

Using Input Market Analysis

Input market analysis can help us examine a variety of institutions and policies affecting the incomes of workers.



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Learning Objectives

- Analyze the effects of the minimum wage on the employment of unskilled workers.
- Determine the extent to which employers versus employees bear the burden of the Social Security program.
- Explain the benefits to firms from colluding in hiring some input through examining the NCAA cartel.
- Show how employment discrimination can affect usage rates and employment.

Some of the most interesting and important issues in economics center on the way input markets function. This is not surprising. People understandably have great interest in the market (or markets) to which they supply inputs, since the functioning of that market largely determines their standard of living. As consumers, we have only a small stake in each of many product markets, but as producers, we have a great interest in one or a few. For example, few consumers are sufficiently motivated to stage demonstrations over milk price supports raising the price of milk by 20 percent, but the prospect of a 20 percent gain or loss in your salary will not leave you so unmoved.

In addition to our interest in matters affecting our personal incomes, we are affected by the operation of input markets generally. The way input markets work strongly influences an economy's income distribution. Some people are poor because the wage rates they receive are low; others are wealthy because their wage rates are high. Many public policies have been designed to redistribute income toward low-income households, and input market analysis is vital to understand the consequences of such policies. This chapter uses input market analysis to examine institutions, policies, and practices affecting workers' incomes. These include the minimum wage, Social Security, discrimination, and the NCAA cartel.

18.1

THE MINIMUM WAGE LAW

In 1938, Congress passed the Fair Labor Standards Act, which established a nationwide minimum wage of \$0.25 per hour. The federal minimum wage has been raised periodically since its establishment: from \$3.35 to \$4.25 an hour in 1990, to \$4.70 in 1996, and to \$5.15 in 1997. As of 2002, a further increase was being debated by Congress. Although the recent increases in the minimum wage may seem large, we should view them relative to the increase in average wage rates since 1938, which have risen greatly as a result of both inflation and real productivity gains. In 1938 the minimum wage of \$0.25 represented 40 percent of the average manufacturing wage, while in 2002 the minimum wage of \$5.15 represented about 37 percent of the average manufacturing wage.

Most people think that the minimum wage is designed to help low-wage workers. If some people are poor because of low wages, requiring employers to pay a “living wage” seems a straightforward remedy. Some simple economic analysis (together with extensive empirical evidence), however, suggests that a minimum wage may not be the best way to help the poor.

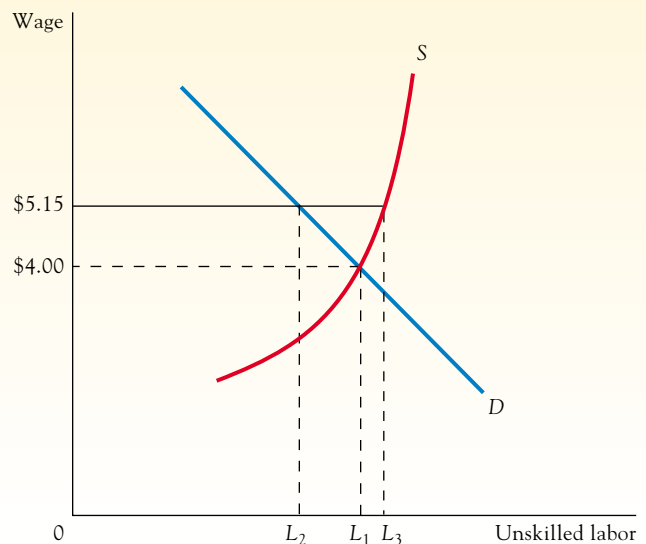
Just 15 percent of all workers have wage rates low enough to be directly affected by the current minimum wage. For convenience we refer to this group as *unskilled workers*. The remaining 85 percent of workers, the *skilled workers*, would have wages in excess of the minimum even without the law. Therefore, our analysis of the minimum wage law focuses on the unskilled labor markets where wages normally would be below the legally specified level.

For simplicity, let's assume that unskilled workers are identical in all relevant respects so that a single wage rate prevails; we will relax this assumption later. Figure 18.1 depicts the labor market for unskilled workers. Almost all jobs and industries are covered by the minimum wage law; that is, by law they must pay the minimum wage. A few industries and jobs are exempt, such as domestic workers, babysitters, hospital and nursing home employees, and workers in seasonal amusement parks. Because of the law's broad coverage, an aggregate analysis is appropriate. As a result, the supply curve of unskilled labor to all jobs is fairly inelastic. In the absence of the minimum wage, let's assume that the wage rate is \$4.00 per

FIGURE 18.1

The Minimum Wage

A minimum wage of \$5.15 per hour reduces employment of unskilled workers from L_1 to L_2 and increases the quantity of labor supplied from L_1 to L_3 . The difference between quantity demanded and quantity supplied, L_2L_3 , is the unemployment created by the minimum wage.




**DISEMPLOYMENT
EFFECT**

the tendency of employers to respond to a higher wage rate by hiring fewer workers

hour and total employment is L_1 . Next, let the government impose a minimum wage of \$5.15. In accordance with the law of demand, employers hire fewer workers at a higher wage rate. Employment falls from L_1 to L_2 . This predictable response of employers to a higher wage rate is frequently overlooked in discussions of the minimum wage. Economists refer to the reduction in employment of L_1L_2 as the **disemployment effect** of the minimum wage. Note also that at the \$5.15 wage, the number of workers looking for work has increased to L_3 , which exceeds the number employed, L_2 , by L_2L_3 . This is the unemployment created by the minimum wage.¹ The higher wage rate has induced more people to enter the job market, but because of the increase in the wage rate, employers will hire fewer people.

Does the minimum wage benefit unskilled workers? On the basis of this analysis, an unqualified answer is not possible. Workers able to get jobs at the \$5.15 wage do indeed benefit, but other workers—those who lose their jobs or are unable to find jobs—are left worse off. Some people argue that if the total earnings of unskilled workers as a group rise, we should say that they gain as a group. (Note that this outcome depends on the demand elasticity for unskilled workers. If demand is inelastic, total earnings rise after a wage increase.) Whether or not the total earnings of unskilled workers as a group rise, however, you should realize that certain unskilled workers are made worse off, and, individually, suffer a major loss.

We gain more insight into who is likely to lose jobs when we drop the assumption that all unskilled workers are identical. For example, suppose that in the absence of the minimum wage, some unskilled workers earn slightly below the minimum, \$5.00 per hour, while others earn much less, \$2.00 per hour. With a minimum wage of \$5.15 per hour the wage rate for employees formerly earning \$5.00 per hour rises by 3 percent, but for workers earning \$2.00 per hour the wage rate employers must pay more than doubles. Employment therefore will decline much more for workers whose wages are initially the lowest because the minimum wage increases most sharply the cost of hiring these workers. In other words, the most disadvantaged, unproductive workers are the ones most likely to lose their jobs and be priced entirely out of the market by the minimum wage. The especially harmful effects on this group of unskilled workers presumably most in need of assistance need to be taken into account by any overall evaluation of the minimum wage.

Apart from those who lose their jobs, who else bears a cost from the minimum wage? Most people assume that employers bear the cost of paying the higher wage. This conclusion is unlikely to be true. The costs of the minimum wage are certain to be spread more widely through society in the form of higher prices for products produced by unskilled workers and lower input prices for complementary factors of production. No one knows exactly who ultimately bears these costs. Perhaps the most accurate statement is that the rest of society (other than the unskilled workers) is the ultimate employer of unskilled workers, so it must bear the cost of a higher wage rate in some form.

Further Considerations

We ignored several complications in the preceding analysis. Among them are the following:

1. The reduction in employment can take the form of a reduction in hours each worker is employed rather than a reduction in the number of workers employed. In other words, instead of one out of ten workers losing a job, each worker might be able to work only 90 percent as many hours as desired. Whatever is more profitable to employers determines the

¹Official statistics may not measure this unemployment accurately. Some workers unable to find jobs at the \$5.15 wage may stop looking for work. Since the government records as unemployed only workers who are actively seeking but unable to find work, those who have dropped out of the labor force are not counted.

outcome. Since overhead costs are associated with each worker hired, independent of hours worked, employers will probably cut back on workers rather than on work hours. Nonetheless, there is some evidence of reductions in hours per worker. For example, about half of all low-wage workers work only part-time—although this practice is surely, at least in part, a matter of choice.

2. When the government requires firms to pay a higher money wage, employers will respond, if possible, by reducing fringe benefits of employment. The fringe benefits that may be reduced include pensions, health insurance, and on-the-job training. Reducing fringe benefits means that the real wage employers pay rises by less than the money wage. Although employment will not fall as much, the intended impact of the minimum wage is mitigated: if employers reduce fringe benefits, the real wage (minimum wage plus fringe benefits) may not change at all. The importance of this reaction is unclear, but it could partly explain why low-wage workers tend to have such poor private pension and health insurance coverage and the on-the-job training provided by employers to their workers has fallen over the past several decades.

3. Our analysis assumed that the minimum wage law covers all unskilled jobs. Actually, not all employers must pay the minimum wage; 15 percent of all unskilled workers have uncovered jobs. For the 85 percent of unskilled workers in covered jobs, the analysis of Figure 18.1 holds: employment falls. With an uncovered sector, workers who are unable to find jobs at the minimum wage in the covered sector may seek employment in uncovered jobs. As the supply of workers to the uncovered sector increases, the wages prevailing in that sector go down, thereby harming workers already employed in the uncovered sector. However, the uncovered sector is now so small that we cannot say how important it is in absorbing workers who can't find jobs in the covered sector at the minimum wage. In the past the uncovered sector was much larger: nearly 50 percent of jobs were uncovered in the 1950s.

4. With a surplus of workers created by the minimum wage (L_2L_3 in Figure 18.1), employers can be more selective about whom they hire. If employers have prejudices relating to the gender, race, age, weight, or religion of their workers, they are in a better position to indulge their “tastes.” When there is a glut of workers from which to choose, employers can more easily hire someone with characteristics they prefer. That is, if there are more applicants than jobs, the cost of discriminating falls. Insofar as employers have prejudices, the harmful effects of the minimum wage are more likely to be borne by workers with characteristics considered undesirable in the eyes of employers.

How Large Are the Effects of the Minimum Wage?

Most of the economic research on the minimum wage has concentrated on its effect on employment. Does the minimum wage reduce employment and, if so, by how much? Researchers have conducted numerous studies, and the evidence generally supports the proposition that the minimum wage reduces employment, especially among the least skilled workers. But no consensus has been reached concerning the size of the disemployment effect.

Most studies have attempted to identify groups of workers who are, on average, less skilled and who should be most affected by the law. For example, Yale Brozen of the University of Chicago concentrated on teenage employment, since teenagers frequently lack the skills, experience, and long-term job attachment necessary to earn high wages. Brozen found that teenage unemployment rates typically rose following each increase in the legal minimum. Other more sophisticated econometric studies have supported Brozen's results.²

Particularly striking has been the trend in teenage unemployment rates among African Americans relative to whites. In 1948, when the minimum wage was about 40 percent of

²Yale Brozen, “The Effects of Statutory Minimum Wage Increases on Teen-Age Unemployment,” *Journal of Law and Economics*, 12 No. 1 (April 1969), pp. 109–122; also see Finis Welch, *Minimum Wages* (Washington, D.C.: American Enterprise Institute, 1978).

the average manufacturing wage and 50 percent of jobs were covered, African American and white teenage unemployment rates were nearly the same: 9.4 percent for African Americans and 10.2 percent for whites. By the late 1970s, when the minimum wage was 50 percent of the average manufacturing wage and 85 percent of jobs were covered, white teenage unemployment stood at 15 percent, but African American teenage unemployment was 35 percent. Whether unemployment among African American teens rose more sharply because as a group they are relatively less skilled (possibly because of poor schooling) or because of the way the minimum wage lessens the cost of discrimination is not clear. Other factors, such as changing attitudes about what jobs are acceptable, may also be involved, but most economists believe the minimum wage played at least a partial role in increasing African American teenage unemployment rates.

More recently, several studies have examined wage and income data to obtain a clearer picture of who benefits from minimum wages.³ The results were surprising. The studies found that low wages and low family incomes are not closely correlated. Of workers earning wages low enough to be affected by the minimum wage, 50 percent were members of families in the wealthier half of the income distribution. This result occurs because some high-income families have individual members, such as teenage children, who work at low wages. Moreover, many poor families have low incomes not because of low wages but because they are unemployed or work only part-time. (A third of low-income households, for example, are elderly and retired.) Furthermore, less than 20 percent of families in the bottom fifth of the income distribution have members who work at a wage as low as the minimum wage, so only a minority of low-income families stand to benefit from the minimum wage.

Most economists believe that the minimum wage is an unwise policy, not because they oppose helping the poor but because the minimum wage is such a blunt policy instrument when it comes to targeting assistance to low-income families (many middle-class teenagers benefit in the process). Most low-income families are not poor because of low wages, and some of those who are may well end up with a zero wage (unemployed) as a result of the policy.

APPLICATION 18.1

THE DISEMPLOYMENT EFFECT OF THE 1990–1991 MINIMUM WAGE HIKE

The debate over certain recent studies of the effects of an hourly minimum wage increase from \$3.35 to \$4.25 between 1990 and 1991 suggests why there is no general consensus on the extent of the disemployment effect of the minimum wage.⁴ The studies are controversial

because of both their unorthodox approach and their findings. For example, economists Lawrence Katz of Harvard and Alan Krueger of Princeton conducted a telephone survey of fast-food chain managers in Texas and found that only 11 percent of the surveyed chains reduced their employment of nonmanagement workers following the minimum wage hike in the spring of 1991. The authors argue that the results indicate a fairly minor disemployment effect associated with the minimum wage hike.

Critics of the Katz-Krueger study contend that it underestimates the disemployment effect because not

⁴This application is based on “Forging New Insight on Minimum Wages and Jobs,” *New York Times*, June 29, 1992, pp. C1 and C7; Alan Reynolds, “Cruel Costs of the 1991 Minimum Wage,” *Wall Street Journal*, July 7, 1992, p. A14; and Gary S. Becker, “It’s Simple: Hike the Minimum Wage and You Put People Out of Work,” *Business Week*, March 6, 1995, p. 22.

³See William R. Johnson and Edgar K. Browning, “The Distributional and Efficiency Effects of Increasing the Minimum Wage: A Simulation,” *American Economic Review*, 73 No. 1 (March 1983), pp. 204–211; and Edward M. Gramlich, “Impact of Minimum Wages on Other Wages, Employment, and Family Income,” *Brookings Papers on Economic Activity*, 2 (1976), pp. 409–451.

all other factors have been held constant. Namely, the demand for labor appears to have been unusually strong in the period examined; as a result of rising exports to Mexico, the overall unemployment level in Texas declined from 6.9 to 5.8 percent. Moreover, three to four months may not be sufficient time to gauge the full effects of the minimum wage hike. While they may not fire existing workers, employers may reduce new hiring. Furthermore, the study does not account for the fact that the reduction in employment may occur in the form of fewer hours per worker, reduced fringe benefits, or an increase in employee productivity per hour worked. As one manager of several fast-food restaurants put it: “Our head count

didn’t increase or decrease. . . . [We’re] just going to manage a lot more tightly to get more out of the people we’ve got.”

In contrast to the Katz-Kreuger results, a statistical study by Donald Deere and Finis Welch of Texas A&M and Kevin Murphy of the University of Chicago finds a more sizable disemployment effect associated with the 1990–1991 minimum wage hike. The Deere, Murphy, and Welch study finds that, holding constant other factors, the 27 percent increase in the minimum wage (from \$3.35 to \$4.25) decreased the employment of male and female teenagers by 12 and 18 percent, respectively.

EFFICIENCY WAGE

a wage higher than the prevailing market-determined level that serves to increase firms’ profits by lowering the costs of searching for, selecting, and training new workers

The Minimum Wage: An Example of an Efficiency Wage?

Some analysts have argued that the minimum wage represents an **efficiency wage**: an above-market wage serving to increase firms’ profits.⁵ According to this theory, paying an above-market wage may be profitable to a firm if there are costs associated with searching for, selecting, and training new workers. Facing these types of costs, a firm may want to pay higher wages to reduce labor force turnover and the costs associated with it. Additionally, if there is imperfect information in labor markets and if a higher wage is likely to attract a larger pool of more-qualified job applicants, a firm may find it profitable to raise wages above the level needed to attract qualified applicants. The increased quality in job applicants may more than offset the costs. Moreover, if hired workers are prone to moral hazard (see Chapter 14) and working below their fullest capacity upon being given an employment contract, a wage exceeding the prevailing market level may induce a greater increase in productive effort than the wage premium—provided that workers are motivated by the higher pay to put forth the additional effort.

Henry Ford’s 1914 decision to institute a \$5-per-day wage for workers in his automobile factory, twice the prevailing market rate, is often cited as an example of an efficiency wage. The benefits of the higher wage included 75 percent declines in worker turnover and absenteeism, a dramatic increase in the number and quality of applicants for positions in the factory, and a productivity improvement of 50 percent in the year following the wage increase. The profitability of Ford’s company doubled in the wake of the wage hike.

Although Ford’s \$5-per-day pay contract may be a striking example, the evidence that a government-legislated minimum wage represents a similar efficiency wage is more tenuous. Moreover, if the minimum wage is indeed an example of an efficiency wage, the question arises of why the government has to legislate a minimum wage for unskilled workers in the first place. An efficiency wage implies that firms have an incentive to pay an above-market wage without any government intervention, since such a wage increases profits.

⁵George Akerlof and Janet Yellen, eds., *Efficiency Wage Models of the Labor Market* (Cambridge, England: Cambridge University Press, 1986).

18.2

WHO REALLY PAYS FOR SOCIAL SECURITY?

The U.S. Social Security system was begun during the Great Depression and is intended to provide older citizens with a secure source of income after retirement. The payments made to retired workers under the system are financed by a payroll tax composed of two equal-rate levies, one collected from current employers and the other from employees. In 2002, each rate was 7.65 percent. Workers earning \$20,000 per year, then, have \$1,530 deducted from their paychecks to cover the employee portion of the tax, and this amount is matched by a \$1,530 payment collected from their employers. The total tax is thus \$3,060.

By splitting the tax between current employers and employees, Congress apparently intended to divide the burden of the Social Security program between them. Whether this has actually been accomplished is far from clear. Economists believe that the way the tax is divided into employer and employee portions has no effect on who actually bears its cost.

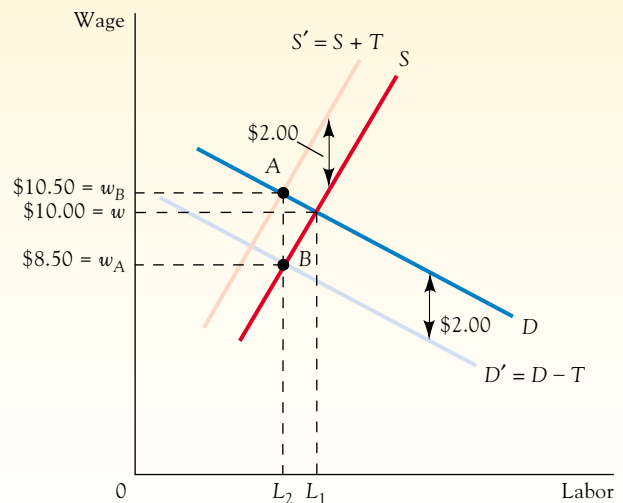
Before discussing who actually pays the Social Security tax, we need to see whether the division of the tax into employer and employee portions makes a difference to wage rates and employment levels. We will compare the two extreme cases: one where employees pay the entire tax and the second where employers pay it. In Figure 18.2, before any tax is levied, the supply and demand curves for labor are S and D , the wage rate is \$10 per hour, and employment is L_1 . Now suppose the government levies a payroll tax on *employers*, which requires them to pay \$2.00 to the government for each hour of labor they employ.

To understand how we incorporate the tax into the analysis, recall that the demand curve for labor shows the maximum amount per hour that employers will pay for each alternative quantity of labor. For example, the demand curve in Figure 18.2 means that employers will pay a maximum of \$10.00 per hour to hire L_1 units of labor. With the tax in place, employers will still pay no more than \$10.00 per hour for the quantity L_1 , but since they must pay \$2.00 to the government, the amount that employers will be willing to pay for L_1 units of labor falls to \$8.00 per hour. In the diagram the effect of the tax is thus shown as a vertical shift downward by \$2.00 in the demand curve to D' . The downward shift in the demand curve means that with a \$2.00-per-hour tax, employers pay \$2.00 less to workers at each level of employment. With the supply curve S , the tax reduces employment to L_2 , and the wage rate paid to workers falls to w_A , or \$8.50. To employers, the cost of labor *including* the tax is now \$10.50 per hour.

FIGURE 18.2

Tax on Employers Versus Tax on Employees

A tax of \$2.00 per hour of employment has the same effect regardless of whether it is collected from employees or employers. When collected from employers, it is analyzed with a \$2.00 downward shift in demand to D' ; when collected from employees, it is analyzed with a \$2.00 upward shift in supply to S' . In both cases workers receive \$8.50 per hour and firms pay \$10.50 per hour.



Alternatively, if employees pay the \$2.00-per-hour tax entirely, the supply curve shifts vertically upward by \$2.00, or to S' , without affecting the demand curve. The shift in supply reflects the fact that workers must receive \$2.00 more per hour to yield the necessary after-tax wage to compensate them for supplying each alternative quantity of labor. For example, if workers must pay the \$2.00-per-hour tax, they will continue to supply L_1 hours of labor only if they receive a net (after-tax) payment of \$10.00 per hour. When the workers pay the tax, the intersection of S' and D determines the new equilibrium, involving employment of L_2 and a wage rate of \$10.50. Since workers must remit \$2.00 to the government, their take-home pay is \$8.50.

Note that the real effects of the tax are exactly the same whether the tax is collected from employers or employees. When collected from employers, employment is L_2 , and firms incur a labor cost of \$10.50 per hour, with \$2.00 going to the government and the remaining \$8.50 to workers. When employees pay the tax, employment is again L_2 , and firms pay \$10.50 as before; although the workers receive \$10.50, they keep only \$8.50 and must remit \$2.00 to the government. In both cases the \$2.00-per-hour tax, distance AB, reflects the difference between the gross-of-tax cost of labor to employers and the net-of-tax payment to workers.

The way the tax is collected gives the government no control over who ultimately bears its cost. The results are the same whether employers or employees pay the tax. Although we have shown that the effects are identical for the extreme cases (when the employer or the employee pays the entire tax), this conclusion holds for the intermediate cases, too. For instance, if \$1.00 of the tax is collected from employers and \$1.00 from employees, firms would pay \$9.50 to workers (plus \$1.00 to the government for a total unit cost of labor of \$10.50, as before), and workers would receive a gross wage of \$9.50 and get to keep \$8.50, since they would turn over \$1.00 to the government.

But Do Workers Bear All the Burden?

We have just shown that the real effects of the payroll tax are the same regardless of its division, for collection purposes, between employers and employees. This is not the same as saying that workers bear all the burden of the tax. Note that in our example the \$2.00-per-hour tax led to a \$1.50 reduction in the net wage rate (\$10.00 to \$8.50), so in that case workers did not bear the full burden of the tax in the form of a lower wage rate. Most economists specializing in tax analysis, however, believe that workers bear most, if not all, of the cost of the tax in the form of reduced wages.

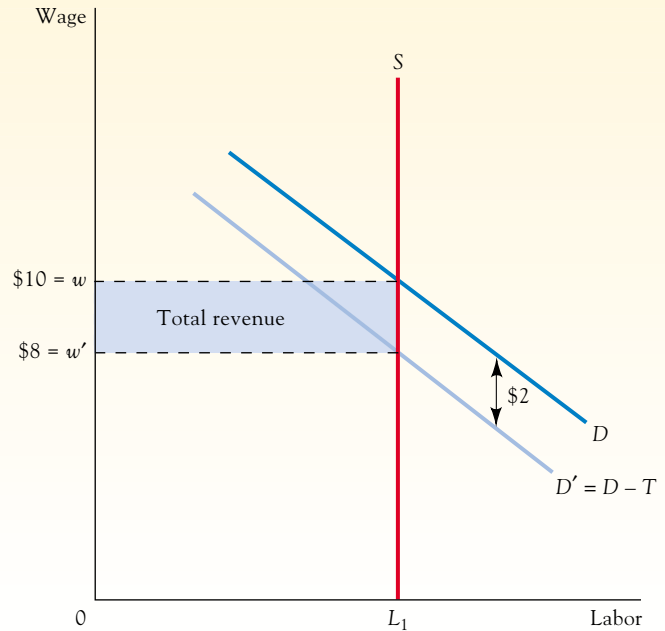
Exactly how far (net-of-tax) wages fall when a payroll tax is collected depends on the elasticities of supply and demand. Of particular importance in the case of the payroll tax is the elasticity of supply. In Figure 18.2, the labor supply curve is drawn as moderately elastic, with lower wage rates leading to significant reductions in the quantity of labor supplied. This is done to simplify the graph for the point being made. Now let's look more closely at the labor supply curve relevant for analyzing the payroll tax.

The payroll tax applies to virtually all jobs, industries, and occupations. Since it applies across the economy, the relevant supply curve for use in analyzing the payroll tax is the aggregate supply curve of hours of work. As explained in Chapter 17, the aggregate labor supply curve is likely to be quite inelastic and, in fact, is vertical if income and substitution effects exactly offset one another. Consequently, let's examine the impact of the payroll tax when the supply curve is vertical.

Figure 18.3 illustrates this case. In the absence of the tax, employment is L_1 and the wage is \$10. Next, the government levies a tax of \$2 per hour. Since it makes no difference if it is collected from employers or workers, let's assume employers pay the entire tax. As a result, the demand curve shifts vertically downward by \$2 to D' . With a vertical supply curve the

FIGURE 18.3**The Burden of the Social Security Tax**

When the supply curve of labor is vertical, a tax on wage income reduces the hourly wage rate workers receive by the amount of the tax, from \$10 to \$8.



wage received by workers falls by \$2—the amount of the tax—to \$8. Employment, however, does not fall, because workers choose to supply the same number of hours at the lower wage. *When the supply curve is vertical, the net wage received by workers falls by the full amount of the tax, so workers bear the entire burden of the tax.*⁶

Note that the cost of labor, including the tax to employers, has not risen; it is still \$10. Now, however, \$2 goes to the government and \$8 to workers, rather than \$10 to workers. Since labor costs have not risen, there is no effect on product prices. Much popular discussion in the media of payroll taxes, especially the employer portion, holds that higher payroll taxes add to labor costs and thus contribute to higher prices. The analysis here shows that total labor costs do not rise: when taxes go up, wages go down.

This analysis suggests two conclusions, both important and routinely misunderstood in discussions of the Social Security payroll tax. First, whether the tax is collected from employers or employees makes no difference. The employer portion is no more borne by business than is the employee portion. Second, if the aggregate supply of labor is highly inelastic, workers bear all, or virtually all, of the tax burden in the form of lower after-tax wages. In particular, workers bear the cost of the employer portion to the same degree that they bear the cost of the employee portion. Many people are unaware of the existence of the employer portion of the tax, but it depresses their take-home pay just as much as the employee portion of the tax. These points are important to keep in mind. Recent advocates of national health insurance, for example, have proposed financing the program through increased payroll taxes, with employers paying a disproportionately

⁶If the tax is collected from the workers, the supply curve shifts vertically upward by \$2, which means that it does not visibly shift at all. Workers still continue supplying L_1 , and employers still pay \$10 per hour. But after sending \$2 per hour to the government, workers keep \$8 per hour, just as when the tax is collected from employers.

larger share. As our analysis shows, the cost of any health insurance scheme financed through payroll taxes will be borne by workers in the form of lower wages, regardless of how the tax is assigned.

APPLICATION 18.2

MANDATED RETIREMENT BENEFITS AND CORPORATE AMERICA'S INCREASING RELIANCE ON "PERMATEMPs"

Federal law prevents companies from discriminating against any group of employees in giving out retirement benefits.⁷ As our analysis of the payroll tax associated with Social Security suggests, however, one effect of government-mandated benefits is to lower the after-tax wage rates received by workers. Another effect is to encourage firms to outsource their work to temporary workers ("temps") to the extent that government-mandated benefits do not have to be provided to temps. Corporate America's reliance on temporary workers who work full-time but do not receive benefits has grown

substantially over the past decade. The Conference Board, a business research group, estimates that as many as 20 percent of U.S. firms use temps for more than 10 percent of their work force. As many as 40 percent of all workers in Silicon Valley are temps, according to an AFL-CIO Labor Council study.

Relying on temps, however, can bring some challenges. Microsoft, which relies on temps for 27 percent of its workforce in the Seattle area, has been sued by former employees whom the firm first fired and then offered to rehire only if they signed up through a third-party staffing agency. The protracted 1997 strike at United Parcel Service (UPS) stemmed largely from UPS's use of "permatemps"—full-time, temporary employees.

⁷This application is based on "Microsoft Testing Limits on Temp Worker Use," *Los Angeles Times*, December 7, 1997, pp. D1 and D14.

18.3

THE NCAA CARTEL

In Chapter 13, we explained why a group of firms has an incentive to reach a collusive agreement, or a cartel, to limit production and raise the price of their product. In that chapter, we examined a cartel in the output market; it is also possible to have a cartel among buyers in input markets. The motivation is the same: by colluding, firms can make higher profits. When firms collude in hiring some input, the goal is to reduce the price paid for the input, which in turn lowers production costs. In effect, firms that collude are attempting to exercise their collective monopsony power in input markets. If effective, it has a detrimental effect on the price and economic rent received by suppliers of the input facing the buyers' cartel.

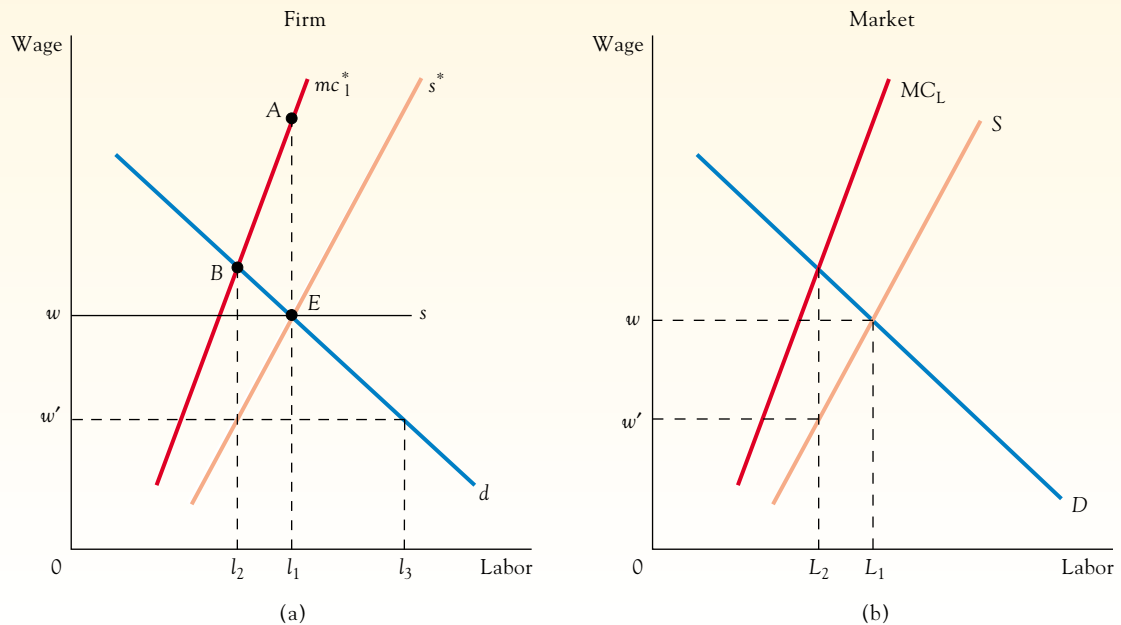
This section examines an effective input buyers' cartel: the National Collegiate Athletic Association (NCAA) regulation of student-athlete compensation. To fully understand the effects of this regulation, we need to first discuss the theory relating to the exercise of monopsony power in input markets by cartels.

An Input Buyers' Cartel

We'll begin with a competitive equilibrium in an input market and then explain how collusion among the firms would increase their profits. Figure 18.4b shows the market demand and supply curves for a certain type of labor, with an equilibrium wage rate of w and

FIGURE 18.4**An Input Buyers' Cartel**

Under competitive labor market conditions, the wage rate is w , with each firm facing a horizontal supply curve at that wage rate and employing l_1 workers. If the firms form a cartel, total employment is restricted to L_2 , permitting firms to pay a lower wage, w' .



employment level of L_1 . Figure 18.4a shows the equilibrium from the viewpoint of one of the competitive firms in the market. As noted in Chapter 16, in a competitive environment the firm faces a horizontal supply curve, s , for the input at the market wage rate w , so with a demand curve of d , the firm employs l_1 workers.

Each firm acting alone has no incentive to reduce the number of workers it employs, since a single firm's decision to hire fewer workers will not affect the wage—all that will happen is that the firm produces less output and sees its profits fall. If all firms simultaneously reduce hiring, however, the combined effect of their actions reduces the wage if the market supply curve is upward-sloping, as it is in this example. Lower wages (that is, lower production costs) are what an input buyers' cartel tries to achieve. To show the consequences somewhat more formally, assume for simplicity that the firms are identical and that they agree to coordinate hiring decisions so they simultaneously increase or reduce employment. The cartel agreement has the effect of changing the labor supply curve facing each firm.

If one firm reduces employment, all other firms will as well, and the combined effect depresses the wage. With coordinated hiring decisions, the individual firm faces the upward-sloping supply curve s^* in Figure 18.4a. This curve is each firm's *pro rata* share of the total labor market supply curve S in Figure 18.4b. It reflects the firm's average cost of labor at alternative hiring levels, provided that all firms coordinate their hiring decisions.

Because each firm's labor supply curve is upward-sloping with collusion, the marginal cost of employing labor is greater than the average cost, or wage rate, as shown by mc_L^* in Figure 18.4a. Firms find that at their initial level of employment, the marginal cost of hiring labor, Al_1 , is greater than the marginal value product of labor, El_1 . Thus, profits can be increased by reducing employment, since labor cost will fall by more than revenue. The profit-maximizing employment level is where the marginal cost of labor equals the marginal value product—that is, where mc_L^* intersects the demand curve d . Firms therefore reduce employment to l_2 and pay a wage rate of w' . This outcome is identical to the monopsony equilibrium explained in Chapter 16.

A buyers' cartel acts just as if a single buyer controlled hiring by all firms and acted to maximize combined profit. This result is illustrated in Figure 18.4b, which shows how the cartel, acting as a single buyer, employs L_2 workers where MC_L intersects the market demand curve. MC_L and S are the sum of the mc_L^* and s^* curves facing the firms when they coordinate their hiring decisions, reflecting the fact that the buyer side of the market has restricted employment to pay a lower wage rate. That is, the firms are collectively behaving as if they were a pure monopsony.

In this way, buyers can profit by colluding to force down prices of goods they purchase. If this type of behavior is so advantageous to buyers, why aren't buyer cartels more common? Just like seller cartels, buyer cartels are difficult to organize and maintain. In Chapter 13, we identified three reasons why seller cartels in output markets tend to fail; they are relevant in this case as well.

First, firms have an incentive to cheat on the cartel agreement. Each firm, acting individually, can raise its profit still further by increasing employment to l_3 at wage rate w' in Figure 18.4a. If many firms cheat, the cartel will fail. Second, participating firms will find it difficult to reach agreement on the levels of permitted employment (l_2) and the wage rate, w' . This is especially true when firms differ in size, structure, and aspiration. Third, the lower wage rate invites entry into the market by other firms that are not parties to the cartel, making it more difficult for the cartel to restrict competition for labor and hold the wage rate down.

Two additional factors, unique to input markets, hinder input buyers' cartels. First, an input market is often composed of many firms in several different industries. Coordinating hiring decisions among a large number of firms within and across industries is difficult. Second, a firm usually hires many different inputs, and the potential profit from reducing the price of only one input may be small. Typically, a firm stands to gain more by increasing the price of what it sells (usually one or a few items) than by reducing the price of one input.

For these reasons the effective exercise of monopsony power by an input buyers' cartel is rare. There are, however, a few interesting examples, and we discuss one next.

The NCAA as a Cartel of Buyers

The NCAA is a private organization empowered to regulate various aspects of college athletics. Currently, nearly 800 colleges and universities belong to the NCAA. When founded in 1906, the NCAA's goal was to control violence in college football, but its powers gradually expanded over time. As athletics became a major source of revenue for many colleges, the NCAA began to promulgate first voluntary guidelines and later rules governing recruitment and financial aid. Today the NCAA limits the number of athletic scholarships schools may award as well as the amount of financial assistance they may give. Basically, student-athletes can receive assistance only for room, board, and tuition (although this oversimplifies the NCAA's 411-page rulebook).

In essence, the NCAA determines the maximum financial reward a student-athlete can receive and the number of student-athletes who may be recruited with scholarships at each

school. If the rules are effectively enforced, the NCAA thus has the power to operate a buyers' cartel on behalf of member schools. We can see this by reinterpreting Figure 18.4 as it applies to the NCAA. The NCAA sets total "employment" by restricting the number of student-athletes receiving scholarships, and it controls the maximum "wage" by limiting assistance to room, board, and tuition. Each school is given a quota (l_2) smaller than the number of student-athletes it would like to hire (l_3) at the lower wage.

Applying a model developed for profit-maximizing firms to the nonprofit world of higher education may seem strange, but there is no doubt that some colleges and universities try to maximize the "profit" from their athletic programs. College athletic programs generate annual revenues equaling roughly \$2 billion in ticket sales and television rights. A winning basketball or football team (the only true money-making sports) can provide enough revenue to finance the entire athletic program, so it is not surprising that some schools treat athletics as a business.

The NCAA rules clearly have the potential to be used to establish a monopsony-like result for college athletics, but are the rules really applied strictly enough to produce this outcome? We have several pieces of evidence that they are. First, let's consider the marginal value products (or marginal revenue products) of college athletes. As shown in Figure 18.4a, the wage paid to an athlete is below the athlete's marginal value product (the height to the demand curve, or Bl_2) in a monopsony equilibrium. A number of estimates for selected college athletes have shown how much revenue they personally generated for their colleges. Doug Flutie, for example, brought \$3 million in television revenue during his last two years on the football team at Boston College, and there are many other cases of college "superstars" generating revenues in excess of \$1 million a year for their schools. Clearly, these athletes are paid far less than they are worth to their colleges.

A second piece of evidence is the significant number of NCAA rules violations by colleges and universities. Recall that any individual school has an incentive to cheat on the cartel agreement, since superior athletes are worth more to the school than the NCAA permits them to be paid. If the sports press can be believed, rules violations are common. Reports of athletes receiving cash payments, cars, apartments, free tickets, jobs without work requirements, and so on are widespread. Between 1977 and 1985 for instance, seven football players at Texas Christian University were paid between \$35,000 and \$45,000 apiece to attend the school. Such instances of cheating all indicate that the official wage permitted by the NCAA is below the market-clearing level.

Why doesn't cheating cause the NCAA cartel's demise? If cheating could not be controlled, disintegration would be the likely result, but the NCAA can apply sanctions to punish cheaters who are caught, and these sanctions have become increasingly severe. For instance, the NCAA can reduce the number of athletic scholarships a school can grant. The NCAA can also limit television appearances and ban a school from appearing in lucrative post-season tournaments. An appearance in the national championship football bowl game can be worth more than \$15 million to a school. In an extreme example of the penalty the NCAA can impose on a school, Southern Methodist University's entire 1987 football schedule was canceled. The NCAA clearly has powers enabling it to enforce, at least partially, the employment restrictions necessary to achieve the monopsony outcome.

Eliminate the Cartel Restrictions on Pay?

Should colleges be permitted to pay student-athletes? That question cannot be answered by economics alone since, as the "should" in the question indicates, value judgments as well as positive analysis are involved. The topic is too provocative and interesting to ignore,

however, so let's consider some of the relevant issues. Positive economic analysis indicates that NCAA policies result in a monopsony-like market for student-athletes. Thus, we know that student-athletes are paid less than they are worth as revenue generators. So if student-athletes are harmed by the NCAA restrictions on pay, who benefits? At a general level, colleges and universities with big-time athletic programs gain: they receive sizable revenues without having to pay the people largely responsible for generating them. But since colleges are nonprofit institutions, tracking down the ultimate beneficiaries is difficult. Perhaps non-revenue-generating sports are subsidized from the profits, perhaps tuition is a bit lower, or perhaps the salaries of coaches and economics professors are higher.

What is clear, however, is that those who benefit from the low pay of college athletes are wealthier than those who are harmed by it. Student-athletes typically come from poorer households than the average college student; often they come from quite disadvantaged backgrounds. One justification for the imbalance between revenue generators and revenue receivers is that student-athletes will soon be making megabucks as professional athletes. This is incorrect; fewer than 1 percent of college athletes make it to the pros. Thus, not only does the NCAA impede the smooth functioning of this labor market, but those who are most obviously harmed are also often relatively poor. These income distribution implications are the reason why certain analysts support breaking up the NCAA cartel. Others remain unconvinced, so let's briefly examine three of the most commonly heard arguments in favor of the current system.

1. *Some schools would have to drop their athletic programs if they had to pay their athletes a competitive "wage."* Although this might be true for some schools, since more student-athletes would participate in college sports at a higher wage, many schools could run the same size or expanded athletic programs. Nonetheless, someone must bear the cost when schools lose "profits" made from not paying their student-athletes what they are worth. If a school currently uses its basketball and football programs' profit to subsidize other sports, for example, these programs will suffer. The basic issue is whether the student-athletes in profitable sports should bear the cost of supporting other, less profitable, programs.
2. *Paying college athletes would destroy their amateur status and turn college athletics into a business.* Giving schools the option of paying student-athletes does not imply that every institution would have to do so. If a school wanted to maintain an amateur athletic program, it could, and probably many would choose this option. Some student-athletes might actually prefer this alternative, although schools choosing not to pay athletes a competitive wage would have difficulty attracting the best athletes. Under the current system, however, student-athletes are forced to be amateurs rather than having a choice.
3. *Paying athletes might adversely affect the education they receive.* Currently, less than one-third of athletes in the revenue-producing sports graduate from college, and of those that do, many take unchallenging courses, so the situation is already cause for concern. The joke about the university basketball coach telling a player who received four Fs and a D, "Looks like you're spending too much time on one subject," may be a more accurate reflection of the priorities of some college athletic departments than they care to admit. Perhaps the goals of having exciting sports programs with superb athletes and providing a quality college education to those athletes are incompatible. Whether or not this is true, it is not clear that permitting colleges to pay athletes makes it harder for them to require athletes to perform well academically and complete their education.

Although these remarks do not dispose of all the objections to permitting the wage rate of college athletes to be determined in an open market, they suggest how an economic approach to the question might help in understanding some of the issues.

APPLICATION 18.3**THE “COLLUSION ERA” IN MAJOR LEAGUE BASEBALL**

The end of the reserve clause and the onset of free agency in major league baseball (see Chapter 16 for more details) substantially increased the salaries and economic rents earned by players. Between 1976 and 1985, for example, the average player's salary rose 700 percent to \$369,000. This upward spiral was temporarily arrested from 1985 to 1988 in what has come to be known as the *collusion era*.⁸ During the collusion era, the free agency market dried up as far as players' prospects were concerned, while team profits soared. Baseball teams, as a group, earned their first pre-tax operating profit in eight years in 1986, the first of the collusion years. Over the next year, average players' salaries declined 2 percent while overall operating profit increased tenfold, to \$103 million.

The ability of major league baseball teams to effectively organize during the collusion era reflected the leadership of Peter Ueberroth, elected league commissioner in 1984. Upon assuming office, Ueberroth doubled the number of meetings between team owners and the commissioner (to four per year) and used them to openly berate owners for their lack of business sense in going after free agents while ignoring their own bottom lines. Ueberroth also got the owners to open up their books to one another for the first time ever at a meeting in 1985

and made them financially justify each of their hiring decisions. The exercise allowed owners to tacitly signal their intentions for any player up for free agency and forged a group dynamic among the owners whereby bidding competitions over players were shunned. Ueberroth also raised the maximum fine that could be levied by the league against a team violating the commissioner's rulings from \$5,000 to \$250,000. Finally, Ueberroth began using a central fund, based on licensing and merchandising fees, to award up to \$500,000 per year to teams acting in consonance with the commissioner's wishes.

The consensus established through Ueberroth's tactics was amazingly strong. For example, of the eight free agents who refused to re-sign with their initial teams by a league-set deadline of January 1987, choosing instead to seek outside offers, most found the market barren and ended up returning to their old teams with pay docked for refusing to re-sign on time. The average free agent's salary that year declined 16 percent.

In the end, however, the consensus proved to be too successful for its own good. The owners lost several grievance procedures filed by the players' union and had to pay \$280 million in damages for acting too closely in concert with one another. Peter Ueberroth opted not to seek reelection for a second five-year term as commissioner. And the owners reverted to their usual ways of competing aggressively over players. Average player pay rose again, by 50 percent between 1990 and 1991.

⁸This application is based on “How Peter Ueberroth Led the Major Leagues in the ‘Collusion Era,’” *Wall Street Journal*, May 20, 1991, pp. A1 and A6.

18.4**DISCRIMINATION IN EMPLOYMENT**

Discrimination can take many forms, but in this section we are concerned with only one aspect of this complex issue: how employment discrimination can affect wage rates and employment. Our main concern is whether, and under what circumstances, wage rates of equally productive workers will differ because of discriminatory hiring practices on grounds unrelated to a person's productivity, such as race, religion, or gender. If wage differentials unrelated to productivity can result from discrimination, we need to qualify the analysis in Chapter 16, where we concluded that wages have a tendency to equalize.

We will examine this issue by considering a labor market in which some employers discriminate and others do not. To be specific, let's assume that a fixed total of 2,000

equally productive workers wish to work in this market. Of these workers, 1,200 are men and 800 are women. Half of the employers (group A) are prejudiced against women workers and will not hire them under any circumstances; the other employers (group B) don't care whether their workers are male or female. What will be the wages paid to men and women in this market, and how many will be hired by group A and group B employers, respectively?

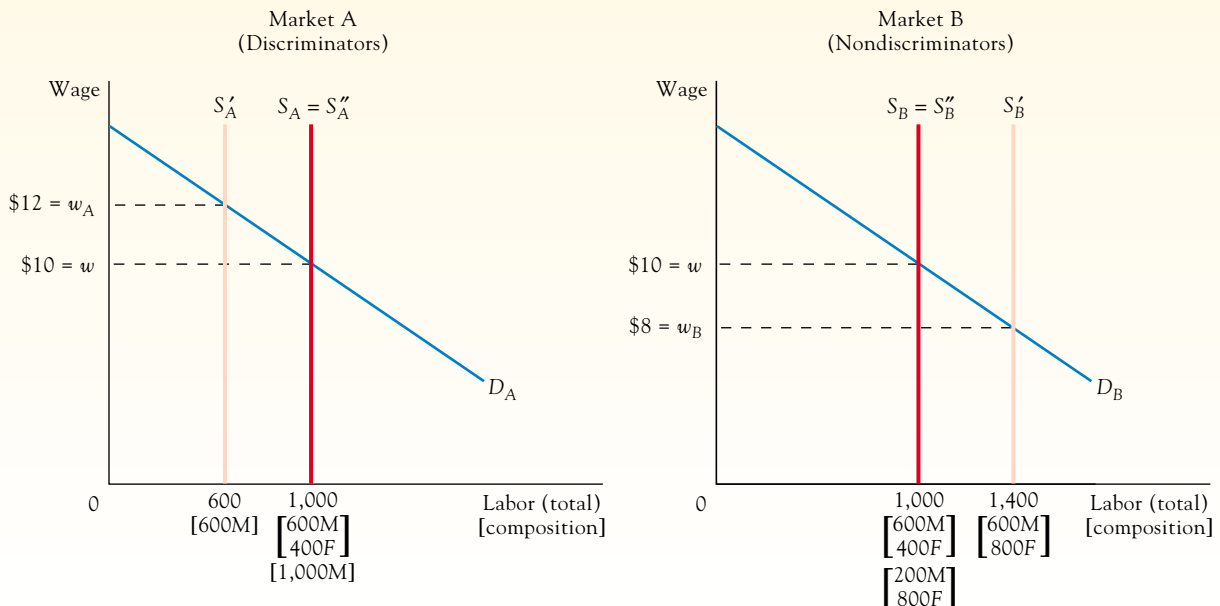
To answer this question, it will simplify matters to assume that no employers discriminate, identify a nondiscriminatory labor market equilibrium, and then work out the consequences when group A employers begin to discriminate against women. In Figure 18.5, the demands for labor by groups A and B are shown in separate graphs as D_A and D_B , respectively. In the initial nondiscriminating equilibrium, workers will be divided between the two markets so that the wage rates are equal, as shown by the supply curves S_A and S_B . The wage rate is w , or \$10, in both markets, and 1,000 workers are employed by each group. Since this market does not include any discrimination yet, we assume that men and women are employed by groups A and B in proportion to their total labor market representation—that is, each group of employers hires 600 males and 400 females (600M + 400F).

When employers do not discriminate, equally productive men and women receive the same wage rates. Now let us suppose that group A employers begin to discriminate against

FIGURE 18.5

Discrimination in Labor Markets

When employers in market A begin to discriminate against women, the initial effect is a leftward shift in the total labor supply curve in market A, S_A , and a simultaneous rightward shift in S_B , as the discharged women move to the nondiscriminating market. This trend creates incentives for men in market B to move to market A, reversing the initial supply curve shifts. The final result is that wage rates of men and women are equal despite the presence of discrimination.



women. They fire their 400 female employees. In the graph, the immediate, or very short-run, effect of this action would be shown as a shift in the supply curve of labor to the A market from S_A to S'_A : the total supply is now 600 men. The wage rate in the A market paid to men will be bid up to w_A , or \$12. What happens to the 400 discharged women employees? Of course, they will look for work elsewhere—in this case, in the B market. Their availability increases the total supply of labor to the B market, shown as a shift in supply from S_B to S'_B . The result is a lower wage rate of w_B , or \$8, and an increase in total employment in market B to 1,400. All of the women are now employed by nondiscriminating employers and none by discriminating employers.

This position is not, however, the final labor market equilibrium. Indeed, it may not materialize at all, as incentives for other changes simultaneously affect the behavior of market participants. To see that the position described is not an equilibrium, consider the 600 men still employed in market B. They are now receiving an \$8 wage rate—while the wage rate in market A is \$12 and market A is not discriminating against men. Thus, men in market B would look for jobs in market A. (Alternatively, employers in market A would try to lure male employees away from market B because they wouldn't have to pay the men as much as their current \$12 wage.) The shift of male workers from B to A is shown as a rightward shift in S'_A and a simultaneous leftward shift in S'_B . This trend will tend to reduce the wage rate in A and increase it in B. How far will this process continue? As long as the wage rate remains higher in market A and any men continue to work in market B, male workers in market B have incentive to move to market A. The process continues until the wage rates are the same in the two markets.

The final discriminating equilibrium occurs when S'_A has shifted to S''_A (coinciding with S_A) and S'_B has shifted to S''_B (coinciding with S_B). Wage rates are the same in both markets, and each market employs 1,000 workers—just as in the case when no employers discriminate. The difference appears in the composition of employment in the two markets. The discriminating employers now employ 1,000 workers—all men; the nondiscriminating employers now employ 1,000 workers—200 men and 800 women.

This effect is a remarkable, and little understood, implication of basic economic analysis. It demonstrates that widespread discrimination can exist, and yet have no effect on the wage rates of the discriminated-against group. Discrimination will tend to produce segregated employment patterns, but not wage differentials.

Can discrimination by employers ever lead to lower wages for discriminated-against groups? In our model, this result is possible if the proportion of employers who discriminate is sufficiently large relative to the size of the discriminated-against group. Specifically, if women represent 40 percent of the relevant labor force and discriminating employers account for more than 60 percent of total employment, then discrimination could reduce women's wages (and raise those of men). But as this analysis makes clear, discrimination must be very widespread to affect wages. In the case of a small minority like African Americans, who account for about 12 percent of the total labor force, discriminating employers would have to control an even larger portion of total employment (more than 88 percent in that case) for discrimination to produce lower wage rates. The key issue is whether enough nondiscriminating employers exist to absorb the discriminated-against group.

Even if discrimination is prevalent enough to produce lower wage rates for the discriminated-against group, a second market force tends to limit its consequences—the profit motive. Firms that engage in discrimination bear a cost in the form of sacrificed profits. Suppose, for example, that widespread discrimination against women produces lower wage rates for female workers. To be specific, assume that firms can hire male workers for \$35,000 per year and can hire equally productive female workers for \$25,000 per year. For every male worker hired in this situation, a firm loses \$10,000 in profit because it incurs a higher cost

than necessary. If the firm is a profit maximizer, it would hire only female workers, which would give it a cost advantage over (discriminating) firms that hire only males. This incentive for firms—to employ the lowest-cost available inputs (of comparable productivity)—works to promote equality in input prices.

The stronger the profit motive, the less likely that discrimination will exist or influence wage rates. Even a moderate difference in wage rates creates the opportunity for a firm to greatly increase its profit by not discriminating. On average, labor costs account for approximately 70 percent of all production costs, while before-tax profits average about 9 percent. If the average firm could reduce its labor cost by just 15 percent, it could nearly double its profit. How many businesses would be willing to forgo doubling their profits just to discriminate against certain groups of workers?

These arguments do not mean that discrimination in employment is nonexistent or that it cannot affect wages, particularly when we recognize that discrimination in hiring can reflect preferences of consumers or co-workers rather than employers' prejudices. (Employers may discriminate against certain groups of workers if customers are likely to refuse to purchase goods provided by that group of workers or if other workers are unwilling to work with them.) The analysis does suggest, however, that discriminatory attitudes must be widespread and that discriminators must be willing to bear nontrivial reductions in profit to indulge their prejudices, if significant wage differentials are to be maintained.

What Causes Average Wage Rates to Differ?

It is well known that average incomes and earnings differ among groups. In recent years, for example, the average earnings of African American males have been about 70 percent as much as those of white males. Among full-time workers, women also earn about 70 percent as much as men. To many people, these and similar numbers provide evidence of discrimination and its consequences. Our theoretical analysis does not prove this view to be wrong, but it does suggest that we should consider other possible explanations for these differences. Average wage rates of groups can differ for reasons other than discrimination. Differences may exist in the average current labor market productivity among groups, for example. Although productivity is notoriously difficult to measure directly, we can measure a number of characteristics thought to be related to productivity.

The median age of African Americans, for example, is 22; for whites, the median age is 30. Productivity and earnings tend to rise with age and experience, so whites would be expected to have higher average earnings when the entire groups are compared. Half of all African Americans, but a much lower percentage of white Americans, live in the South, where wage rates (and living costs) are lower. The careers of African Americans, especially if they are older, may also bear the lingering effects of past discrimination by schools and labor unions. On average, whites have slightly more schooling than African Americans (though the difference has been narrowing in recent decades); since education is related to earnings, this discrepancy produces a difference in group average earnings (22 percent of whites over the age of 25 have four or more years of college compared with 12 percent of African Americans). African Americans also score lower on standardized tests on average than whites, and some believe that these test scores reflect productive potential. Even marriage patterns can play a role in determining earnings. The percentage of African American men who are single is double the percentage for white men, and single men in general work 20 percent fewer hours per week than married men. These differences between the two groups would produce differences in average wage rates even if there was no discrimination.

What about women? Perhaps the most important factor here is the different ways that marriage and child-rearing affect men and women. Statistically, married men make more

money than single men, but married women make less than single women. Perhaps this occurs because, historically, marriage has freed men of household duties and permitted them to give more single-minded attention to their jobs, whereas it has had the opposite effect for women. For whatever reason, men work 10 to 20 percent longer hours than women, even when only full-time workers are examined. To test whether marriage and choices made within marriages cause much of the difference in average wages, we may consider only men and women young enough that marriage and procreation are not so widespread. It turns out that young women earn substantially more relative to young men than older women do relative to older men. If we compare single women and single men, single women earn 91 percent as much as single men. To highlight another factor, a recent study compared the starting salaries of male and female college graduates. On average, women received 83 percent as much as men. When women were compared with men who had the same major subject in college, however, the female workers were found to receive 97 percent as much as their male counterparts. Women tended to choose lower-paying majors, which accounted for most of the difference in average starting salaries.

In trying to determine whether wage differences are due to discrimination, we should compare groups of workers who are equally capable, motivated, and experienced. Such a comparison is not easy, given the numerous factors that affect the current earnings of any worker. Using statistical techniques, economists and other social scientists have tried to take into account easily measured factors like age, years of education, region, and hours of work. They have generally found that from one-half to three-fourths of the overall differences in earnings between African Americans and whites, and between men and women, can be explained by these factors.⁹ Whether the remaining differences reflect discrimination or something else remains a controversial issue.

APPLICATION 18.4

MALE VERSUS FEMALE EARNINGS AMONG SELF-EMPLOYED WORKERS

Since no self-employed person discriminates against himself or herself, economists have argued that if employer discrimination were the main reason for the earnings gap between men and women, self-employed women should find their earnings to be much closer to those of similarly productive self-employed men than do women who work for employers other than themselves. The data actually indicate that the gender earnings gap among the self-employed is, if anything, slightly larger

than it is among regular-wage and salaried employees.¹⁰ This finding suggests that reasons other than employer discrimination may explain the gender earnings gap.

¹⁰Victor Fuchs, "Women's Quest for Economic Equality," *Journal of Economic Perspectives*, 3 No. 1 (Winter 1989), pp. 25–41; and Robert L. Moore, "Employer Discrimination: Evidence from Self-Employed Workers," *Review of Economics and Statistics*, 85 No. 3 (August 1983), pp. 496–501.

⁹Ronald Ehrenberg and Robert Smith, *Modern Labor Economics*, 3rd ed. (Glenview, Ill.: Scott, Foresman, 1988). All of the difference in gross earnings between young African American and white males has been explained in a study that takes account of the results of achievement tests administered by the military since World War I—achievement tests used by the armed services to test individuals for fitness for military service. The tests measure verbal and mathematical skills and reflect the quality of schooling received as well as the effects of parental background. See June O'Neill, "The Role of Human Capital in Earnings Differences Between Black and White Men," *Journal of Economic Perspectives*, 4 No. 4 (Fall 1990), pp. 25–45.



SUMMARY

- The way input markets work strongly influences an economy's income distribution.
- The 1938 Fair Labor Standards Act established a nationwide minimum wage, which, by 2002, had been increased to \$5.15 per hour. Although the minimum wage was designed to help low-wage workers, economic analysis suggests that it may not be the best way to do so. Employers' response to the minimum wage is often to hire fewer workers, according to the law of demand. The resulting disemployment effect of the minimum wage, and the fact that the cost of paying the higher wage is spread widely through society in the form of higher goods prices, makes it difficult to assess the minimum wage as an unqualified success in assisting unskilled workers.
- Social Security is intended to provide older citizens with a secure source of income after retirement by taxing both those currently employed and their employers. Economists believe that the way the tax is divided has no effect on who actually bears the cost of Social Security

and that employees in fact bear most (but not all) of the burden in the form of lower after-tax wage rates, particularly if the aggregate supply of labor is highly inelastic.

- The National Collegiate Athletic Association is an input buyers' cartel that, in essence, determines the maximum financial reward a student-athlete can receive and the number of student-athletes who can be recruited with scholarships at each school. At the same time, its policies result in a monopsony-like market for student-athletes, who are paid less than they are worth as revenue generators for their schools.
- Economic analysis shows that widespread employment discrimination can exist yet have no effect on the wage rates of the group that is discriminated against. Even if discrimination is prevalent enough to produce lower wage rates for a particular group, firms that fail to hire workers in that group pay higher labor costs than necessary and realize correspondingly lower profits.



REVIEW QUESTIONS AND PROBLEMS

Questions and problems marked with an asterisk have solutions given in Answers to Selected Problems at the back of the book (page 584).

18.1. "Proponents of minimum wage laws stress society's obligation to act through its elected representatives to ensure an adequate standard of living for all working citizens." Evaluate the extent to which minimum wage laws achieve this goal.

18.2. Why does economic theory imply that the most harmful effects of the minimum wage law will fall on the most disadvantaged and least productive workers?

***18.3.** "The employer Social Security tax is just like any other labor cost to firms. A higher employer tax will thus increase labor costs, reduce employment, and increase prices." Explain why this reasoning is incorrect.

18.4. When the Social Security Administration attempts to compare the retirement benefits a worker receives with the taxes paid, it usually bases the comparison on only the employee portion of the tax. Do you think this comparison is appropriate?

18.5. As the owner of a retail store, you would like to be able to pay your salespeople lower wages. What problems would you

confront if you attempt to establish a cartel among employers to force down wage rates?

18.6. Articulate and defend your position regarding paying college athletes. What is the role played by positive analysis versus value judgments in your argument?

18.7. You are a business manager, and you believe that the differences in wages between men and women and between African Americans and whites reflect discrimination and not productivity differences. What type of employment policy should you adopt?

***18.8.** Suppose that some consumers of personal training services refuse to purchase such services from health clubs that employ any members of a minority group, the Amazons. How will this refusal affect the employment and wage rates of Amazons and other (assumed equally productive) workers?

18.9. Suppose that all employers in a perfectly competitive industry do not have a preference for discriminating against African Americans but that all the employees at one firm do. Describe what will happen to the profit-maximizing output level

of this firm in the long run if the employees' racial preferences influence the firm's hiring decisions.

18.10. If the prevailing market wage for low-skilled workers is \$7.00 per hour and a minimum wage law is passed dictating \$6.00 per hour, what will be the effect of the law on employment and the prevailing wage rate?

18.11. One of the authors of this book typically pays twice the prevailing market wage for research assistants. Why might such a policy be rational?

18.12. Suppose that Korean Americans on average earn more than Polish Americans. Does this imply that Polish Americans are discriminated against by employers relative to Korean Americans?

18.13. Economists Daniel Hamermesh (University of Texas) and Jeff Biddle (Michigan State University) examined the dif-

ference in attractiveness of private-sector lawyers, who have to woo clients, and public-sector lawyers, who do not. The results of their study indicate that private-sector firms drew more attractive lawyers to begin with and that the gap in attractiveness grew over time. What do their results say about the role customers, fellow employees, and managers play in promoting discrimination based on attractiveness in hiring decisions at private-sector law firms?

18.14. Explain why it is more difficult to organize and maintain an input buyers' cartel than an output sellers' cartel.

18.15. In terms of the cost to employees, it would make no difference regarding the extent to which the financing of national health insurance was underwritten through various possible shares of the required tax being formally assigned to employers. True, false, or uncertain? Explain.