UNIT 6  LABOUR MARKET

Structure

6.0  Objectives

6.1  Introduction

6.2  Meaning of Labour Markets

6.3  Labour Market: Different Market Structures
    6.3.1  Perfect Competition
    6.3.2  Imperfect Competition

6.4  Labour Market Policies
    6.4.1  Minimum Wage Laws
    6.4.2  Role of Labour Unions

6.5  Why Wages Differ?

6.6  Let Us Sum Up

6.7  References

6.8  Answers or Hints to Check Your Progress Exercises

6.0  OBJECTIVES

You have already studied the basics of factor markets in the Unit 5. This unit discusses in detail the characteristics of and price mechanism in labour market as labour differs significantly from the other factors of production. Households supply labour and are paid wages in return of their services. Labour is inseparable from a labourer and this characteristic distinguishes labour market from land and capital markets. After going through this unit, you will be able to:

•  state the meaning of labour markets;
•  explain the demand and supply mechanisms in perfectly competitive labour markets;
•  analyse demand and supply mechanisms in imperfectly competitive labour markets;
•  discuss the policies in labour markets; and
•  identify the reasons behind variations in wage rates.

6.1  INTRODUCTION

The decisions that people make about work determine the economy’s supply of labour. Their decisions about savings determine the economy’s supply of funds in the capital market. Economists use the basic model of choice to help understand the patterns of labour supply. The choice of work is a choice between consumption and leisure. Holding technology and other inputs constant, there exists a direct relationship between the quantity of labour inputs and the amount of output. The law of variable proportions states that after a certain level, each additional unit of labour input will add a smaller and smaller
amount to the total output. Thus, there are diminishing returns to labour. This unit aims at analysing the meaning and mechanism of labour markets by undertaking a demand-supply analysis of a labour market in both perfectly competitive and imperfectly competitive market structures.

There are government interventions, labour market policies, labour rights and labour laws in an economy. This unit has looked into the implications of the presence of minimum wage laws and labour unions in detail. The last section of the unit looks into the reasons leading to variation in wage-rates across professions. A deeper understanding of labour markets would help you to understand how labour as a resource functions in an economy.

6.2 MEANING OF LABOUR MARKETS

In order to understand the meaning of labour markets, one needs to understand who are the demanders and suppliers in the labour market. Firms and other employers demand labour to produce goods and services. Households supply their labour services and in return, get wages. The labour market is studied by microeconomists as well as macroeconomists as both use the tools of demand and supply. The labour market refers to the supply and demand for labour, in which employers provide the supply and employers the demand. It is a major component of any economy, and is intricately tied in with markets for capital, goods and services. At the macroeconomic level, supply and demand are influenced by domestic and international market dynamics, as well as factors such as immigration, the age of the population, and education levels. Commonly used measures in labour markets are unemployment rate, labour productivity, labour intensity, participation rates and total wage income as a percentage of GDP. Wages represent the price of labour, which provide an income to households and represent a cost to firms. In a hypothetical free market economy, wages are determined by the unregulated interaction of demand and supply. However, in real mixed economies, governments and trade unions can exert an influence on wage levels. At the microeconomic level, individual firms interact with employees, hiring them, firing them, and raising or cutting wages and hours of work. The interaction between supply and demand influences the hours the employees work and compensation they receive in form of wages, salary and other benefits.

6.3 LABOUR MARKET: DIFFERENT MARKET STRUCTURES

As labour is generally demanded for producing goods and services, the demand for it would depend on the structure of the market for goods and services too. We would study it under two major heads:

- Perfectly competitive market
- Imperfectly competitive market

6.3.1 Perfect Competition

DEMAND FOR LABOUR

We begin the discussion by analysing what determines the number of workers the employers would like to hire at any given wage rate. Demand for labour depends on both productivity of labour and the price that market sets for
Factor Market

worker’s output. The more productive the workers are, the more is the value of the goods and services produced by them and the greater the number of workers an employer wants to hire at the given wage-rate. Table 6.1 shows the relationship between output and the number of workers employed in a computer hardware company. Column 1 shows the possible number of workers that may be employed by the company and Column 2 shows the output produced depending on the number of workers hired. Column 3 shows the marginal product of labour which is the additional production due to addition of one more worker. As discussed earlier, as more and more workers are hired by an organisation, beyond a certain limit there are decreasing returns to labour. The law of diminishing returns to labour states that if the quantities of capital and other inputs are held constant, then the greater the quantity of labour employed, lesser would be their marginal contributions to production. This can be observed in Column 3 which depicts marginal product of labour. Column 4 shows the value of marginal product at each level of employment. The value of marginal product of labour is the amount of extra revenue that an additional worker generates for the firm. Specifically, the value of the marginal product of workers is workers’ marginal product multiplied by the price of output. Here the price of output is taken as Rs. 20,000 per unit. Monthly wage rate of computer hardware workers in the market is Rs. 20,000/-. 

Table 6.1: Relationship between output and number of workers

<table>
<thead>
<tr>
<th>Number of Workers</th>
<th>Computers Produced per Year</th>
<th>Marginal Product</th>
<th>Value of Marginal Product (In Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>15</td>
<td>$15 \times 20,000 = 300,000$</td>
</tr>
<tr>
<td>2</td>
<td>28</td>
<td>13</td>
<td>$13 \times 20,000 = 260,000$</td>
</tr>
<tr>
<td>3</td>
<td>39</td>
<td>11</td>
<td>$11 \times 20,000 = 220,000$</td>
</tr>
<tr>
<td>4</td>
<td>47</td>
<td>8</td>
<td>$8 \times 20,000 = 160,000$</td>
</tr>
<tr>
<td>5</td>
<td>52</td>
<td>5</td>
<td>$5 \times 20,000 = 100,000$</td>
</tr>
<tr>
<td>6</td>
<td>55</td>
<td>3</td>
<td>$3 \times 20,000 = 60,000$</td>
</tr>
<tr>
<td>7</td>
<td>57</td>
<td>2</td>
<td>$2 \times 20,000 = 40,000$</td>
</tr>
<tr>
<td>8</td>
<td>57</td>
<td>0</td>
<td>$0 \times 20,000 = 0$</td>
</tr>
</tbody>
</table>

The company would hire an extra worker if and only if the value of his marginal product is at least as great as the wage payable to him. In our example above, the second worker’s marginal product is 13 computers during the year. These are valued at Rs. 2,60,000/- but, at the rate of Rs. 20,000 per month, this worker gets only Rs. 2,40,000/- as wages during the year. Thus, the company clearly earns Rs. 2,60,000 – Rs. 2,40,000 = 20,000/- as a surplus on giving employment to this worker. The company will not employ the 3rd worker, his marginal product will be valued at Rs. 2,20,000/- only, which is Rs. 20,000/- less than the wage payment necessary to employ him.
Suppose market wage rate drops down to Rs. 15000/- per month. There will be a change in employment decision of the company. Every worker will not receive Rs. 1,80,000/- per annum. We can read from Column 4 of the Table 6.1 that marginal product of the third worker is valued at Rs. 2,20,000/- and this exceeds annual wage payment to him by Rs. 40,000/-. The company will definitely employ this person as his employment adds to the surplus. However, the fourth person will still not be considered ‘employable’ by the company as his marginal product (Rs. 1,60,000/-) will be less than his wage bill (Rs. 1,80,000/-).

**Wages**

![VMP Curve](image)

**Fig. 6.1: Demand curve of labour**

**FACTORS AFFECTING DEMAND FOR LABOUR**

The number of workers the company hires at any given real wage rate depends on the value of their marginal product. Changes in the economy that increase the value of workers’ marginal product will increase the value of extra workers to the company and would thus affect the demand for labour at any given real wage. This implies that any factor which raises the value of the marginal product of the company’s workers will also shift the company’s labour demand curve to the right. In short, the two factors which directly affect and increase labour demand are:

a) An increase in the price of company’s output

b) An increase in the labour productivity of company’s workers

This can be easily shown using the above example (Table 6.2). Suppose the price of output increases from Rs. 20,000 per unit to Rs. 30,000 per unit. The value of marginal product of labour would change in accordance to the price change and will also change the number of workers to be hired by the company if the ongoing wage rate remains the same.

**Table 6.2 : Value of Marginal Product and Firm’s decision to Hire**

<table>
<thead>
<tr>
<th>Number of Workers</th>
<th>Computers Produced per Year</th>
<th>Marginal Product</th>
<th>Value of Marginal Product (In Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>15</td>
<td>450000</td>
</tr>
</tbody>
</table>
Here, if market wage rate remains Rs. 20,000/- per month the 4th worker is also hired- as value of his marginal product (Rs. 2,40,000/-) equals the wage payable to him during the year (Rs. 2,40,000/-). But hiring the 5th worker will not be in the company’s interest – he would add only Rs. 1,50,000/- to the total revenue, but claim Rs. 2,40,000/- as wages.

The next possibility is rise in labour productivity. We are showing it in Table 6.3. The wage rate is retained at Rs. 20,000/- per month and the market price of computers is assumed to be Rs. 20,000/- as in Table 6.1.

**Table 6.3 : Improvement in labour productivity and Demand for labour**

<table>
<thead>
<tr>
<th>Number of Workers</th>
<th>Computers Produced per Year</th>
<th>Marginal Product</th>
<th>Value of Marginal Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>25</td>
<td>5,00,000</td>
</tr>
<tr>
<td>2</td>
<td>48</td>
<td>23</td>
<td>4,60,000</td>
</tr>
<tr>
<td>3</td>
<td>68</td>
<td>20</td>
<td>4,00,000</td>
</tr>
<tr>
<td>4</td>
<td>84</td>
<td>16</td>
<td>3,20,000</td>
</tr>
<tr>
<td>5</td>
<td>96</td>
<td>12</td>
<td>2,40,000</td>
</tr>
<tr>
<td>6</td>
<td>105</td>
<td>9</td>
<td>1,80,000</td>
</tr>
<tr>
<td>7</td>
<td>112</td>
<td>7</td>
<td>1,40,000</td>
</tr>
<tr>
<td>8</td>
<td>115</td>
<td>3</td>
<td>60,000</td>
</tr>
</tbody>
</table>

The Table 6.3 shows that workers are able to produce more computers at every level of employment. Now, the value of 5th worker’s marginal product will be just equal to his wage claim. The company can consider employing him as well.

We can, now say, in the light of our examples in Tables 6.1 to 6.3 that:

i) if the wage rate declines, employment increases;

ii) if the price of output rises, employment increases; and

iii) if the productivity of labour increases, employment increase, given the market price of the product, value of the marginal product of labour rises.

**SUPPLY OF LABOUR**

Economists use the basic model of choice to help understand patterns of labour supply. The decision about how much labour to supply is a choice between
consumption and leisure. Leisure implies the time available to a person when not working. By giving up leisure, a person receives additional income and this enables him/her to increase consumption. On the other hand, by working less and giving up some consumption, a person enjoys more leisure.

The suppliers of labour are workers and potential workers. At any given real wage, potential suppliers of labour must decide if they are willing to work. The total number of people who are willing to work at each real wage is the supply of labour. The minimum payment or the reservation price which one sets for labour is the compensation level that leaves one indifferent between working and not working. In economic terms, deciding whether to work at any given wage depends on the cost-benefit principle. The willingness to supply labour is greater when the wage rate is higher. This results into the upward slope of supply curve upto a point and then bends backward supply curve.

![Backward-bending supply of Labour](image)

**Fig. 6.2 : Supply curve of labour**

The backward-bending shape of labour supply curve results from the fact higher wage rates create disincentive for longer hours of work. Why? This is so because longer working hours imply less leisure hours. As the wage rate increases, the individual’s income rises enabling workers to have access to more leisure activities. So beyond a certain level of the wage rate, the supply of labour decreases as the worker prefers to use his income on more leisure activities.

**FACTORS AFFECTING SUPPLY OF LABOUR**

Any factor that affects the quantity of labour offered at a given real wage will shift the labour supply curve. At the macroeconomic level, the most important factor affecting the supply of labour is the size of the working-age population which is influenced by factors such as the domestic birth rate, immigration and emigration rates, and the ages at which people normally enter the workforce and retire.

**Check Your Progress 1**

1) State the features of a labour market?

.......................................................... ..........................................................
.......................................................... ..........................................................
.......................................................... ..........................................................
2) Derive the demand for labour in a competitive market. How is Value of Marginal product and Marginal revenue product curve relevant in the derivation of labour demand?

3) What is the slope of supply curve of labour in perfectly competitive markets? Comment on its shape.

6.3.2 Imperfect Competition

Demand for Labour

The firms in this market can sell larger output only if they are willing to accept a lower price. The demand curve facing a typical firm will be downwards sloping. Employment of an additional worker leads to rise in output which can be sold at a lower price only. The firm has to compare its rise in cost which change in revenue because of increase in output on account of hiring of one more worker.

Consider demand schedule for a product faced by monopolistically competing firm. It is presented in Table 6.4.

<table>
<thead>
<tr>
<th>Price</th>
<th>Quantity Demanded</th>
<th>Total Revenue</th>
<th>Marginal Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>18</td>
<td>8</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>24</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td>4</td>
<td>28</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>7</td>
<td>28</td>
<td>-2</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>24</td>
<td>-4</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>18</td>
<td>-6</td>
</tr>
</tbody>
</table>

Since MR is falling at a rate faster than AR = Price, MRP = MR × MP will decline at a rate faster than the rate of decline of VMP = Price × MP.

Thus, we get two curves: VMP & MRP, which are depicted in Fig. 6.3.
Under the competitive conditions of the labour market, any firm can hire as many workers as it deems necessary at the going market wage rate. Therefore, the supply curve of labour for the firm will be horizontal. It is depicted by its line \( W S_L \).

VMP can be regarded as demand curve for labour for a firm which is operating in competitive, than its demand for labour is represented by \( MRP_L \).

Now compare the two situations. The wage rate paid by both firms remains same, \( OW \). But a competitive firm will employ \( OL_C \) number of workers while a monopolistic firm will stop at \( OL_m \). This latter firm hires fewer workers. It shall produce smaller output even when size of plant and state of technology was one used by competitive firm.

**SUPPLY OF LABOUR**

The supply of labour is not affected by the fact that firms have monopolistic power. Market supply of labour is the summation of the supply curves of individual households. Supply curve that an individual firm faces is however perfectly elastic and that of the market is positively sloped at the given wage rate.

**EQUILIBRIUM**

The market price of the factor is determined by the intersection of the market demand and the market supply. An important difference in this case is that the
market demand is based on the MRP and not on the VMP. This means that when the firms have monopolistic power in goods market, the labour is paid its MRP which is smaller than the VMP. So the workers are paid less than case of perfect competition where MRP was equal to VMP.

**Check Your Progress 2**

1) Distinguish the demand for labour in perfectly competitive and imperfectly competitive markets.

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

2) Draw and explain the supply curve of labour of an imperfectly competitive firm.

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

3) How is equilibrium achieved in an imperfectly competitive market? How is it different from equilibrium under perfectly competitive markets?

........................................................................................................................................
........................................................................................................................................
........................................................................................................................................

---

### 6.4 LABOUR MARKET POLICIES

Labour markets are segmented and are of different types.

#### 6.4.1 Minimum Wage Laws

Minimum wage laws prescribe a wage rate which the employers must pay to their workers. Minimum wages are most useful to the low-skilled workers. The mechanism of minimum wage and its effects can be understood using a diagram.

![Diagram of Minimum Wage Effects on Labour Market](image)

*Fig. 6.5: Implications of Minimum wage laws on labour market*

You may observe that W is the market-clearing wage at which the quantity of
labour demanded equals the quantity of labour supplied and the corresponding level of employment of low-skilled workers is $N$. Suppose there is a legal minimum wage $W_{\text{min}}$ that exceeds the market-clearing wage $W$. At the minimum wage, the number of people who want jobs $N_r$ exceeds the number of workers that employers are willing to hire. This results into unemployment.

### 6.4.2 Role of Labour Unions

Labour unions are organisations that negotiate with employers on behalf of workers. Among the issues that unions negotiate are the wages workers earn, rules for hiring and firing, duties of different types of workers, work hours and working conditions, procedures for resolving disputes between workers and employers. Unions gain negotiating power by their power to call a strike i.e. to refuse to work until an agreement is reached. Demand for higher wages by the union comes with its own costs and benefits. The effect of a high union wage would be similar to minimum wage. Higher union wage would enable union members and staff to enjoy higher salaries at the cost of other workers who are unemployed as a result of artificially higher union wage rate. Critics are of the view that although labour unions are important to safeguard the conditions of work and workers, yet in today’s times firms having them are finding difficult to compete with their counterparts that have no unions as the former has artificially higher wages and thus higher costs.

### 6.5 WHY WAGES DIFFER?

This section deals with the fundamental question asked in labour economics that what makes people earn different wages. Why wage rates of doctors are higher than the wage rates of medical assistants? Why wage-rates of actuaries are higher than the wage-rates of fire-fighters? Is it the skill or the background or the age that brings about differential in wages of different workers? The answer is none of these. Differential wages are a result of the difference in demand-supply of jobs available. There are several possibilities to the differential existence of jobs. It is possible that workers currently employed as clerks may prefer their jobs despite the difference in their salaries as they do not want to become an engineer. Even acquiring skills of an engineer may have a significant cost. Wages for engineers may not be sufficiently high to compensate clerks for the training costs they would have to bear to become engineers. Moreover even if there were no training costs, clerks may not have the aptitude for science and mathematics necessary to work as engineers. Thus, training costs as well as differences in worker’s abilities and preferences for particular jobs can lead to differences in equilibrium wage rates among persons and jobs; there is no tendency toward adjustments that would wipe out wage differentials due to such factors. Let us discuss such factors affecting wage differentials in some detail:

1) **Compensating wage differentials:** Many a times workers themselves make a decision to remain in a certain job even though they may be qualified for a higher pay package in a different job. For e.g., an experienced researcher in a university may be offered a job profile requiring him to work on some country project with a high package but may not choose to accept it as it may result into less time and freedom for his independent research.

When workers view some jobs as intrinsically more attractive than others, the forces of supply and demand produce differences in the wages
paid. These differences are called ‘compensating wages differentials’ because the less attractive jobs must pay more to equalise real advantages of employment across jobs. For e.g., a certain person’s abilities are identical to fit him in a teaching job or as a consultant in an MNC. At equal wages, he would prefer to be a teacher rather than consultant as the number of working hours of teacher is less than that of a consultant. So only if the wage rate of a consultant is 20 per cent higher than that of a teacher, then would the person shift from a teaching job to a consultancy job. Difference in money wages are necessary to equate the quantity of labour supplied and demanded in different occupations when the non-monetary attractiveness of jobs differs.

2) **Differences in human capital Investment**: Our ability to perform useful services can be augmented by training, education and experience. People can become more productive workers and more productive workers receive higher wage rates. This process through which workers augment their earning capacity is sometimes called human capital investment. Such jobs tend to pay higher wages. The reason is simple: if the wages were not higher, a few people would be willing to incur the training costs. The higher wages associated with highly skilled work are, in part, the returns on past investments in human capital.

3) **Differences in ability**: Worker’s productive capacities depend not only on their training and experience (human capital investment) but also on certain inherited traits. The relative importance of these two factors is greatly disputed. For years people have debated whether genetic or environmental factors are more important in explaining IQs. Similarly possessing abilities that are scarce is no guarantee to a higher wage. What matters is the supply of persons with abilities required to perform certain jobs relative to the demand for their services.

**Check Your Progress 3**

1) What is the minimum wage? Does it influence the level of employment at firm’s level?

2) How does labour Unions in an economy influence the wage rate and level of employment?

3) Why do you find variations in the wage-rates across different professions? Give reasons as to why a professor is paid higher salary than a school teacher?
6.6 LET US SUM UP

The unit has dealt in some detail with the working of labour markets in an economy. The first part introduces the meaning of labour markets and explains how wages are returns to the services rendered by a labourer. In the second part, perfectly competitive and imperfectly competitive market structures have been discussed. The first sub-section explains the determination of demand and supply curves of labour in the perfectly competitive markets. It shows how intersection of value of marginal product curve or marginal revenue product curve with the supply curve determines the equilibrium in this market structure. The second sub-section distinguishes demand, supply and equilibrium mechanisms of the imperfectly competitive markets by discussing the special case of a monopoly. As price and marginal revenue are different in case of monopoly, the determination of equilibrium wages and number of workers hired by a firm entirely depends on the intersection of the marginal product curve with the supply curve of the labour. The next section discusses the prominent labour market policies implemented for the welfare of workers across the world. Minimum wages are the minimum wages that need to be paid to labour for use of his/her services. Labour unions provide collective bargaining powers to workers of a firm and can bring about improvements in work conditions of workers.

The last section of the unit discusses about the most interesting debate in labour economics that why wages differ across different professions across the world. This section explains the various factors that lead to variations in the wage-rates of workers which includes compensating wages, human capital investment and differences in skill of workers. Yet relative scarcity of supply of a particular skill compared to the demand for the same remains critical determinant of its higher price.

6.7 REFERENCES


6.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

1) Read Section 6.2 and answer.

2) Read Section 6.3 and answer.

3) Read Section 6.3 and answer.

Check Your Progress 2

1) Read Sub-section 6.3.2 and answer.
Factor Market

2) Read Sub-section 6.3.2 and answer.
3) Read Sub-section 6.3.2 and answer.

Check Your Progress 3

1) Read Sub-section 6.4.1 and answer.
2) Read Sub-section 6.4.2 and answer.
3) Read Sub-section 6.5 and answer.