

Many of the unemployed would presumably work even for a lower wage rate than that being received by employed people. Why don't we see firms cutting wage rates, increasing employment levels, and thereby increasing their profit? Can our models of competitive equilibrium explain persistent unemployment?

In this section we show how the *efficiency wage theory* can explain the presence of unemployment and wage discrimination.¹⁶ We have thus far determined labor productivity according to workers' abilities and firms' investment in capital. Efficiency wage models recognize that labor productivity also depends on what wage rate is paid.¹⁷ There are various explanations for this relationship. In developing countries, economists have suggested that the productivity of workers depends on the wage rate for nutritional reasons. Better-paid workers can afford to buy more and better food and are therefore healthier and can work harder.

A better explanation for the United States is found in the *shirking model*. Because monitoring workers is costly or impossible, firms have imperfect information about worker productivity, and there is a principal-agent problem. In its simplest form, the shirking model assumes perfectly competitive markets, so all workers are equally productive and earn the same wage. Once hired, workers can either work productively or slack off (shirk). But because information about their performance is limited, workers may not get fired for shirking.

The model works as follows. If a firm pays its workers the market clearing wage w^* , they have an incentive to shirk. Even if they get caught and are fired (and they might not be), they can immediately get hired somewhere else for the same wage. In this situation, the threat of being fired does not impose a cost on workers, so they have no incentive to be productive. As an incentive not to shirk, a firm must offer workers a higher wage. At this higher wage, workers who are fired for shirking will have to face a decrease in wages if they get hired by another firm at w^* . If the difference in wages is large enough, workers will be induced to be productive, and this firm will not have a problem with shirking. The wage at which no shirking occurs is the *efficiency wage*.

Up to this point, we have looked at only one firm. But all firms face the problem of shirking. This means that all firms will offer wages greater than the market clearing wage w^* , say, w_e (efficiency wage). Does this remove the incentive for workers not to shirk because they will be hired at the higher wage by other firms if they get fired? No; because all firms are offering wages greater than w^* , the demand for labor is less than the market-clearing quantity, and there is unemployment. This means that workers fired for shirking will face a spell of unemployment before earning w_e at another firm.

¹⁶ See Janet L. Yellen, "Efficiency Wage Models of Unemployment," *American Economic Review* 74 (May 1984): 200-205. The graphical analysis relies on Joseph E. Stiglitz, "The Causes and Consequences of the Dependence of Quality on Price," *Journal of Economic Literature* 25 (March 1987): 1-48.

¹⁷ This linkage between productivity and wages has been discussed by economists before the development of efficiency wage theory, most notably by Karl Marx.

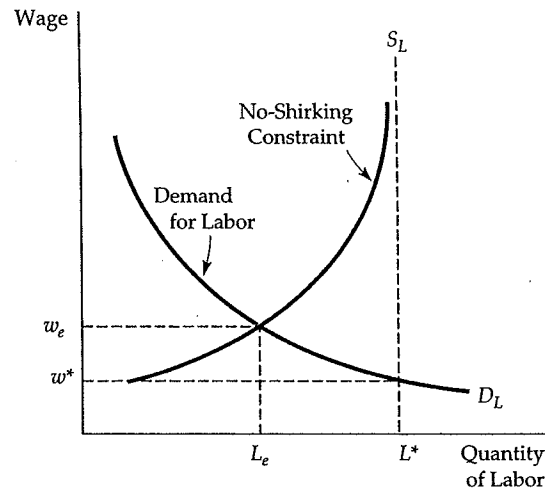


FIGURE 17.5 Unemployment in a Shirking Model. Unemployment can arise in otherwise competitive labor markets when employers cannot accurately monitor workers. Here the no-shirking constraint gives the wage necessary to keep workers from shirking on the job. The firm hires L_e workers (at a higher than competitive efficiency wage w_e), creating $L^* - L_e$ of unemployment.

Figure 17.5 shows shirking in the labor market. The demand for labor D_L is downward-sloping for the traditional reasons. If there were no shirking, the intersection of D_L with the supply of labor (S_L) would set the market wage at w^* , and full employment would result (L^*). With shirking, however, individual firms are unwilling to pay w^* . Rather, for every level of unemployment in the labor market, firms need to pay some wage greater than w^* to induce workers to be productive. This wage is shown as the no-shirking constraint (NSC) curve. This curve shows the minimum wage workers need earn in order not to shirk, for each level of unemployment. Note that the greater the level of unemployment, the smaller the difference between the efficiency wage and w^* . This is because with high levels of unemployment, people who shirk risk long periods of unemployment and therefore don't need much inducement to be productive.

In Figure 17.5, the equilibrium wage will be at the intersection of the NSC curve and D_L curves, with L_e workers earning w_e . This is because the NSC curve gives the lowest wage that firms can pay and still avoid shirking. Firms do not need to pay more than this to get the number of workers they need, and they will not pay less than this because of shirking. Note that the NSC curve never crosses the labor supply curve. This means that there will always be some unemployment in equilibrium.

Summa

EXAMPLE 17.5 EFFICIENCY WAGES AT FORD MOTOR COMPANY

One of the early examples of the payment of efficiency wages can be found in the history of Ford, one of America's major automobile producers.¹⁸ Before 1913 automobile production had depended heavily on skilled workers. But the introduction of the assembly line drastically changed the workplace. Now jobs demanded much less skill, and production depended on maintaining the assembly-line equipment. As the automobile plants changed, workers became increasingly disenchanted. In 1913, turnover at Ford was 380 percent. The following year, it rose to 1000 percent, and profit margins fell sharply.

Ford needed to maintain a stable work force, and Henry Ford (and his business partner James Couzens) provided it. In 1914, when the going wage for a day's work in industry averaged between \$2 and \$3, Ford Motor Company introduced a pay policy of \$5 a day for its workers. Improved labor efficiency (not generosity) was behind this policy. The goal was to attract better workers who would stay with their jobs, and eventually to increase profits.

Although Henry Ford was attacked for it, this policy succeeded. The work force did become more stable, and the publicity helped Ford's sales. And because Henry Ford had his pick of workers, he could hire a group that was on average more productive. Ford stated that the wage increase did in fact increase the loyalty and personal efficiency of his workers, and quantitative estimates support his statements. According to calculations by Ford's chief of labor relations, productivity increased by 51 percent. Another study found that absenteeism had been halved, and discharges for cause had declined sharply. So the productivity increase more than offset the increase in wages. As a result, Ford's profitability rose from \$30 million in 1914 to \$60 million in 1916.

Summary

1. The seller of a product often has better information about its quality than the buyer. Asymmetric information of this type creates a market failure in which bad products tend to drive good products out of the market. The market failure can be eliminated if sellers offer standardized products, provide guarantees or warranties, or find other ways to maintain a good reputation for their product.

¹⁸ See J.R. Lee, "So-called Profit Sharing System in the Ford Plant," *Annals of the American Academy of Political and Social Science* (May 1915): 297-310; David Halberstam, *The Reckoning* (New York: William Morrow, 1986), pp. 91-92; and Daniel M.G. Raff and Lawrence H. Summers, "Did Henry Ford Pay Efficiency Wages?" *Journal of Labor Economics* (1987): 557-586.

