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The Marginal Productivity Theory of Distribution

What determines the prices of factors of production? A theory which tries to answer this question and which has been honestly extensively held by professional economists is known as marginal productivity theory of distribution. The essence of this theory is that price of a factor of production depends upon its marginal productivity. It also seems to be very fair and just that price of a factor of production should get its reward according to the contribution it makes to the total output, i.e., its marginal productivity. Marginal productivity theory was first put forward to explain the determination of wages, i.e., reward for labour but later on prices of other factors of production such as land, capital etc. also was explained with marginal productivity. It suggests some broad principles regarding the distribution of the national income among the four factors of production.

The marginal productivity theory of distribution developed by J. B. Clark, at the end of the 19th century, provides a general explanation of how the price of a factor of production is determined.

In other words, it recommends some broad ideologies regarding the distribution of the national income among the four factors of production.

According to the Marginal Productivity Theory an entrepreneur will keep employing additional units of a factor of production till the marginal productivity of the factor equals its marginal cost. The marginal cost of the entrepreneur in this case will be the payment he makes to the last unit of the factor. The price of a factor tends to be equal to the value of its marginal product. Thus, rent is equal to the value of the marginal product (VMP) of land; wages are equal to the VMP of labour and so on. The neo-classical economists have applied the same principle of profit maximisation (MC = MR) to determine the factor price. Just as an entrepreneur maximises his total profits by equating MC and MR, he also maximises profits by equating the marginal product of each factor with its marginal cost.

Assumptions of the Theory:

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

1. Perfect competition in both product and factor markets: The theory accepts perfect competition in both product and factor markets. It means that both the price of the product and the price of the factor (say, labour) remain unchanged.

2. Operation of the law of diminishing returns: The theory assumes that the marginal product of a factor would reduce as additional units of the factor are employed while keeping other factors constant.

3. Similarity and divisibility of the factor: All the units of a factor are assumed to be divisible and homogeneous. It means that a factor can be divided into small units and each unit of it will be of the same kind and of the same quality.

4. Operation of the law of substitution: The theory assumes the likelihood of the substitution of different factors. It means that the factors like labour, capital and others can be freely and easily substituted for one another. For example, land can be substituted by labour and labour by capital.

5. Profit maximisation: The employer is supposed to employ the different factors in such a way and in such a proportion that he gets the maximum profits. This can be achieved by employing each factor up to that level at which the price of each is equal to the value of its marginal product.

6. Full employment of factors: The theory assumes full employment for factors. Otherwise each factor cannot be paid in accordance with its marginal product. If some units of a particular factor remain unemployed, they would be then willing to accept the employment at a price less than the value of their marginal product.

7. Exhaustion of the total product: The theory assumes that the payment to each factor according to its marginal productivity completely exhausts the total product, leaving neither a surplus nor a deficit at the end.

Some Key Concepts:

1. MPP:

The first is marginal physical product of a factor. The marginal physical product (MPP) of a factor, say, of labour, is the increase in the total product of the firm as additional workers are employed by it.

2. VMP:

The second concept is value of marginal product. If we multiply the MPP of a factor by the price of the product, we would get the value of the marginal product (VMP) of that factor.

3. MRP:

The third concept is marginal revenue product (MRP). Under perfect competition, the VMP of the factor is equal to its marginal revenue product (MRP), which is the addition to the total revenue when more and more units of a factor are added to the fixed amount of other factors, or MRP = MPP x MR under perfect competition. It is simply MPP multiplied by constant price, as P = MR.

The Core of the Theory:

The marginal productivity theory is the general theory of distribution. The theory elucidates how the prices of the various factors of production would be determined under the conditions of perfect competition and full employment. According to the theory the price of any factor will be equal to the value of its marginal product. A firm will go on employing more and more units of a factor until the price of that factor is equal to the value of the marginal product. In other words gets when he employs an additional unit of that factor, each factor will be rewarded according to its marginal productivity. The marginal productivity is equal to the value of the extra product which an employer gets when he employs an added unit of that factor, the supply of all other factors remaining constant. Therefore the productivity of the marginal unit of a factor determines the rate that is to be paid to all units of the factor. The employer combines the different factors of production to produce the output at the minimum of cost and the reward for the each factor is determined by its marginal productivity. The theory has been used to explain the determination of rent, wages, interest and profits. As such it is also called as the general theory of distribution.

Criticisms of the Theory:

1. Indetermination of marginal product: Main product is a joint product produced by all the factors jointly. Hence the marginal product of any particular factor cannot be separately determined.

2. Unrealistic: The theory is unrealistic because it's based on the unrealistic assumptions of perfect competition and full employment etc.
3. Market imperfection: The theory assumes the existence of perfect competition, which is rarely found in the real world.
4. Full employment: Again, the assumption of full employment is also unrealistic. Full employment is also a myth, not a reflection of reality.
5. Difficulties of factor substitution: Factor substitution is not very cool as assumed by the theory.
6. Emphasis on the demand side only: The theory is one-sided as it ignores the supply side of a factor; it has emphasised only the demand side i.e., the employer's side
7. Inhuman theory: Finally, the theory is often described as 'inhuman' as it treats human and non-human factors in the same way for the determination of factor prices.
8. No ethical justification: The theory does not provide any ethical justification for the existence of inequalities in the market economies.

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