

- 2) The New Classicals assume price flexibility and hence perfect competition, whereas the New Keynesians assume price-setting power for firms in the context of imperfect competition. There is no distinction, though in the analytical tools of the two schools: both use optimisation models peopled by rational individuals.

Check Your Progress 2

- 1) Nominal rigidities exist when prices in money terms do not change as much as they would under competitive conditions. Real rigidities, on the other hand, refer to certain imperfections in the goods, labour and credit markets which prevent relative prices and real wages from changing as much as they would under Walrasian conditions.

Check Your Progress 3

- 1) Menu costs are costs incurred by price-setting firms in changing the price that they charge. Such costs can be quite high in absolute terms if, for example, price changes require costly adjustments to automatic dispensing machines.
- 2) Even if menu costs are not high in absolute terms they may turn out to be higher in relation to the private benefit that would be obtained in terms of increased profits by changing the price.
- 3) The distinction between private and social benefits becomes important in the context of the Mankiw model because, under certain conditions defined by, *inter alia*, the elasticity of demand, not much of private benefits are obtained by a price-setting firm in terms of higher profits by changing the price. If menu costs are higher than these private benefits, the firms do not change the price. The price rigidity that this entails leads to unemployment. If only the price had been changed the social benefit obtained by way of reduction in unemployment would perhaps be higher than the menu costs.

Check Your Progress 4

- 1) Real rigidities occur in goods market because, in an imperfectly competitive set-up, firms do not change prices – they accept instead a change in the mark-up that they charge to fix the price. In credit markets, rigidities occur ultimately because of the existence of imperfections in the form of information asymmetries – borrowers being more informed of their investment projects than lenders. Rigidities exist in the labour market in as much as real wages paid are higher than the market-clearing wage. This could happen because of efficiency wage considerations.

UNIT 16 NEW KEYNESIAN THEORIES OF UNEMPLOYMENT

Structure

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- 16.2 Keynesian and New-Keynesian Theories of Unemployment and the Behaviour of Real Wages
- 16.3 Efficiency-Wage Theories of Unemployment
- 16.4 Efficiency-Wage Model: An Example
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 - 16.4.4 Possible Extensions of the Model
- 16.5 Contracting and Insider-Outsider Models of Unemployment
- 16.6 Let Us Sum Up
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- 16.8 Some Useful Books
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16.0 OBJECTIVES

After going through this unit you should be in a position to:

- explain clearly what is meant by non-Walrasian features of the labour market;
- appreciate that, empirically, real wages behave moderately pro-cyclically;
- explain some reasons why efficiency of workers could increase when firms pay higher than market-clearing wages;
- develop an efficiency-wage model and examine its solution;
- indicate the directions for extending the efficiency wage model;
- explain why real wage rigidity and unemployment can emerge because of contracting; and
- find out the implications to unemployment of the existence of employed workers (insiders) along with unemployed workers (outsiders).

16.1 INTRODUCTION

In this unit we consider in detail some New Keynesian theories of unemployment. These theories are essentially non-Walrasian theories of unemployment. This means that the observed phenomenon of unemployment is not brushed aside as the working out of unimportant frictions as workers move between jobs; or even as involuntary unemployment of workers who are ready to work only at a higher wage than that which is available on the market. You have already looked at the difference between Walrasian and non-Walrasian theories of unemployment in Section 14.2 of Unit 14 where we considered an unemployed worker, who claimed to be identical to a firm's current workers, and who offered to work for the firm at a marginally lower wage than the one the firm is currently paying its workers. At this stage, you are advised to revise the four possible responses of the firm that were considered in Section 14.2. The

labour market can be considered to be Walrasian in the first response, whereby the firm accepts the worker's offer – any unemployment leads to a decrease in the real wage. The observed unemployment in this case is purely frictional or involuntary. The remaining sections of Unit 14 dealt with search and matching models of unemployment, which explained persistent unemployment as the equilibrium response of a heterogeneous labour market wherein specialised vacancies in a firm were matched with unemployed workers with specific skills through an elaborate search process. We considered there the second response of the firm whereby the firm did not accept that the unemployed are homogenous *vis-à-vis* the employed.

In this unit we deal with the third and the fourth responses of the firm (see section 14.2 of Unit 14). The third response was that the firm was not in a position to cut wages and employ additional workers, however much it would have liked to do this, because it was bound by implicit and explicit agreements with its workers, arrived at through collective bargaining, regarding the wages that have to be paid. This leads us to institutionally determined wages in models known as *contracting models*. The fourth response, on the other hand, was that the firm did not want to reduce real wages – it believed that the benefits accruing to it from higher wages were more than the costs of maintaining wages at a higher level. The higher wages paid are referred to as efficiency wages and the theories rationalising such wages are called *efficiency-wage theories*.

Section 16.3 deals with efficiency wage theories, whereas Section 16.4 deals with contracting models. We will evaluate these theories on the basis of the extent to which the theories help to explain empirical realities. In particular we would like our theories to explain the following two observed empirical facts about the labour markets in developed capitalist economies:

- i) Existence of persistent unemployment
- ii) The moderately pro-cyclical behaviour of real wages

The very purpose of the theories is to explain persistent unemployment. The theories should, however, also explain the observed behaviour of real wages. We deal with this latter point below in Section 16.2.

16.2 KEYNESIAN AND NEW-KEYNESIAN THEORIES OF UNEMPLOYMENT AND THE BEHAVIOUR OF REAL WAGES

As mentioned above, two phenomena about the labour market need to be explained: the persistence of unemployment and the moderately pro-cyclical behaviour of real wages. When aggregate demand increases, labour markets respond typically by a larger increase in employment and a relatively smaller increase in real wages, i.e., quantities respond more than prices. But real wages do respond cyclically, however moderately.

This point helps us to understand the difference between Keynesian and New-Keynesian theories of unemployment. Though both kinds of theories help explain persistent unemployment, it is only some of the new-Keynesian theories that explain why wages behave pro-cyclically, though only moderately so. The Keynesian theory clearly implies that wages behave counter-cyclically. This follows from the assumption of a constant nominal wage. Given the nominal wage rate W , the real wage W/P falls during an expansion as the price level P gradually increases. It is this fall in the real wage that induces firms to employ more labour and produce higher output as aggregate demand increases. During contraction, on the other hand, real wages rise as prices fall, nominal wages remaining unchanged. The Keynesian model thus implies a counter-cyclical

behaviour of real wages. This is not in accordance with the empirically observed behaviour of real wages. In real world we see that real wage increases during periods of boom and decreases during recession.

The new-Keynesian models imply an advance over the Keynesian model to the extent that they imply a pro-cyclical behaviour for real wages, in accordance with empirical observations.

Check Your Progress 1

- 1) Show that the Keynesian model implies a counter-cyclical movement of real wages.

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16.3 EFFICIENCY-WAGE THEORIES OF UNEMPLOYMENT

Efficiency wage theories are clearly non-Walrasian theories in as much as they postulate payment of wages that are higher than market-clearing wages. The persistence of unemployment follows as a direct consequence of higher wages. The efficiency wage theories rationalise the existence of higher than market clearing real wages.

Broadly speaking, firms pay higher than market-clearing real wages because the benefits accruing from higher wages are more than the cost of paying higher wages. The higher benefits can accrue for the following reasons:

- i) At a very basic level, higher wages enable higher consumption for workers, including higher nutrition, and this is expected to increase the *work capacity* of the hired workers. The point is more valid at lower levels of standards of living than are prevalent in the developed economies.
- ii) Higher wages may get into the pool of workers with a higher *reservation wage*, i.e., the minimum wage that should be offered to a worker to induce him to supply his labour on the market. Workers with a higher reservation wage are expected to have superior abilities along directions that cannot be directly observed and duly compensated for on the market. These higher abilities in the pool of employed workers are expected to benefit the firm.
- iii) A higher than market wage can build *loyalty* and a *sense of belonging* among workers and induce higher effort. This point is better understood in the context of the opposite situation of a lower wage, which is expected to have effects like generating anger and a desire for revenge, thereby leading even to a sabotage by the workers.
- iv) At a more sophisticated level, a higher wage generates incentives for workers to avoid *work-shirking* behaviour in situations where the firms cannot monitor the work effort perfectly. Workers do not want to be caught shirking in such valuable jobs, for they could be fired if caught shirking and may be able to replace the job, if at all, by one which pays only a market-clearing and hence a lower wage.

Some of the above ideas have been developed into more formal models in the literature. In the next Section you will go through one such model that analyses the determination of efficiency wages.

16.4 EFFICIENCY WAGE MODEL: AN EXAMPLE

As you know, we construct a model by making many simplifying assumptions. We specify the model, indicate its solution, and bring out all the implications of the solution. In this section we present an efficiency wage model in line with of Romer (2001).

16.4.1 Specification of the Model

We consider a model with M firms and analyse a representative firm. We specify a simple neoclassical production function with a single input, labour. However labour enters the production function, not in physical units, but in efficiency units. The production function for a representative firm is hence of the form:

$$Y = F(e.L)$$

Y is the total output produced. L is the number of physical units of labour hired by the firm. $e.L$ is the efficiency units of labour. You can look upon $e.L$ as the total effort undertaken by the L units of hired labour. Higher the index of effort, e , exerted by individual units of labour, higher the total labour input in efficiency units.

By saying that the production function is of the neoclassical kind, we mean that the total output increases as the efficiency units of labour used increase, but at a decreasing rate. In other words, marginal product of the efficiency units of labour is positive but decreases as the total labour effort expended in the production process increases. In symbols it amounts to the standard assumptions you have seen in Unit 3, that is, $F' > 0; F'' < 0$

The model further specifies that the individual effort, e , depends on the wage rate – higher the wage rate, w , higher is the effort exerted by individual physical unit of labour. The effort function can be specified as:

$$e = e(w)$$

It is also assumed that there are N workers in the economy, each supply one unit of labour inelastically: an increase in wage rate leads, not to an increase in physical labour supplied by an individual worker, but to an increase in the effort expended.

16.4.2 Solution of the Model

The model is solved by making the usual behaviouristic assumption about the firm: that the firm hires labour so as to maximise its profits. The profits of the firm are defined as:

$$\Pi = Y - w.L$$

w is the real wage paid by the firm and, as you have seen above, Y is the total output of the firm. L is of course the number of units of physical labour hired by the firm.

After substituting for Y in the above profit function, the problem reduces to the following two-variable maximisation problem in calculus, *viz.*, determine L and w so as to maximise $z = F(e(w).L) - w.L$. Following the usual calculus techniques to solve a maximisation problem, this problem is solved by taking the partial derivatives of z respectively with respect to w and L and equating each of these to zero. This gives us two equations in two unknowns, w and L , which can be solved simultaneously to obtain the equilibrium, profit maximising, values of w and L .

Instead of obtaining the solution explicitly, we can characterise it by examining the first of the above two equations obtained by equating the partial derivative of z with respect to L to zero. The equation reduces to

$$w \cdot e'(w)/e(w) = 1$$

$e'(w)$ is the derivative of the effort function with respect to w , giving the increase in effort per unit increase in the real wage, for infinitely small increases in the wage rate. You will be able to recognise the L.H.S. expression of the above equation as the elasticity of the effort function $e(w)$ with respect to the real wage rate w . What the equation states is that, at the optimum, the elasticity of effort with respect to wage is unity, i.e., the real wage rate is so determined that, at the optimum, a one per cent increase in the wage rate leads to one percent increase in effort. This means that, at the optimum, the ratio $w/e(w)$ remains constant, for infinitely small changes in w . This suggests that the ratio $w/e(w)$ is at its minimum at the optimum.

What do you think is the economic interpretation of this ratio being a minimum at the optimum real wage? When a firm buys one physical unit of labour at the cost given by w , it is effectively buying e units of labour, since one physical unit of labour expends e units of effort. That is why we said above that L physical units of labour effectively provide $e \cdot L$ efficiency units of labour. The ratio $w/e(w)$ hence gives the per unit cost of effective units of labour. The firm sets the real wage so as to minimise this per unit cost of effective units of labour that it obtains by buying physical labour on the market. This means that the firm sets the real wage rate so as to maximise the effective labour obtained for a given outlay, assuming that the effort expended by labour is an increasing function of the real wage. It is presumed here that, as the real wage increases, the effort increases, first at an increasing rate and subsequently at a decreasing rate. The real wage is set such that the rate of increase of effort with respect to the wage is just equal to the wage. For wage rates below the optimum wage, increasing the wage leads to a larger increase in effort; whereas for wage rates above the optimum, increasing the wage any further leads to a lower increase in effort. At the optimum, the marginal product of effective labour equals its cost.

16.4.3 Implications of the Model Solution

Let w^* and L^* be the optimum levels of the real wage and physical units of labour hired obtained as a solution to the model for the representative firm. Since there are M such firms, the total demand for labour is given by $M \cdot L^*$. We bring out some of the implications of this solution.

- i) The solution clearly implies that workers could remain unemployed in the model when the wage rate is set at w^* . We have assumed above in the specification of the model that the total number of workers in the model is N . Unemployment can exist if $N > M \cdot L^*$, where $M \cdot L^*$ is the total demand for labour when the real wage rate is the efficiency wage w^* . On the other hand, if $M \cdot L^*$ turns out to be larger than N , then the wage is bid up above the efficiency wage up to the point that demand N for and supply of labour are in balance and there is no unemployment
- ii) The model implies that the increase in aggregate demand does not lead to an increase in real wage. This is because the efficiency wage is determined entirely by the properties of the effort function $e = e(w)$ and there is no reason for w^* to change when aggregate demand increases. The model hence comes close to rationalizing the empirically observed fact that in cyclical upswings, it is employment, and not real wage, that increases – the real wage is only moderately pro-cyclical.
- iii) Rigidity of prices is also implied in the model. The fact that real wage and, hence, effort do not change during cyclical upswings means that the labour costs of firms do not change and hence price-setting firms do not have incentives to adjust prices. You must connect this up with the conclusions

We thus see that the efficiency wage model not only explains the possibility of the existence of persistent unemployment, but also suggests why the burden of adjustment falls on employment rather than on the real wage during cyclical changes in business activity.

16.4.4 Possible Extensions of the Model

The efficiency wage model that we considered above, however, has an important drawback: it is unable to distinguish between short-run cyclical effects and long run secular effects. In the real world, though the short run effect is in terms of increased employment and hence decreased unemployment, the long run is characterised, not by a trend decrease in unemployment, but by a trend increase in the real wage. The model is not able to make this transition from the short to the long run.

The efficiency wage model can however be extended to deal with the above problem. We only indicate the directions in which such an extension can take place and do not develop the extended model in details. The extension is basically given effect to through modifications in the effort function. The effort function in the earlier model was $e = e(w)$. It is now extended as:

$$e = e(w, w', u)$$

The real wage paid in the representative firm is w , whereas e is the effort. The real wage available to the workers in alternative firms is denoted by w' and the unemployment rate in the economy is u . The inclusion of w' and u in addition to w as arguments in the effort function can be rationalised by examining some of the reasons we set out at the beginning of Section 16.3 for the payment of higher (i.e., efficiency) wages. If higher wages are paid to induce workers not to shirk and to exert greater effort in situations where the effort cannot be continuously monitored, then the higher wages will lead to the desired effect of workers not shirking only if the wage rate obtained in other firms is lower and the unemployment rate is high. If the wage rate obtained in other firms is as high and if the unemployment rate in the economy is low then the worker will not mind getting caught shirking because he can, with a high probability, obtain an alternative job which is as paying as his current one. A higher (i.e., efficiency) wage will not, in such a situation, induce him to exert greater effort. Effort e depends positively on w , given w' and u . Effort e , however, depends negatively on w' and positively on u . We can similarly work out the rationale behind the extended effort function if reasons for paying a higher (i.e., efficiency) wage have to do with tapping higher unobserved abilities or with engendering loyalty or avoiding sabotage by disgruntled workers.

Such an extension of the effort function again leads to a similar solution for the efficiency wage as in the above model with a simpler effort function. Here too the elasticity of effort with respect to the real wage is unity at the optimum real wage. The wage paid by any of the firms has however to be necessarily equal to that paid by the representative firm, i.e., $w = w'$ in the solution. Unemployment can also emerge in this model if, at this common efficiency wage, the total demand for physical units of labour by the firms falls short of the total supply of physical units of labour.

Such an extended model can account for both, a larger effect of increased aggregate demand on employment as compared to real wage in the short run and an absence in trend unemployment in the long run. This is shown with the help of an example in Romer (2001). Interested learners are advised to follow the original.

Check Your Progress 2

- 1) Why do firms pay higher than market-clearing wages? List out some of the reasons.

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- 2) How would you interpret the first-order condition for optimum, viz., that the elasticity of effort with respect to the wage is unity, in the efficiency-wage model that you studied above?

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- 3) Show how unemployment can emerge in an efficiency-wage model.

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- 4) Why does an increase in demand for labour have a larger effect on employment than on the real wage in the efficiency wage model constructed above?

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- 5) Bring out an important drawback of the efficiency wage model that uses a simple effort function.

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16.5 CONTRACTING AND INSIDER-OUTSIDER MODELS OF UNEMPLOYMENT

The models in Section 16.3 departed from the Walrasian assumption of a market-clearing wage on efficiency considerations – it was postulated that a

higher than market-clearing wage leads to increased efficiency of workers for one reason or another. In this section we consider briefly some models wherein the wage differs from the Walrasian wage because of long-term relations between workers and firms. We consider here, very briefly, two kinds of models – contracting models and insider-outsider models.

The rationale underlying the contracting models is that firms do not hire workers afresh each period. Workers continue to work for a firm for a large number of years because many jobs involve firm-specific skills that are not valued as much outside the firm and also because firms would find it costly to train new workers in these skills afresh each period. Workers are content to stay in their current jobs so long as their expected earnings over a much longer period than just, say, the current year are more than the opportunities that the workers would have outside the firm, even if in the current year their earnings are low. A worker in the United States, for example, lasts in a job, on an average, for ten years. In such a situation wages do not have to adjust every period to clear the labour market and the labour market clearly becomes non-Walrasian.

The relationships between workers and firms are determined in such cases by long-term contracts, arrived at through collective bargaining between worker unions and firms. We can consider two kinds of contracts. The first kind is a fixed-wage contract under which the wage is pre-determined and the firm is free to choose the level of employment that it provides depending on the state of the economy that emerges in each period. Workers agree to supply all the labour demanded by the firm. Wage rigidity and unemployment emerge immediately in such a model. A fall in labour demand does not affect the real wage because of the contract. The labour supply too cannot fall. The only thing that can happen when labour demand falls is that firms reduce employment at the fixed real wage.

The problem with this type of fixed-wage, variable employment contract is, however, that it is not an efficient contract because, under it, the marginal product of labour is generally not equal to the marginal disutility of work, and so it is possible to make both parties to the contract better off. You should recollect from your microeconomics units that contracts are said to be efficient if it is not possible to make one of the parties better off without making the other one worse off (pare to efficiency). This takes us to the idea of implicit contracts, which are efficient contracts unlike the simple fixed-wage contracts.

Implicit contracts are contracts between the firm and workers wherein the firm specifies the real wage and the employment that it will provide for each possible state of the economy. The contracts are so called because actual contracts in the real world do not *explicitly* specify employment and wage as a function of the state of the economy. Not only are these contracts efficient, but also imply real wage rigidity and the consequences of real wage rigidity that we have examined in other contexts.

The insider-outsider models are a development on the contracting models, wherein three categories of agents are recognised, *viz.*, the firms, the workers that are employed (insiders), and the unemployed workers (outsiders). It is in the interest of the unemployed workers that the firms and the insider workers sign contracts providing for lower real wages and higher employment. But the unemployed, being outsiders, are not on the bargaining table. The real wage rigidity, that is implied, provides a non-Walrasian characteristic to the labour market and explains the existence of unemployment. Rich models have been built up in the literature analysing the interactions between the three categories of agents to explain some of the empirically observed characteristics of the labour market.

Check Your Progress 3

- 1) Why are fixed-wage contracts inefficient?

- 2) What is the difference between wage contracts and implicit contracts?

- 3) How do insider-outsider models explain the existence of unemployment?

16.6 LET US SUM UP

The new Keynesian theories of unemployment are non-Walrasian theories – the real wage in the new Keynesian models is generally not a market-clearing wage. Most of the new Keynesian models however accord with the empirically observed fact of a moderately pro-cyclical real wage. This is unlike the Keynesian theory of unemployment, where real wage is counter-cyclical. In most of the new Keynesian models, an increase in aggregate demand and in the demand for labour has a larger effect on employment and a smaller effect on the real wage in the short run.

The new Keynesian models of unemployment include models such as the efficiency wage models, the contracting models and insider-outsider models.

The efficiency wage models postulate and rationalise a higher than market-clearing wage on the ground that the benefits accruing from higher wages are more than the costs of maintaining wages at a higher level. The benefits come from increased efficiency of workers. The increased efficiency could be due to increased physical efficiency of workers obtaining higher wages, or due to the engendering of a sense of loyalty and belonging among workers, or even due to avoidance of work shirking by workers who do not want to lose high paying jobs if caught shirking. The efficiency wage model not only rationalises the existence of persistent unemployment, but also produces a larger effect on employment in the short run. The shortcoming of an efficiency wage model using a simple version of the effort function is that it implies that there is no increasing trend in the real wage even in the long run. This is contrary to empirically observed facts. The shortcoming can be easily remedied by using a more complex effort function.

The contracting and insider-outsider models rationalise wage rigidity with reference to the fact that wages are determined by long term contracts between

workers and firms, and are not necessarily set at the market-clearing level in each period. This immediately rationalises wage rigidity and unemployment. The insider-outsider models provide the insight that though it is in the interest of the unemployed workers (outsiders) that wages are contracted to be low so that employment is higher, the unemployed in a non-competitive economy have no power in the matter, as wages are determined through bargaining between the employed workers (insiders interested in higher wages) and firms.

16.7 KEY WORDS

Efficiency Units of Labour: Units of labour that take into account both the physical units and the 'effort' expended by the physical units. If each of L units of physical labour expends e units of effort, the total number of efficiency units is $e.L$.

Effort Function: The relationship showing the dependence of work effort on, e.g., the real wage. The arguments of the effort function can also include the real wage available in alternative jobs and the unemployment rate.

Fixed-wage Contract: A contract between firms and workers under which the wage is pre-determined and the firm is free to choose the level of employment that it provides depending on the state of the economy that emerges in each period.

Implicit Contract: A contract between firms and workers under which both the wage paid and employment provided are specified as a function of the state of the economy. Since actual contracts do not *explicitly* specify wage and employment as functions of the state, such contracts are called *implicit* contracts.

Insiders: Workers employed in a firm.

Outsiders: Unemployed workers.

Pro-cyclical Real Wage: Real wage that increases during the expansionary and decreases during the contractionary phase of a business cycle.

Reservation Wage: The minimum wage that must be offered to a worker to induce her to supply her labour on the market.

Shirking: Tendency on the part of workers to avoid work in situations where the employers cannot monitor the work effort perfectly. It pays the firms in such situations to offer higher than market wages, so that the workers have an incentive not to shirk – they could lose a valuable job if caught shirking and they may not be able to get a higher than market-clearing wage in their next job.

16.8 SOME USEFUL BOOKS

Dornbusch, R., S. Fischer and R. Startz, 2004, *Macroeconomics*, Ninth Edition, Tata McGraw-Hill, New Delhi.

Romer, D., 2001, *Advanced Macroeconomics*, Second Edition, McGraw-Hill International, New Delhi.

Blanchard, O.J. and S. Fischer, 2000, *Lectures on Macroeconomics*, Prentice-Hall of India, New Delhi.

16.9 ANSWERS/ HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) Keynesian models assume constancy of nominal wages. Prices rise during cyclical expansions. This implies a fall in real wages. Such a fall in real

wages is necessary in Keynesian models to induce firms to employ more labour during phases of increase in aggregate demand.

Check Your Progress 2

- 1) Firms pay higher than market-clearing wages because the benefits from higher wages could outweigh their costs. The benefits come from increasing the work-capacity of the workers, from bringing in workers with higher reservation wage who are expected to have higher abilities along some unobservable dimensions, from engendering a sense of loyalty among workers, and, above all, from generating incentives for workers to avoid shirking in situations where the work effort cannot be perfectly monitored.
- 2) The condition is interpreted by understanding that when the elasticity is equal to one, the firm minimises the per unit cost of buying effective labour, i.e., the firm sets the real wage so as to get the maximum per unit of effective labour at a given cost. The firm can do such a thing because we assume that the effort expended by labour is an increasing function of the real wage.
- 3) In answering this question, you will have to fully specify an efficiency wage model and characterise its solution. Unemployment can arise in such a model if, at the efficiency wage (which is expected to be higher than the market clearing wage) the total demand for physical units of labour by the firms is less than the total available supply of physical units of labour.
- 4) Increase in labour demand has no effect on the real wage in the model because the real wage is determined in the model only by the characteristics of the effort function and not by labour demand conditions. These latter conditions, hence, only affect employment.
- 5) Simple effort function refers to the function wherein effort depends only on the real wage. The efficiency wage model that uses a simple effort function is not able to distinguish between the short run and the long run effects of increase in demand for labour. We need a model that has a relatively larger effect on employment in the short run and on the real wage in the long run, which is what accords with empirical reality. The model that we have developed in details has uniformly larger effect on employment both in the short and the long run.

Check Your Progress 3

- 1) Fixed-wage contracts are inefficient because, under these contracts, the marginal product of labour is not equal to the marginal disutility of workers, so that it is possible to make both parties to the contract better off.
- 2) An important difference between a wage contract and an implicit contract is that the former is generally inefficient, whereas the latter is efficient. Both kinds of contracts, however, imply real wage rigidity and the usual consequences of such real wage rigidity.
- 3) Insider-outsider models explain the existence of unemployment by reference to the fact that in imperfectly competitive economies, the unemployed workers have no power to influence the wage bargains between the employed workers and the firms. Real wages are hence not low enough for employment to increase.