Subject	ECONOMICS
Paper No and Title	Paper-5 :Advanced Microeconomics
Module No and Title	Module-7: Theories of Rent
Module Tag	ECO_P5_M7

Principal Investigator	Co- Principal Investigator	Co- Principal Investigator	Co- Principal Investigator and Technical Coordinator
Prof H C Pokhriyal Executive Director School of Open Learning University of Delhi Delhi-110007	**Dr Jaswinder Singh** Principal SGTB Khalsa College University of Delhi Delhi-110007	**Dr Jatinder Bir Singh** Principal Sri Guru Gobind Singh College of Commerce University of Delhi	**Dr Vimal Rarh** Deputy Director, Centre for e-Learning and Assistant Professor, Department of Chemistry, SGTB Khalsa College, University of Delhi *Specialised in : e-Learning and Educational Technologies*
Paper Coordinator	**Content Writer**		**Reviewer**
Prof. O. M. Aggarwal Associate Professor, Shaheed Bhagat Singh College University of Delhi	**Animesh Naskar** Assistant Professor Hansraj College University of Delhi		**Dr. Nalini Panda** Associate Professor I.P College University of Delhi
Anchor Institute : SGTB Khalsa College, University of Delhi			

ECONOMICS	PAPER No.: 5- Advanced Microeconomics
	MODULE No. : 7- Theories of Rent

Table of Contents

1. Learning Outcomes
2. Introduction
3. Theories of Rent

    3.1. The Classical theory of land rent (by David Ricardo)

        3.1.1. Scarcity Rent

        3.1.2. Differential Rent

    3.2. Theory of Economic Rent

    3.3. Quasi-Rent

4. Summary

ECONOMICS	PAPER No.: 5- Advanced Microeconomics
	MODULE No. : 7- Theories of Rent

1. Learning Outcome

- In this module we will determine the price of fixed factor whose supply is less elastic or in elastic.
- We will get detailed knowledge about different concepts of rent.

2. Introduction

Unlike variable factor, the marginal productivity theory of distribution fails to determine price of factor whose supply is fixed (e.g. land) or quasi fixed (e.g. capital equipments) as there is zero marginal product of fixed factor. There exists separate body of theory, i.e. theory of rent which helps explain the pricing of these fixed factors. According to classical theory, rent is the price paid for the use of land. However, in modern theory, the concept of rent is not confined to land. It can be applied to any factor whose supply is inelastic in the short run.

There are three different concepts of rent: land rent, economic rent and quasi-rent. The land rent is paid by the tenant to the landlord for hiring land and the landlord obtains this price because of the fact that the supply of land is scarce. The concept of economic rent is widely applicable, in the sense that it is the price paid to any factor on top of what is required to retain the factor in its current employment. In other words, economic rent is a payment to a factor in excess of its opportunity cost. The quasi-rent is the earnings of fixed capital equipments. The capital equipments are quasi-fixed factors in the sense that the supply of these factors are fixed only in short run, while their supply varies in the long run. These three concepts of rent are described in details in sections below.

3. Theories of Rent

3.1. The Classical theory of land rent(by David Ricardo)

The classical theory of rent was first defined and explained by David Ricardo. According to him, "Rent is that portion of the produce of earth which is paid to the landlord for the use of the

original and indestructible powers of the soil". Ricardian concept of rent has two features. Firstly, it is payment to the landlord just for the use of land. It differs from contractual rent which accounts return on capital invested by the landlord. The portion of landlord's earning which is spent for the improvement of land is considered as rent. Secondly, rent is generated due to the scarcity of land. That is, for an economy the area of land is fixed. In other words, the supply of land is completely inelastic. Therefore a price (i.e. rent) must be paid for the use of land. Since, the land rent appears due to the scarcity of land given the assumption that all plots of the land are homogenous, it is also known as *scarcity rent*. When we relax the assumption that all plots of a land are homogenous, another type of rent appears due to the different quality of lands. This rent is called *differential rent.* These two concepts of rent are analyzed in the following sections.

3.1.1. Scarcity Rent

The Ricardian concept of scarcity rent is based on following assumptions:

(1) There is an island with finite size of land. All plots of the land are homogenous in quality.
(2) It is assumed that only one crop will be cultivated in all the plots.
(3) All plots are assumed to be owned by large number of absentee landlords. That is, no landlord will farm the land himself.
(4) There is perfect competition among the landlords.
(5) Assume that the world market for the crop is also perfectly competitive. The supply decision from our imaginary island has least impact on the market price of the crop. Therefore each and every farmer is a price taker.

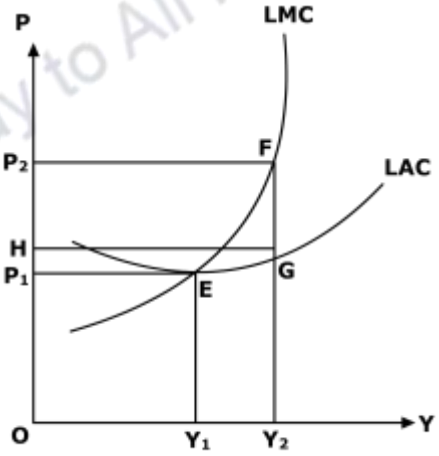

Figure-3.1.1

Since, land market is perfectly competitive, no rent will arise until all plots of the land are used. The price of corn will be equal to the minimum average cost. In Figure-3.1.1 we show the scarcity rent measuring output along the horizontal axis and price of corn along the vertical axis.

Suppose that a farmer is initially in equilibrium at point E and corresponding level of output is OY_1. At point E the price level OP_1 equals to minimum long run average cost of production. Now suppose demand for corn increases due to growth of population. The price of corn will rise temporarily and it will exceed minimum average cost. There will be super normal profit which will attract more new farmers for cultivation. This will lead to increase in production and fall in price. This will be continued until all the plots of land are exhausted. After the cultivation of all plots of the land if population continues to grow, the demand for corn will increase further and there will be a permanent rise of price. Suppose the new price level will be OP_2 which is higher than minimum average cost. This increment of price is permanent as there will be no idle land for cultivation so that increase in production will reduce the price back to its original level. At higher price level OP_2 each farmer will increase output by equating long run marginal cost to this price level. The new equilibrium point will be at point F and at this point the farmer will produce OY_2 level of output. When the price is permanently settled at OP_2, the vertical distance from point F to point G on the LAC curve measures the rent per unit of land. That is, total $FGHP_2$ amount of rent will be paid by the farmer. The rent is generated here, due to the scarcity of homogenous land. This rent is, therefore, called scarcity rent. In the next section we will drop the assumption of homogenous quality of plots of land and analyze the concept of *differential rent.*

3.1.2. Differential Rent

Differential rent arises when quality of plot varies across the land. If one plot is relatively more fertile than the other plot, the average cost of production will be lower in the first one. When price rises over the average minimum cost of production in less fertile land, a surplus will be generated in the more fertile land and this surplus is called differential rent. This is explained graphically in figure-3.1.2. Assume that there are two types of plots: type -1 plot and type-2 plot. Type-1 is more fertile than the type-2. This implies that the average cost of production in type-1 is lower than that of in type-2 plot. The marginal and average cost curves of two plots are denoted asMC^1,AC^1,MC^2, and AC^2 respectively in figure-3.1.2.

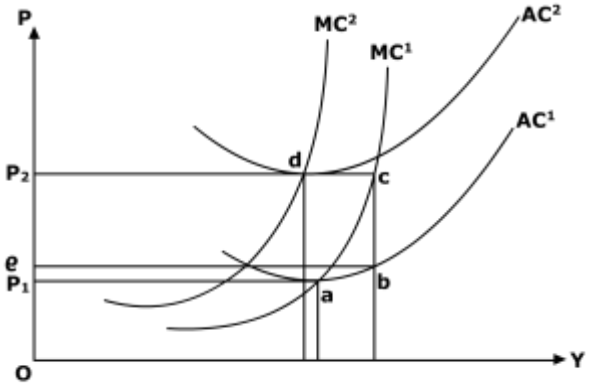

Figure-3.1.2

Since type-1 land is more fertile than type-2, all farmers want to cultivate type-1 plot as long as it is available. Each farmer will bear the minimum average cost of cultivation. Therefore, farmer will not pay any rent. In figure-3.1.2 a farmer will initially operate at point a where OP_1 price level equals to minimum of AC^1. When type-1 plot is fully exhausted and population continues to grow, there will be demand for farming in type-2 plot. Due to the population growth, the demand for corn will increase and thereby raising the price level. Farmer will cultivate type-2 land only when rise in price will be equal to their lowest average cost. That is, when price rises toOP_2, type-2 plot will be cultivated. At OP_2 price the average cost of farming AC^2 is minimum. With rise in population growth and at this new price level both type-1 and type-2 plots will be cultivated. Since the new price level OP_2 exceeds the minimum of AC^1, a surplus will be generated for cultivation in type-1 plot. This surplus value is called rent. There will be no rent for type-2 land, as price equals to minimum of average cost. The type-2 land is therefore, called 'no rent land' or 'marginal land'. The shaded area $ebcP_2$ shows the rent generated for type-1 plot. If demand for corn goes on rising and price of corn rises permanently aboveOP_2, then even the owners of type-2 land will start earning rent. But the type-1 land owners will always earn more rent than the type-2 land owners. Since this rent arises due to the differences in quality of plots of a land, it is called differential rent.

3.2. Theory of Economic Rent

The economic rent is an amount of payment received by the supplier of a factor input in excess of the minimum amount required to retain the factor in its present employment. In order to analyze the economic rent, it is important to explain the concept of transfer earning. The transfer

earning or price is the payment or price which is necessary to keep a unit of factor in a certain use or industry.

Economic rent is the excess payment to an input over its transfer earning or opportunity cost. If the market supply of an input is fixed or perfectly inelastic, demand alone determines the input price and all of the payment made to the input is rent. If the market supply of an input is positively sloped or moderately elastic, the area above the supply curve and below the price of input shows the rent. When the supply curve is perfectly elastic, there will be no rent, the entire income will be transfer earning. The determination of economic rent in these three different situations are plotted in figure- 3.2.1. (a)-(c). In figure-3.2.1(a) the supply curve parallel to vertical axis shows that the supply of factor input is perfectly inelastic and as a result of this there is no opportunity cost or transfer earning. Thus the factor earns only economic rent $O\ Y_0EP_0$.

In figure-3.2.1(b) the supply curve of factor input is moderately elastic. For each corresponding unit of input used the minimum earning(transfer earning) or reservation price required to supply this factor is represented by the straight line drawn from the supply curve to the horizontal axis. For OY_0 level of output the transfer earning will be the area $OAFY_0$. However the market equilibrium price is OP_0. Therefore, the economic rent represented by the area $AP_0\ F$ is obtained by deducting the transfer earning from the total earning (i.e. $OP_0\ FY_0$ - $OAFY_0$).

When the supply curve of factor is perfectly elastic shown in figure-3.2.1(c), the factor doesn't earn economic rent as the entire area below the market equilibrium price and the area below the supply curve is same. That is, the entire earning shown by the area OP_0GY_0 is transfer earning and there is no surplus earning over transfer earning.

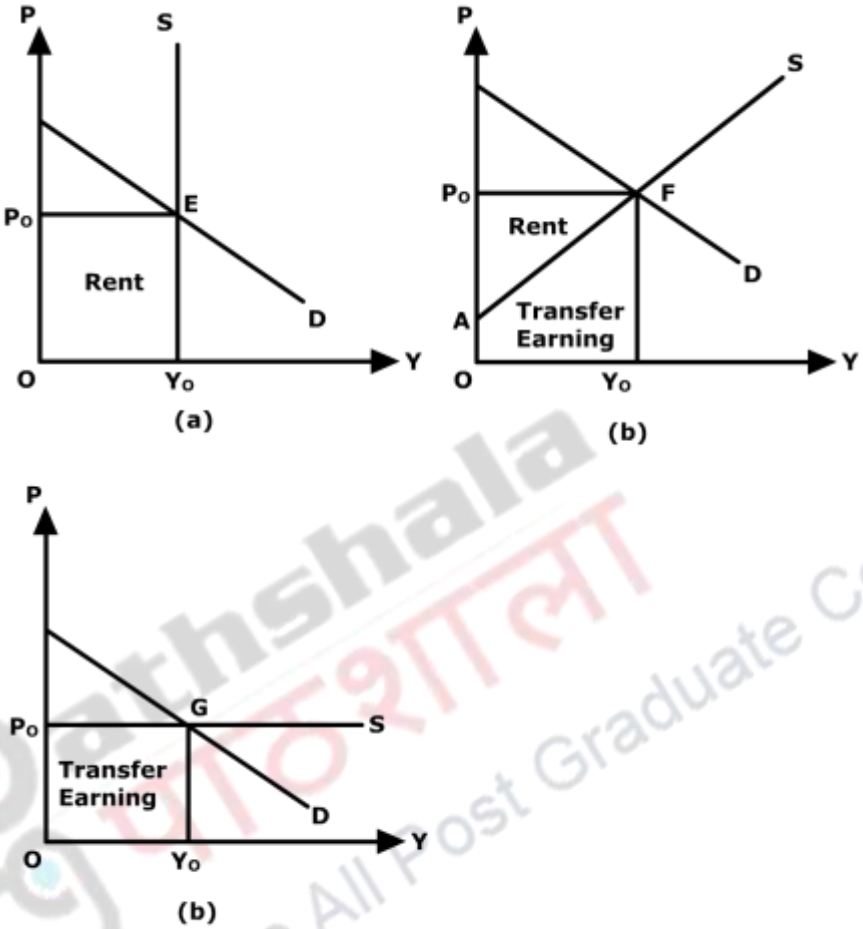

Figure-3.2.1

ECONOMICS	PAPER No.: 5- Advanced Microeconomics
	MODULE No. : 7- Theories of Rent

3.3. Quasi-Rent

Marshall introduced the concept of quasi-rent. It is the earning on capital equipment. It rises due to the inelastic supply of capital equipment in the short run. Unlike supply of land, the supply of capital equipment is not permanently fixed or perfectly inelastic; it varies in the long run. That is, in the long run the supply of capital equipment becomes elastic. According to Marshall this type of earning is defined as quasi-rent rather than the concept of rent defined earlier sections. It is a surplus earning enjoyed by the owner of capital in the short run due to an increase in demand for it and will be completely wiped out when supply will increase in response to the increase in demand.

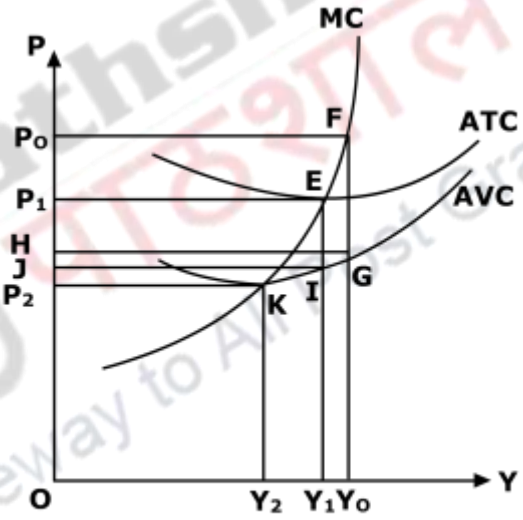

Figure-3.3.1

The quasi-rent can also be defined as revenue generated in the short run less the short run variable cost. For instance, assume that a firm hires a machine on contract, and pays a constant amount per period. This kind of payment is fixed and not considered as a variable cost for the firm. If the entrepreneur has only one fixed factor, his total revenue net of the total variable cost is a quasi-rent earned by the machine. This quasi-rent may be higher than, equal to or lower than the fixed rental of the machine. This concept of quasi-rent can be explained graphically in figure-3.3.1. We plot average variable cost (AVC), average total cost (ATC), and marginal cost

(MC) in the price output quadrant (figure-3.3.1). Suppose at price OP_0 the average revenue or demand for product intersects the marginal cost at F and corresponding output is OY_0. We draw a vertical line from F to Y_0. The FY_0 line cuts the AVC curve at point *G*. Hence, the area of the rectangle $FGHP_0$ measures the difference between total revenue and total variable cost or quasi-rent in the short run. The surplus earning defined by the area $FGHP_0$ is greater than the total fixed cost. This implies that in this case quasi-rent of the machine is greater than fixed cost or fixed rental of the machine.

In the long run when a large number of new firms enter, the supply of machines will increase and there will be an expansion of output. This will lead to fall in price of product. In figure-3.3.1 price falls from OP_0 to OP_1. At price P_1 the average revenue curve is tangent with ATC curve shown by point E. That indicates that at OP_1 price the fixed rental cost of capital equals to the quasi-rent. This is shown by the area of rectangle $EIJP_1$. Suppose that the demand further declines and price falls to OP_2 at which price equals to minimum of AVC. At price level OP_2, average revenue earned from the capital equipment equals to the minimum of average variable cost shown by the point K and the quasi-rent is completely eroded away. In this case quasi-rent is zero, but the rental cost of capital still exists and as before equals to total fixed cost. If the price falls further (suppose price falls below the shut-down point), firm will stop production. Therefore, quasi-rent cannot be negative.

4. Summary

- Rent is the price paid to any factor whose supply is inelastic in the short run.
- There are three different concepts of rent: land rent, economic rent and quasi-rent.
- Land rent is payment to the landlord just for the use of land. It is generated due to the scarcity of land.
- Differential rent is another concept of land rent which appears due to qualitative differences (e.g. fertility) across the plots of a land.
- Economic rent is the excess payment to an input over its transfer earning or opportunity cost.
- If the market supply of an input is fixed or perfectly inelastic, all of the payment made to the input is rent.
- If the market supply of an input is positively sloped or moderately elastic, the area above the supply curve and below the price of input shows the rent.
- When the supply curve is perfectly elastic, there will be no rent, the entire income will be transfer earning.
- Quasi-rent arises due to the inelastic supply of capital equipment in the short run.
- The quasi-rent can also be defined as revenue generated in the short run less the short run variable cost.