In a *monopolistic* [illegible] firm had *monopsony*, being the sole buyer of a factor. So its factor supply curve (*AFC*) is upward sloping to the right and its *MFC* curve is above its *AFC* curve, as shown in Figure 39.3. It means that if the firm wants to employ more units of that factor (say labour), it will have to spend more (wage) not only on additional units but on its all units (workers). Consequently, *MFC* of that factor will be more than its *AFC* (actual cost). Therefore, the *MFC* curve will be above its *AFC* curve.

THE MARGINAL PRODUCTIVITY THEORY OF DISTRIBUTION

The marginal productivity theory states that the demand for a factor depends on its marginal revenue productivity (MRP). MRP is the addition made to total revenue by employing one more unit of a variable factor, other factors remaining unchanged.

As a general rule, the marginal revenue productivity of a factor diminishes with the increase in the units of that factor. When in the initial stages the units of a variable factor are employed, keeping the other factors constant, the total revenue product may increase more than proportionately for some time. But, sooner or later, a time will come when the marginal revenue product will start diminishing, and will tend to equal the price of the factor. This tendency of diminishing *MRP* follows from the Law of Variable Proportions.

A firm operating under perfect competition has to pay the same price (reward) to a unit of the factor, which is being paid by the industry. In order to have maximum profits, it acts on the principle of substitution. Cheaper factors tend to displace expensive ones. For example, if a firm finds it more profitable to substitute machines for costly labour, it will do so. The substitution of cheaper factors for the dearer will continue till the marginal revenue productivity of each factor is equal to its price. At this stage, the factors of production are employed in their most efficient combination or the least cost combination and the profits of the firm will be maximized.

Moreover, substitution also takes place between different units of the same factor. There being perfect mobility in the factor market, units of a factor tend to move from one use where their marginal revenue productivity is low to another use where it is high, till it is equalized for all the units in different uses.

In equilibrium, therefore, the price of a factor-service must equal its marginal revenue productivity. If the marginal revenue product of a factor unit is more than its price (cost of employing it), it will be profitable for the firm to employ more units of this factor. As more units are employed, the marginal revenue product diminishes till it equalises the price. This is the point of maximum profits for the firm. But if more factor units are employed beyond this point, the marginal revenue product will fall below the price and the firm will sustain a loss. This follows from the application of the Law of Non-proportional Returns.

Assumptions of the Theory

The marginal productivity theory of distribution is based on the following assumptions:

(i) It assumes that all units of a factor are homogeneous.
(ii) They can be substituted for each other.
(iii) There is perfect mobility of factors as between different places and employments.
(iv) There is perfect competition in the factor market.
(v) There is perfect competition in product market.

(vi) There is full employment of factors and resources.
(vii) The various units of the different factors are divisible.
(viii) One factor is variable and other factors are constant.
(ix) Techniques of production are given and constant.
(x) The entrepreneurs are motivated by profit maximization.
(xi) The theory is applicable in the long-run.
(xii) It is based on the Law of Variable Proportions.

Explanation of the Theory

Given these assumptions, first we explain the determination of the price of a factor in an industry in terms of its demand and supply. In Fig. 39 (A), the demand curve D of industry intersects its supply curve S at point E which determines OP price and OQ quantity demanded and supplied. Thus all units of the factor (say, labour) in the industry are paid the same price (wage), OP.

There being perfect competition, a firm will pay the same price (wage) to each unit of the factor (labour) as paid by the industry. Therefore, for the *firm*, the supply of this factor at that price will be *perfectly elastic*. It means that the supply curve of this factor at the given price OP is horizontal curve, shown as $AFC = MFC$ in Panel (B) of the figure. AFC and MFC are the average and marginal factor costs of the firm at which it employs the factor units. The number of factor units, the firm will employ, depends upon its demand for that factor. And the demand for the factor depends on its MRP. For equilibrium, it is essential that the price which the firm pays to the factor must equal its MRP, ARP and MFC, that is, Price of the Factor Unit = AFC = MFC = MRP = ARP. This is shown in Panel (B) where E is the equilibrium point for the firm when $ARP = MRP = MFC = AFC$ and it pays OP price for OQ units of the factor. Suppose the factor-price *rises to* OP_1. At this price, the firms will be incurring AB per unit loss, as the price Q_1A being paid to factor units is greater them Q_1B, their ARP. This will induce some firms to leave the industry. As a result, the supply of factors will increase by ds, as in Panel (A), and the factor price will fall again to OP where equilibrium will be re-established at point E in both *(A)* and *(B)* Panels. On the other hand, if the factor-price falls to OP_2, firms will be earning DC per unit profit because the price Q_2D being paid to factor units is less than Q_2C, their ARP. Attracted by the profit, some firms will enter the industry. This will raise the factor-demand by s_1d_1 in the industry and the price will again increase to OP. These price changes are only possible in the short-run. In the long-run, equilibrium will stay on at point E, where $OP = ARP = MRP = MFC = AFC$.

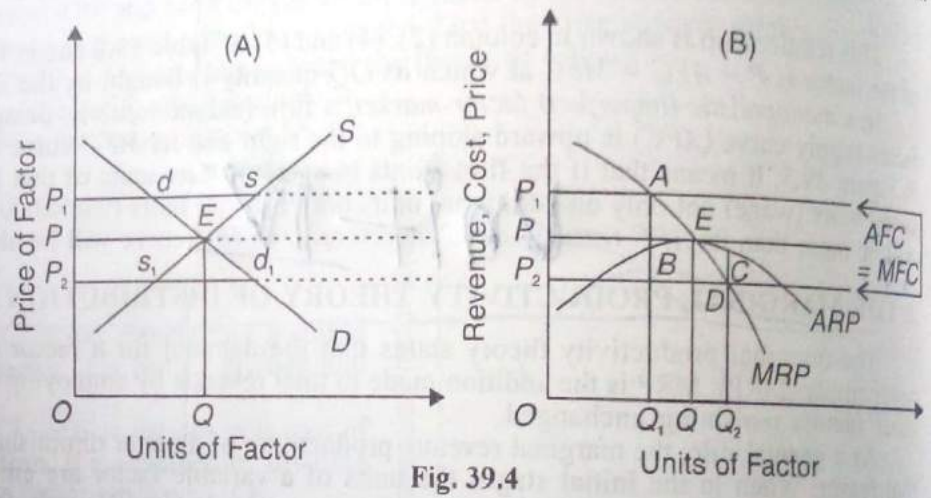


Fig. 39.4

Its Criticisms

The marginal productivity theory of distribution has been one of the most criticised theories in economics due to its unrealistic assumptions.

(1) *Units of a Factor not Homogeneous.* The assumption that all units of a factor are homogeneous is unrealistic. We know that efficiency of labour differs from worker to worker. Similarly, one piece of land differs from the other in fertility. It is, therefore, not correct to assume that the different factor-units of the same are homogeneous. In fact, heterogeneity and not homogeneity is the rule.

(2) Factors not Perfectly Mobile. The theory assumes perfect mobility of factors as between different employments and places. But, in reality, factors are mostly immobile, particularly labour.

(3) No Perfect Competition. The theory is based on another unrealistic assumption of perfect competition which is to be found neither in the factor market nor in the product market. Perfect competition is not a reality but a myth. Rather imperfect competition or monopolistic competition is the rule.

(4) *Factors not Fully Employed.* The theory assumes the existence of full employment in the economy. This assumption of full employment makes the theory static. According to Keynes, under-employment rather than full employment is found in an economy.

(5) *All Factors not Divisible.* The assumption that factor-units are divisible and therefore can be increased by small quantities does not hold true. It is not possible to vary an individual, large or lumpy factor. For example, how can the entrepreneur of a firm be increased or decreased by small units? Thus the equality between marginal productivity and price of a factor cannot be brought about by varying its quantities a little less or more.

(6) *Production not the Result of One Factor.* According to Taussig and Devonport, production of a commodity cannot be attributed to any one factor– land, labour or capital. Rather, it is always the result of factors and their units working together. It is, therefore, not possible to calculate the marginal productivity of each factor-unit separately.

(7) *Profit not the Main Motive.* The theory assumes that the entrepreneurs are motivated by maximization of profits. But as pointed out by Schumpeter, the entrepreneurial action is guided by the desire to found a commercial kingdom, the will to conquer, the joy of creating and getting things done. It is, therefore, not true to say that the entrepreneur is guided by the profit motive.

(8) *Not Applicable in the Short-Run.* The theory is applicable only in the long-run, when the reward of a factor tends to equal its marginal revenue product. But, in reality, we are concerned with short-run problems. As remarked by Keynes, "In the long-run we are all dead." This assumption makes the factor pricing unrealistic.

(9) *Neglect of Technical Progress.* According to Hicks, this theory fails to throw light on the determination of relative shares by neglecting the influence of technical change. Hicks has shown that a labour-saving innovation tends to raise the marginal product of capital relative to that of labour. The opposite may happen in the case of capital-saving innovation. Sometimes a technical change requires the use of cooperating factors in fixed proportions, say two workers for one machine. Thus the marginal productivity theory fails to analyse the problems of technical change.

(10) *Supply of Factors not Fixed.* This Theory assumes the supply of factors to be perfectly inelastic. The supply of factors is fixed during the short period and not in the long-run. Therefore, the theory is self-contradictory. For it assumes the supply of factors to be fixed in the long-run to which it applies.

(11) *Only Demand Theory.* According to Samuelson, being a theory solely of the demand for factors, this theory cannot be applied to the factor market as a whole which requires a theory of both the demand for and supply of factors. Thus it is a one-side theory.

(12) *No Justification for Inequalities in Income.* The marginal productivity theory is often used to justify the existing inequalities in the distribution of income. The theory states that the price of each factor equals its marginal revenue product which makes the reward inevitably what it is. Apparently, a person gets what he produces. The basic postulate rests on the proposition that an individual gets what is produced by the resources he possesses and that all persons have equal opportunities. But no two persons possess the same resources and have equal opportunities. Thus the existing distribution of income cannot be justified on the basis of the principle of marginal productivity.

(13) *Reward determines Productivity.* According to this theory, the reward of a factor-unit is determined by its *MRP*. But according to Sydney Webb, when a worker is paid a higher reward (wage), his efficiency and productivity increase. Thus, reward is the cause and not the result of MRP.

Conclusion. On account of its many weaknesses, Prof. Kaldor regards this theory as *intellectual sterility.*

6. FACTOR PRICING UNDER PERFECT COMPETITION: MODERN THEORY

The price of a factor of production, like the price of a product, is determined by demand and supply. Though the conditions of demand and supply for different factors are different, yet certain common principles have been laid down by economists.

Assumptions. The analysis of factor pricing under perfect competition is based on the following assumptions:

(1) These is perfect competition in the product market and the factor market.
(2) The number of buyers and sellers of factors is large.
(3) All units of a factor are homogeneous.
(4) Factors of production are perfectly mobile.
(5) There is perfect substitutability between factors and their units.
(6) All factor-units are divisible.
(7) Buyers and sellers of factors have complete knowledge about market conditions.
(8) Buyers and sellers of factors nave complete freedom to enter and leave the market.
(9) The Law of Variable Proportions operates.

Explanation

Given the above assumptions, we explain how demand and supply of a factor determine its price.

Demand for Factor. The demand for a factor is a derived demand which is derived from the demand for the

Wages

1. MEANING

Wages are a payment for the services of labour, whether mental or physical. Though in ordinary language an office executive, a minister or a teacher is said to receive a salary; a lawyer or a doctor a fee; and a skilled or unskilled worker a wage, yet in economics no such distinctions are made for different services and all of them are said to receive a wage. In other words, wages include fees, commissions and salaries. It is another thing that some may be receiving more in the form of real wages and less in terms of money wages and vice versa. We shall refer to this problem later on.

Time and Piece Wages. Wages may be paid weekly, fortnightly, or monthly and partly at the end of the year in the form of bonus. These are *time wages*. But the bonus may be a task wage if a work is finished within a specified period or before that. Sometimes, time wages are supplemented by wages earned by working extra time. They are over-time wages. Wages are also paid in accordance with the amount of work done, say in a shoe factory or a tailoring department as per one pair of shoes or pants manufactured. If the rate per pair of shoes or for pants is Rs 50, a worker will be paid according to the number of pairs of shoes or pants manufactured. These will be *piece wages*.

2. MONEY WAGES AND REAL WAGES

Money wages or nominal wages relate to the amount of money income received by workers for their services in production. Real wages include the various facilities, benefits and comforts which workers receive in terms of goods and services for their work. These are in addition to the money wages of workers.

Real wages depend upon the following factors.

1. Price Level. The purchasing power of money depends upon the price level. When the price level rises, the purchasing power of money gets reduced, thus adversely affecting the real wages of workers. Every increase in the price level reduces the purchasing power of money. This leads to a fall in the real wages of workers.

2. Money wages. The size of the pay packet received by the worker is an important determinant of his real wages. The greater the money wages, the greater will be the real wages, other things remaining the same.

3. Regularity of Work. A permanent job, even though it carries a smaller money income, is considered to be better than a temporary job which may yield high reward in terms of money.

4. Nature of Work. The nature of work also plays an important role in determining the level of real wages. Some jobs are pleasant, while others are not. Similarly, some occupations are enjoyable while others are disagreeable. All these considerations have to be given weightage in determining real wages.

5. Future Prospects. An occupation carrying the promise of better prospects of promotion in the future is considered to be better than the one which does not do so, even though the money wages offered by the latter may be high.

6. Extra Benefits. In some occupations, employees receive in addition to their pay, some extra benefits. For example, the manager of a firm gets in addition to his pay, a well furnished bungalow, free medical help etc. Such benefits increase the real wage of a worker.

7. Trade Expenses. This refers to the expenses one has to incur in the course of one's occupation. These expenses are high in some occupations while in others they may be moderate. These expenses should be deducted from the money income in order to arrive at the real wage.

8. Social Prestige. The real wages of employees engaged in prestigeous occupations are high as compared to the real wages of employees working in ordinary occupations.

9. Form of Payment. Real wages are influenced by the form of payment. Generally, workers are paid money wages. But in certain occupations, in addition to money wages, workers receive subsidised ration or free lunch, and living quarters. All these facilities increase the real wages of workers.

10. Conditions of Work. Conditions of work also affect real wages. In some cases, it is found that conditions

Marginal productivity is an addition to total productivity resulting from the employment of an additional unit of labour. In a monetized economic system, an entrepreneur is interested not in the marginal physical productivity of labour but in the addition to the size of his total revenue. An entrepreneur while making a decision regarding the employment of an additional hand, takes into account marginal revenue productivity which, in turn, equals marginal physical product plus the price of the product. (Marginal revenue productivity = Marginal physical productivity×Price of the product). The theory asserts that no worker under conditions of perfect competition can expect to receive wages greater than the value of marginal product, that is, marginal revenue productivity. For example, if an entrepreneur hires workers at Rs 100 per day to produce goods that are sold for more than Rs 100, he would make a profit by hiring them. The entrepreneur in question would go on hiring additional units of labour till the point of equality between the marginal revenue product and the prevailing wage level is attained. If, on the other hand, the entrepreneur hires workers at Rs 100 per day to produce goods which are sold for less than Rs 100, he would incur losses. It follows that the entrepreneur will not pay wages to labour more than the value of his marginal product. If the entrepreneur is employing less labour, he can increase his profits by employing more labour. On the other hand, if he is employing more labour, he can increase his profits by reducing the employment of labour depending upon the position of the wage rate and the marginal revenue productivity. Thus, the entrepreneur's profits would be maximum or losses would be minimum at a point where the prevailing wage rate equals the marginal revenue productivity.[1]

6. The Modern Theory of Wages : Perfect Labour Market

The wage rate, like any price, is determined by the demand for and supply of labour. Assuming perfect competition and absence of trade unions, what forces determine the demand for and supply of labour.

Its Assumptions

This theory is based on the following assumptions :

1. There is freedom of occupation. Any employer can employ any worker and any worker can work with any employer.
2. There are many workers and employers in the labour market and no single worker or employer can influence the wage rate.
3. There is perfect mobility of workers in different employments.
4. There is full employment of labour. Vacant jobs are filled at the same time.
5. Workers and employers have perfect knowledge of labour market. Workers know where vacant jobs exist and what are the wage rates. Employers know about workers as to where they are available and at what wage rate.

Demand for Labour

Labour is demanded for its service by the employers in helping to produce goods. Thus the demand for labour is derived from the demand for the goods it helps to produce, if a rise or fall is expected in the demand for a product, it will lead to a rise or fall in the demand for the labour which produces the product.

In fact, it is not the demand for labour that matters but the elasticity of demand for labour which depends on the elasticity of demand for its product. The more elastic is the demand for the product, the more elastic is the demand for the labour which makes the product. The elasticity of demand for labour is the percentage increase in the number of workers employed as the wage rate falls by 1%. But this does not mean that the percentage increase in employment will be in the same proportion as the fall in the wage rate; the increase in employment may be greater. In case, however, a small amount of labour is engaged in the production of a product, the demand for that type of labour is inelastic. In factories using automatic machines, highly skilled labour of a particular type is employed in very limited quantity and it is not possible to find this type of labour easily. The demand for such a type of labour is inelastic. Lastly, the elasticity of demand for labour depends on the degree of substitution between labour and other factor-services. The cheaper and better the substitutes for labour, the more elastic is the demand the labour. If machines are cheap and easily available, they can be substituted for labour. A rise in the wage rate will encourage the use of more machines for labour. Conversely, a fall in the wage rate will lead to the employment of more labour in place of at least worn out machines. In case the cost of machines is very high or a particular type of labour is indispensable (that is, has no substitute), a rise in its wages will not decrease its demand. The demand for this type of labour is elastic.[2]

Specifically, labour is demanded because of its productivity. What a unit of labour adds to the total

1. For a detailed study refer to the Marginal Productivity Theory of Distribution in the chapter on Theories of Distribution given earlier.
2. Ordinary students may leave this para without loss in continuity.

revenue of the firm is its marginal revenue productivity. The wage rate at any time is equal to the marginal revenue productivity. So long as the marginal revenue product of labour is more than the wage rate, it is profitable to employ more labour for it adds more to revenue than to cost. But the employment of more labour tends to diminish the marginal revenue product of labour, after a point, based as it is on the law of variable proportions. That is why the demand curve for labour slopes downward from left to right and is shown as the marginal revenue productivity curve *(MRP)*. It is the demand curve for labour at each level of employment. It also shows the amount of labour the firm would employ at each possible wage rate.

Supply of Labour

The supply of labour means the number of workers that would offer themselves for employment at each possible wage rate. The relationship between wages and the quantity of labour is a direct one. Usually a greater quantity of labour is offered at rising wage levels. That is why, the supply curve of labour slopes upwards from left to right. An industry will be faced with such a supply curve. It can only attract more labour by offering high wages.

The supply of labour, however, depends on a number of factors like the rate of population growth, the age and sex of distribution of population, the working hours, the normal period of education and training, labour laws regarding the employment of child and woman labour, the attitude of society towards the employment of woman labour, the attitude of labour in general towards work and leisure, the mobility of labour.

Taking the last factor first, it is the mobility of labour which determines the elasticity of the supply of labour. If the labour is mobile, its supply will be elastic. A small rise in the wage rate of this type of labour will attract a large number of workers from other occupations, and a small fall in the wage rate will lead to an outflow of workers to the other occupations. If labour is less mobile between occupations for it requires exceptional skill and ability, its supply will be inelastic. For neither a rise nor a fall in wages can attract in or drive workers out of occupation. In any case, the shorter the period, the less elastic is the supply curve of labour, and the longer the period, the more elastic it is.[3]

Backward Sloping Supply Curve of Labour[4]

Another important factor in the supply of labour is the work-leisure ratio. At low level of wages, workers will work for longer hours. But with the rise in the wage rate, the workers take home bigger pay-packets and a time comes in the life of each worker, when he feels that at a particular wage rate his needs are easily met. If the wage rate rises above this level, he would prefer to work for lesser hours and enjoy leisure instead. In this case, the supply curve of labour is "backward-sloping". Two trends are noticeable in this attitude of workers as the wage rate rises, each labour-hour becomes more paying and the worker substitutes work for leisure. Rise in the wage rate induces workers to work more and take less leisure. Secondly, there is the income effect. As the wage rate rises substantially, workers feel more well-off than before and they are inclined to enjoy more leisure. The former effect reduces the desire for leisure and the latter increases it. In the initial stages, the substitution effect becomes more powerful as the wage rate rises, but when the wage rate rises beyond a point, the income effect becomes more powerful. This is because the desire for extra recreation becomes stronger as income increases and this makes the income effect more powerful and the desire for additional income becomes less intense and this reduces the strength of the substitution effect. All this takes place gradually and the supply curve also slopes backward gently. Such a curve may exist both in the case of the individual worker and for the economy. But there is a difference in the two cases. The supply curve of labour for the individual worker slopes backward only when the number of workers in an occupation cannot change. It happens in the short-run. But in the case of the economy, the supply curve of labour tends to bend backward more in the long-run than in the short-run. No doubt, population increases in the long-run but the majority of the workers in the developed countries are influenced by the income effect as the national average wage rate continues to rise.[5] In the analysis that follows, we take the usual supply curve.

Its Determination

The wage rate in an industry will be determined at a point where the demand for labour equals the supply of labour. In Figure 41.2 (A), OE workers are employed at OW wage rate. There cannot be any deviation from this equilibrium position. A wage rate above equilibrium level to say, OW_1 will induce more workers to offer themselves for employment and the firms would be induced to cut down employment. Thus wages will be brought down to OW level. Contrariwise, a fall in the wage level to OW_2 would lead to the exodus of workers from the industry

3. As (2) above.
4. As (2) above.

and the firms in a bid to stop this, would offer higher wages and the equilibrium level of wages would be restored. In case, however, the demand for labour increases or decreases on the part of the industry to D_1 to D_2, the wage rate would rise or fall to OW_1 to OW_2 accordingly, but only in the short-run. In the long-run, equilibrium will ultimately be restored at the wage rate of OW.

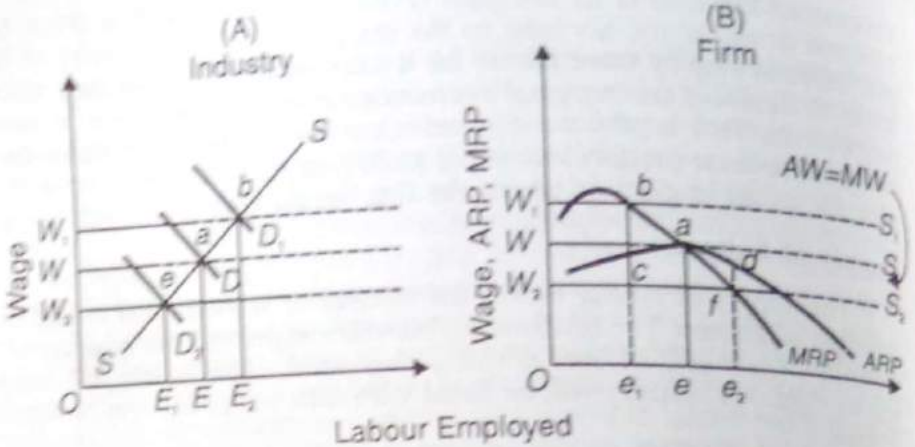


Fig. 41.2

For all firms under perfect competition, the wage rate is given at any time, as determined by the industry demand and supply curves of labour. The supply curve of labour for the firm *(WS)* is, thus, perfectly elastic at the current wage rate, as shown in Panel *(B)*. The equilibrium point for the firm is where the marginal revenue productivity curve, *MRP* cuts the horizontal supply curve of labour, *WS*. In other words, it is a point where the cost of employing labour (the wage rate) equals the marginal revenue product of the labour to the employer. For full equilibrium, it is essential that marginal revenue product of labour should equal its marginal cost (marginal wage) and the average revenue product be equal to the average cost of labour (average wage).

$$\therefore \quad AW = MW$$

and

$$MRP = MW$$

$$\therefore \quad ARP = AW$$

$$MRP = MW = AW = ARP$$

In Panel (*B*). Point *a* is of full equilibrium, where *Oe* number of workers are employed. A firm will be earning profits *fd* per unit of labour by employing Oe_2 workers when the wage rate W_2S_2 is below the *ARP* curve. It will be sustaining losses *cb* per unit of labour by employing Oe_1 workers, if the wage rate W_1S_1 is above the *ARP* curve. It will be earning normal profits when the wage rate is *WS*. A firm can afford to remain under conditions of profit or loss only in the short-run. In the long-run, in the case of loss when the wage rate is W_1S_1, some firms will leave the industry, the demand for labour will fall and the wage rate will come down to *WS* where it equals the *ARP* curve at point *a*. In the opposite case when the wage rate is W_2S_2, attracted by the profits some new firms will enter the industry and the old ones will have a tendency to expand. The demand for labour would rise and thus push up the wage rate to *WS* where it equals the *ARP* curve at point *a*. Thus the wage rate under perfect competition is always equal to the marginal and the average revenue product of labour.

7. Wage Determination Under Imperfect Labour Market

Monopsony in labour market is a situation in which there is only one firm to buy the services of a particular type of labour. Hence it is regarded as a "buyer's monopoly". The term monopsony is derived from the Greek words : *mono* which means "one", and *opsinia* "which means "a buying." Monopsony in labour market is found in many "mining towns.

Monopsonistic situations occur when the labour market is imperfect. There is immobility of labour—both occupational and geographical. This is because labour in a particular area is of a special type. It is a trained for a particular type of work and its services cannot be utilised by any other firm except the one for which it is specialised. There may be certain other forces preventing labour to migrate to other areas. They may be ignorance, inertia, social and family considerations, facilities provided by the employer in the form of housing for workers, free education for their children and job priorities to the latter. In the monopsony market, the supply curve of labour facing the firm slopes upward to the right.

The supply curve of labour shows the wage rate. It is also the average cost of labour at which the workers are employed. The rising supply curve of labour means that the monopsonist must offer a higher wage to attract more workers. When the average cost curve of labour is rising, the marginal cost curve must be above it and rising faster.[6]

In Figure 43.3, S_L $(=AC_L)$ is the supply curve of labour and MC_L is its corresponding marginal cost curve

5. For Figure and further explanation, refer to the chapter on Indifference Curve under "Uses of Indifference Curves."
6. See "Table 41.3 of Chapter.41 for its understanding where *AFC* is "the *AC* of labour and *MFC* is the *MC* of labour. "Students may redraw the Table here.

29
RENT

Meaning of Rent

The term "Rent" has been defined in a variety of ways by different economists. David Ricardo defined *rent* as "that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil."[1] Dr. Marshall used the term *rent* to refer to the income derived from the free gifts of nature.[2] Thus, both Ricardo and Marshall associated rent with the income derived from land or other free gifts of nature. From these definitions, it follows that there is a difference between true *economic rent* and *contractual payment* generally described as "land rent". The contractual payment (or, *contractual rent*) includes interest on capital investment besides the payment for the use of land. The rent which is paid for a house or a farm also includes, besides economic rent, the interest on capital invested by the landlord in the house or in the farm. Thus, contractual rent is not true economic rent. *True economic rent is only a payment for the use of land. It excludes interest on landlord's capital investment.*

Though the earlier economists like Ricardo and Marshall have almost exclusively associated the term *rent* with land or free gifts of nature, the present-day economists have extended the concept of rent to cover *other* factors of production as well. Rent may arise not only from land, but from all those factors of production which have in them what is called the *land aspect*. This refers to an important characteristic of land as a factor of production, namely, that land has an *imperfectly elastic supply*. Other factors of production may also possess this characteristic of imperfectly elastic supply, at least, in the short period. So the concept of rent applies equally well to any factor of production which does not have a perfectly elastic supply. "In economic theory....the term "rent" is applied to payments made for factors of production which are in imperfectly elastic supply."[3] The meaning of the term "rent" has, thus, been *broadened* by the modern economists. It is now defined in terms of the difference between the *actual* earnings and the *transfer* earnings of a factor of production (not necessarily, land, though we take it as the main example). Rent in the modern sense may be defined as that part of payment for any factor of production which is above the minimum necessary to keep it in its present use. According to *Mrs. Joan Robinson, "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 its work."* We shall explain this modern concept of rent in details when we take up the modern theory of rent in an ensuing section.

The sum up, we have three concepts of rent – (a) layman's concept of rent, better call it contractual rent, (b) classical or Ricardian concept in the sense of rent as payment for the use of *land*, and (c) modern concept in the sense of rent as payment to *any* factor of production over and above its transfer earnings.

THE RICARDIAN THEORY OF RENT

David Ricardo was a brilliant 19th century economist of England who profounded a systematic theory of rent which is in many ways the basis of modern concept of rent.

Ricardo defined rent in the following words : *"Rent is that part of the produce of the earth which is paid to the landlord for the use of*

1 Ricardo, David, *Principles of Political Economy*, p. 47.
2 Marshall, Alfred, *Principles of Economics*, pp. 62-63.
3 Stonier and Hague, *A Text-Book of Economic Theory*, p. 273.

original and indestructible powers of the soil." Economic rent, according to Ricardo, is the true surplus left after the expenses of the cultivation as represented by payments to labour, capital and enterprise have been met.

Differential Rent

In his theory, Ricardo dealt with *differential* rent. According to him, rent was a *differential* surplus which accrued to superior lands over inferior lands or which was enjoyed by the more fertile lands over the less fertile lands. Differences in the fertility of land was the main factor giving rise to rent. If all lands had been homogeneous, rent would not have arisen according to Ricardo.

The *differential* nature of rent can be explained both in *extensive* as well as *intensive* cultivation.

Rent and Extensive Cultivation

To illustrate the emergence of rent in extensive cultivation, let us take the example of an uninhabited island newly discovered in the vicinity of a large populous country. Let us also assume that there are four types of land in the island – classified on the basis of fertility – 'A', 'B', 'C' and 'D'. 'A' is the most fertile and 'D' is the least fertile land. People from the neighbouring country come in batches to settle on the land. When the first batch of settlers comes, it will naturally occupy the 'A' quality land for the purpose of agricultural production. Let us assume that with one dose of labour and capital, 'A' quality land yields 100 metric tons of wheat per hectare. When the second batch of settlers comes, it will be faced with two alternatives – either to occupy the 'B' quality land, which is free, or to take 'A' quality land on rent from the first batch. If the second batch decides to take 'A' quality land on rent from the first batch how much rent it will have to pay to the first batch ? It is obvious that the rent payable on the 'A' quality land would be equal to the differences in the fertilities of the 'A' and 'B' quality lands. Let us assume that one dose of labour and capital applied to 'B' quality land yields 80 metric tons of wheat per hectare. In that case, the rent of 'A' quality land would be equal to 20 (100 – 80) metric tons of wheat per hectare, because this represents the difference between the fertilities of the two lands.

Even, if the second batch decides not to take the 'A' quality land on rent (because it occupies the 'B' quality land free of payment), rent would still arise on 'A' quality land. How ? Both 'A' and 'B' quality lands produce wheat which will be sold in the same market at a *single* uniform price (assuming the existence of perfect competition in the wheat market). Now this price will be determined by the cost of production of 'B' quality land, not the cost of production of 'A' quality land, if the produce of the 'B' quality land is required by the market. The cost of production at the 'B' quality land is higher than at the 'A' quality land. Since the market price of wheat will be equal to the cost of production at 'B' quality land, the 'A' quality land will enjoy a surplus over 'B' quality land, because the cost of production at the former land is lower than at the latter. This surplus will be the rent which will accrue to 'A' quality land on account of its superior fertility in comparison with the 'B' quality land.

When the third batch of settlers comes, it will have three alternatives. It can occupy the 'C' quality land (which is free), or it can take 'B' or 'A' quality land on rent. If the 'C' quality land yields 60 metric tons of wheat with the application of a dose of labour and capital, then the rent of 'A' quality land would be 40 metric tons per hectare and that of the 'B' quality land 20 metric tons per hectare. It is clear that 'B' quality land did not yield rent so long as the 'C' quality land was not brought under the plough. As soon as the 'C' quality land is brought under cultivation, the 'B' quality land starts yielding rent.

Let us now suppose that the fourth batch of settlers comes to the island. It will have four alternatives before it. It can occupy the 'D' quality land (which is free), or it can take 'C' or 'B' or 'A' quality land on rent. The rent would be determined by the difference in the fertilities of 'D' quality land on the one side and those of 'C', and 'B' and 'A' quality lands on the other. In this way, the rents of superior lands are measured upwards from the *marginal* or the *no-rent* land. In this example, 'D' quality land is the marginal or the no-rent land because it earns no rent. The price of its products is equal to its cost of production. Had there been some 'E' quality land, it would have become the marginal or no-rent land. 'D' quality land in that case would have been *super-marginal* land. It is, thus, clear from this example that the rents of the super-marginal lands are measured from the marginal or no-rent land upwards. The rent on any super-marginal land is determined by the difference between the fertility of this land and that of the marginal land. The rent is, thus, a *differential surplus* enjoyed by the superior land over the inferior land. This has been illustrated in the following diagram.

In this Diagram 29.1, 'A', 'B', 'C' and 'D' are the four lands represented along *OX* axis. The

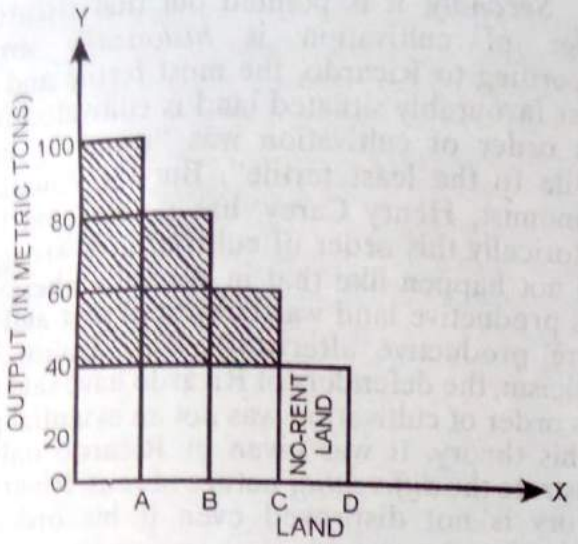


Diagram 29.1

output yielded by each of these lands with the application of one dose of labour and capital is represented by the respective rectangles along *X*-axis. For example, the rectangle on 'A' quality land represents the output (namely, 100 metric tons) yielded by this land. Similarly, rectangles on 'B', 'C' and 'D' quality lands represent their outputs (*i.e.*, 80, 60 and 40 metric tons respectively). Since the 'D' quality land is *no-rent* land, the rectangle over it does not indicate the emergence of any rent. The rents on 'A', 'B' and 'C' lands are shown by the shaded portions of their respective rectangles.

As explained above, the marginal or the no-rent land has a decisive effect on the determination of economic rent. *The rents of the super-marginal lands are measured on the basis of the output of this marginal land.*

It should be remembered that the market price of agricultural produce is equal to the cost of production of the marginal land. The market price of agricultural produce cannot be less than the cost of production of the marginal land ; otherwise production will stop on the marginal land. The supply of agricultural produce will fall and assuming that the demand remains constant, the market price will be bound to rise. In the same way, the market price cannot exceed the cost of production of the marginal land. If it does happen, the sub-marginal land will be brought under the plough and the hitherto marginal land will become super-marginal land. The supply of agricultural produce will increase, and assuming that the demand remains constant, the price will surely fall. Therefore, the market price will always be equal to the cost of production of the marginal land.

Rent and Intensive Cultivation

According to the Ricardian theory, rent also emerges in intensive cultivation. When intensive cultivation is practised on any land, the application of successive doses of labour and capital is accompanied by a progressively diminishing output. Ultimately, a stage is reached when the volume of the output yielded by the marginal dose of labour and capital just equals its cost (the cost of the marginal dose). Such a dose is known as the *marginal dose* or the *no-rent dose*. The doses which precede the marginal dose are known as the *super-marginal doses*. The output yielded by every super-marginal dose exceeds the output of marginal dose. In this way, the surplus enjoyed by every super-marginal dose over the marginal is of the nature of rent.

To explain the emergence of rent in extensive cultivation, the Diagram 29.1 can be used to illustrate the phenomenon of rent in intensive cultivation. Let us suppose that the first dose of labour and capital yields 100 metric tons of wheat. If the second dose of labour and capital is used, it yields 80 metric tons of wheat, the third dose yields 60 and the fourth dose produces 40 metric tons of wheat. It is clear that the fourth dose is *no-rent dose* and the first three doses yield rents of 60, 40 and 20 metric tons of wheat respectively. In the aforesaid diagram 'A', 'B', 'C', and 'D' are the four doses. The rectangles constructed on each of these show the outputs resulting from these doses. The shaded portions of the rectangles on 'A', 'B', 'C' indicate their respective rents. 'D' dose is no-rent dose in this diagram.

Situation and Rent

Some writers have criticized Ricardo on the ground that he attributed rent to the *differential fertility* of land and that he ignored *differential situation* as the cause of rent. This, however, is not the truth. It is true that he explained rent in terms of differential fertility, but it does not mean that he ignored differential situation as the cause of the emergence of rent. As Ricardo wrote, "The most fertile and the most favourably situated land will be cultivated first. If all lands are equally fertile, rent will not arise unless a particular land enjoys the advantage of situation." Thus, according to Ricardo, rent is due both to *differential fertility* as well as *differential situation*. The fact of the matter is that situation directly influences the emergence of rent.

ASSUMPTIONS OF THE RICARDIAN THEORY OF RENT

This theory is based on the following assumptions which must be kept in mind while attempting any evaluation of it.

(1) Like all other classical theories, the Ricardian theory is based on the assumption of long period. It explains the determination of rent in the long period. (2) The theory assumes that there exists in every country what is called *no-rent* land or the marginal land. The rents of the superior lands are measured upwards from the no-rent land. (3) The theory assumes that land is *limited* both quantitatively as well as qualitatively. (4) The theory assumes that land has certain "original and indestructible powers" which are not to be found in other factors. Rent is the payment for the use of these powers of the land. (5) The theory assumes that rent arises only on land which is a free gift of nature. Man-made factors, like capital, etc., do not yield any rent. (6) The theory assumes that the land in a country is cultivated in a descending order. The most fertile and the most favourably situated land is cultivated first. (7) The theory assumes that rent arises due either to differential fertility or to differential situation. (8) The theory is based on the assumption that the law of diminishing returns operates in agriculture. (9) The theory assumes that population will keep increasing perennially.

CRITICISM OF THE RICARDIAN THEORY OF RENT

In the light of the above assumptions, we shall now examine the various points of criticism which have been brought against the Ricardian Theory.

Firstly, Ricardo's assertion that rent is due to the "original and indestructible powers of the soil" has been severely criticized. The powers of the soil, it is pointed out, are neither original nor indestructible. For example, the fertility of the soil can be increased through scientific manuring. (In other words, the powers of the soil are not original). Likewise, the fertility of the soil can be destroyed through indiscriminate and reckless cropping. (In other words, the powers of the soil are not indestructible). It would be more profitable to interpret the words "original and indestructible powers of the soil" to mean the *imperfect* elasticity of the supply of land to changes in its price as has been done by Stonier and Hague.[1] This is a better and a more meaningful interpretation of the words "original and indestructible powers of the soil".

Secondly, it is pointed out that Ricardo's order of cultivation is *historically wrong.* According to Ricardo, the most fertile and the most favourably situated land is cultivated first. His order of cultivation was "from the most fertile to the least fertile". But the American economist, Henry Carey, has pointed out that historically this order of cultivation is wrong. It did not happen like that in America where the less productive land was cultivated first and the more productive afterwards. But against this criticism, the defenders of Ricardo have said that this order of cultivation was not an essential part of his theory. It was given by Ricardo only to illustrate the *differential* nature of rent. Ricardo's theory is not disproved even if his order of cultivation is reversed.

Thirdly, it is argued by the critics that the productivity (or, the original fertility) of land cannot be separated from the capital which has been invested in it. It is not possible, the critics say, to separate the yield which is due to the original fertility of land and the yield which is due to the investment of capital. The two types of yields are so intermixed that there is genuine difficulty in separating them from each other.

Fourthly, it is pointed out that Ricardo's theory *lacks* realism. It is completely imaginary and unrealistic. The theory is based on the assumption that there exists perfect competition between farmers and the landlords. But this assumption of perfect competition is *unreal* because in actual life perfect competition is very rare. Consequently, the rent charged by the landlords from the farmers is *more* than the economic rent. The theory is also unrealistic on the ground that it deals only with the *long period,* whereas we are more interested in the *short-period* determination of rent.

Fifthly, it is pointed out that Ricardo's no-rent land is not necessarily found in every country. For example, in a thickly-populated country (where the pressure of population of land is heavy) even the inferiormost land yields rent. There is no such thing as a no-rent land in such a country. The supporters of Ricardo, however, do not agree with this criticism. According to them, the market for agricultural produce has become international today. If a country does not have a no-rent land of its own,

1 Stonier & Hague, *A Text-Book of Economic Theory*, p. 276.

on account of its far-reaching implications.

SCARCITY RENT

The rent explained by the Ricardian theory is *differential rent* (*i.e.*, rent arising on account of differential fertility or differential situation). Ricardo did not explain *scarcity rent* or the rent which arose due to the scarcity of land in relation to its demand. The rent arising in older countries (where the pressure of population on land is heavy) is mostly scarcity rent. In such countries, even the marginal land (Ricardo's no-rent land) yields rent, but it is scarcity rent.

The scarcity rent arises on account of the *inflexible* or *rigid* supply of land. The supply of land is slightly different from the supply of other factors of production. A rise in the prices of other factors causes an increase in their supply, at any rate in the long period (if not in the short period) ; a rise in the price of land (or, rent) cannot bring about any increase in the supply of land at all, the supply of land being already fixed. It is the *fixity* of the supply of land which causes scarcity rent to emerge. Since the supply of other factors can be increased in response to the increase in their prices, no such scarcity rent arises in their case. Sometimes, however, even factors other than land may be rigidly fixed in supply. In such cases, scarcity rent may also accrue to these factors. Thus, scarcity rent may arise not only in the case of land, but may also accrue to film-stars and matinee idols. There is only one Amitabh Bachchan in the Indian film industry. A part of income he receives comprises wages, but another part consists of scarcity rent. It represents that part or surplus which is over and above the average income of all the film-stars taken in its totality.

CHAPTER-40

Rent

1. MEANING

In popular language, the word *rent* is used to denote payments for the use of land, a house or a shop . It also denotes the hiring charges for a taxi, or a machine. It is often taken to mean payments received by owners of all kinds of private property that is leased for a fixed sum. But what an owner receives is not pure rent. It is, in fact, *contract rent* or *gross rent*, and includes (*a*) interest for the capital invested in making improvements; (*b*) its depreciation and maintenance charges; (*c*) wages of management; (*d*) some profits as the reward for risk taking involved in hiring, leasing and investing; and (*e*) *economic rent* which is a surplus arrived at by deducting items (*a*) to (*d*) from gross rent. Thus in economics, according to Dr. Marshall, "the income derived from the ownership of land and other free gifts of nature is commonly called rent." It is a surplus above cost of production, due either to the bounty of nature or to the scarcity of land in relation to its demand.

Rent as an economic surplus, as used by modern economists means the earning of a factor of production in excess of the minimum amount necessary to keep it in its present use. It is not a differential surplus, the difference between the superior and the inferior grades of lands, as Ricardo meant by rent. Moreover, it accrues not to land "alone, but to all other factor-services. A piece of land which is earning Rs 200 in its present use can earn at the most Rs 150 in its next best use, the difference of Rs 50 is economic rent. If it cannot be put to any alternative use (is completely specific in its use), its transfer earning is zero and the whole of the present earning of Rs 200 is rent. Similarly, there is a rent element in the wages when a worker is able to earn more in his present occupation than in the alternative one. There is an element of rent in interest when a saver gets the market rate of interest though he is prepared to lend at a lower rate; and an entrepreneur may obtain larger profit than is required for him to stay in business. Thus economic rent is an element that enters into the incomes of all factors and is not peculiar to land alone.

2. THE RICARDIAN THEORY OF RENT

David Ricardo was a brilliant 19th century economist of England who propounded a systematic theory of rent which is, in many ways, the basis of the modern concept of rent.

Ricardo defines "rent as that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil." Two inferences are clear from this definition: land possesses original and permanent properties with reference to its nature, situation, environment and construction, and rent is paid for the use of land alone. These, in turn, reveal that rent accrues to the landlord both from extensive and intensive cultivation of land, as well as due to the situation of his land.

Its Assumptions

Ricardo's theory of rent is based on the following assumptions:

(1) There is perfect competition in the economy.
(2) The supply of land is limited.
(3) The Law of Diminishing Returns applies.
(4) Rent accrues from land alone.
(5) Rent arises in the long-run.
(6) Land and capital are single factors.
(7) Rent is price determined.
(8) Land is cultivated in historical sequence, i.e., first the best land, then the less fertile and in this order.

Emergence of Rent

Taking " an abundance of rich and fertile land" in a new country where only corn is produced, there will be no rent so long as this best (*A* grade) land is available. The increase in population will raise the demand as also the price of corn and make it necessary to cultivate land of inferior quality, *B* grade. Rent will not arise on *A*

grade land. In this way, each increase in population necessitates cultivation of progressively inferior quality lands, grade *C* and so on. The last cultivated land *C* grade does not yield any rent and the other grades of land earn rent over and above the produce of this no-rent or marginal land. To Ricardo, rent is a differential surplus, the difference between the produce of the superior and the marginal land.

To illustrate the emergence of rent under *extensive cultivation* as discussed above, suppose that the same doses of labour and capital produce 25 quintals of corn on grade *A* land, 20 on *B*, and 15 on C. So long as *A* land is cultivated, no rent arises. When land *B* is brought under cultivation, the farmer of *A* earns a corn-rent of 5 (= 25-20) quintals; and when *C* is cultivated, there emerges a rent of 5 (= 20 – 15) quintals on *B* and of 10 (= 25 – 15) quintals on *A* while *C* becomes the no-rent land. This is depicted in Figure 42.1, where the rent of superior lands goes on increasing as inferior lands are brought under cultivation.

In the case of *intensive cultivation*, the successive applications of labour-and-capital to the same piece of land give, after a point, less than proportionate returns, till the produce obtained from the last unit of labour and capital equals its price. Such a unit is the marginal or no-rent unit and the other units, called intra-marginal, yield rent. Using the same example, if the first dose of labour-and-capital yields 25 quintals, the second 20 and the third 15, rent in each case will be 10, 5 and 0 quintals respectively.

The whole analysis is explained in terms of costs and prices in Figure 42.2, where the horizontal axis measures quantities of corn and the vertical axis measures costs and prices. *AC* and *MC* are the average and marginal cost curves respectively.

To start with, let us suppose that only grade *A* land is cultivated. The supply and demand conditions for corn determine *OP* price where *MC* and *AC* curves coincide and equal the marginal revenue *PE* at point *E*. There is no surplus or rent because *OQ* output just covers the costs at the prevailing price *OP*. Suppose with the increase in population and the application of the law of diminishing returns to land, the demand for corn rises, thereby raising the price to OP_1. To meet the increased demand, larger units of labour and capital will be applied to this piece of land for intensive cultivation. This raises costs, and the curve MC_a meets the new price line $P_1 a_1$ at point a_1. Rent being the difference between price and average cost, this land starts earning $a_1 e_1$ rent per unit. By multiplying it with the total output ($OA_1 = a_1 d_1$), we have the total rent equal to the area $a_1 e_1 d_1 P_1$. If price rises to OP_2 with the further increase in population, the land will be cultivated more intensively and the output of corn will rise to OA_2. The new equilibrium point between the price line $P_2 a_2$ and MC_a will be a_2 which will raise the rent to $a_2 e_2 d_2 P_2$.

The emergence of rent under extensive cultivation is shown in Figure 40.1, where MC_a and AC_a curves correspond to *A* grade land, the curves MC_b and AC_b to *B* grade land, and MC_c and AC_c to *C* grade land. In the beginning, *A* grade land is cultivated but it earns no rent at *OP* price where it just covers its costs $P = MC_a = AC_a$, as shown in Panel (A). Increase in population and the consequent rise in demand and price to OP_1 also necessitates the cultivation of *B* grade land. The *B* grade land is now the marginal land which just covers the price OP_1 (=*Bb*) in Panel *(B)*. The *A* grade land becomes the intramarginal land which starts earning rent equal to the area $a_1 e_1 d_1 P_1$. With the rise in the price of corn to OP_2 as a result of further increase in population, the *C* grade land is also brought under the plough to meet the additional demand for corn. Now this land becomes the no-rent or marginal land, the price OP_2 (=*C c*$_1$) equals the costs MC_c and AC_c at point *c* in Panel (C). The *B* grade land starts earning rent equal to the area $b_1 f_1 K_1 P_2$ while more rent accrues to the *A* grade land equal to the area $a_2 e_2 d_2 P_2$ and *C* grade land is the marginal or no rent land.

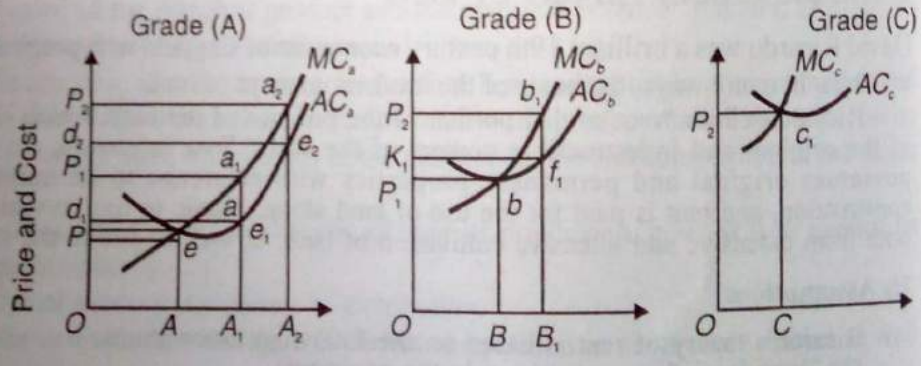


Fig. 40.1

Rent in the Ricardian sense also arises from differences in land situations. Assuming all land to be of the same quality and fertility, and producing the same quantity of corn, rent would arise from the difference in the cost of transporting corn of a land away from the market and that which is near the market. As lands situated farther and farther away from the market are brought under the plough with increase in the demand for corn, the transportation charges become higher and higher. *Lands nearer the market paying lower transport charges earn situation rent over the distant lands.* If land *A* is situated near the market and lands *B* and *C* at a graduated

distance from the market and a truck load of corn costs Rs 100, 150 and 200 respectively, rent in the case of lands *A* and *B* will be Rs 100 and 50. *C* grade land will, however, earn no rent.

Criticisms of the Ricardian Theory

The Ricardian theory of rent has been severely criticised primarily on the basis of its unrealistic assumptions.

(1) *No Original and Indestructible Powers of the Soil.* It is assumed that rent is a payment for the use of the 'original and indestructible powers of the soil.' But it is difficult to decide which powers of the land are original and which are the result of human action. Leaving aside an entirely new country uninhabited ever by man, there is no land in this universe which has been kept in its natural form. Neither are powers of the soil indestructible in this nuclear age. Even the fertility of the land can be improved by adopting better farming methods or reduced by not using appropriate techniques of production. Thus the notion of the original and indestructible powers of the soil is vague.

(2) *Best Land not Cultivated First.* Ricardo's assumption that the best soils are cultivated first is not borne out by historical facts. H.C. Carey, an American economist of the late 19th century, proved through his survey of the American settlements that the order of cultivation is the reverse of what Ricardo regarded the basis of his theory. It was the inferior land that was first cultivated because it was easily manageable and did not require much efforts to clear it of vegetation. It was only when the settlers increased in power and numbers that fertile lands were approached. Carey declared emphatically: "We know of no exception to this rule and we feel assured that none exist." [1]

(3) *Scarcity and not Fertility the Cause of Emergence of Rent.* The Ricardian theory is based on the assumption that lands differ in fertility. None can deny this. But to say that more fertile lands earn high rents and less fertile lands earn low rents is not true. Rent arises not because of the fertility of land, but because land is scarce in relation to its demand. Since land is fixed in supply, changes in the demand for agricultural products cause changes in their prices which bring about changes in the demand for land and thus cause changes in the rent. Therefore, the realistic approach to the problem of the emergence of rent is through the scarcity principle rather than the differential principle.

(4) *There is no No-Rent Land.* For the explanation of his theory, Ricardo assumes no-rent land. In reality, no such land exists, though there may be a marginal land which just covers the cost of producing the product. The use of the concept of no-rent land is not essential for the study of the theory of rent. Even if a piece of land does not earn rent in one use, it can be put to some other use where it can earn a surplus.

(5) *The Law of Diminishing Returns can be Held in Abeyance.* The theory assumes the operation of the law of diminishing returns. But technological and organisational improvements have tended to offset the operation of this law not only in England but also throughout the continent of Europe. Ricardo failed to anticipate that powerful forces will play a prominent role in holding the law of diminishing returns in abeyance and increase the agricultural productivity manifold.

(6) *Perfect Competition not Found.* Ricardo's theory is also based on the unrealistic assumption of full and free competition. Even in the agricultural sphere, perfect competition is not found and the rent charged by the landlords is much above the economic rent.

(7) *Rent also Arises in the Short-Run.* Like all classical doctrines, the theory is applicable only in the long-run. It is unrealistic, since rent also arises in the short-run when in fact the supply of factors is fixed and Marshall prefers to call it quasi-rent.

(8) *Rent not a Payment for the Use of Land Only.* According to Ricardo, rent is a payment made for the use of land only. But it is not land alone that is fixed in supply in relation to its demand. Even other factors are fixed in supply at a period of time and thus earn a surplus which is rent. Marshall was right in saying that 'rent is a leading species of a large genus'.

(9) *Land and Labour are not Single Homogeneous Factor.* Throughout the Ricardian analysis capital-and-labour are viewed as a single, homogeneous factor applied to land in successive doses and rent is a residual after paying the joint share of capital-and-labour. This reasoning appears to be absurd for capital and labour are two separate factors that receive separate rewards, Secondly, it has not been made clear by Ricardo the proportions in which capital-and-labour are used with land.

(10) *Rent is not Price-Determined.* The argument that rent is price-determined has been the subject of much criticism. Since the price of corn equals the cost of production on the marginal land which is the no-rent land, rent does not enter price. In reality, some payment has to be made to the owner of a land as price to induce him to transfer his land to some other use. This payment would enter into the cost of production of the product and hence into the price. The rent which a farmer is paying to the landlord is included in the total expenses of production and obviously enters into price. From the point of view of an industry or use, only the transfer cost

1. H.C. Carey, *The Past, Present and the Future*, pp. 31-39.

of a piece of land enters into price. However, from the point of view of the economy, there being no transfer cost of land, the entire earnings are rent which do not enter into the cost of production and hence into the price.[2]

Conclusion. Despite these weaknesses, the Ricardian theory of rent "brings out clearly certain points which are of great importance from the standpoint of policy." To Ricardo, rent was essentially an "unearned income", which accrues more and more to the owners of land as the demand for products of land continues to rise thus bringing even inferior lands under the plough. It was on this basis that Henry George, an American writer in his book *Progress and "Poverty* (1879) advocated a single tax on land. This ultimately has led to the imposition of tax on land whether agricultural or urban. For it is contended that since rent does not involve any sacrifice on the part of the landowner and is a surplus above the cost of production, the taking away of the part or whole of rent will neither diminish the supply of land nor its productivity. Rather, it helps in reducing "inequalitites of income and wealth.

Even on the theoretical plane, the modern theory of rent is merely the amplification and modification of the Ricardian theory. Instead of attributing rent to land alone, modern economists apply it to all factors, in place of the differential principle, the latter use the concept of transfer earnings and the whole analysis is worked under the assumption of perfect competition. Despite all the revolutionizing changes in science and technology, the two main tenets of Ricardian theory, that of diminishing returns in agriculture and increase in population, are more true today in the underdeveloped countries than they were in the days of Ricardo. To conclude with Prof. *Robertson*, the Ricardian theory of rent "has by no means lost its vitality and "instructiveness."

3. THE MODERN THEORY OF RENT

Modern economists have tried to modify and amplify the Ricardian theory of rent in two ways: *(1)* In the Ricardian analysis, rent is a differential surplus enjoyed by superior lands over inferior lands. But in the modern analysis rent arises because the supply of land is scarce in relation to its demand. It makes no difference to the emergence of rent whether land is homogeneous or heterogeneous, rent would arise according to the principle of scarcity. The determination of rent, therefore, does not require any special theory. It can be explained in the same manner as the rewards of the other factors, that is, by demand and supply forces. *(2)* The Ricardian theory assumes that land is specific to the production of one crop, say corn. It means that land has no alternative use. This may be from the standpoint of the society as a whole. But from the point of view of an individual or industry, land can be put to growing variety of crops or can even be transferred for building purposes. Thus the earnings of land in excess of its transfer price constitute rent in modern economic thought. Rent is not peculiar to land alone but arises in the case of all factors which earn over and above their transfer earnings. Whereas Ricardo approached the problem of rent as a rigid one-sided problem, modern economists treat it as a comprehensive all- pervasive problem, Let us analyse these aspects of the modern theory of rent in detail.

(1) Demand and Supply Analysis

Modern analysis treats the problem of determination of rent in the familiar framework of demand and supply. It assumes perfect competition, homogeneous product and all land of uniform quality. The demand for land refers to the demand by an individual farmer, an industry, or by the economy as a whole, and depends upon the marginal revenue productivity. A firm or farmer will pay rent equal to the marginal revenue productivity of land which falls as more land is used due to the law of diminishing returns. The demand curve, therefore, slopes downward in the usual manner which means more land will be used only at lower rents, other things being equal. The demand curve of the industry for land is the sum of the demand curves of each of the firms. The demand curve for the society comprises the demand curves of all the industries using land.

On the *supply side* also we have to take into consideration the supply of land from the standpoint of a firm, an industry and economy as a whole. To an individual farmer the supply of land is *perfectly elastic*. The supply curve is horizontal to the *X*-axis, for rent is fixed by the industry. By paying the current rent, he can cultivate as much additional land as he wants. But the supply of land for the industry growing the same agricultural crop is less than perfectly elastic, and the shape of the supply curve is the usual one. It means that by offering higher rent, land can be withdrawn from other uses to this use and thus the supply of land can be increased. For the economy as a whole, the supply of land is perfectly inelastic. Whatever be the rent–low, high or zero–its supply remains unchanged.

Then the demand curve for land along with the relevant supply curve determines rent for a firm, an industry and the economy. This is explained with the help of the following Figure 40.2 (A), (B) and (C).

Figure 40.1 (A) shows that with the increase in the demand of a *firm* from D to D_1 *rent remains the same*

2. To understand this point, readers should first study the concept of 'Transfer Earnings' below.

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 specialized 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 which will disappear in the long run due to the increase in the supply of capital equipment in response to the increased demand. In the short run, specialized 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 earnings 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 precisely, 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, buildings 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 earnings 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 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. Professors Stonier and Hague rightly remark, "The supply of machines is fixed in the short run whether they are paid much money or little so they earn a kind of rent. In the long run this rent disappears for it is not a true rent, but only an ephemeral reward—a 'quasi-rent'."[20]

But the case of land is quite different. The supply of land being a free gift of nature 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."[21]

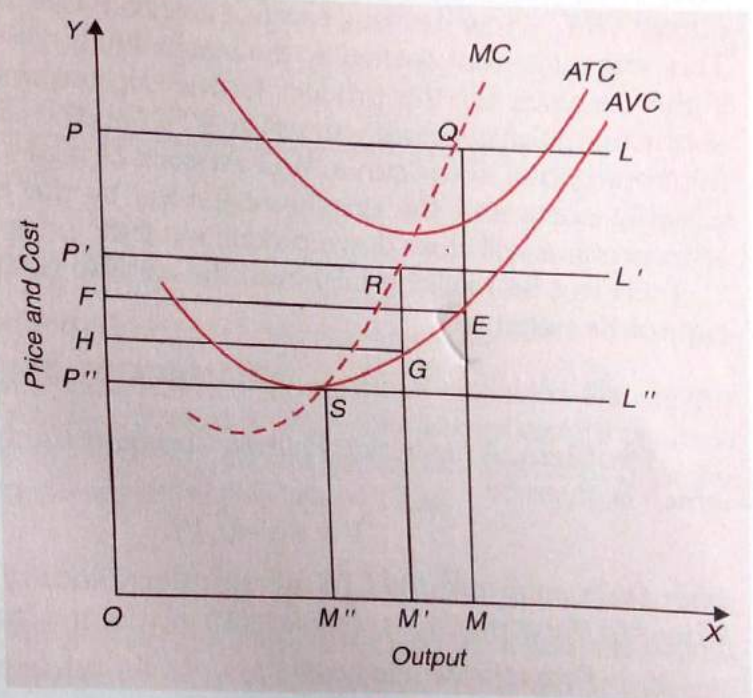


Fig. 55.8. Quasi-Rent

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 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 earned in the short run over and above the total variable costs. Thus,

Quasi-Rent= Total Revenue Earned – Total Variable Costs

Since in the long run, all costs are variable and, in long-run competitive equilibrium, total receipts are 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. 55.8 whereas, as usual, output is measured on the X-axis and price and cost of output are measured on the Y-axis. *ATC* and *AVC* represent the average total cost and average variable cost curves respectively in the short run. It should be noted that

20. A. W. Stonier and B.C. Hague : *A Textbook of Economic Theory*, fourth edition, p. 329.
21. Op. cit.,p. 292.

the average variable costs, *AVC*, includes the cost incurred per unit of output on the variable factors such as labour, raw material 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 the variable costs.)

Now suppose that the demand for the product is such that the price *OP* is determined. With price of the product *OP*, 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 *OMEF*. The area *FEQP* represents the surplus of total revenue earned over total variable costs (*FEQP* = *OMQP* – *OMEF*). Thus *FEQP* 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 entrepreneur is at point *R* with output *OM'*. Now the total revenue earned is *OM'RP'* and the total variable cost is *OM'GH*. Thus the quasi-rent earned by the machinery is now *HGRP'* (*HGRP'* = *OM'RP* – *OM'GH*). If the demand for the product further declines and the price falls to *OP''*, the price line confronting the entrepreneur will be *P''L''* and he will be in equilibrium position at point *S*–the minimum point of the curve *AVC*. At point *S*, the total revenue earned is just equal to the total variable costs and the quasi-rent earned by the machinery has thus fallen to zero. The entrepreneur will close down production if the price falls below *OP''*, for at a price below *OP''*, it will not be realising fully even the variable costs. It is therefore clear that the quasi-rent cannot be negative.

NUMERICAL PROBLEM

Problem. *A big Indian Pharma Company Ranbaxy has a demand for specialised labour which is given by*

$$W = 80 - 0.1\, L_d$$

where w is wage rate and L_d is quantity demanded of labour. The supply L_s of the specialised labour to the company is completely inelastic at a level of 400

(i) *Draw the demand curve for labour and determine the equilibrium wage and the element of economic rent in that wage.*

(ii) *If the supply function for specialised labour for the company takes a normal upward-sloping form and is given by $W = 20 + 0.5\, L_s$, calculate the new equilibrium wage and the element of economic rent in it. Illustrate graphically.*

Solution. (i) To draw the demand curve of labour representing the given labour demand function ($W = 80 - 0.1\, L_d$) we need to know where the labour demand curve cuts the wage axis (*i.e.* *Y*-axis). It will cut the wage axis when labour used is zero. This can therefore be obtained by substituting $L_d = 0$ in the given demand function for labour. Thus $W = 80 - 0.1\,(0) = 80$. We therefore mark 80 on the *Y*-axis on which wage rate is measured.

Now, the given labour demand curve will cut the *X*-axis on which the quantity of labour demanded is measured when wage rate (*W*) is zero. Therefore, by substituting zero for *W* in the given demand function we have

$$0 = 80 - 0.1L$$
$$0.1L = 80$$

5. THE CLASSICAL THEORY OF INTEREST

According to the classical theory, the rate of interest is determined by the supply and demand of capital. The supply of capital is governed by the time preference and the demand for capital by the expected productivity of capital. Both time preference and productivity of capital depend upon waiting or saving. The theory is, therefore, also known as the supply and demand theory of waiting or saving.

Demand Side

The demand for capital consists of the demand for productive and consumptive purpose. Ignoring the latter, capital is demanded by the investors because it is productive. But the productivity of capital is subject to the law of variable proportions. Additional units of capital are not as productive as the earlier units. A stage comes when the employment of an additional unit of capital in the business is just worthwhile and no more. Suppose an investor invests Rs. 1,00,000 in a factory and expects a yield of 20%. Another installment of an equal amount would not be as productive as the first one, and might bring him 15%. While a third installment might yield 10%. If he has borrowed the money at 10%, he will not venture to invest more. For the rate of interest is just equal to the marginal productivity of capital to him. It shows that at a higher rate of interest, the demand for capital is low and it is high at a lower rate of interest. Thus the demand for capital is inversely related to the rate of interest and the demand schedule for capital slopes downward from left to right. There are, however, certain other factors which govern the demand for capital, such as the growth of population, technical progress, process of rationalization, the standard of living of the community, etc.

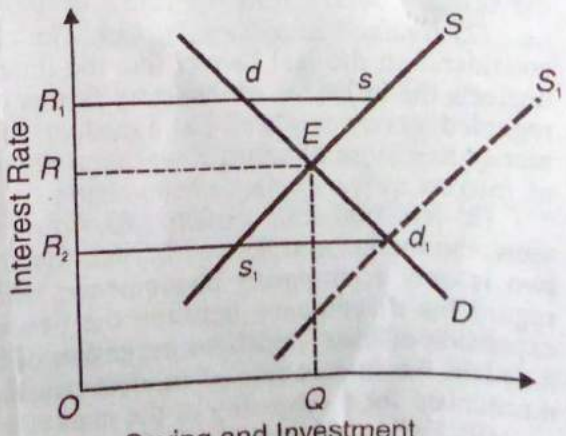
Supply Side

The supply of capital depends upon savings, rather upon the will to save and the power to save of the community. Some people save irrespective of the rate of interest. They would continue to save even if the rate of interest were zero. There are others who save because the current rate of interest is just enough to induce them to save. They would reduce their savings if the rate of interest fell below this level. Still there are the potential savers who would be induced to save if the rate of interest were raised. To the last two catagories of savers, saving involves a sacrifice, abstinence or waiting when they forego present consumption in order to earn interest. The higher the rate of interest, the larger will be the community savings and more will be the supply of funds. The supply curve of capital thus moves upwards to the right.

Determination

Assuming the level of income to be given, the rate of interest is determined by the interaction of the demand curve, D and the supply curve of saving, S.

This is shown in Figure 42.1 where the D and S curves intersect at E which is the equilibrium point when OQ quantity of capital is demanded and supplied at OR rate of interest. If at any time, the rate of interest rises above OR to OR_1 the demand for investment funds will fall and the supply of savings will increase. Since the supply of savings is more than the demand ($R_1s > R_1d$), the rate of interest will come down to the equilibrium level OR. The opposite will be the case if the rate of interest falls to OR_2. If the demand for investment funds is greater than their supply ($R_2d_1 > R_1s_1$), the rate of interest will rise to OR. The ultimate situation is one of equality between saving and investment brought about by the equilibrium or the *natural* rate of interest. If at any time people become thrifty and save more than OQ, the rate of interest would fall below OR because the



Saving and Investment

Fig. 42.1

demand for capital remains the same. This is shown by the rightward shift of the saving curve to S_1 where it intersects the D curve at d_1 and the rate of interest falls to OR_2. At the lower rate of interest, people will save less but the demand for investible funds will increase which will tend to raise the rate of interest to the equilibrium level OR.

Its Criticism

The 'pure' or the *real* theory of interest of the classicals as enunciated by Marshall and Pigou has been severely criticised by Keynes.

(1) *Income not a Constant but a Variable.* One of the serious defects of the classical theory is that it assumes the level of income to be given, and regards interest as an equilibrating mechanism between the demand for investible funds and the supply of funds through savings. According to Keynes, income is a variable and not a constant and the equality between saving and investment is brought about by changes is income and not by variations in the rate of interest.

(2) *Saving and Investment Schedules are not Independent.* In this theory, the two determinants of interest rate, the demand and supply curves of saving are treated as independent of one another. It means that if there is change in demand, the demand curve can shift up or below the D curve without causing a change in the supply curve. But according to Keynes, the two curves are not independent of one another. If, for instance, an invention shifts the demand curve upward, income will rise and it will lead to higher savings and thus shift the supply curve too. Similarly, a shift in the supply curve will bring a change in the demand curve.

(3) *Neglects the Effects of Investment on Income.* The classical theory neglects the effect of investment on the level of income. A rise in the rate of interest, for instance, will bring a decline in investment by making it less profitable. This will mean decline in output, employment and income. The latter will, in turn, lead to reduced savings, a fact contrary of the classical assertion that saving is a direct function of the rate of interest. On the other hand, a low rate of interest encourages investment activity, augments output, employment, income and saving. But Keynes does not believe that investment depends on the rate of interest. It depends on the marginal efficiency of capital. Even if the rate of interest were to fall to zero, Keynes argues, investment will not take place if the business expectations of profits are at a low level, as is the case in depression.

(4) *Indeterminate Theory.* Since savings depend upon the level of income, it is not possible to know the rate of interest unless the income level is known before- hand. And the income level itself cannot be known without already knowing the rate of interest. A lower rate of interest will increase investment, output, employment, income and savings. So, for each income level, a separate saving curve will have to be drawn. This is all circular reasoning and offers no solution to the problem of interest. That is why Keymes characterised the classical theory of interest as indeterminate.

(5) *Neglects other Sources of Savings.* The propounders of this theory include savings out of current income in the supply schedule of savings which makes it inadequate. Considering the supply of capital to be interest-elastic, people might lend their past savings with the rise in the rate of interest and so increase the supply of capital. Similarly, bank credit is an important source of the supply of capital. Banks lend more during periods of slow business activity. The classical theory remains incomplete when it neglects these factors in the supply schedule of capital.

(6) *Unrealistic Assumption of Full Employment.* The classical theory is based on the unrealistic assumption of full employment. In a fully employed economy, interest as a reward for saving, waiting or abstinence is necessary to induce people to save. But according to Keynes, underemployment and not full employment is the rule and where resources are unemployed, interest is not essentially an inducement for saving.

(7) *Neglects Monetary Factors.* The classical theory is a pure or real theory of interest which takes into consideration the real factors like the time preference and the marginal productivity of capital. It completely neglects the influence of monetary factors on the determination of the rate of interest. The classical economists regarded money as a 'veil', as a medium of exchange over goods and services. They failed to take into account money as a store of value. Keynes, on the other hand, laid emphasis in explaining the determination of the rate of interest as a monetary phenomenon.

(8) *No Automatic Equality between Natural and Market Rates of Interest.* According to the classical view, the market and the equilibrium (natural) rates of interest are always equal. Any discrepancy between the two is only a temporary phenomenon which would disappear in the long-run. Keynes, however, does not regard the discrepancy between the two as accidental and temporary. It can be due to the contraction or expansion of bank credit. An expansion of bank credit by increasing the supply of loanable funds brings about a fall in the market rate of interest below the equilibrium rate, and *vice versa.* Thus there is no automatic mechanism for the equality of the market and equilibrium interest rates.

(9) *Difference over the Definition of Interest.* Keynes differs with the classical economists even over the definition and determination of the rate of interest. According to him, it is the reward of not hoarding but the

reward of parting with liquidity for a specified period. It is the 'price' which equilibrates demand for money with the available quantity of money. He does not agree that it is determined by the demand for and supply of capital. Thus, Keynes dismisses the classical theory of interest as absolutely wrong and inadequate.

6. THE LOANABLE FUNDS THEORY OF INTEREST

The neo-classical or the loanable funds theory explains the determination of interest in terms of demand and supply of loanable funds or credit. Expounded by Wicksell, the theory was elaborated by Ohlin, Robertson, Pigou and other new-classical economists.

According to this theory, the rate of interest is the price of credit which is determined by the demand and supply for loanable funds. In the words of Prof. Lerner: "It is the price which equates the supply of 'credit', or saving *plus* the net increase in the amount of money in a period, to the demand for 'credit', or investment *plus* net 'hoarding' in the period." Let us analyse the forces behind the demand and supply of loanable funds.

Demand for Loanable Funds

The demand for loanable funds has primarily three sources: government, businessmen and consumers who need them for purposes of investment, hoarding and consumption. The government borrows funds for constructing public works or for war preparations. The businessmen borrow for the purchase of capital goods and for starting investment projects. Such borrowings are interest elastic and depend mostly on the expected rate of profit as compared with the rate of interest. The demand for loanable funds on the part of consumers is for the purchase of durable consumer goods like scooters, houses, etc. Individual borrowings are also interest elastic. The tendency to borrow is more at a lower rate than at a higher interest rate in order to enjoy their consumption soon. Since this demand for funds is mostly met out of past saving or through *dissaving*, it is represented by the curve *DS* in Figure 42.2. The demand curve for *investment* funds both for the government and the businessmen is shown as curve *I*. It slopes downward showing that less funds are borrowed at a higher rate and more at a lower rate of interest. *Lastly*, funds are demanded for the purpose of *hoarding* them in liquid form or as idle cash. They are also interest elastic and are shown by the curve *H*. The lateral summation of these curves, *H*, *DS* and *I* gives us the aggregate demand curve for loanable funds *å D*.

Supply of Loanable Funds

The supply of loanable funds comes from savings, dishoardings and bank credit. Private savings, individual and corporate, are the main source of savings. Though personal savings depend upon the income level, yet taking the level of income as given, they are regarded as interest elastic. The higher the rate of interest, the greater will be the inducement to save and *vice versa*. Corporate savings are the undistributed profits of a firm which also depend on the current rate of interest to some extent. If the interest rate is high, it will act as a deterrent to borrowing and thus encourage savings. *Savings* are indicated as curve *S* in the Figure 42.2. The second source is the volume of funds coming out of hoards or being added to them. These "*dishoardings* may represent not only purchase of old assets or securities from others out of idle cash balances of one's own funds for net investment or for consumption in purchase in excess of net disposable income." Such funds are directly related to the rate of interest. The higher the interest rate, the larger the funds that shall be coming out of hoards and *vice versa*. These funds are represented by the curve *DH*. *Lastly*, there is the *bank credit* or *money* as an important source of the supply of loanable funds. Bank credit is also interest elastic to some extent. More funds are lent at a higher than at a lower rate of interest. Bank money is shown as the curve *BM*. If these curves *DH*, *BM* and *S* are laterally added up, we have the aggregate supply curve *å S* of loanable funds.

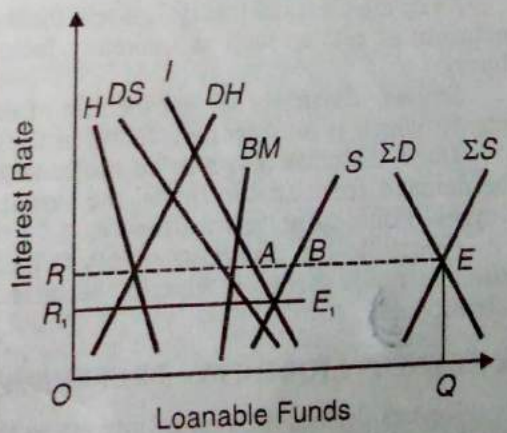


Fig. 42.2

Its Determination

When the total demand curve for loanable funds *å D* and the total supply curve of loanable funds *å S* intersect each other at point *E* and *OR* rate of interest is determined. At this rate, *OQ* amount of funds are borrowed and lent.

Its Criticisms

According to Prof. Robertson the loanable funds theory is a "commonsense explanation" of the determination of the rate of interest. But this theory is also not free from certain defects.

(1) *Equilibrium Rate Reflects Unstable Equilibrium.* The demand and supply schedules for loanable funds in fig. 42.2 determine the equilibrium rate of interest *OR* which does not equate each component on the supply side with the corresponding component on the demand side. Thus the equilibrium rate *OR* reflects unstable equilibrium. For stable equilibrium, it is essential that *ex ante* (planned) investment must equal *ex ante* savings at the equilibrium rate *OR*. In the above figure, *ex ante* savings *S* exceed *ex ante* investment I by *AB*. They are equal at point E_1 but at a lower interest rate OR_1, which is the natural rate of interest in Fig. 52.2.

(2) *Indeterminate Theory.* Prof. Hansen asserts that the loanable funds theory like the classical and the Keynesian theories of interest is indeterminate. The supply schedule of loanable funds is composed of savings, dishoarding and bank money. But since savings vary with past income and the new money, and activated balances with the current income, it follows that the total supply schedule of loanable funds also varies with income. Thus the loanable funds theory is indeterminate unless the income level is already known[1].

(3) *Cash Balance not elastic.* The loanable funds theory states that the supply of loanable funds can be increased by releasing cash balances of savings and decreased by absorbing cash balances into savings. This implies that the cash balances are fairly elastic. But this does not seem to be a correct view because the total cash balances available with the community are fixed and equal the total supply of money at any time. Whenever there are variations in the cash balances, they are, in fact, in the velocity of circulation of money rather than in the amount of cash balances with community.

(4) *Savings Interest Inelastic.* The theory over-emphasises the influence of the rate of interest on savings. It regards savings as interest elastic. Generally speaking, people save not to earn rate of interest but to satisfy precautionary motive. So savings are interest *inelastic.*

(5) Wrong to Combine Real and Monetary Factors. The loanable funds theory has been criticised for combining monetary factors with real factors. It is not correct to combine real factors like saving and investment with monetary factors like bank credit and dishoarding without bringing in changes in the level of income. This makes the theory unrealistic.

7. ITS SUPERIORITY OVER THE CLASSICAL THEORY

Despite these weaknesses, the loanable funds theory is better and more realistic than the classical theory on a number of counts.

First, the classical theory is a real theory of interest and neglects monetary influences on interest. With the inclusion of real as well as monetary factors, the loanable funds theory becomes superior to the classical theory.

Second, classicists neglect the role of bank credit as a constituent of money supply influencing the rate of interest which is an important factor in the loanable funds theory.

Third, the classicists also do not consider the role of hoarding. By including the desire to hoard money in the demand for loanable funds, the loanable funds theory becomes more realistic and brings us nearer to Keynes' liquidity preference theory.

Fourth, to the classicists money is merely a 'veil', a passive factor influencing the rate of interest. The loanable funds theory is superior because it regards money as an active factor in the determination of the interest rate.

8. KEYNES' LIQUIDITY PREFERENCE THEORY OF INTEREST

Keynes defines the rate of interest as the reward of not hoarding but the reward for parting with liquidity for the specified period. It "is not the 'price' which brings into equilibrium the demand for resources to invest with the readiness to abstain from consumption. It is the 'price' which equilibrates the desire to hold wealth in the form of cash with the available quantity of cash."[2] In other words, the rate of interest, in the Keynesian sense, is determined by the demand for and the supply of money. This theory is, therefore, characterised as the monetary theory of interest, as distinct from the real theory of the classicals.

Supply of Money

Of the two determinants of interest, the supply of money refers to the total quantity of money in the country for all purposes at any time. Though the supply of money is a function of the rate of interest to a

1. A.H. Hansen, *A Guide to Keynes*, p. 141.
2. J.M. Keynes, *The General Theory of Employment, Interest and Money*, p. 167.

CHAPTER-43

Profits

1. GROSS PROFIT AND NET PROFIT

In ordinary language, profit is the surplus of income over expenses of production according to a businessman. It is the amount left with him after he has made payments for all factor services used by him in the process of production. But he may not have been careful in calculating all such expenses of production in the economic sense. Therefore, economists regard businessman's profit as *gross profit* as distinct from *pure or net profit* because it includes the "following constituents.

1) *Rent on Land.* The businessman may have used his own land for erecting the factory so that he may be saved of the botheration "of paying rent to some other landlord. This rent is included in his profit. This is implicit or imputed rent which is not a part of his profit. Had he hired land from some other person, he would have paid its rent. In calculating net profit, implicit rent should be deducted from gross profit.

(2) *Interest on Capital.* Similarly, he may have used his own capital in his business in order to avoid the inconvenience of borrowing from some other person. This implicit interest is again included in his gross profit. If he had borrowed the same amount of capital for investment in his business, he would have paid interest on it. This interest should, therefore, be subtracted from his gross profit to arrive at net profit.

(3) *Wages of Management.* The businessman may have been busy in organising, coordinating and managing the entire business himself. But he may have been contented with income received after meeting all expenses of production. If he had not performed the work of management himself he would have employed a manager to whom he would have paid wages. Thus his gross profit included implicit wages which are required to be deducted for calculating net profit. In all joint stock companies, profits are received by shareholders, but the managers and managing directors are all salaried persons whose salaries are included in "the expenses of the firms.

(4) *Depreciation Charges.* During the process of production, machinery and plants depreciate and become obsolete. Expenses incurred on their repairs and replacements are a part of the cost of production. Hence they should be excluded from gross profit for the purpose of calculating net profit.

(5) *Insurance Charges.* Every firm gets itself insured against fire, accidents and losses of other kinds for which it pays large premiums annually to insurance companies. They are a charge on the revenue of the concern, and therefore do not form part of the gross profit.

All these elements are present in gross profit even in the long-run, as they are relatively stable. Frequent and violent changes occurring in gross profit are due to the presence of net profit within the former. It is, therefore, net profit which may be positive or negative.

(6) *Net Profit.* Net, true, economic or pure profit is the residue left to the entrepreneur after deducting all the items enumerated above from gross profit. Net profit, however, includes the following elements within it.

(i) *Reward for Uncertainty Bearing.* Pure profit which an entrepreneur receives is the reward of bearing uninsurable risks and uncertainties. Uncertainty-bearing is one of the main functions of an entrepreneur in the present capitalist system which leads to profit.

(ii) *Reward for Coordination.* The present system of production is one of coordinating the right quantity of factors in right proportions. An entrepreneur who combines them in the right way is able to produce larger quantities of the product with the minimum of cost and thus earns the largest amount of profit.

(iii) *Rent of Ability.* Net profit accruing to the businessman also includes the rent of his ability. An entrepreneur with a superior business acumen is able to earn larger profit than the others.

(iv) *Reward of Innovation.* An entrepreneur who innovates by bringing out a new product or technique of production earns higher profit than others.

(v) *Monopoly Gains*[1] The modern market system is characterised by the existence of imperfect markets. Some of the shrewd entrepreneurs are able to push up their sales by making their products appear distinct and

1. Some writers include these two items in "pure profits which is not a correct view because every entrepreneur "is not able to take advantage of market imperfections and chance or "conjunctural gains. Entrepreneurs earn such profits due to their special "ability.

superior to others. In this process, they also succeed in raising the prices of their products. Thus their profits swell when they create semi- monopolistic conditions for themselves.

(vi) *Windfalls*[2]. Pure profit earned by an entrepreneur may also include fortuitous or chance gain. The demand for his product may suddenly rise either due to the outbreak of war or as a result of the closing down of some of the other firms for some time on account of labour trouble. He,therefore, earns higher profit which is like a windfall.

We may conclude that an economist's profit is quite distinct from a businessman's profit. The former is concerned with net profit which is arrived at by deducting from the businessman's gross profit the remuneration for the latter's own land, labour and capital.

We may write in equation form:

Gross Profit = Net profit + implicit rent+ implicit interest + implicit wages + depreciation and insurance charges.

Net Profit = Gross profit –(implicit rent + implicit interest + implicit wages + depreciation and insurance charges).

2. NATURE OF PROFIT

The nature of profit has ever been the most perplexed and troubled problem for economists. Prof. Taussig referred to it as ''that "mixed and vexed income."

The early classical economists regarded profit as accruing to the capitalist who supplied capital and owned the business. Profits were residually determined after making all necessary payments from the total income of the business. The first systematic explanation of the nature of profit was given by Marshall in terms of demand and "supply of entrepreneurs. Walker looked upon profit as the reward of the entrepreneur with a superior ability than others. Hawley ascribed it to the entrepreneur's risk- taking. The greater the risk undertaken, the larger the profit.

To Clark, Knight and Schumpeter, ''It is an income which arises out of change,uncertainty and friction inherent in a dynamic world, and which the belated operation of competitive forces tends to eliminate."

Veblen and Hobson, the Marxian economists, regard profit as unearned income and attribute it to the existence of institutional monopolies established by a few capitalists. Monopoly profits arise because a monopolist is able to restrict output and keep the price of his product much above the average cost of production. We discuss below some of the important theories of profit for understanding the nature of profit in detail.

3. THEORIES OF PROFITS

(A) The Dynamic Theory

Prof. J.B. Clark propounded his dynamic theory of profit in 1900. To him, profit is the difference between the price and the cost of production of the commodity. But profit is the result of dynamic change. In a dynamic state, ''five generic changes are going on, everyone of which reacts on the structure of society." They are: 1. Population is increasing. 2. Capital is increasing. 3. Methods of production are improving. 4. The forms of industrial establishment are changing, the less efficient shops, etc., are passing from the field, and the most efficient are surviving. (5) The wants of consumers are multiplying.

In a static state, competition tends to eliminate these five kinds of changes so that each factor receives what it produces. The selling price and the cost of production are equal and there are no profits. What entrepreneurs receive are simply wages of management. The static state is the state of natural adjustments between ''natural" and actual prices of goods, wages, interest, profits and their rates. In reality, both prices and rates are static. If there is any divergence between the two, competition tends to bring their equality.

Thus profits are the result exclusively of five dynamic changes, *i.e.*, changes in population, capital, techniques of production, forms of business organisation and in the wants of people. Obviously, from all the changes, according to Clark, ''two general results must follow : first, values, wages and interest will differ from the static standards; secondly, the static standards themselves will always be changing." The typical dynamic change is an invention. An invention enables the entrepreneur to produce more and reduce costs. A divergence between the selling price and the costs of production leads to the emergence of profits. But such profits are temporary, because competition leads to the adoption of this invention by the other entrepreneurs in the industry. Production increases and prices fall. On the other hand, competition for the services of factors tends to raise their wage and interest rates. Costs rise. The dual tendency of falling prices and rising costs eliminates

2. *Ibid.*

profits. Thus ``profit is an elusive sum which entrepreneurs grasp but cannot hold. It slips through their fingers and bestows itself on all members of society." In the dynamic "state, ``if competition worked without let or hindrance, pure business profit would be annihilated as fast as it could be created."[3] In actuality, however, entrepreneurs earn profits because society being dynamic, changes constantly occur and adjustments always take place. The lure of profits leads to improvement and improvement tends to raise the standard of wages but actual wages always lag behind the standard rate with the "result that profits appear.

Its Criticisms

Clark's dynamic theory of profit has been severely criticised mainly by Prof. Knight[4] on the following counts.

1. *All Changes Not Foreseen*. It fails to make any difference between a change that is foreseen and one that is unforeseen in advance. If the five generic changes assumed by Clark are assumed to be foreknown in advance, so that their course may be correctly predicted, then the whole argument based on the effects of changes will not hold at all. In reality, however, not all changes are foreseen. Some are foreseen and some are not. For a clear understanding of the problem, it is essential to separate its effects from those of change as such.

2. *Natural Conditions not Static Conditions*. Prof. Knight questions the use of `natural' prices and rates in a dynamic society. According to him, a society may be dynamic and yet all its `natural' prices might equal costs of production so that the entrepreneur is not in a position to earn any profit. It is, therefore, fallacious for Clark to define `natural' conditions as `static' conditions.

3. *Unpredictable Changes Lead to Profits*. Clark's argument that it is the lure of profit that leads to improvement is based on the foreknowledge of change. But when once speculative element of making inventions and discovering new natural resources is removed, profits disappear and what remain are simply wages, interest and rent. This is so because all improvements are foreseen. Dynamic changes, according to Prof. Knight, give rise to profits only when such changes and their consequences are unpredictable in character.

4. *Profits without Dynamic Changes*. Profits may also emerge in the absence of Clark's five dynamic changes. If future fluctuations are unpredicatable, competition will not work itself accurately and profits will inevitably emerge.

5. *Profit the Reward for Risk-taking*. Prof. Clark makes no mention of the fact that profit is the reward of risk-taking. But "in an article entitled ``Insurance and Profits," he points out that profit as the reward for risk-taking accrues to the capitalist and not to the entrepreneur. But he fails to point out what relation will profit bear to interest when profit accrues to the capitalist. In fact, profit accrues to the entrepreneur.

6. *Superfluous Distinction between Profit and Wages of Management*. Prof. Taussig points out that Clark's dynamic theory creates an artificial distinction between profit and wages of management. According to Clark, even the routine work of an established industry requires the same judgement and administrative ability as is exercised by the entrepreneur under conditions of rapid progress. The entrepreneurs get wages of management because there are no risks in a static state. But this is not a correct view for some unforeseen risks do remain even in a static state for which a reward must be paid to the entrepreneur in the form of profit. Thus the dynamic theory makes a superfluous distinction between profit and wages of management.

7. *Profit a Frictional Surplus*. According to Prof. A.K. Das Gupta, Clark's notion of economic dynamics is, in fact, one of comparative statics. ``The emergence of profit is considered to be merely a stage in the regular progress of the economy. In the ultimate analysis it turns out to be a `frictional surplus' the significance of which is just to raise the economic standard."[5]

(B) The Innovation Theory

Prof. Schumpeter[6] attributes profits to dynamic changes resulting from an innovation. To start with, he takes a capitalist closed economy which is in a stationary equilibrium. This equilibrium is characterised by what Schumpeter calls a ``circular flow" which continues to repeat itself forever. In such a static state, there is perfectly competitive equilibrium. The price of each product just equals its cost of production and there is no profit. Only exogenous factors, like weather conditions, can cause changes in the circular-flow, but that too temporarily, and the economy would again reach a circular flow position. In the circular-flow position goods are being produced at a constant rate. This routine work is being performed by the salaried managers. It is the entrepreneur who disturbs the channels of this circular flow by the introduction of an innovation. Thus

3. J.B. "Clark, *The Distribution of Wealth*, 1900.
4. F.H. Knight, *Risk, Uncertainty and Profit*, "1957.
5. The Conception of Surplus "in Theoretical Economics, p. 186.
6. J.A., *The Theory of Economic Development*. "1934.

Schumpeter assigns the role of an innovator not to the capitalist but to the entrepreneur. The entrepreneur is not a man of ordinary managerial ability but one who introduces something entirely new. He does not provide funds but directs their use. To perform his economic function, he requires two things : first, the existence of technical knowledge in order to produce new products; and second, the power of disposal over the factors of production in the form of credit. He gets credit from the banks and uses his ability to untap the existing technical knowledge. This brings about an innovation which disturbs the circular-flow of production in the economy and leads to the emergence of profits. Thus the role of the entrepreneur is quite distinct from that of the capitalist. The former simply innovates and does not undertake any risk. Risk-taking is the function of the capitalist or the banks that provide credit. Even if the entrepreneur is the capitalist himself, he performs two functions which are quite different. Profits, therefore, accrue to the entrepreneur as a reward for innovating and not as a reward for risk-taking.

According to Schumpeter, an innovation may consist of : (1) the introduction of a new product; (2) the introduction of a new method of production; (3) the opening up of a new market; (4) the discovery of a new source of raw materials; and (5) the reorganisation of an industry. When any one of these innovations is introduced by an entrepreneur, it tends to reduce the cost of production of the commodity below its selling price. Profits emerge. So long as this particular innovation remains a secret, the entrepreneur continues to earn profits. But this state of affairs cannot continue indefinitely. Other entrepreneurs follow this innovation in "swarmlike clusters." Competition for factor services tends to raise the cost of production, whereas increase in production brings prices downward. This dual tendency ultimately leads to the disappearance of profits.

The emergence of profits due to an innovation is not peculiar to only one industry. Innovation in one field may induce other innovations in related fields. The emergence of a motor car industry may in turn stimulate a wave of new investments in the construction of highways, rubber tyres and petroleum products, etc. Profits are both the cause and effect of innovations. The lure of profits leads entrepreneurs to innovate, and when an entrepreneur innovates, profits emerge.

Profits continue to arise and disappear, now in one industry and then in another. They are a temporary phenomena which accrue to the entrepreneur who innovates. But after some time when it becomes common, profits disappear.

Its Criticisms

Schumpeter's innovation theory has been subjected to the following criticisms :

1. *Shareholders Earn Profits.* Schumpeter does not regard profits as the reward for risk-taking. According to him, risk- taking is the function of the capitalist and not of the entrepreneur as such. But in his later book *Capitalism, Socialism and Democracy*, he points out that the rapid economic development of the 19th century in capitalist economies was partly due to many innovations made by the entrepreneurs who also happened to be risk-takers. It is the shareholders of modern corporations who undertake risks and thus earn profits.

2. *Profit the Reward for Uncertainty.* The element of uncertainty finds no place in Schumpeter's innovation theory. Profit is not regarded as the reward of uncertainty which is not a correct view for every innovation is associated with uncertainty. If innovation takes place without the element of uncertainty, the reward for innovation is not profit but simply wages of management.

3. *Incomplete Explanation.* Innovation is not the only function of the entrepreneur for which he earns profit. Profit accrues to the entrepreneur because of his organisational ability, when he is able to reduce business costs. Thus Schumpeter's theory is an incomplete explanation of the emergence of profits.

The Risk Theory

The risk theory of profit is associated with F.B. Hawley[7] who regards risk-taking as the main function of the entrepreneur. Profit is the residual income which the entrepreneur receives because he assumes risks. The entrepreneur exposes his business to risk, and receives in turn a reward in the form of profit because the task of risk-taking is irksome. Profit is 'an excess of payment above the actuarial value of the risk.' No entrepreneur will be willing to undertake risks if he gets only the normal return. Therefore, the reward for risk-taking must be higher than the actual value of the risk.

According to Hawley, the entrepreneur can avoid certain risks for a fixed payment to the insurance company. But he cannot get rid of all risks by means of insurance, for if he is able to do so, he would cease to be an entrepreneur and would earn only wages of management and no profit. However, when the entrepreneur transfers his risk to the insurance company, he abdicates his risk-taking function to the latter which receives the profit. The reward of the insurance company is not the premium it receives, but the difference between that

7. *Enterprise "and the Productive Process*, 1907.

premium and the loss it eventually suffers. So profit is the reward of risk-taking, especially of ``wisely selected'' risks.

But all persons are incapable of undertaking risks, so risks act as a deterrent to the supply of entrepreneurs. Those who remain in business are able to earn an excess of payment above the actuarial value of the risk and thus earn profits.

Its Criticisms

Like other theories, the risk theory of profit has also been criticised for the following reasons :

1. *Meaning of Risk Unclear.* Hawley does not clarify the meaning of risk. According to Knight, risks are of two types, insurable and non-insurable. Risks proper refer to insurable risks. Such risk-taking cannot give rise to profit because the entrepreneur covers the risk by the payment of the premium. He does not agree with Hawley that by insuring risk, the entrepreneur abdicates his function to the insurance company which earns profit instead. Profit accrues to the entrepreneur and not to the insurer. It is only the uninsurable risks which are uncertain that give rise to profits. Profits are thus reward of uncertainty-bearing, according to Prof. Knight.

2. *Profits due to the Entrepreneurial Ability.* Risk-taking is not the only entrepreneurial function which leads to the emergence of profits. Profits are also due to the organisational and coordinating ability of the entrepreneurs. This function leads to the reduction in business costs. It is also partly a reward for innovating.

3. *Profits the Reward of Avoiding Risks.* According to Carver, those entrepreneurs who are able to avoid risks earn profits. Hence, profits arise not because risks are undertaken but because they are avoided by able entrepreneurs. The more risks are avoided, the larger will be the profits earned by the entrepreneurs.

4. *Amount of Profit not Related to Size of Risk.* The quantum of profit in any way is not related to the size of the risk undertaken. If it were so, every entrepreneur would involve himself into huge risks in order to earn larger profits.

5. *Incomplete Theory.* There is little empirical evidence to prove that entrepreneurs earn more in risky enterprises. In a way, "all enterprises are risky for an element of uncertainty is present "in them. And every entrepreneur aims at making large profits. Thus "Hawley's risk theory is also an incomplete theory of profit.

The Uncertainty-bearing Theory

Prof. Frank H. Knight[8] regards profit as the reward of bearing non-insurable risks and uncertainties. He distinguishes between insurable and non-insurable risks. Certain risks are measurable in as much as the probability of their occurrence can be statistically calculated. The risk of fire, theft of merchandise and of death by accident are insurable. Such risks are borne by the insurance company. There are certain unique risks which are incalculable. The probability of their occurrence cannot be statistically computed because of the presence of uncertainty in them. Such unforeseen risks relate to changes in prices, demand, supply, etc. No insurance company can calculate the loss expected from such risks, and hence they are non- insurable. Profit, according to Knight, is the reward of bearing non-insurable risks and uncertainties. It is a deviation arising from uncertainty between earning *ex post* and *ex ante*.

Profit is thus the difference between *ex ante* and *ex post* returns. It is the residue after deducting all contractual income to the other factor services. In a competitive economy if entrepreneurs compete cautiously and do not raise the prices of factor services to the value of their marginal product, they will earn positive profits. If, on the other hand, they are optimist about future expectations, profits will be negative because the factor services are paid more than their *anticipated* marginal products. Positive or negative profit simply reflect the entrepreneur's judgement to meet conditions of uncertainty.

However, uncertainty prevails the entire society, and profit, positive or negative, in a way accrues to all factor services. In other words, there is profit element in all types of income. But the division of social income between profit and contractual income depends on the supply of entrepreneurial ability. When the supply of entrepreneurial ability is small, the size of profit increases. The supply of entrepreneurial ability is subject to diminishing returns which tends to reduce the size of profit. The application of diminishing returns to entrepreneurship is nothing except the amount of uncertainty present in business.

Uncertainty-bearing is the most important function in a dynamic state. It is the entrepreneur who either delegates this function among different personnel or assumes it himself. The expectation of profit is, in a way, the supply price of entrepreneurial uncertainty-bearing. In a competitive economy where there is no risk, every entrepreneur will have a minimum supply price. If his reward falls below it, the entrepreneurial services will not be supplied. But the presence of uncertainty tends to raise the minimum supply price which is actually a `risk premium' which the entrepreneur expects to be paid. This is profit. But change due to innovations and exogenous

8. F.H. Knight, *Risk, Uncertainty and Profit,* "1957.

forces, such as climatic and other unforeseen changes, are constantly causing revision of these expectations so that the entrepreneur receives only normal profit in the long-run. Only unpredictable changes give rise to profit. Changes in population and capital being predictable do not occasion imperfect competition or profit. Thus profit is due to non-insurable risks and uncertainties generated by dynamic changes.

Its Criticisms

Knight's theory of profit is more elaborate than the other theories, because it combines the conceptions of risk, of economic change and of the role of business ability. But it has its weaknesses.

1. *No Clear Notion of Entrepreneurship.* It does not include a clear notion of entrepreneurship. His sole function is regarded as one of the uncertainty-bearing. But in modern business corporations ownership is separate from control. Decision-making is done by the salaried managers who control and organise the entire corporation, whereas ownership rests with shareholders who ultimately bear uncertainties of business. Knight does not separate the two and his theory becomes unrealistic.

2. *No Solution to Distribution of Profit among Holders of Corporations.* As a corollary, the theory does not solve the problem of allocation or distribution of profit among the controlling and ownership groups of the corporation and thus keeps the problem of the determination of profit unsolved.

3. *No Empirical Evidence to Measure Uncertainty-bearing.* Knight himself finds little empirical evidence to measure uncertainty-bearing to arrive at the quantum of profit accruing to a firm. Thus uncertainty-bearing explains the emergence of profit in a vague manner.

4. *Changes in Population and Capital Unpredictable.* Knight's assertion that changes in population and capital are predictable is "true only if we are dealing with the economy as a whole. But his study of profit is related to a business firm for which changes in population and capital are unpredictable. And in terms of Knight's theory, they can also lead to positive or negative profit.

5. *Profit Not a Residual Income.* Knight's view that profit is a residual income which accrues to the entrepreneur on the basis of his judgement, has also been criticised. According to J.F. Weston, "The ultimate decision-makers in a firm need not be compensated as residual income receivers. Judgement is an economic service. The principles explaining the compensation for this service are similar to the principles explaining the compensation for other services. The exercise of judgement may be sold on a fixed-price basis or on a variable-price basis." This is how the expert managers sell their services.

6. *Uncertainty-bearing not a Separate Factor of Production.* Uncertainty-bearing cannot be looked upon as a separate factor of production like land, labour or capital. It is a psychological concept which forms part of the real cost of production. But the supply of a factor service, much less of entrepreneurial ability, depends on "its opportunity cost rather than on real cost.

7. *Does not Study Monopoly Profit.* This theory throws no light on monopoly profit. Monopoly firms earn much larger profits than competitive firms and they are not due to the presence of uncertainty.

Despite these weaknesses, the uncertainty-bearing theory of Knight is regarded as the only satisfactory explanation of the nature of profit.

(E) Shackle's Theory

Prof. G.L.S. Shackle has extended Knight's theory of profit by introducing expectations under conditions of uncertainty. According to Shackle, expectations are of two types: general and particular. General expectations relate to variables general to the economy as a whole. They are associated with future macro- variables such as the general price level, GNP, balance of payments, etc. On the other hand, particular expectations relate to variables particular to a firm or industry. They are associated with such micro-variables as the future reaction of a particular marketing strategy adopted by a firm, the future pricing policy of a competitive firm, etc.

The decisions of the business community are generally based on general expectations. If it regards them favourable, investments are made. But there is "subjective certainty" in the case of general expectations. Their time horizon is about 12 months. As the general expectations have subjective certainty and their time horizon is also of reasonable duration, the business community is able to anticipate price and income increases correctly for the economy as a whole, and by adopting appropriate inventory policies, it earns windfall profits.

But in the case of particular expectations, there is "subjective uncertainty" and the time horizon is also quite long ranging between 100 to 150 months. Under particular expectations, a firm or an industry may earn either innovative profits or monopoly profits depending upon its policies and competitors. Under perfect competitions the number of buyers and sellers of a similar product is very large. A firm which innovates in introducing new techniques of production or new products or new techniques of management earns innovator's profits. On the other hand, when there is monopolistic competition and the product is differentiated, it is the marketing policy that leads to profits. As there is subjective uncertainty and the time horizon is quite long, it is the taking of correct decisions by a firm about marketing, advertising, etc. of its products in relation to the