

demand for factors is a derived demand, i.e., their demand arises due to the demand for various commodities in whose production the factors are used. The supply of labour is not cost determined like the supply of commodities, but influenced by attitudes of workers toward work and leisure.

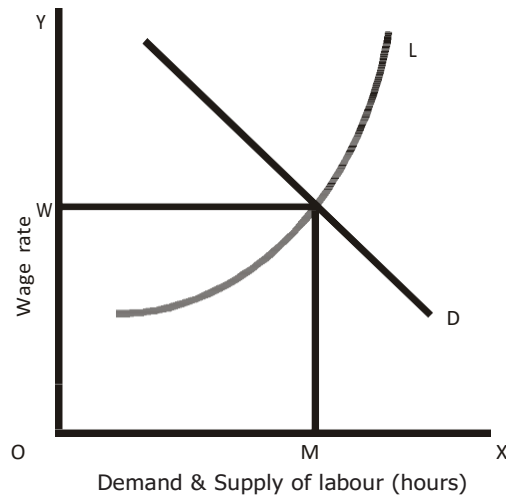


Fig. 11.5

MARGINAL PRODUCTIVITY THEORY

Marginal productivity theory tries to explain how the services of factors are determined. As already stated, a firm works for profits and therefore he will not pay any factor more than its marginal productivity. Similarly, no factor will accept price less than its marginal productivity. Thus, marginal productivity determines the price of a factor. An entrepreneur will substitute one factor for another till the marginal productivities of all factors are equalized. At the margin of employment, the payment made to the factor concerned is just equal to the value of the addition made to the total production due to the addition of an extra employment of a unit of a factor. If the prevailing wage rate is less the marginal productivity, then more labour will be employed. Competition among the firms will raise the wage rate to the level of marginal productivity. On the contrary, when marginal productivity is less than the wage, the firms will reduce the demand for labour. As a result wage will fall to the level of marginal productivity. In this manner, by competition, wage tends to equal the marginal productivity of labour. This is applicable to other factors of production. The Fig. 11.6 shows the above explanation. MRP is the marginal productivity curve for labour. It is the demand curve for the factor. At wage rate OW, OM quantity of labour is employed because at this level of employment, wage is equal to marginal productivity of labour.

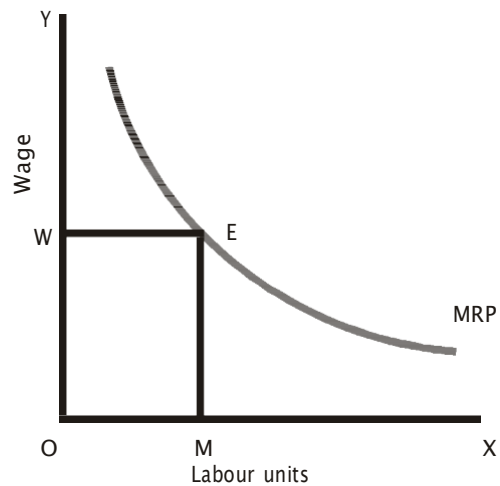


Fig. 11.6

UNIT-5

Shortcomings of Marginal Productivity Theory

Marginal productivity theory is criticized on the following grounds:

1. Assumption that all units of factors are homogenous is wrong. All labourers are not alike. Efficiency varies from labour to labour. Similarly, capital units are also of different types.
2. Different factors cannot always be substituted as assumed.
3. It is also assumed that factors are mobile as between various uses. Land lacks mobility. Labour and capital are also not perfectly mobile.

Questions for Review

1. Who demand factors in the markets?
2. Who supply factors in the markets?
3. Define marginal physical productivity. How is it different from marginal revenue productivity?
4. Name two factors which shift the factor demand curve.
5. Explain backward bending supply curve of labour.
6. Demand for labour is derived demand. Explain.
7. What is the essence of marginal productivity theory of distribution?
8. How is price of a factor determined? Explain with the help of a diagram.
9. Describe marginal productivity theory of distribution.
10. What is derived demand?
11. What are the factors that determine market supply of labour?
12. Calculate from the following table-MPP and MRP, given that price per unit of the commodity is Rs. 5/-.

<i>Units of labour</i>	<i>Total Physical Product</i>	<i>Marginal Physical Product</i>
1	6	
2	14	
3	20	
4	39	
5	60	
6	90	
7	115	
8	130	
9	152	
10	161	

12

FACTOR PRICES, COMPARATIVE ADVANTAGE AND INTERNATIONAL TRADE

A study of international trade necessarily explains why nations trade with other. The immediate cause of international trade is the presence of differences in the prices of goods and services between the countries. Price differences arise because of differences in supply and demand conditions. Supply conditions differ due to various reasons such as natural endowments of economic resources, the degree of efficiency with which factors are employed, the level of technology, labour skills, factor abundance etc. Differences in demand are mainly due to differences in income and taste pattern of people in different countries. The result of international trade will be equalization of product prices as well as factor prices. Before we analyze further, it would be imperative to have acquaint ourselves with some important terms used in the study of international trade.

Internal and International Trade

Internal or inter-regional trade may be defined as exchange of goods and services among the residents of the same country. International trade is the exchange of goods and services between the residents of a given country and those of the rest of the world. The fundamental principles underlying trade between different countries and that within a country are the same. There is free mobility of factors of production within the nation whereas in the international setting, factor mobility is not free. In former case, there could not exist inter-regional differences in factor prices. The factors would always be attracted towards the regions where their prices are higher. As such they would move from the regions where their prices are low paid to the places where they would be rewarded at higher rates. This movement would continue till the factor price differences between the regions are completely removed. In the latter case, mobility is restrictive by immigration laws that prevent free mobility of labour from one country to another. The restrictions are not only limited to labour flow but also to flow of capital and investment across the countries. There are barriers as social, political and cultural that also restricts the flow of capital and labour.

As regards to movement of goods and services within a nation, it is free. The only barriers internally are the distance and cost of transportation. In case of international trade, such movement is not free because of various barriers like import and export duties and quotas, exchange controls non-tariff barriers etc.

Economic environment within the nations is more or less same in all regions. Economic environment such as legal framework, regulations regarding production and exchange of goods,

infrastructural facilities, etc are same within a country. But between nations, there are significant differences in economic environment.

The distinction between internal and international trade can be significantly seen in case of monetary units. There are currency differences between countries. Money and capital market within a country are the same for all regions governed by a single currency facilitating exchange of goods and services. But in the international setting this is not true. International monetary differences create complications in international transactions, which are not found in domestic trade.

Absolute Factor Price Difference

It occurs when the price of a factor in one country is different, in absolute terms, from the price of that factor in another. For example, if a labour earns Rs. 100 by working a day in India and by providing same labour the worker gets Rs. 500 in Japan, then there is absolute factor price difference between these two countries.

Relative Factor Price Difference

It refers to the difference in factor price ratios across regions or countries. For example, in Japan a labour earns Rs. 500 per day and capital earns Rs. 2000 and in India earning of a labour is, say, Rs. 100 and that of capital Rs. 500, then relative factor price difference is,

$$\text{In case of Japan,} \quad \frac{P_L}{P_K} = \frac{500}{2000} = \frac{1}{4}$$

$$\text{In case of India,} \quad \frac{P_L}{P_K} = \frac{100}{500} = \frac{1}{5}$$

Thus, factor price ratio in India is lower than that in Japan.

THE CLASSICAL THEORY OF INTERNATIONAL TRADE

Theory of Absolute Advantage—Adam Smith

Adam Smith provided the base for the development of the classical theory of international trade. His theory is popularly known as the Theory of Absolute Advantage. According to Smith, if one country has absolute advantage over another in one line of production, and the other country has an absolute advantage over the first country in another line of production, then both the countries would gain by trading. He, thus, showed how all countries would gain from international trade through international division of labour. Let us explain Smith's theory of international trade by taking an example.

Let us suppose that there are two countries in the world—India and America. We also assume that there are two goods traded between these countries—tea and textiles. Assume further that both the countries can produce both the goods if they wish. Suppose America can produce 100 units of textiles or 50 units of rice using a given amount of factors of production or any other combination of two goods provided that the opportunity cost ratio remains 2:1. It would mean that if America wants to produce 1 more unit of rice, it will have to give up the opportunity

of producing 2 units of textiles. In the same manner and with same amount of factors of production, India can produce 50 units of textiles or 100 units of rice or any other combination in the opportunity ratio of 1:2. It means that India has to give up 1 unit of textiles for the production of 2 units of rice. Thus, it is clear that America has an absolute advantage in the production of textiles and India has absolute advantage in the production of rice. This means there is scope for India to establish trade relations with America by specializing in production of that commodity where each has absolute advantage.

Thus, America will specialize in the production of textiles and India in the production of rice, when they start trading each other. Autarky is a situation when a country is not having any trade relations with rest of the world. In such situation, two countries in question will produce and consume a combination of textiles and rice as shown in the following table:

<i>Countries</i>	<i>Textiles (units)</i>	<i>Rice (units)</i>	<i>Total output/GNP (units)</i>
U.S.A.	50	25	75
India	25	50	75
World	75	75	150

America produces and consumes 50 units of textiles and 25 units of rice whereas India produces and consumes 25 and 50 units of textiles and rice respectively. When the two countries open their economies to international trade, there take place changes in respect of production lines and GNP, as shown below in the table:

<i>Countries</i>	<i>Textiles (units)</i>	<i>Rice (units)</i>	<i>Total output/GNP (units)</i>
U.S.A.	100	0	100
India	0	100	100
World	100	100	200

After the trade is established, America produces textiles only and India produces rice. The two countries divert their resources in the production of that commodity in which they have absolute advantage. As a result of trade, GNP of both the countries has increased to 100 units. The world trade has also increased by 50 units. Both the countries have become better off, after trade, without making any country worse off. Thus, there have been production gains from international trade between two countries. As regards to consumption gains from trade, it depends on distribution of gains from production between two countries. In other words, consumption gains depend upon the terms of trade, i.e., number of units of textiles exchanged for one unit of rice between India and America.

Theory of Comparative Advantage—David Ricardo

Ricardo's model on international trade is a further refinement of Smith's model. He argued that even if the countries did not have absolute advantage in any line of production over the other countries, international trade would be gainful. Let us explain Ricardo's model as under.

Let us again take the example of a world with only two countries—America and India and two commodities—textiles and rice. Ricardo assumes that one country has the absolute advantage

over the other country in both the lines of production. It means the other country has absolute disadvantage in both the lines of production. Further, in terms of relative or comparative advantage, he assumes that the first country has a greater comparative advantage in one line of production compared with the other and second country has a smaller comparative disadvantage in the second line of production compared with the first line of production. In short, one country's comparative advantage is greater in one line of production, and the other country's comparative disadvantage is smaller in the other line of production. If trade is established between these two countries, it would bring both production and consumption gains. The production possibilities of the two countries are shown in the following table:

<i>Countries</i>	<i>Textiles (units)</i>	<i>Rice (units)</i>	<i>Opportunity cost ratios</i>
U.S.A.	120	120	1:1
India	40	80	1:2

America can produce 120 units of textiles or 120 units of rice, or any other combination of textile and rice at opportunity cost ratio of 1:1. It means America can produce 1 unit of textile (or rice) by sacrificing 1 unit of rice (textile). Here, America has absolute advantage in the production of both textiles and rice. India, on the other hand, has absolute disadvantage in either line of production. She can produce either 40 units of textiles or 80 units of rice or any combination at opportunity ratio of 1:2. It would mean that India has to give up 2 units of rice to produce 1 unit of textiles. Alternatively, $\frac{1}{2}$ unit of textiles have to be given up to produce 1 unit of rice. It is to be noted here that the internal cost ratios for producing two commodities in the two countries are different, implying that there is potentiality of gains from international trade. The cost of producing any commodity in America is same, but in India it is not so. In India, to produce 1 units of rice, $\frac{1}{2}$ units of textiles has to be given up and to produce 1 unit of textiles, 2 units of rice has to be given up. From the table above, we can see that America's comparative advantage over India is greater in the production of textiles (3:1) as compared to rice (1.5:1). Therefore, America would specialize in the production of textiles than rice. Now, India's comparative disadvantage, in relation to America, is lower in the production of rice (1:1.5) than textile (1:3). Thus, India would specialize in the production of rice than textiles.

The theory suggests that a country should specialize in the production and export of those goods in which either its comparative advantages is more or its comparative disadvantage is less. Then only a country can maximize its production and increase economic welfare.

THEORY OF OPPORTUNITY COST

Adam Smith's and David Ricardo's theories were based on the labour theory of value, which has been criticized on the ground that labour is not a homogenous factor and is not the only factor of production. Goods are produced by using all factors of production –land, labour, capital and organization and not labour alone. Thus Heberler has developed a theory in terms of opportunity costs using labour and capital in 1936. Once comparative advantage is defined in terms of opportunity costs, it makes no difference whether goods are produced by labour alone or by all factors of production combined with labour. Let us explain the theory with an example. Suppose U.S. can produce either 100 units of wheat or 100 units of cloth when all factors are fully