded area) has emerged. This surplus over cost will be given to the landlord. The price of corn rises above the minimum average cost of production only when the demand for corn has greatly increased and as a result land has become scarce in relation to the derived demand for it. Since all pieces of land are homogeneous, the same amount of rent will accrue on all pieces of land.

It is evident that on a piece of land rent will arise when a difference between the price of the corn and the average cost on labour and capital has arisen, that is, when farmer earns more than the labour and capital cost incurred by him. This rent (difference between price and cost) cannot be competed away by the entry of more farmers in production since all land is already being employed for production. This rent has arisen because of the scarcity of land. In other words, rent arises due to the niggardliness of nature; nature has not provided land large enough to meet the level of demand by producing on the lowest level of average cost.

Differential Rent

In the discussion of scarcity rent above, we have assumed that all land is homogeneous, *i.e.*, equally well fertile and equally well-situated. This is, however, not a realistic assumption. In fact, Ricardo was most interested in showing the emergence of rent when the land differs in quality *i.e.*, in fertility and situation. Some pieces of land are more fertile than others. Again, some pieces of land are more favourably situated than other. That is, they are located near to the market centres where produce has to be sold than others.

Fertility of tracts of land varies primarily because of the differences in the nature of the soil temperature, rainfall and other climatic factors. With a given application of labour and capital, some pieces of land will yield more output per acre than others. Thus the differences in fertility will bring about differences in the costs of production (exclusive of rent) of various farmers operating on the defferent grades of land. The farmers working on the superior or more fertile grades of land will have their average cost curve at a lower level than those working on the inferior or less fertile grades of land. Likewise, differences in location cause differences in costs of various farmers because of the differences in transportation costs. In practice, land is of numerous grades, shading off gradually from the best to the poorest. To simplify our analysis, we, however, assume that in our island there are three grades of land. Land A being the superior most and C the poorest, B grade of land lies between A and C.

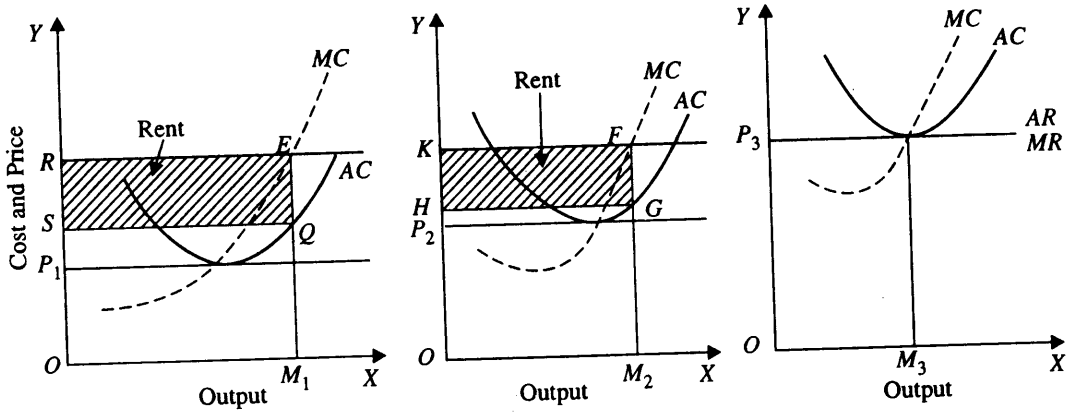

Fig. 30.2. *Differential Rent*

When people first come to an island, they will take up the best grade land A for the production of corn. So long as some of grade A land is yet lying idle, there will be no rent.

When with the increase in population of the island or with the development of the island, the demand for corn increases, the whole of the grade *A* land will be put into use for the production of corn. At this stage each of the many farmers who will be using the grade *A* land will work at the lowest point of the average cost curve as shown in Fig. 30.2. When once the whole of grade *A* land is brought into use and the demand for corn still further increases due to either growth of population or the development of the island, two courses of action will be adopted. First, grade *B* will also be taken for cultivation. Secondly, grade *A* land will be more intensively used *i.e.*, more doses of labour and capital will be applied to the pieces of grade *A* land.

Now, the grade *B* land can be taken for use only when the price sufficiently rises so that it covers the average cost of production on grade *B* land. In other words, price must be at least equal to OP_2 so as to cover the lowest average cost (exclusive of rent) on grade *B* land, otherwise it will not be worthwhile to cultivate it. In other words, if the price is lower than the lowest average cost on grade *B* land, its cultivation will not pay back even the labour and capital cost incurred and therefore it will not be brought under cultivation. Besides *extending the margin of cultivation* to grade *B* land, there will also be side by side more intensive cultivation of grade *A* land by applying more doses of labour and capital on it. In other words, *margin of intensive cultivation* will also be pushed forward.

Now, suppose that population of the island further increases which brings about further increases in demand for the produce of land so that the price of corn further rises to the level OP_3. As a result of this, the grade *C* land will also be brought under cultivation and lands of grade *A* and *B* will be more intensively cultivated. New price of corn must be equal to the minimum average cost on grade *C* land if it is worthwhile to bring it under cultivation. With price of corn equal to OP_3 there is no surplus earned over cost of production on grade *C* land and hence grade *C* land does not earn any rent. *Grade C land is now on the margin of extensive cultivation. Thus, grade C land is the marginal land.* Besides, at price OP_3, lands of grade *A* and *B* will be more intensively cultivated by applying more doses of labour and capital on them. Consequently, output on grades *A* and *B* will be expanded to point where the marginal cost equals to the price OP_3.

It will be seen from Fig. 30.2 that with price OP_3 output is expanded to OM_1 on grade *A* land and to OM_2 on grade *B* land. Now, surplus over cost of production has emerged on grade *B* land. Total revenue earned on grade *B* land is now OM_2FK, whereas total labour and capital cost is OM_2GH. The surplus of total revenue over total cost is equal to *KFGH* which represents rent earned by grade *B* land. As a result of the increase in price to OP_3 level, the total revenue earned in case of Grade *A* land is OM_1ER, while the total cost of production is OM_1QS. Hence the rent, that is, surplus earned over cost of production on grade *A* land has increased to *REQS*.

To sum up, with price of the corn equal to OP_3, the land of grade *C* is the marginal land that earns no rent, whereas the lands of grade *A* and *B* are *intramarginal lands*. The higher-quality land of grade *A* is earning more rent than land of grade *B*. The important point to be noted about the classical (Ricardian) theory of rent is that rent does not form a part of the cost of production.

As seen above, *rent is the earnings over and above the cost of production.* As rent does not enter into cost of production, it therefore does not determine price of output, *i.e.*, corn. Price of corn (or produce of the land) must be equal to the minimum average cost of production of the marginal land, but the marginal land earns no rent. It is thus clear that in Ricardian theory, rent *is not price determining*. In fact, in this theory *rent is price determined*, that is, it is price of corn which determines rent, and not other way around. The quote Ricardo, "*Corn is not high because a rent is paid, but a rent is paid because corn is high*".

So far as the determination of land rent is concerned and the forces which influence it, modern economists agree with the Ricardian theory of rent. Like Recardo, modern economists are also of the view that rent of land arises because of its scarcity. Although Recardo explained the determination of land rent through a '*differential return approach*' and not on the basis of

direct demand for and supply of land, and accordingly he did not employ demand and supply curves to depict the determination of land rent, yet in Ricaridan theory it is the forces of demand for and supply of land which determine the rent of land. Like modern economists, Ricardo too believed that demand for land is derived demand; it is derived from the demand for the produce of land, that is, what Ricardo called 'corn'.

Critical Evaluation of Ricardian Theory of Rent

Modern economists agree with Ricardo that rent arises when land becomes scarce in relation to derived demand for it. But modern economists do not apply any different approach to explain the emergence of scarcity rent. They use demand and supply curves of land to explain the emergence and determination of land rent like prices of other factors of production. Marginal revenue productivity of land determines demand curve for land. We shall explain in detail in a later section how modern economists explain the determination of rent for the use of land through demand for and supply of land.

Ricardian theory has been cirticised by some modern economists for its laying undue emphasis on the "*original and industructible powers of the soil*". According to them, fertility of the soil gets destroyed after a few years of continuous cultivation. Further, fertility of soil can be greatly improved by using modern techniques of production. Thus, according to Stonier and Hague, "In these days of nuclear physics and atomic energy it is very dangerous to assert that anything is indestructible..... It is not reasonable to regard the powers of the land as indestructible."[1] They further write "it seems more reasonable to attribute the payment of rent not to the original and indestructible powers of the soil but rather to the fact that land is a factor of production which is in almost completely inelastic supply to changes in its price."[2]

Briggs and Jordan criticise the Ricardian differential theory of rent as a mere truism. According to them, it just seeks to prove that a superior grade land would earn more than an inferior land. They thus write "Fundamentally, all that the Ricardian theory of rent amounts to is the truism that the better article will always command the higher price. A more fertile acre will be worth more than less fertile one simply because they are different things." However, in our view, criticism of Briggs and Jordan is misplaced. Through his defferential theory of rent Ricardo tried to show that productivity of land like the marginal productivity of other factors is an important factor in determining demand for land and therefore rent for its use.

Another disagreement of modern economists with Ricardo relates to the role of rent in determining price of product (*i.e.*, corn in Ricardo's case). As seen above, Recardo was of the view that rent is a surplus over cost of production and therefore does not enter into cost of producing corn and hence does not determine its price. In fact, according to him, *rent is price-determined and not price determining*. Thus, according to him, price of corn determines rent of land and not the other way around. As we shall explain in detail from the point of view of an individual firm or individual industry rent of land or at least transfer earnings of land is a necessary part of the cost of production and therefore contributes to the determination of the price of corn or product of land. Thus modern economists do not agree with Ricardo that rent does not determine price of corn.

Rent's Share in National Income and Stagnation of Economic Growth

Another aspect of Ricardian theory with which modern economists do not agree is the prediction by Recardo, on the basis of the his rent theory, that process of economic growth would come to an end and there will be economic stagnation. He argued that as the population increased, the demand for land would also increase. As a result, both the extensive and intensive margins would be pushed further and due to this rent of land will go up. According to him, in this process, share of land rent in the total national product will go up and share of profits will

1. Stonier and Hague, *A Textbook of Economic Theory*, 4th edition, p. 276.
2. *Ibid*, p. 276.

decline. Decline in profits means not much money will be available for financing investment in the industry. Further, decline in the rate of profit will discourage inducement to invest. Consequently, further investment and growth process would come to a halt. But, in actual practice things have not worked out in accordance with the prediction of Recardo. To quote Jan Pen again, "the grandiose theory developed by D. Ricardo at the beginning of the nineteenth century... amounts to the fact that population growth and shortage of land will force up the share of land rent, as a result of which no money will be left for the financing of industry. Ricardo predicted stagnation of economic growth, but this prediction did not work out, nor has the increase in the share of rent of land occurred... There is in fact a clear shortage of land at many places, and especially in the cities this may lead to high prices and rents. This situation is not without its problems, but it is nothing like Ricardo's prediction."[3]

Explaining Determination of Land Rent through Demand and Supply

The Ricardian theory can be expressed and explained directly in terms of demand for and the supply of land. In the Ricardian treatment of rent, the supply of land for the economy as a whole is fixed, and the demand for land is derived from the demand for the "corn" produced by land. Thus, according to Lipsey, "The modern student of Economics will recognize in the Richaridan arguments the idea of derived demand. Landlords, Ricardo was saying, cannot just charge any price they want for land; the price they get will depend on demand and supply. The supply of land is pretty well fixed and the demand depends on the price of corn. The higher the price of corn, the more profitable will it be to grow corn, higher will be the demand for corn land, and the higher will be the price for use."[4]

In the Ricardian model, it is assumed that land has only one use, that is, of growing corn on it. Therefore, no price is required to be paid to prevent land from transferring itself to other uses, that is, to uses other than growing corn. Further, the land has been considered for the economy as a whole. Therefore, the supply of land is a given and fixed quantity. Given these assumptions, supply curve of land is *perfectly inelastic*. Scarcity rent will arise only when the available quantity of land is scarce in relation to demand for it, which is derived from the demand for the corn. The Ricardian model of the determination of scarcity rent through demand and supply has been illustrated in Fig. 30.3 where *SS'* is the supply curve of land with *OS* as the available quantity of land. It is assumed that all land is homogeneous and therefore no differences in fertility or location exist. It

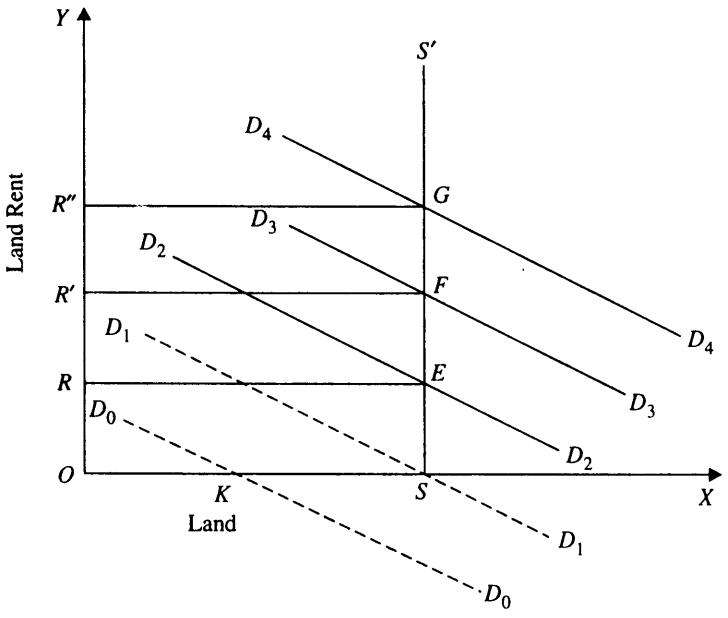

Fig. 30.3. *Ricardian Model of Scarcity Rent: Determination of Land Rent through Demand and Supply Curves*

3. Jan Pen, *Income Distribution*, Penguin Books, p. 126.
4. R.G. Lipsey, *Introduction to Positive Economics*, 2nd ed. p. 349.

will be seen from the Fig. 30.3 that various demand curves such as D_0D_0, D_1D_1, D_2D_2, D_3D_3 and D_4D_4 for land depend upon the various levels of demand for the product *i.e.*, corn.

It should be noted that aggregate demand curves for land have been obtained by summing up the marginal revenue product curves of all farmers cultivating the land. Thus, as the demand for other factors, demand for land is also determined by its marginal revenue product. If to begin with, demand curve for land is given by the curve D_0D_0, then *no rent will be charged on hiring it.* This is because D_0D_0 as the demand curve, the available land OS is abundant in relation to the demand for it. With D_0D_0 as the demand curve, various farmers will use OK amount of land and as a result KS amount of land will remain idle or uncultivated. If the demand for land increases to D_1D_1, even then the rent of land will be nil, but now the whole of available land OS will be cultivated. If the demand for land further increases to D_2D_2, the demand for and supply of land will be in equilibrium at point E and rent OR is determined. With the increase in demand for land to D_3D_3, rent rises to OR' and with the further increase in demand for land to D_4D_4, rent rises to OR'', whereas the supply of land remains fixed at OS. Demand for land can increase as a result of population growth which raises the consumption of corn or agricultural produce. This increased demand for corn or agricultural produce causes the demand curve for land to shift upward and thereby brings about a rise in the rent of land. We thus see that Ricardian model of determination of land rent can be better explained with demand and supply curves. Therefore, there is no need for the adoption of special differential return theory of rent, while other factor prices are explained through demand and supply and marginal productivity principle.

Rent which we have discussed above is called *scarcity rent. It is called scarcity rent because it arises due to the scarcity of homogeneous land.* Since all land is homogeneous and there exists perfect competition among the land owners on the one hand and among the tenants on the other, all farmers will pay equal amount of rent. Because land has zero elasticity of supply, *i.e.*, its quantity is fixed, the rise in rent will not bring more land into existence. Therefore, the essential features of pure scarcity rent is that whereas a rise in the prices of other factors of production will bring about an increase in their supply, at any rate in the long-run, a rise in rent cannot cause an increase in the supply of land. "*Higher earnings can therefore persist for land even in the long run, whereas with other factors this is not very likely to happen because supply will increase to meet the increased demand. It is the fixity of its supply which distinguishes homogeneous land and its scarcity rent from other factors of production and their prices. Scarcity rent is essentially the result of the fact that land is in inflexible supply.*"[5]

Demand-Supply Analysis and Differential Rents

Modern economists also agree with Ricardo regarding differential rents arising on different kinds of lands between which there are differences of fertility and location. In our above analysis of rent determination through demand and supply, we have assumed that all land is homogeneous. Therefore, a single uniform rent is determined. When there are differences in land, each kind of land would have its own separate demand and supply curves and consequently *different rents* depending on their demand and supply will be determined. Thus, on demand and supply basis, even differential rents on different grades of land in respect of fertility and location can be explained.

LAND RENT, COST AND PRICE

Ricardo explained the determination of land rent from the standpoint of the economy as a whole. He did not consider the question of rent payment from the point of a single industry or use. He did not consider the *various different uses or industries* for which land can be used. Since he confined himself to the whole land and a single use of it, he concluded that whole land rent is a surplus, superfluous and unnecessary payment. It is a surplus or unnecessary payment in the sense that it is not required to bring land into existence or use by the society.

5. R.G. Lipsey, *op. cit.*, p. 126.

From the point of view of the economy as a whole, the total supply of land is inelastic, therefore the whole rent from land may be regarded as surplus or unnecessary payment. But this cannot be said of the land rent from the point of view of the individual industries or uses in which land is used.

From the point of view of an industry producing particular product, the necessary minimum payment for a factor is not the payment which will bring it into existence or use for the society but the payment which is required to induce that factor to remain in that particular industry or use rather than transfer itself to other industries or uses.

If land has various possible uses, and it has a relatively low rent for one use it will lead to something different being done with the land. If houses yield too small a derived demand for land, and car parks a higher one, the property standing on it will be demolished and car parks will appear. The minimum price or payment that must be paid to a unit of a factor in order to induce it to work in the particular industry or use is called transfer payment or transfer earnings or transfer cost.

It should be noted that from the viewpoint of a particular industry these transfer payments are as much a part of the supply price or cost of production as any other element of cost. In order to obtain the land for any particular industry or use, it needs to be paid a rent which is at least equal to the income it should earn in the next best alternative use. Thus this transfer price or payment will enter into cost of production and will determine the price of the product. Thus Ricardo was wrong when he asserted that rent does not enter into cost of production of corn and therefore does not determine the price of the corn. According to modern economists, at least that part of land rent which is the transfer cost or transfer earnings enters into the cost of production of a commodity produced by land and therefore determines the price of the commodity as any other element of cost.

That the land rent enters into the cost of production and thus determines price of a commodity for the production of which land is used is quite evident if we consider the supply of land from the viewpoint of the individual farmer or any other individual user of land. For an individual farmer, the supply of land is perfectly elastic at the given rate of land rent. If an individual farmer does not pay this land rent, the land will get transferred to other farmers who will be ready to pay the current rate of land rent. It is therefore quite clear that *for the individual farmer the whole of land rent is a necessary payment and he therefore must include it in his cost of production on the basis of which price of the commodity will be determined.*

We therefore see that Ricardo's view that rent of land does not enter into cost of production and therefore does not take part in the determination of the price of corn is quite wrong. He formed this view by considering land from the point of view of the whole society for which land is completely inelastic and have zero transfer earnings. As a result, from the point of view of the society as a whole, the whole land rent is surplus and unnecessary payment. But, Chamberlin writes, "Although rents may be surpluses from certain points of view or for certain purposes, or subject to certain interpretation, *they are to the individual producer no different from any other money expense.* They do not arise as a surplus from his own operations; they are a cost rigidly imposed upon him by the competition of his rivals for the use of rent-yielding property. They figure in the same way as do the wages of labour and the interest of capital in his computations as to the most advantageous proportion between the factors and as to the most advantageous scale of operations."[6]

To sum up, *from the point of view of the individual industry and farmer or producer, land rent enters into cost of production and therefore determines price.* Ricardo was wrong in holding an opposite view that rent does not enter into cost of production and therefore does not determine price.

6. E.H. Chamberlin, *The Theory of Monopolistic Competition*, 1950.

MODERN THEORY OF RENT

Economic Rent as a Surplus Return over Transfer Earnings

In the modern theory of rent the concept of economic rent has been generalised and extended to the surplus payments made to other factors of production besides land. As we saw above, Ricardo regarded land as a free gift of nature and considered the whole earnings of land as the economic rent. Later on, this Ricardian concept of rent has been extended to describe a part of earnings of other factors of production—labour, capital and entrepreneurial ability—over and above the minimum necessary income required to induce the factors to do their work. Thus, in accord with Ricardo's concept, Joan Robinson writes, "The essence of the conception of *rent* is the conception of a surplus earned by a particular part of a factor of production over and above the minimum earnings necessary *to induce it to do work.*"[7] According to Benham, economic rents are *"the sum paid to the factors which need not be paid in order to retain the factors in the industry."*[8] Likewise, according to Boulding, economic rent is the payment to a factor *"in excess of the minimum amount necessary to keep that factor in its present occupation."*[9]

It is clear from above that other factors of production, labour capital, entrepreneur may also be found to be earning economic rent when they are getting payment greater than what is required to induce them to work in the present industry or job. Thus, in modern economic theory, *economic rent is not merely confined to land, it also refers to the surplus payment made to some units of other factors over and above what is necessary to keep them in the present industry or use.* Thus, the units of other factors may also earn economic rent.

Economic Rent Arises when the Supply of a Factor is Less Than Perfectly Elastic

Whenever the supply of factor units to an industry or economy is not perfectly elastic, a part of the earnings of a factor will consist of surplus or economic rent, since the total price they get are not necessary to make all the factor units available. If the supply is not perfectly elastic, some factor units will be available at a price lower than the price they actually receive, the difference between the actual price and the one necessary to make them available is surplus or economic rent. We shall now explain below the concept of economic rent with special reference to land and will bring out the conditions under which it arises.

As explained above, in the classical (Ricardian) theory, the rent was conceived as a payment made to a factor of production whose total supply was completely inelastic or fixed. When the total supply of a factor is completely fixed or inelastic, no price is needed to be paid in order to indute it to be available for production. Land is the fixed and completely inelastic to the economy as a whole. This is because land is a free gift of nature and is non-reproducible. Thus supply of land cannot be increased when the demand for it and hence the price for its use rises. On the contrary, even if the price of its use falls to zero, the total supply of land will remain unaffected. Land is there in any case and does not require to be paid any price in order to exist and become available for production. To put it in other words, the transfer earnings of land for the economy as a whole are zero. Thus, *to Ricardo and other calssical economists, the whole earnings of land are functionless surplus*, that is, whatever price the land happens to earn is not required to be paid for it in order to keep it in existence or to make it available to the society. Therefore, they regarded the whole price or earnings of land as economic rent defined as the surplus payment over and above what is required to be paid to make it available to society. Thus the term rent which in ordinary usage means the price or payment for hiring of land came to be used by economists as the title for the surplus earnings which the land receives.

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7. *Economics of Imperfect Competition*, (London 1948).
8. Fredrick Benham, *Economics*, 6th edition (London), p. 227.
9. K.E. Boulding, The Concept of Economic Surplus, *American Economic Review*, December 1945, Vol. 35

Since the whole price or payment made to land is surplus earnings in the sense defined above, the rent as a price for the use of land and rent as surplus earnings of land have often been used interchangeably, though they are conceptually different. Figure 30.4 illustrates that *whole of the earnings of land are economic rent from the viewpoint of the society.* Suppose *OS* is the amount of land available to the society. The society then confronts a perfectly inelastic supply curve *SS'* of land. This perfectly inelastic curve *SS'* indicates that even if the price for the use of land falls to zero, its supply remains *OS*. Thus, the transfer earnings of land from the viewpoint of society are zero. Curve *DD'* represents the demand for land of the society as a whole. As a result of the intersection of demand and supply curves of land, the rental *OR* per unit for the use of land is determined. Since transfer earnings are zero, the whole rental *OR* will be the economic rent earned per unit of land. The total earnings of land will be *ORES* and whole of these earnings of land will represent economic rent, since the transfer earnings are zero.

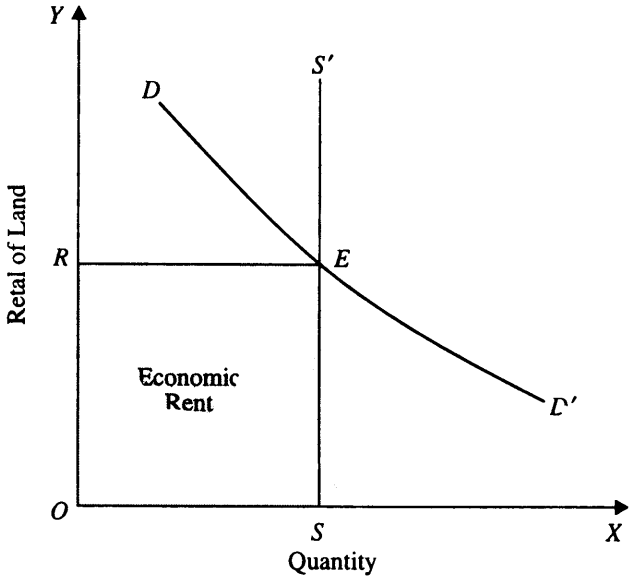

Fig. 30.4. *From the viewpoint of the society the whole earnings of land are economic rent.*

The whole earnings of a factor can be surplus only if its supply is perfectly inelastic because of its being a free gift of nature and society having incurred no cost to make it available for production. Therefore, *economic rent has also been defined as a payment for any factor whose supply is perfectly inelastic.* Thus, economic rent refers to the payment for the use of land and other natural resources since it is the supply of land and other natural resources which are permanently in fixed supply.

In the discussion of Ricardian rent theory we have explained that economic rent arises due to the scarcity of land in relation to its demand. When the available supply of land is in plenty relative to its demand, there will be no price for its use and, therefore, no economic rent. Even the differential rents arise due to the scarcity. More fertile grades of land earn more rent because they are more scarce relative to their demand. So far, the modern economists are in complete agreement with Ricardo. The difference between Ricardo and morern economists arises due to the fact that whereas Ricardo considered the problem of land rent from the viewpoint of the economy or society as a whole, the modern economists also look at it from the standpoint of a particular industry (or use) and an individual producer. In Ricardian theory it is assumed that land is completely specific to the growing of one crop only, but in actual practice, land is used for the production of different competing crops and uses.

According to the modern economists, it is only from the standpoint of the economy as a whole that land has perfectly inelastic supply. The supply of land for a particular use or industry is not perfectly inelastic. There are various uses or industries competing for the use of land. A unit of land being employed to produce a particular crop will be transferred to the production of other crops if its earnings in the present use fall below the possible earnings in the production of any other crop. It is therefore clear that from the viewpoint of a particular use or industry a payment has to be made for a unit of land so as to prevent it from being transferred to some

other use or industry. *The payment or price which is necessary to keep a unit of factor (land in the present case) in a certain use or industry is called transfer earnings or transfer price,* because a payment of a price below this will cause it to be transferred elsewhere. Thus, transfer earnings are the minimum earnings which must be paid to a unit of factor in order to induce it to remain in the present use or industry. The transfer earnings of a unit of a factor may also be defined as the amount of earnings which it can obtain in the *next best alternative use, occupation or industry.* This is because reduction in the earnings of a unit of factor below its earnings in the next best alternative use will cause it to transfer itself from the present use to its next best use. For instance, if a wheat-growing industry has to keep land with it, then it must pay for the land at least its transfer earnings. Suppose, an acre of land currently employed in the production of wheat has its next best alternative of being used for the production of potato where it can earn Rs. 500. Thus the transfer earnings of this acre of land is Rs. 500. Then, in order to keep this particular acre of land in the wheat industry it must be paid at least Rs. 500, otherwise it will transfer itself to the patato-growing industry. Now, if actually this acre of land is being paid Rs. 600 in the wheat industry, it will be earning economic rent of Rs. 100 which is the difference between actual earnings of Rs. 600 in the present use and its transfer earnings of Rs. 500.

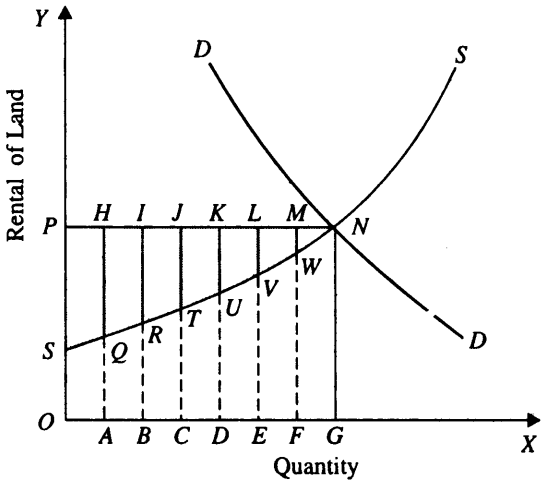

Fig. 30.5. *When the supply curve of a factor is less than perfectly elastic a part of the earnings is economic rent and a part transfer earnings.*

As the wheat industry uses more land, it will draw into it the land with successively higher supply prices. Thus, in Fig. 30.5, *A*th unit of land has a supply price equal to *AQ*. In other words, *AQ* must be paid to the *A*th unit of land in order to keep it in the wheat industry. Thus *AQ* represents the transfer earnings of *A*th unit of land. Similarly, *B*th unit of land must be paid *BR* if it is to be attracted into or retained in the wheat industry. *BR* is therefore the transfer earinigs of the *B*th unit of land. Likewise, transfer earnigns of *C*th, *D*th, *E*th, *F*th and *G*th units of land are *CT*, *DU*, *EV*, *FW* and *GN* respectively. Demand curve *DD* of wheat industry for land and supply curve *SS* of land intersect at point *S* and thus determine *OP* as price or rental for the use of land.

Suppose all units of land are equally productive in respect of wheat production. Then all acres of land will earn the same rental as determined by demand for land for wheat production and supply of land to it. But if various units of land are different in respect of other uses, they will have different supply prices to the wheat industry, that is, they need to be paid different prices to attract them to the wheat industry. The units of land having larger earnings in other uses will need to be paid higher prices to attract them to the wheat industry and those with smaller earnings in other uses will be required to be paid relatively smaller prices to draw them into the wheat industry. Under such conditions, the supply curve of land to the wheat industry will be upward sloping, as is shown by curve *SS* in Fig. 30.5. This figure shows that rental price for the use of land determined is *OP* and *OG* is the equilibrium amount of land employed in the wheat industry.

It will be seen from Fig. 30.5 the *G*th is the marginal unit of land employed in the wheat industry and further that the rental *OP* per unit of wheat land is equal to transfer earnings *GN* of the marginal unit *G*th of land. But, since we are assuming that all units of land are identical, *i.e.*, equally productive in respect of wheat, every unit of land employed in the wheat industry must get *OP* as the price for its use. Thus intra-marginal units, *A, B, C, D, E, F* will also be paid *OP* as the rental for their use in wheat industry. But it will be seen that whereas the rental *OP* is equal to the transfer earnings of the marginal unit *G*, it is greater than the transfer earinings of the intra-marginal units, *A, B, C, D, E* and *F*. That is to say, these intra-marginal units of land are paid by the wheat industry in excess of their transfer earnings. Thus, while the marginal unit of land employed in the wheat industry, that is, unit *G* does not earn any economic rent, the intra-marginal units of land will earn economic rent which will be equal to the present rental or earnings they get in the wheat industry minus their transfer earnings. Thus *A*th unit of land obtain rental (*AH* = *OP*) while its transfer earnings are only *AQ*. Therefore, *A*th unit of land earns *QH* as economic rent (*QH* = *AH* – *AQ*). Likewise, *B*th, *C*th, *D*th, *E*th and *F*th units of land will earn economic rent equal to *RI, TJ, UK, VL* and *WM* respectively.

The total transfer earnings of the whole *OG* amount of land employed in the wheat industry is *OSNG*—the area under the supply curve up to point *G*. The total actual earnings made by the whole amount *OG* of land is *OPNG*, that is, the rental *OP* multiplied by the amount of land *OG*. The total economic rent earned by the whole *OG* amount of land employed in the wheat industry is, therefore, the area *SNP* which is equal to the present actual earnings *OPNG* minus the transfer earnings *OSNG*. It is now clear that *whereas in the case of society as a whole, the whole earnings of land represents a sruplus or economic rent, from the viewpoint of a single industry or use, a part of the earnings are transfer earnings (which must be paid in order to retain the land in the given use or industry) and only the remaining amount of earnings (i.e., surplus over transfer earnings) represents economic rent.*

A careful study of Fig. 30.5 will reveal that rent as a surplus over transfer earnings is different from the rental as price for the use of land. In Fig. 30.5 whereas the price or rental (per unit) for the use of land is *OP* and the total price (that is, the total rental for the use of land) of the whole land employed in the given industry is the area *OPNG*, the total economic rent (*i.e.*, the total rent as surplus over transfer earnings) earned is the area *SNP*.

Furthermore, Fig. 30.5 makes it clear that all units of land do not earn equal amounts of economic rent; different units of land earn different amounts of economic rent depending upon their transfer earnings. Thus, economic rent earned by *A*th unit is *QH*, *B*th unit is *RI*, *C*th unit is *TJ* and so on. It should be noted that these differences in economic rent earned by different units of land are not due to the differences in thier productivity in respecct of wheat but due to the differences in their ability to earn in their next best uses.

When the supply of a factor is perfectly elastic, no economic rent is earned. Now, suppose that all units of land used in the wheat industry are not only identical in respect of wheat production but are also identical in respect of all other uses. In such circumstances, each unit of land employed in the wheat industry will have the same transfer earnings and therfore the supply curve of land for the wheat industry will be perfectly elastic as shown by

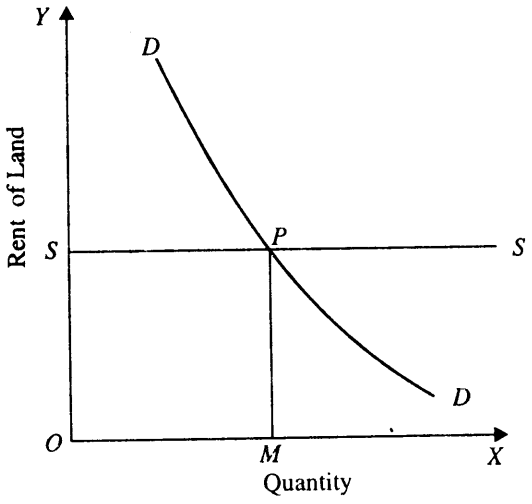

Fig. 30.6. *No economic rent is earned when the supply of a factor is perfectly elastic.*

SS curve in Fig. 30.6. In this, therefore, the transfer earnings of every unit of land employed in the wheat industry is *OS*. In other words, every unit of land needs to be paid equal to *OS* in order to retain it in the wheat industry. It will be seen in Fig. 30.6 that rental per unit for the use of land in the wheat industry as determined by demand for and supply of land is also *OS*. Thus, every unit of land in the wheat industry gets *OS* and its transfer earnings are also *OS*. Therefore, in this case no unit of land in the wheat industry earns more than its transfer earnings, *i.e.*, no unit of land in the wheat industry earns any economic rent. It is, therefore, clear that *when the supply of any factor is perfectly elastic to an industry, no unit of this factor will earn any economic rent.* Further, it has been seen above, that whereas to the economy or society as a whole, the supply of land is perfectly inelastic and, therefore, the whole of its earnings are economic rent, the supply of land to an industry (the wheat industry in the above case) may be perfectly elastic and earns no economic rent at all from the viewpoint of an individual industry.

Earnings of all Factors may Contain the Element of Economic Rent

We have seen above that under certain circumstances some units of land from the viewpoint of industry may earn economic rent, *i.e.*, earnings in excess of their transfer earnings, and under some other conditions, land may not earn any economic rent at all. The same kind of analysis can be made for other factors as well. As pointed out above, the concept of economic rent is not merely confined to land, it applies to other factors of production as well. Thus *labour, capital and entrepreneurs may also be earning economic rent when their supplies are less than perfectly elastic.* Thus, consider the supply of a particular kind of workers in a given industry, all of which are being paid a certain uniform wage rate by the industry. But all these workers may be heterogeneous from the point of view of the other industries. As a result of this, they would have different transfer earnings and the supply curve of this kind of wokers will be upward sloping (*i.e.*, less than perfectly elastic). Since all are getting the same wage rate in the industry which is determined by demand and supply. Those workers whose transfer earnings are less than the wage rate will be getting economic rent or surplus. It will be seen from Fig. 30.7 that only the marginal worker (*i.e.*, *L*th worker) employed would not be obtaining any economic surplus or rent. In Fig. 30.7 the total economic rent earned by all the intra-marginal workers is equal to *WES*.

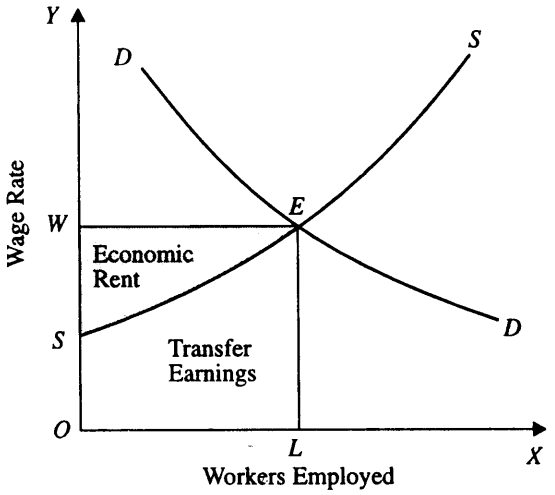

Fig. 30.7. *Economic Rent of Workers*

Likewise, entrepreneurs may be able to earn different amounts of profits in different industries. An entrepreneur will work in the industry in which he is able to get greater amount of profits and if his profits fall below a certain level, he will shift himself to the next best industry. But the additional amount of profits which he is able to earn in an industry over and above his transfer earnings (that is, the profits in the next best profitable industry) are surplus or economic rent from the point of the given industry.

Similarly, a particular kind of capital equipment is not equally efficient from the viewpoint of all industries. It will earn higher income for which it is best suited and will earn over and above the necessary income that is required to keep that in the industry. This additional income, which owner of capital equipment will get, will be the economic rent from the standpoint of that industry. We thus see that all factors under certain circumstaces may earn economic rent.

But this economic rent will be different if we consider their supply from the standpoint of the economy as whole than from the standpoint of the individual industry.

QUASI-RENT

The concept of quasi-rent was introduced in economic theory by Marshall. Marshall's concept of quasi-rent is the extension of the Ricardian concept of rent to the short-run earnings of the capital equipment (such as machinery, buildings etc.) which are in inelastic supply in the short run. The distinguishing characteristic of land is the fact that its supply is perfectly inelastic to changes in its price and therefore its earnings depend mainly upon the demand for it. But, in the short run, the fixed capital equipment such as machinery is likewise perfectly inelastic in supply and cost of its production is not relevant once it has been produced. During the short period, the earnings of specialised capital equipment depend mainly upon the demand conditions and are thus similar to land rent and have therefore been called rent by Marshall. Since the capital equipment is not permanently in fixed supply like land and instead their supply is very much elastic in the long run, Marshall preferred to call their earnings in the short period as quasi-rent rather than rent.

The *quasi-rent is only a temporary surplus* which is enjoyed by the owner of the capital equipment in the short run due to the increase in demand for it and this will disappear in the long run due to the increate in the supply of capital equipment in response the increased demand. In the short run, specialised machinery has no alternative use and therefore its supply will remain fixed in the short run even if its earnings fall to zero. Thus, the transfer earnings of the capital equipment or machinery in the short run are zero. Therefore, *the whole of the earnings of the machinery in the short run are surplus over transfer earinings and therefore represent rent.* It may, however, be pointed out that some maintenance costs are required to be incurred in the short run to keep the machinery in the running order. Therefore, more percisely, the quasi-rent may be defined *as the short-run earnings of a machine minus the short-run cost of keeping it in running order.*

There is every reason to believe that quasi rent will be generally earned in the short run by the capital equipment like machinery, building etc. This is because, however keen competition between entrepreneurs may be, the supply of capital equipment cannot be increased in the short run. Consequently, when very high earning are being made from capital equipment they will not be competed away in the short run. But in the long run the position regarding the supply of capital equipment (*e.g.*, machines) is quite different. Capital equipment are man-made instruments of production and therefore their supply can be increased in the long run to meet the increased demand for them. Thus as a result of the increase in the supply of machines, their excessive earnings will be competed away. In the long run, therefore, the competitive equilibrium is reached when the earnings from the capital equipment are just sufficient to maintain them in the running order and provide only normal profits to entrepreneur. Thus in the long run no surplus over cost of production is earned by the machines. Therefore, *quasi-rent will disappear in the long-run competitive equilibrium.*

But the case of land is quite different. The supply of land being a free gift of nautre and non-reproducible, its supply is perfectly inelastic in the short run as well as in the long run. Thus the surplus earnings or rent, earned by land persist in the long run also. It is thus clear that the earnings of land and of capital equipment (machines etc.) are similar only in the short run. The analogy between the two does not hold in the long run because of the difference in the nature of their long-run supply. To quote Professors Stonier and Hague again, "In the long period, machines will stand on a very different footing from land or natural ability. For machines are produced by human effort whilst land or human ability are gift of nature. In the long run, therefore, the supply of land will not respond to an increase in demand for it, the supply of machines will. In the long run, therefore, land will earn rent but machines will, assuming competition, earn only just enough to make their existence worthwhile."[10]

10. Stonier and Hague, *A Textbook of Economic Theroy*, Orient Longman, 2nd Ed. p. 439.

Quasi-Rent as Surplus over Variable Costs

Production of a good is possible when a fixed factor is combined with some variable factors. The amount of variable factors used depends upon the level of output produced, while the quantity of the fixed factor remains unchanged during the short period. The variable costs must be recovered in the short run, otherwise the production would be stopped. Whatever excess earnings over and a above the total variable costs are made are ascribed to the machines (*i.e.*, fixed factor). Therefore, *quasi-rent has also been defined as the excess of total revenue in the short run over and above the total variable costs.* Thus,

Quasi-Rent = Total Revenue Earned – Total Variable Costs

Since in long run, all costs are variable and, in long-run competitive equilibrium, total receipts must be equal to total costs (including normal profits to the entrepreneur), no excess earnings over and above the costs will accrue to the machines and therefore no quasi-rent will be earned by the machines.

The earning of quasi-rent in the short run and its disappearance in the long run is illustrated in Fig. 30.8 wherein, as usual, output is measured on the *X*-axis and price and cost are measured on the *Y*-axis. *ATC* and *AVC* represents the average total cost and average variable cost curves respectively in the short run. It should be noted that the average variable cost, *AVC* includes the cost incurred per unot of output on the variable factors such as labour, raw materials etc. as well as the cost per unit of output for keeping the machinery in the working order during the short period. (As said above, the cost of maintaining the machinery in the working order during the short period is a part of variable costs).

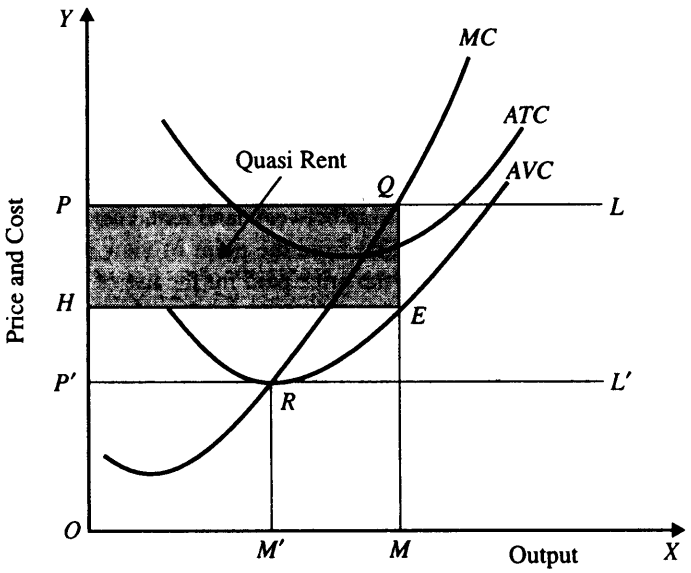

Fig. 30.8. *Quasi-Rent*

Now suppose that the demand for the product is such that price *OP* of a product is determined. With price *OP* of the product, the price line faced by an individual entrepreneur is *PL* which represents the marginal revenue as well as the average revenue. With price line *PL*, the entrepreneur is in equilibrium at point *Q* and is producing *OM* level of output. It will be seen from the figure that the total revenue earned is *OMQP*, while total variable costs incurred is *OMEH*. The area *HEQP* represents the surplus of total revenue earned over the total variable costs (*HEQP = OMPQ – OMEH*). Thus *HEQP* is quasi-rent, that is, the short-run earnings of the machinery.

If now the demand for the product declines so that the price for the product falls to *OP'*. With price *OP'*, the price line is *P'L'* and equilibrium of the enterpreneur is at point *R* with output *OM'*. Now, the total revenue earned is *OM'RP'* which is equal to the total variable cost. Thus, at point *R*, the total revenue earned is just equal to the total variable costs and quasi-rent earned by the machinery has fallen to zero. The entrepreneur will close down production if the price falls below *OP'*, for at a price belwo *OP'*, it will not be realising fully even the variable costs. It is, clear the the quasi-rent cannot be negative.

QUESTIONS FOR REVIEW

1. Explain Ricardian theory of rent drawing a distinction betwen scarcity rent and differntial rent.
2. Does rent in Ricardian theory arise when land is homogenous and equally well-situated ? Discuss and illustrate diagrammatically.
3. Critically examine Ricardian model of determination of land rent. Does not marginal productivity theory of factor pricing apply to the determination of land rent.
4. Define economic rent. Explain the concept of transfer earnings ? How is it related to rent ?
5. Economic rent is defined as the excess of actual earnings over transfer earnings. Explain how would you advocate a tax on rent ?
6. Any factor of production can earn rent. Comment
   Can factors other than land earn rent ? Explain using diagrams.
7. Distinguish between economic rent and quasi rent
8. Can quasi rent be negative ?
9. Is rent price determined or price determining ? Explain
10. Explain the relationship between land rent, cost of production and price of the production of the land. Show that from the point of view not only of the individual firm but of the individual industry the price paid for the use of land is exactly on *all fours* with the price paid for the use of the other factors of production.
11. Explain the concept of Quasi rent. Must it always be non-negative.
12. What is economic rent ? Explain that economic rent arises when the supply of a factor is less than perfectly elastic.
13. The more elastic the supply curve the less the amount of payment to factors that is rent and the more that are transfer earnings.
14. Division of a given factor payment between transfer earnings and economic rent depends on the type of transfer earnings considered.
15. Distinguish economic rent earned by a factor from the viewpoint of (1) the society as whole, (2) an individual industry and (3) the individual firm.
16. While the whole earnings of land are economic rent from the viewpoint of the society as a whole, an individual farmer earns no economic rent. Explain.

31

Theroies of Interest

Having now discussed the determination of rent of land and wages of labour, we now pass on to the study of the throry of interest. Interest is a reward for capital. But these are two concepts of capital : phyical capital and money or financial capital. Accordingly, there are two concepts of interest. One concept of interest is the *real rate of interest* which is the *rate of return* on physical capital such a machine, vehicle, tractor created for the purpose of producing more goods. A capital asset is used for production for several years and yields a stream of return over the years. A rate of return on it is obtained by calculating the present discounted value of the yields earned over the number of years for which capital asset is used for production.

The second concept of interest is the price paid for the use of borrowed funds from others and is often called *market rate* of interest. These funds are mainly used for investment in physical capital but they may also be used for consumption purposes. It is worth noting that money rate of interest is intimately related to the rate of return on physical capital. When the rate of return on a physical asset, that is, the real rate of interest is higher than the market money rate of interest, then there will be greater investment in capital with the result that the rate of return on capital will fall. The equilibrium will be established when the rate of return becomes equal to the market rate of interest.

CLASSICAL THEORY OF INTEREST

The classical theory seeks to explain the determination of the rate of interest through the interaction of the demand for savings to make investment and the supply of savings. Since this theory explains the determination of the rate of interest by real factors such as thrift, time preference and productivity of capital, it is also called the *real theory* of interest. Various calssical writers differ a good deal from each other in respect of their views about interest. Some of them laid emphasis on the factors governing the supply of savings. Thus they considered interest as a price for abstinence or waiting or time preference. Some others like J.B. Clark and Knight thought the marginal productivity of capital, which is a factor that operates on the demand side of savings, determines the rate of interest.

According to this theory, money which is lent out to the entrepreneurs for investment in capital goods is to be made available by those who save out of their incomes. By abstaining from consumption they release resources for production of capital goods. In order to induce people to save and refrain form consuming a part of their incomes, they must be offered some interest as a reward. To persuade them to save more, the higher rate of interest has to be offered. Thus, according to several classical economists, *interest is a price for abstaining from consumption or for waiting.*

Interest is paid because of time preference. Irving Fisher, an eminent American economist, laid greater emphasis on time preference as a cause of interest. But along with time preference he also considered the role of marginal productivity of capital for which he used the term *'rate of return over cost'* as a factor that determines interest. Rate of interest arises because people prefer present satisfaction to future satisfaction. They are therefore impatient to spend

their incomes in the present. According to Fisher, interest is a compensation for the time preference of individuals. The greater the impatience to spend money in the present, that is, the greater the preference of individuals for the present enjoyment of goods to furure enjoyment of them, the higher will have to be the rate of interest to induce them to lend money.

The degree of impatience to spend income in the present depends upon the size of income, the distribution of income over time, the degree of certainty regarding enjoyment in the future and the temperament and character of the individual. The people whose incomes are large are likely to have their present wants more fully satisfied. Therefore, these rich people will discount the future at a relatively lower rate of interest (that is, their time preference will be less) and will be required to be paid a relatively lower rate of interest. As regards distribution of income over time, three kinds of situation are possible. The income may be uniform throughout one's life or may increase with age or decrease with age. If it is uniform, the degree of impatience to spend in the present will be determined by the size of income and the temperament of the individual. If income increases with age, it means the furture is well provided for and the degree of impatience to spend money in the present (that is, time preference) will be greater. On the other hand, if income decareases with age, the degree of impatience to spend money at present will be less.

As regards certainty of enjoyment in the future, if the individual is sure of enjoyment of income in the future, other things remaining the same, the impatience to spend money in the present will be less, that is, the degree of time preference will be smaller. Finally, the character and the temperament of the individual also determines his time preference. A man of foresight will be less impatient to spend income in the present, that is, his rate of time preference will be less as compared to that of a spendthrift. The rate of time perference is also influenced by expectation of life. If a man expects to live long, his preference for spending income in the present will be comparatively low.

Determination of the Rate of Interest in the Classical Theroy

According to the classical theory of interest, rate of interest is determined by the supply of savings and demand for savings to invest. We have explained above the factors working on the side of supply of savings. Some classical economists laid stress on the abstinence or waiting involved in the act of savings and supply of them and some others emphasized the role of time preference as a determinant of the supply of savings. According to this theory, the money which is to be used for purchasing capital goods is made available by those who save from their current income. By postponing consuming a part of their income they release resources for the production of captial goods. It is assumed in this theory that savings are interest elastic. The higher the rate of interest, the more the savings which people will be induced to make. Besides, at a higher rate of interest, savings would be forthcoming from those persons whose rates of time preference are more strongly weighed in favour of present satisfaction. The supply curve of savings will therefore slope upward to the right.

On the other hand, the demand for savings comes from the entrepreneurs or firms which desire to invest in capital goods. Capital goods are demanded because they can be used to produce further goods which can be sold to earn income. Thus capital goods have a revenue productivity like all other factors. For any given type of capital asset, *e.g.*, a machine, it is possible to draw a marginal revenue productivity curve showing the addition made to total revenue by an additional unit of a machine at various levels of the stock of that machine.

As said above, like other factors of production, capital has marginal revenue productivity. But the marginal revenue productivity of capital is a more complex concept than that of other factors because capital has a life of many years. A capital asset continues to yield return for many years. But the future is quite uncertain. Therefore, the entrepreneurs have to judge the uncertainties of the future and estimate prospective yield or income from a capital asset after making allowance for maintenance and operating costs. In other words, they have to find out

the net expected return on a capital asset. This net expected return is expressed as percentage of the cost of capital asset. The more capital assets of a given kind there are, the less income will be expected to accrue from a marginal unit of it. Therefore, the marginal revenue productivity curve of capital slopes downward to the right.

We have seen in the previous chapters that in a perfectly competitive factor market a firm will hire a factor upto the point at which the price of that factor equals the marginal revenue product of the factor. The marginal revenue product from a capital asset can be regarded as marginal revenue product from the money invested in that capital asset. The *price* of money invested in capital assets is the rate of interest which a person has to pay on the borrowed funds. An entrepreneur will continue making investment in captial assets so long as the expected net rate of return, or in other words, marginal revenue product of capital or investment is greater than the rate of interest. Since the marginal revenue product curve of capital slopes downward, it will become profitable to purchase more capital goods as the rate of interest falls, *i.e.*, with the fall in the rate of interest more money will be demanded for investment. Thus, the investment demand curve relating the rate of interest with the investment demand will be downward sloping. In other words, investment demand is assumed to be interest-elastic.

The way in which the investment demand increases as the interest falls is illustrated in Fig. 31.1 where *II* is the investment demand curve showing the falling marginal revenue product of capital indicating the declining marginal net expected return as more investment is undertaken. When the rate of interest is *Or*, the entrepreneurs will make investment equal to *ON* because the marginal net expected return is equal to the *Or* rate of interest when *ON* is the investment. If the rate of interest falls to *Or'*, then more capital projects will become profitable to be undertaken. Therefore, as a result of fall in the rate of interest to *Or'*, investment increases to *ON'*.

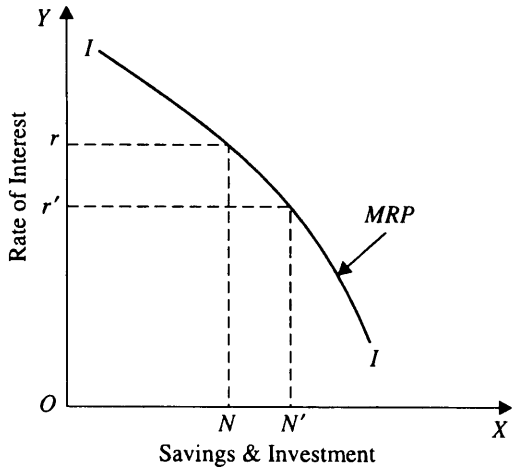

Fig. 31.1. *Investment Demand Curve*

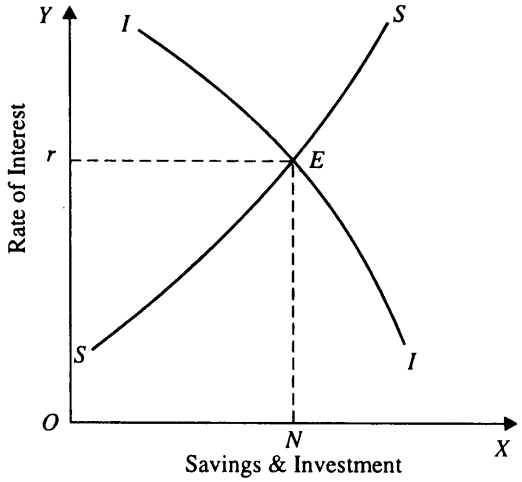

Fig. 31.2. *Classical Theory : Determination of rate of Interest*

It is clear from the above analysis that investment demand curve slopes downward to the right. With the change in the rate of interest, investment will change.

Equilibrium between demand and supply. As seen above, according to the classical theory, the rate of interest is determined by the intersection of investment demand curve and supply of savings curve—the curves showing the relation of investment and savings to the rate of interest. The way in which the rate of interest is determined by the intersection of investment demand and supply of savings is depicted in Fig. 31.2 where *II* is investment demand curve and *SS* is supply of savings curve. Investment demand curve *II* and supply of savings curve *SS*

intersect at point *E* and thereby determine *Or* as the equilibruim rate of interest. In this equilibrium position, *ON* is the amount of savings and investment. If any change in the demand for investment or supply of savings occurs, the curves will shift accordingly and therefore the equilibrium rate of interest will also change.

Critical Appraisal of the Classical Theory of Interest

Classical theory of interest has been criticised on several grounds. J.M. Keynes made a strong attack on this theory and propounded a new theory of interest called liquidity preference theory. We shall consider below the various criticisms levelled against the classical theory of interest.

Full employment assumption. Classical theory of interest has been criticised for its assumption for full employment of resources which is said to be unrealistic. In case of full employment of resources, more investment (*i.e.*, production of more capital goods) can take place only by curtailing consumption and thereby releasing resources from the production of consumption goods. Therefore, when full-employment of resources prevails, people have to be paid interest so as to induce them to abstain from consumption so that more resources should be devoted to the production of capital goods. But, when unemployed resources are found on a large scale there is no need for paying people to abstain from consumption or to postpone consumption or to wait in order that more savings and investment should take place. More investment then can be undertaken by using unemployed or unutilized productive resources. Prof. Dillard rightly remarks : "Within the framework of a system of theory built on the assumption of full employment, the notion of interest as reward for waiting or abstinence is highly plausible. It is the premise that resources are typically fully employed that lacks plausibility in the contemporary world."[1]

Changes in income level ignored. By assuming full employment the classical theory has also ignored the changes in income level and their effect on savings and investment. Classical theory establishes a direct functional relationship between interest rate and the volume of savings. As rate of interest goes up, more savings will take place. But at a higher rate of interest investment demand will be less with the result that interest will tend to fall to the level where savings and investment are in equilibrium. But this is not so realistic : first, because the direct functional relationship between savings and rate of interest is doubtful, and, secondly, because when more savings take place as a result of the rise in rate of interest, these more savings should lead to more investment, as according to classical theory investment is governed by savings. Further, in the whole process of adjustment, change in income is not at all considered by the classical theory. As a matter of fact, when the rate of interest rises and investment shrinks as a consequence, income will decline. With the decline in income, the savings will decline. Therefore, *the equality between savings and investment are brought about not through changes in rate of interest but through changes in income.*

From the above analysis it follows that by neglecting changes in income the classical theory is led into the error of viewing the rate of interest as the factor which brings about he equality of savings and investment. *The classical theory ignores the changes in income level because it assumes full employment of resources.* When resources are fully employed, income level will remain constant, production techniques being given. Now, it was Keynes who abandoned the assumption of full employment and, therefore, considered changes in income level and its relation with savings and investment. Quoting Prof. Dillard again, "The difference between the traditional theory of interest and Keynes money theory of interest is a fundamental aspect of the difference between the economics of full employment and the economics of less than full employment."[2]

1. D. Dillard, *Economics of J.M. Keynes*, p. 162.
2. *Op. cit.*, p. 160.

Distinctive effect of lesser consumption on investment ignored. According to the classical theory, more investment can occur only by cutting down consumption. More the reduction in consumption, the greater the increase in investment in capital goods. But as we know the demand for capital goods is a derived demand; it is derived from the demand for consumer goods. Therefore, the reduction in consumption, which means decrease in demand for consumer goods, will adversely affect the demand for capital goods and will thus lessen the inducement to invest. The disincentive effect of fall in consumption on investment is golssed over by the classical theory.

As we shall see later, in Keynes theory more investment does not occur at the expense of consumption. In Keynes theory, in view of the unemployment of resources, more investment is possible by utilizing the unemployed and underemployed resources. When investment increases, it leads to the increase in income level. With the increase in incomes, people will consume more. Thus in Keynesian analysis more investment leads to more consumption, or in other words, investment and consumption go together. Keynesian analysis is more realistic in the context of unemployment of resources prevailing in the economy.

Independence of saving schedule from investment schedule assumed. Another implication of assuming full employment and constant level of income in the classical theory is that investment demand shedule can change without causing a change in the savings schedule. For instance, according to the classical theory, if investment demand curve *II* shifts downward to the dotted position *I'I'* (Fig. 31.3) because the profit prospects have lessened, the new equilibrium rate of interest will be *OY'* corresponding to which the new investment demand curve *I'I'* intersects the supply curve *SS* which remains unaltered. But this is quite untenable. As a result of the fall in investment, income will decline. Since supply curve of savings is drawn with a given level of income, when the income falls, there will be less savings than before and saving curve will shift to the left. But the classical theory does not take into account changes in the income level as a result of changes in investment and regards the saving schedule as independent of investment schedule which is not correct and realistic.

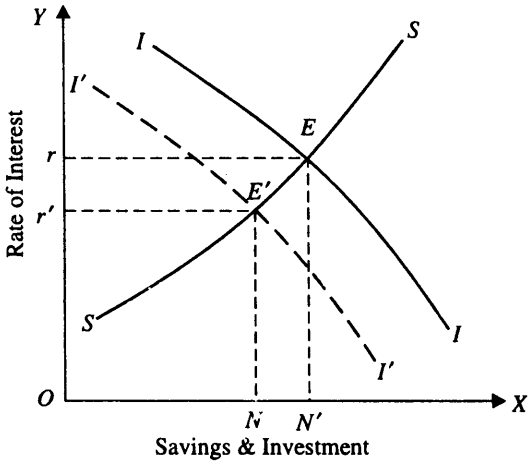

Fig. 31.3. *According to classical theory, investment schedule can change without affecting the savings schedule.*

Indeterminateness. Finally, the classical theory, as pointed out by Keynes, is indeterminate. Position of the saving curve depends upon the income level, that is, the position of saving curve varies with the level of income. There will be different saving schedules for different levels of income. As income rises, the saving curve will shift to the right and as income falls the saving curve will shift to the left. Thus, we cannot know the position of the saving curve unless we already know the level of income, and if we do not know the position of saving curve, we cannot know the rate of interest. It follows therefore that we cannot know what the rate of interest will be unless we already know what the income level is. But we cannot know the income level without already knowing the rate of interest because with the change in the rate of interest investment will change which will in turn bring about change in the income level. The classical theory therefore offers no determinate solution to the problem of interest rater determination and is therefore indeterminate.

Savings out of current income is not the only source of supply of funds. As we have seen, the classical theory considered only savings out of current income as constituting the supply of funds in the market. But savings out of current income is not the only source of capital supply. People have usually past hoarded savings, which they may dishoard in a period which will add to the supply of funds in the market. Further, now-a-days bank credit has become a very important source of investible funds which are also not taken into account by the classical theory.

We have critically explained the classical theory above. Some of the shortcomings of the classical theory were removed by the loanable funds theory which we now turn to discuss.

LOANABLE FUNDS THEORY OF INTEREST

In modern economics, determination of rate of interest is explained with the demand for and supply of loanable funds. This theory is therefore called loanable funds theory of the rate of interest. The supply of loanable funds consists of savings out of disposable income, dishoarding, money created by the banks and disinvestment. The demand for loanable funds is composed of the demand for investment, demand for consumption and demand for hoarding money. We discuss below in detail *these several sources* of supply of and demand for loanable funds.

Supply of Loanable Funds

The various sources of supply of loanable funds are as under.

Savings. Savings by individuals and households constitute the most important source of the supply of loanable funds. It is assumed that the amount of savings varies with rate of interest. More savings will be forthcoming at higher rates of interest and *vice versa.* It is granted that savings by individuals and households primarily depend upon the size of their income. But, given the level of income, *savings vary with the rate of interest; the higher the rate of interest, the greater the volume of savings.* Therefore, supply curve of saving slopes upward to the right.

Like individuals, business firms also save. When the business is of the type of private enterprise or partenership, a part of the income from the business is used for current expenditure and a part is kept for further expansion of the business. When the business is of the type of joint stock company, a part of the earnings is distributed as dividends to the shareholders but a part of the earnings of the company are retained undistributed which constitute the *corporate savings.* Business savings depend partly upon the current rate of interest. A high rate of interest is likely to encourage business savings as a substitute for borrowing from the loan market. These savings are mostly used for investment purposes by the business firms themselves and, therefore, most of them do not enter the market for loanable funds. But these savings influence the rate of interest since they serve as substitute for borrowed funds and therefore reduce the market demand for loanable funds.

Dishoarding. Dishoarding of past accumulated savings constitutes another source of supply of loanable funds. Individuals may possess idle cash balances hoarded from the incomes of the previous years which they may dishoard in a current year. When people dishoard, the idle cash balances become active in the present period and thus add to the supply of loanable funds. People hoard money because of their perference for liquidity. When the rate of interest rises or when the prices at securities decline, they may like to take advantage of these market movements and thus dishoard money for lending it to others or for purchasing securities. At a higher rate of interest, the individuals possessing idle cash balances will be induced to dishoard more money. At very low rates of interest, their parting with liquidity will not be rewarded sufficiently and therefore, they will hold on to money. It is evident that *dishoarding is interest-elastic and the curve of dishoarding slopes upward to the right.*

Bank credit. The banking system is another important source of supply of loanable funds. The commercial banks by creating credit (that is, demand deposits) advance loans to the businessmen and industries for investment. Banks can also reduce the supply of loanable funds by

contracting thier lendings. Banks also purchase and sell securities and thereby affect the supply of loanable funds. The supply curve of funds provided by banks is to some degree interest elastic. Generally speaking, the banks will lend more money at higher rates of interest than at lower ones. Therefore, supply curve of bank money also slopes upward to the right.

Disinvesmtment. Disinvestment is another source of the supply of loanable funds. Disinvestment means bringing in the market for loanable funds the depreciation reserves kept for the purpose of replacing over time the present fixed and working capital. Usually a good amount of depreciation reserves are kept so as to replace the fixed capital when it is completely worn out. When there is a declining tendency in certain industries due to some structural changes in the economy, the entrepreneurs may not feel remaining tied to these industries and therefore they may allow the existing stock of machines and other equipment belonging to these industries wear out without replacement. As a result, they may bring the depreciation reserves in the market for loanable funds. At higher rates of interest, the entrepreneurs will generally think of making a greater amount of disinvestment.

By summing up supplies of savings, dishoarding, bank credit and disinvestment funds forthcoming at various rates of interest we (in Fig. 31.5) get the total supply curve of loanable funds *SL* which slopes upward to the right showing that a greater amount of loanable funds will be available at higher rates of interest and *vice versa.*

Demand for Loanable Funds

Having now explained the sources of supply of loanable funds we turn to explain the sources of demand for loanable funds. Loanable funds theory consider the demand for loanable funds come from different sources. We explain below these different sources of demand for loanable funds.

Investment demand. Demand for investment constitutes an important factor working on the side of demand for loanable funds. Investment demand includes businessmen's borrowings for purchasing or making of new capital goods including the building up of inventories. Businessmen borrow funds for investment in different types of capital goods (*i.e.*, different investment projects, each of which is expected to yield certain profits to the investors. Just as demand for labour depends on its marginal revenue productivity, the demand for investment in capital goods too depends on marginal revenue productivity. (*MRP*) of capital. *The marginal revenue productivity of capital (MRP) expressed as a percentage of total value of capital is called the rate of return on investment in capital.* As in case of demand for other factors, the demand for capital is also a derived demand. The *demand for investment in capital goods creates demand for loanable funds to finance new investment.* The price of obtaining the loanable funds required to purchase or produce capital goods is obviously the rate of interest. It will pay businessmen to demand and undertake investment of loanable funds up to the point where the expected net rate of return on investment equals the rate of interest. *Demand for loanable funds for making investment in capital goods depends upon the marginal revenue productivity of capital (i.e., the marginal rate of return) on the one hand and rate of interest on the*

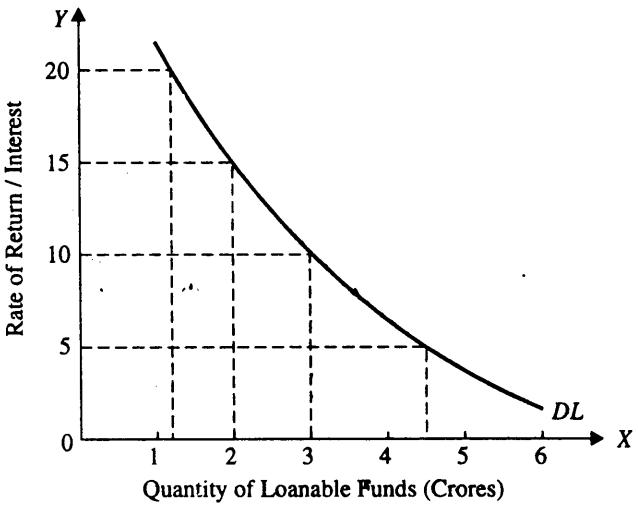

Fig. 31.4. *Demand for Loanable Funds for Investment*

other. When the rate of interest falls, businessmen will find it profitable to increase investment in capital goods with the result that their demand for loanable funds will rise. We thus see that demand of loanable funds for investment is interest-elastic; at a low rate of interest there will be greater investment demand and *vice versa.* Therefore, the curve of investment demand for loanable funds slopes downward to the right as is shown in Fig. 31.4.

On the vertical axis of Fig. 31.4 we measure the rate of return from investment as well as rate interest on the vertical axis and demand for loanable funds for investment in capital goods (*i.e.*, plant and equipment) on the horizontal axis. Businessmen give ranking to various investment projects successively in terms of expected rates of return on investment reflecting marginal revenue productivity of capital. As more investment takes place either in a perticular type of capital or in a particular industry or in the economy as a whole rate of return on investment diminishes.

At a relatively higher rate of interest, say 20 per cent, only a few projects of capital investment will be profitable. Therefore, it will be seen from Fig. 31.4 that at 20 per cent rate of interest only a small quantity (Rs. 1.2 crores) of loanable funds is demanded for investment. With 20 per cent market rate of interest no body would invest in those investment projects which yield less than 20 per cent rate of return. When rate of interest falls, say to 15 per cent, more investment projects yielding rate of return above 15 per cent will now become profitable and as a result more demand for loanable funds will be generated. It will seen from Fig. 31.4 that at 15 per cent rate of interest, the quantity of loanable funds demanded by all investors increases to 2 crores. With a further reduction in rate of interest, the quantity of loanable funds demanded of loanable funds further increases.

It should be noted that *it is the diminishing rate of return on investment in capital that yields downward-sloping demand curve for loanable funds.*

Consumption demand. Another important source of demand for loanable funds are the loans desired to be taken by the people for consumption purposes. Loan for consumption purposes are demanded by the people when they wish to make purchases in excess of their current incomes and idle cash resources. *The loans for consumption purposes are demanded generally for buying durable use goods* such as houses, automobiles, refrigerators, television sets, air-conditioners etc. Whereas a lower rate of interest will induce people to borrow more for consumption, the higher rates of interest will discourage borrowing for consumption. Therefore, consumption demand for loanable funds will also rise when the rate of interest is lower and will decline if the rate of interest rises.

Government demand for loanable funds. The third important source of loanable funds is the Government. The Government borrows funds from the market, especially from banks when it has a deficit budget. Government has a deficit budget when its expenditure exceeds its revenue receipts from taxes, fees etc. Government borrows through selling its securities, that is, bonds. It may be noted that rather than borrow from the banks, Government may borrow from Reserve Bank of India and get new currency issued but that has a danger of creating inflation or rise in prices in the economy. To avoid inflationary pressures which are likely to occur if Government borrows from Reserve Bank, Government enters the loan market to borrow funds. It may be noted that *Government demand for loanable funds is interest-inelastic.* Since Government needs funds for financing its budget deficit, it has to borrow all its requirements at the market rate of interest.

By summing up the demand for loanable funds from three sources explained above, namely, demand for loanable funds by private investors, consumers and Government we can obtain total demand for loanable funds represented by the curve *DL* in Fig. 30.5. Since investment demand and consumption demand for loanable funds is interest-elastic (declining with the rise in interest rate and increasing with the fall in the interest rate), the demand curve for loanable funds slopes downward to the right.

Equilibrium between Demand for and Supply of Laonable Funds

We have explained above the factors governing both demand for and supply of loanable funds and have also derived the aggregate demand curve for loanable funds *DL* and the aggregate supply curve of loanable funds *SL*. Now, the equilibrium rate of interest is determined where the quantity demanded and supplied of loanable funds are equal, that is, where the demand for loanable funds curve *DL* and the supply of loanable funds curve *SL* intersect. It will be seen form Fig. 31.5 that *DL* and *SL* curves intersect at point *E* and thereby determine the equilibrium rate of interest *Or*. At the equilibrium rate of interest *Or*, the loanable funds supplied and demanded are equal to *OM*. At any higher interest rate than *Or* the demand for loanable funds will be less that the supply of loanable funds and this excess supply of funds will cause the rate of interest to fall until it reaches *Or*. At any rate of interest lower than *Or*, the demand for loanable funds will exceed the supply of loanable funds and this excess demand for loanable funds will push up the rate of interest until it reaches the level *Or* where demand for and supply of loanable funds are equal.

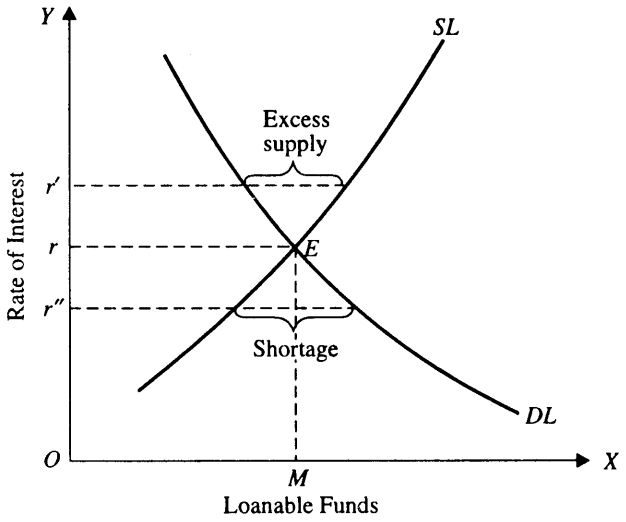

Fig. 31.5. *Determination of Rate of Interest through Equilibrium between Demand for and Supply of Loanable Funds.*

Changes in Equilibrium Interest Rate

It is important to understand what causes changes in the equilibrium rate of interest. We discuss below the impact on rate of interest of changes in the two types of factors, one which causes changes in the demand for loanable funds and the other which causes changes in supply of loanable funds.

Changes in demand for loanable funds. We have seen above that apart form the rate of interest, the demand for loanable funds depends on the profitability of investment, or in other words, expected rate of return on capital. A demand curve for investment (and therefore a demand curve for loanable funds) is drawn with the given profit yields from a variety of investment projects. This implies that, among other things, the given physical productivity of capital and given prices of products resulting from various projects (*i.e.*, various types of plants and equipments) and the given fiscal policy (*i.e.*, policy regarding taxation and providing subsidies on goods and services) determines demand for investment funds. If due to certain changes in the economy or changes in Government policy businessmen become more optimistic than before about the profitability of investment, their demand for investment will increase which will increase the demand for loanable funds. As a result of this, the demand curve for loanable funds will shift to the right as shown in Fig. 31.6. For example, if due to technological progress, the productivity of capital increases and as a result cost per unit declines, profits on investment projects will increase. Therefore, businessmen will be induced to invest more in them which will increase the demand for loanable funds to finance the additional investment.

Similarly, if there is a boom in the economy causing rise in prices of products. This will cause increase in the marginal value productivity of capital ($VMP = MPP \times P$ where P stands for price of output). This will encourage businessmen to invest more at a given rate of interest. This too will generate additional demand for loanable funds and cause the demand curve for loanable funds to shift to the right.

Likewise, when Finance Minister reduces excise duties on some commodities or provides subsidies on them, cost of production of the commodities will fall. The reduction in cost will lead to the rise in expected rate of return on capital which will tend to raise investment demand for loanable funds at *all* rates of interest. Thus whatever raises the profitability of investment or expected rate of return on capital will cause a shift in the demand curve for loanable funds to the right, for example, from DL_0 to DL_1, in Fig. 31.6. As will be seen from this figure, increase in demand for loanable funds from DL_0 to DL_1, the supply curve of loanable funds SL remainning constant, leads to the rise in the interest rate from Or_0 to Or_1 and increase in the quantity of loanable funds invested.

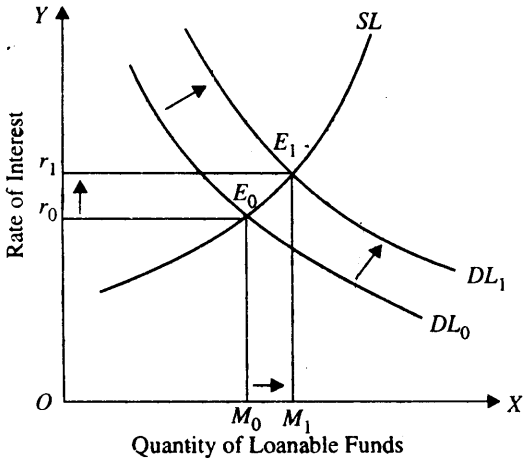

Fig. 31.6. *Increase in profitability of investment raises the demand for loanable funds and causes the rate of interest to rise.*

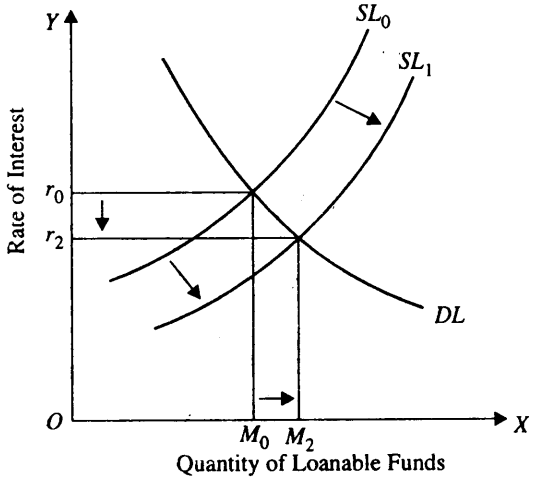

Fig. 31.7. *Rise in saving propensity increases the supply of loanable funds and causes the rate of interest to fall.*

Increase in supply of loanable funds. Let us now trun to analyse the impact of changes in the supply of loanable funds on the rate of interest. A supply curve of loanable funds is drawn asuming a given propensity to save of the people. For instance, because of tax concessions provided on certain types of savings by the Finance Minister in his budget, if people may save more than before, the supply of loanable funds in the market will increase causing a shift in the SL curve to the right. Similarly, if Reserve Bank of India adopts an expansionary monetary policy and lowers the cash reserve ratio (CRR) for commercial banks, excess liquid resources will be generated in the banks. As a result, banks will expand credit to finance business investment. Thus factors such as increase in propensity to save of the people, the expansion of credit by banks, the supply curve of loanable funds will shift to the right as is shown in Fig. 31.7 from SL_0 to SL_1. It will be seen form Fig. 31.7 that the increase in supply of loanable funds from SL_0 to SL_1 leads to the fall in the rate of interest from Or_0 to Or_2 and increase in the quantity of loanable funds borrowed from OM_0 to OM_2.

Critical Evaluation of Loanable Funds Theory

Loanable funds theory is superior to classical theroy of interest. It has greatly improved our understanding of the forces working on the supply of and demand for loanable funds. It makes quite comprehensive analysis of the determination of the rate of interest and takes into consideration all the relevant factors which have a bearing on the rate of interest, namely, saving or thriftiness, investment demand, hoarding and bank credit. However, loanable funds theory has been criticised by Keynes and Keynesians.

First, it was asserted by Keynes that the concept of hoarding as used in loanable funds

theory was quite dubious. This is so because hoarding simply cannot increase or decrease as long as the amount of money remains the same. Money in circulation in an economy has to be in somebody's cash balances at any time. According to him, if the quantity of money remains the same, then the total amount of cash balances in the beginning and at the end of a period will be the same; the greater hoarding of money by one person must have been offset by the dishoarding of any other person. But this criticism of loanable funds theory is misplaced. As a matter of fact, the effective supply of money in a society does not merely depend upon quantity of money, it also depends upon the velocity of circulation of money. And it is this velocity of circulation which changes as a result of hoarding or dishoarding and, therefore, involves the changes in the effective supply of money, although the amount of money in existence may remain the same.

Kenyes also criticised the loanable funds theory on the ground that like classical theory it did not provide a determinate solution to the interest-rate determination and involved what is called circular reasoning. According to him, since saving is an important constituent of the supply of loanable funds, the supply of loanable funds curve will vary with the level of income which determines savings. We, therefore, cannot know the rate of interest unless we know what the level of income is. And we cannot know the level of income unless we know the rate of interest since rate of interest affects investment which in trun determines the level of income. Following Keynes, Hansen also disapproves loanable funds theory and maintains that "the schedule of loanable funds is compounded of savings plus net additions to loanable funds from new money and dishoarding of idle balances. But since the savings portion of the schedule varies with the level of disposable income, it follows that the total supply schedule of loanable funds also vaires with income making the rate of interest indeterminate."[3]

However, in our view while Keynes was correct in ciritcizing the classical theory for its ignoring the effect of changes in the level of income upon the supply of savings but his criticism against loanable funds theory is not valid. This is because loanable funds theory seeks to explain the interest rate determination through *period analysis* with a lag of one period, which makes the theory quite determinate. In loanable funds theory, the supply of savings is regarded as being determined by the income of the preceding period and savings so determined along with other components of supply and the demand for loanable funds determine the rate of interest in the current period. The current rate of interest so determined affects the level of income in the succeeding period through investment. Prof. Halm rightly maintains that "It is not circular reasoning to say that income is influenced by investment, investment by rates of interest, rates of interest by the supply of loanable funds, the supply of loanable funds by savings, and *savings in turn, by the income received in the last period.*"[4] We, therefore, conclude that charge against loanable funds theory that it is indeterminate is untenable. In fact, it is Keynes's own liquidity preference theory of interest, as we shall see later, which is indeterminate.

Another charge against the loanable funds theory is that it is based upon the assumption of full employment of resources which does not hold in the real world. And the superiority of Keynes's theory is sought to be proved on the basis of its being based upon realistic assumption of less that full employment. As we have seen above, loanable funds theory takes into account the increases in the level of income as a result of investment and their influence on savings. If full employment of resources were the assumption, how income could increase?

As a matter of fact, loanable funds theory is a synthesis between the classical theory and Keynes's liquidity preference theory since it takes into account the savings and investment demand of the classical theory as well as liquidity preference of Keynes's theory. By incorporating hoarding and dishoarding it considers the liquidity preference on which Keynes laid a great stress as a factor determining the rate of interest.

3. A.H Hansen, *Guide to Keynes*, p. 141.
4. G.N. Halm, *op. cit.*, p. 147.

KEYNES'S LIQUIDITY PREFERENCE THEORY OF INTEREST

In his famous book, "*The General Theory of Employment, Interest and Money*" late Lord Keynes gave a new view of interest. According to him, "interest is the reward for parting with liquidity for a specified period."[5] A man with a given income has to decide first how much he is to consume and how much to save. The former will depend on what Keynes calls *propensity to consume*. Given his propensity to consume, an individual will save a certain proportion of his given income. He now has to make another decision. Should he hold his savings ? How much of his resources he should hold in the form of ready money (cash or non-interest-paying bank deposits) and how much he should part with or lend depend upon what Keynes calls his "*liquidity preference*". Liquidity preference means the *demand for money* to hold or the desire of the public to hold cash.

Demand for Money or Motives for Liquidity Preference

Liquidity preference of a particular individual depends upon several considerations. The question is : Why should the people hold their resources in liquid form or in the form of ready money, when they can get interest by lending such resources ? The desire for liquidity arises because of three motives: (*i*) the transactions motive, (*ii*) the precautionary motive, and (*iii*) the speculative motive.

Transactions motive. The transactions motive relates to the demand for money or need for cash for the current transactions of individuals and businessmen. Individuals hold cash in order "to bridge the interval between the receipt of income and its expenditure". This is called '*Income Motive*'. Most of the people receive their incomes by the week or the month, while his expenditure goes on day by day. A certain amount of ready money, therefore, is kept in hand to make current payments. This amount will depend upon the size of the individual's income, the interval at which the income is received and the methods of payments current in the society.

The businessmen and the entrepreneurs also have to keep a propoetion of their resources in ready cash in order to meet current needs of various kinds. They need money all the time in order to pay for raw materials and transport, to pay wages and salaries and to meet all other current expenses incurred by business firms. This Keynes calls the '*Business Motive*' for keeping money. It is clear that the amount of money held under this business motive will depend to a very large extent on the turnover (*i.e.*, the volume of trade of the firm in question). The larger the turnover, the larger in general will be the amount of money needed to cover current expenses.

Precautionary motive. Precautionary motive for holding money refers to the desire of the people to hold cash balances for unforeseen contingencies. People hold a certain amount of money to provide for the danger of unemployment, sickness, accidents, and the other uncertain perils. The amount of money held under this motive will depend on the nature of the individual and on the conditions in which he lives.

Speculative motive. The speculative motive relates to the desire to hold one's resources in liquid form in order to take advantage of market movements regarding the future changes in the rate of interest (or bond prices). The notion of holding money for speculative motive is a new typically Keynesian idea. Money held under the speculative motive serves as a store of value as money held under the precautionary motive does. But it is a store of money meant for a different purpose. The cash held under this motive is used to make speculative gains by dealing in bonds[6] whose prices fluctuate. If bond prices are expected to rise, which, in other words, means that the rate of interest is expected to fall, businessmen will buy bonds to sell when their prices actully rise. If, however, bond prices are expected to fall, *i.e.*, the rate of

5. *Op. cit.*, p. 167.

6. All securities and other such papers that yield a fixed and known rate of interest over a period of time are known as bonds.

interest is expected to rise, businessmen will sell bonds to avoid capital losses to hold more money. Nothing being certain in this dynamic world, the guesses about the future course of events are made on precarious basis, businessmen keep cash balances to speculate on the probable future changes in bond prices (or the rate of interest) with a view to making profits.

Given the expectations about the changes in the rate of interest in future, less money will be held under the speculative motive at a higher current or prevailing rate of interest and more money will be held under this motive at a lower current rate of interest. The reason for this inverse relation between money held for speculative motive and the prevailing rate of interest is that at a lower rate of interest less is lost by not lending money or investing it, that is, by holding on to money, while at a higher rate of interest holders of cash balances would lose more by not lending or investing.

Thus, the demand for money under speculative motive is a function of the current rate of interest, increasing as the interest rate falls and decreasing as the interest rate rises. Thus, demand for money under this motive is a decreasing function of the rate of interest. This is shown in Fig. 31.8. Along the *X*-axis we represent the speculative demand for money and along the *Y*-axis the rate of interest. The liquidity preference curve *LP* is a downward sloping towards the right signifying that the higher rate of inerest, the lower the demand for speculative motive, and vice versa. Thus, at the high current rate of interest *Or*, a very small amount of money *OM* is held for speculative motive. This is because at a high current rate of interest much money would have been lent out or used for buying bonds and therefore less money will be kept as inactive balances. If the rate of interest falls to *Or'*, then greater amount of money *OM'* is held under speculative motive. With a further fall in the rate of interest to *Or''*, money held under speculative motive increases to *OM''*. It will be seen in Fig. 31.8 that the liquidity preference curve *LP* becomes quite flat *i.e.*, perfectly elastic at a very low rate of interest; it is horizontal line beyond point *E''* towards the right. This perfectly elastic portion of liquidity preference curve indicates the postiton of *absolute liquidity preference* of the people. That is, at a very low rate of interest people will hold with them as inactive balances any amount of money they come to have. This portion of liquidity preference curve with absolute liquidity preference is called *liquidity trap* by some economists.

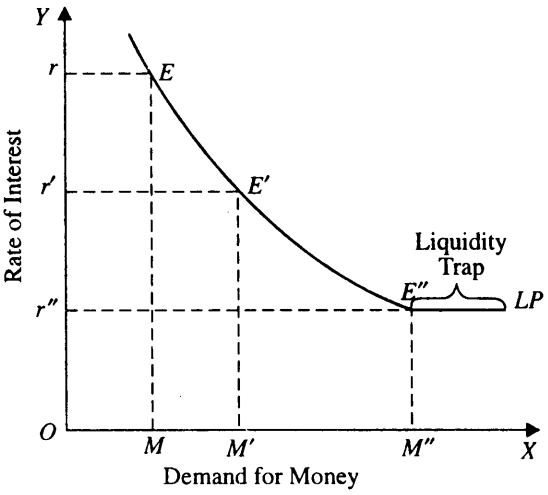

Fig. 31.8. *Liquidity Preference for Speculative Motive*

But the demand for money to satisfy the speculative motive does not depend so much upon what the current rate of interest is as on expectations of changes in the rate of interest. If there is a change in the expectations regarding the future rate of interest, the whole curve of liquidity preference for speculative motive will change accordingly. Thus, if the public on balance expect the rate of interest to be higher (*i.e.*, bond prices to be lower) in the future than had been previously supposed, the speculative demand for money will increase and the whole liquidity preference curve for speculative motive will shift upward.

If the total supply of money is represented by *M*, we may refer to the part of *M* held for transactions and precautionary motive as M_1 and the part held for speculative motive as M_2. Thus $M = M_1 + M_2$. The money held under transactions and precautionary motives, *i.e.*, M_1, is completwly interest-inelastic unless the interest rate is very high. The amount of money held

as M_1, that is, for transactions and precautionary motive, is mainly a function of size of income and business transactions together with the contingencies growing out of the conduct of personal and business affairs. We can write this in a functional form as follows :

$$M_1 = L_1(Y) \qquad ...(i)$$

where Y stands for income, L_1 for liquidity preference function, and M_1 for money held under the transaction and precautionary motive.

The above function implies that money held under the transaction and precautionary motives is a function of income.

On the other hand, money demanded for speculative motive, *i.e.*, M_2 as explained above, is primarily a function of the rate of interest. This can be written as :

$$M_2 = L_2(r) \qquad ...(ii)$$

where r stands for the rate of interest, L_2 for liquidity preference function for speculative motive.

Since total supply of money $M = M_1 + M_2$, we get from (i) and (ii) above

$$M = L_1(Y) + L_2(r) \qquad ...(iii)$$

It follows from (iii) above that given the supply of money (M) and income (Y) the rate of interest will be determined by the liquidity preference.

Determination of the Rate of Interest : Interaction between Liquidity Preference and Supply of Money

According to Keynes, the demand for money, *i.e.*, the liquidity preference and supply of money determine the rate of interest. It is in fact the liquidity preference for speculative motive which along with the quantity of money determines the rate of interest. We have explained above the speculative demand for money in detail. As for the supply of money, it is determined by the policies of the Government and the Central Bank of the country. The total supply of money consists of coins plus notes plus bank deposits. How the rate of interest is determined by the equilibrium between the liquidity preference for speculative motive and the supply of money is shown in Fig. 31.9.

In Fig. 31.9, LP curve represents liquidity preference for specutlative motive. In other words, LP curve shows the demand for money for speculative motive. To begin with, ON is

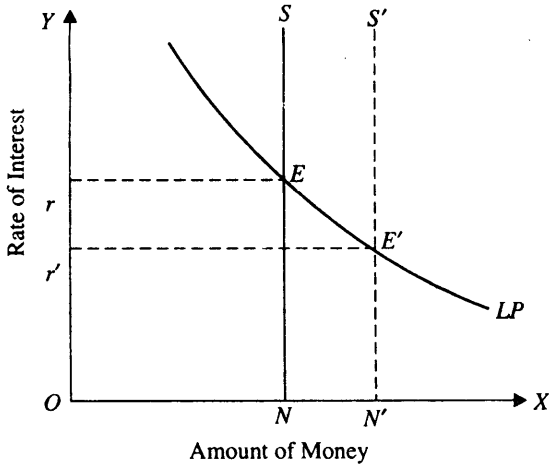

Fig. 31.9. *Equilibrium between Demand for and Supply of Money*

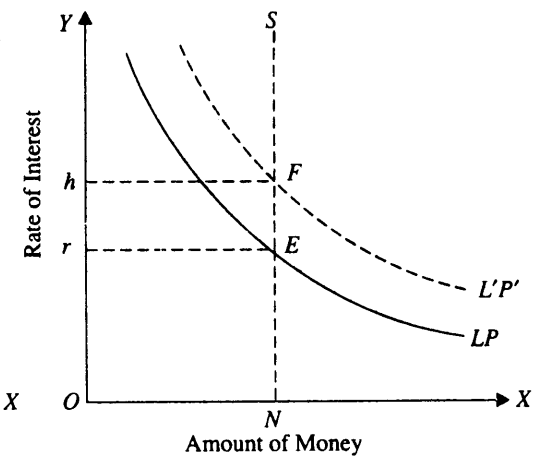

Fig. 31.10. *Effect of Increase in Liquidity Preference on the Rate of Interest*

the quantity of money available for satisfying liquidity preference for speculative motive. Rate of interest will be determined where the speculative demand for money is in balance or equal

to the fixed supply of money *ON*. It is clear from the figure that speculative demand for money is equal to *ON* quantity of money at *Or* rate of interest. Hence *Or* is the equilibrium rate of interest. Assuming no change in expectations, an increase in the quantity of money (via open market operations) for the speculative motive will lower the rate of interest. In Fig. 31.9, when the quantity of money increases form *ON* to *ON'*, the rate of interest falls from *Or* to *Or'* because the new quantity of money *ON'* is in balance with the speculative demand for money at *Or'* rate of interest. In this case we move down along the liquidity preference curve. Thus, given the schedule of liquidity preference curve for speculative motive, an increase in the quantity of money brings down the rate of interest.

But the act of increase in the quantity of money may cause a change in the expectations of the public and thereby cause an upward shift in the liquidity preference curve for speculative motive bringing the rate of interest up. But this is not certain. "New developments may only cause wide differences of opinion leading to increased acivity in the bond market without necessarily causing any shift in the aggregate speculative demand for money schedule. If the balance of market expectations is changed, there will be *shift* in the schedule. Central Bank Policy designed to increase the money supply may therefore be met by an upward shift of speculative demand function leaving the rate of interest virtually unaffected."[7] Thus, a large increase in the quantity of money may exert only a small influence on the rate of interest in certain circumstances.

It is worth mentioning that shift in liquidity preference curve can be caused by many other factors which affect expectations and might take palce independently of changes in the quantity of money by the Central Bank. Shifts in the liquidity preference function may be either downward or upward depending on the way in which the public interprets a change in events. If some change in events leads the people on balance to expect a higher rate of interest in the future than they had previously supposed, the liquidity preference for speculative motive will increase which will bring about an upward shift in the curve of liquidity preference for speculative motive and will raise the rate of interest.

In Fig. 31.10, assuming that the quantity of money remains unchanged at *ON*, the increase in the liquidity preference curve from *LP* to *L'P'*, the rate of interest rises form *Or* to *Oh* because at *Oh*, the new speculative demand for money is in equilibrium with the supply of money *ON*. It is worth noting that when the liquidity preference for speculative motive increases from *LP* to *L'P'*, the amount of money held does not increase; it remains *ON* as before. Only the rate of interest rises from *Or* to *Oh* to equilibrate the new liquidity preference for speculative motive with the available quantity of money *ON*.

Thus, we see that Keynes explained interest in terms of purely monetary forces and not in terms of real forces like productivity of capital and thrift which formed the foundation-stones of both classical and loanable fund theories. According to him, demand for money for speculative motive together with the supply of money determines the rate of interest. He agreed that the marginal revenue product of capital tends to become equal to the rate of interest but the rate of interest is not determined by marginal revenue productivity of capital. Moreover, according to him, interest is not a reward for saving or thriftiness or waiting but for parting with liquidity. Keynes asserted that it is not the rate of interest whch equalises saving and investment. But this equality is brought about through changes in the level of income.

Critical Appraisal of Keynes's Liquidity Preference Theory of Interest

1. Keynes ignored real factors in the determination of interest. First, it has been pointed out that rate of interest is not a purely monetary phenomenon. Real forces like productivity of capital and thriftiness or saving propensity also play an inportant role in the determination of the rate of interest. Keyens makes the rate of interest independent of the demand for investment

7. Hansen, *A Guide to Keynes*, p. 133.

funds. In fact, it is not so independent. The cash-balances of the businessmen are largely influenced by their demand for capital investment. This demand for capital-investment depends upon the marginal revenue productivity of capital. Therefore, the rate of interest is not determined independently of the marginal revenue productivity of capital which Keynes called marginal efficiency of capital. When investment demand increases due to greater profit prospects or, in other words, when marginal revenue productivity of capital rises, there will be greater demand for investment funds and the rate of interest will go up. But Keynesian theory does not account for this. Similarly, Keynes ignored the effect of the availability of savings on the rate of interest. For instance, if the propensity to consume fo the people increases, savings would decline. As a result, supply of funds in the market will decline which will raise the rate of interest.

2. Keynesian theory is also indeterminate. Exactly the same criticism applies to Keynesian theory itself on the basis of which Keynes rejected the classical and loanable funds theories. Kenyes's theory of interest, like the classical and loanable funds theories, is indeterminate. According to Keynes, rate of interest is determined by the speculative demand for money and the supply of money available for satisfying speculative demand. Given the total money supply, we cannot know how much money will be available to satisfy the speculative demand for money unless we know how much the transactions demnd for money is. And we cannot know the transactions demand for money unless we first know the level of income because money held under transactions motive depends on the level of income. Thus the Keynesian theory, like the classical, is indeterminate. "In the Keynesian case the supply and demand for money curves cannot give the rate of interest unless we already know the income level; in the classical case the demand and supply schedules for saving offer no solution until the income is known. Precisely the same is true of loanable-fund theory. Keynes criticism of the classical and loanable-fund theories applies equally to his own theory."[8]

3. No liquidity without savings. According to Keynes, interest is a reward for parting with liquidity and in no way a compensation and inducement for saving or waiting. But without saving how can the funds be available to be kept as liquid and how can there be a question of surrendering liquidity if one has not already saved money. Jacob Viner rightly maintains, "*Without savings there can be no liquidity to surrender*". Therefore, the rate of interest is vitally connected with saving whcih is neglected by Kyenes in the determination of interest .

It follows from above that Keynesian theory of interest is also not without flaws. But importance which Keynes gave to liquidity preference as a determinant of interest is correct. In fact, the exponents of loanable funds theory incorporated the liquidity preference in their theory by laying greater stress on hoarding and dishoarding. We are inclined to agree With Prof. D. Hamberg when he says, "Keynes did not forge nearly as *new* a theory as he and others at first thought. Rather, his great emphasis on the influence of hoarding on the rate of interest constituted an invaluable addition to the theory of interest as it has been developed by the loanable funds theorists who incorporated much of Keynes' ideas into their theory to make it more complete."

8. Hansen, *Guide to Keynes*, p. 141.

QUESTIONS FOR REVIEW

1. Define interest. Distinguish between nominal rate of interest and real rate of interest
2. Critically examine the following views about why rate of interest arises (or is paid).
   (*a*) Interest is a reward for abstinence
   (*b*) Interest arises because of time preference
   (*c*) Interest is a reward for parting with liquidity
3. Explain how saving and investment are related to rate of interest. Critically examine the classical theory that rate of interest is determined by saving and investment.
4. Explain how Keynes showed that Classical theory of interest was indeterminate. The same criticism of indeterminacy has been made against Keynes' own theory of interest. Discuss
5. Explain the components of demand for and supply of loanable funds. Show that rate of interest is determined by demand for and supply of loanable funds. Is the rate of interest determined through equality of demand for and supply of loanable funds stable ?
6. How does loanable funds theory of interest differ from (i) Classical theory, and (2) Keynes' theory of interest
7. Explain the Keynesian theory of interest. How is the Keynesian theory of interest different from the Classical theory.
8. What is meant by liquidity preference ? How does it explain why interest is paid ?
9. Explain Keynes' liquidity preference theory of interest. Why is it considered to be indeterminate ?
10. In what ways is the Keynesian theory of interest a departure from the classical theory ? Discuss
11. Explain why demand for money is considered to be declining function of rate of interest.
12. The deference between the classical theory of interest and Keynes' monetary theory of interest is a fundamental aspect of the difference between the economics of full employment and the economics of less than full employment (D. Dillard). Discuss.

32

Theories of Profits

INTRODUCTION

After having discussed the determination of rent of land, wages of labour and interest on capital, we now pass on to the study of profits which are said to be the reward for enterprise, the fourth factor of production. No doubt profits are associated with entrepreneur and his functions but the economists from time to time have expressed diverse and conflicting views about the nature, origin and role of profits. Till today, there is no complete agreement among economists about the true nature and origin of profits. As a matter of fact, there has been perhaps no topic in the whole economic theory which has been in such a confused and tangled state as the theory of profit.

A part of the confusion in the theory of profits is due to lack of agreement among economists about the true or proper function of the entrepreneur. Some have held the view that the function of the entrepreneur is to organise and co-ordinate the other factors of production. According to them, profits are a *functional income* and entrepreneur earns profits for his performing this function. On this view, enterprise is a special type of labour and profits a special form of wages. Some others have described the entrepreneur as performing joint and inseparable functions of *responsibility* (*i.e.*, ultimate risk bearing) and *control* (*i.e.*, ultimate decision making). The entrepreneur earns profits because he takes risk because his price and output policies may prove to be incorrect in view of the future business movements. Schumpeter has assigned to the entrepreneur the role of an innovator and profits as a reward for his introducing innovations. Lastly, F.H. Knight has emphasized uncertainty in the economy as a factor which gives rise to profits and bearing uncertainty is the task of the entrepreneur.

Besides, some economists have described profits as *non-functional income*. Thus, J.M. Keynes expressed the view that profits resulted from the favourable movements of the general price level. Mrs. Joan Robinson, E.H. Chamberlin and M. Kalecki have associated profits with imperfect competition and monopoly. According to them, the greater the degree of imperfection or, in other words, the greater the degree of monopoly power, the greater the profits made by the entrepreneur. Prof. B.S Keristead, therefore, expresses the view that profits originate from various sources such as mononoly, seccessful innovations and a correct estimate of uncertain future. He thus says, "Profits may come to exist as a result of monopoly or monopsony, as a reward for innovation, as a reward for the correct estimate of uncertain factors, either particular to the industry or general to the whole economy."[1]

Profits as a Residual Income

It is worth mentioning that protits are *residual income* left after the payment of the contractual reward to other factors of production. The entrepreneur while engaging other factors of production enters into contract with them. He thus pays wages to the workers, rent on the land employed, interest on loans taken at the rates already fixed by contracts. In fact, the entrepreneur

1. B.S. Keirstead, *Capital, Interest and Profits,* (1959), p. 6.