Chapter 12
Gender, Race, and Ethnicity
in the Labor Market

This chapter represents a comprehensive inquiry into wage differentials across gender, racial, and ethnic groups. It begins with a section on earnings differences by gender, in which the overall differential is broken into two parts: that associated with measurable productivity differences and that associated with unobserved (unexplained) differences. The latter differences are associated with (but not confined to) current market discrimination. Discrimination is defined and problems of its measurement are discussed in the context of analyzing gender differences in earnings.

Black-white earnings differentials are analyzed next in a subsection that includes a brief treatment of differences in the ratios of employment to population. Earnings by ethnicity are also discussed. In each case, the analysis includes a review of attempts to estimate the effects of discrimination, with special emphasis on the effects of such hard-to-observe factors as English language proficiency, cognitive achievement, and school quality.

The second major section of the chapter analyzes theories of market discrimination. Becker's theories of employer, customer, and employee discrimination are discussed, and the theory of statistical discrimination is explained, along with noncompetitive models of discrimination (occupational crowding, dual labor markets, search-based monopsony, and theories involving collusive action).

The chapter concludes with in-depth discussions of governmental efforts to reduce or eliminate market discrimination: the Equal Pay Act of 1963 and the Civil Rights Act of 1964. Included in our discussion of the last are the evolution of the disparate impact standard by the courts (as opposed to a disparate treatment standard), legal decisions involving seniority, and the emerging comparable worth remedy. The chapter closes with an analysis of the federal contract compliance program, including the standards against which affirmative action plans are judged and the results of studies that have tried to assess the effects of the program.

The appendix to Chapter 12 contains an introduction to the problems of estimating comparable worth "earnings gaps." The purpose of this appendix is twofold: to give students a brief illustration of the use of regression analysis and to show them how comparable worth comparisons are made.

■ List of Major Concepts

1. Income disparities between men and women may have their roots in different incentives to acquire productive characteristics.

2. Current labor-market discrimination is said to exist when the market places values on personal characteristics of workers that are unrelated to productivity.

3. Earnings differentials caused by differences in productive characteristics are termed "premarket."

4. Occupational segregation is one form of discrimination, and it can be measured by an index of occupational dissimilarity; however, it is difficult to distinguish between the effects of occupational choice and those of employer discrimination.

5. To measure the extent of wage discrimination, one must determine what the earnings ratio would be if the protected class and white males had the same productive characteristics. However, the adjusted differential is in reality an *unexplained* differential, and it could reflect the effects of unmeasured worker characteristics as well as market discrimination.

6. Much of what appears to be labor-market discrimination against women takes the form of occupational segregation, which, while still rather marked, seems to be declining somewhat recently.

7. When productive characteristics are controlled in an analysis of earnings differentials, they account for all but roughly 10 percentage points of the gender wage differential.

8. Differences in the black-white employment-to-population ratio are a function of both higher unemployment rates and lower labor force participation rates among blacks.

9. Studies using conventionally measured variables for productive characteristics suggest that about 11 percentage points of the observed disparity between black and white males may be due to current labor-market discrimination. Studies that control for cognitive achievement scores as well suggest that black men earn from 8% more to 8% less than white men with comparable productive characteristics.

10. Human capital and language proficiency differences account for about 3 to 7 percentage points of the Hispanic wage differential.

11. If employers discriminate against some group of workers, they will act as if they believe the marginal product of those workers is lower than it really is. Thus, they will hire fewer such workers than would be called for by profit maximization, and those who are the most discriminatory will make the least profits.

12. Under employer discrimination, the behavior of prejudiced employers will reduce demand for the minority group and cause a wage differential to exist. The size of the differential depends on the size of the minority population relative to the distribution of prejudiced employers in the market.

13. The implication that prejudiced employers will be less profitable suggests that discrimination ought to be eliminated over time as nonprejudiced (profitable) employers buy out less profitable, prejudiced employers.

14. Like employer discrimination, customer discrimination implies a shift to the left of the demand curve for the services of a protected class. However, with customer discrimination, a reduction in productivity is, from the employer's perspective, genuine.

15. Employee discrimination generates supply-related behavior that might cause employers to segregate their plants by race or sex if possible. If not, wage differentials will arise as a result of the need of employers to retain workers in the prejudiced group.

16. Statistical discrimination arises from a screening problem in which job applicants are evaluated both on their individual characteristics and on average characteristics of the group to which they belong. Statistical discrimination should be reduced in situations in which the variance of individual characteristics around the group average widens.

17. Both the crowding hypothesis and theories emphasizing the dual labor market suggest the presence of noncompeting groups, but they do not satisfactorily explain the creation of these groups.

18. If search costs create upward-sloping labor supply curves to individual employers, and if discrimination raises the search costs of certain groups of workers, then monopsonistic behavior will create wage differentials among otherwise identical workers.

19. Some theorists use collusive action on the part of employers to explain the creation and persistence of noncompeting groups. Employers are seen as deliberately dividing the labor force to guard against cohesive collective action by workers, but the theory does not explain how an employer cartel is maintained in the face of clear-cut incentives to cheat.

20. Anti-discrimination programs by the government must set standards for both employment and wages. If employment standards are the only ones used, prejudiced employers may comply by paying protected-class workers less than white males. If a wage standard is the only one applicable, then prejudiced employers will respond to increased wages for protected classes by reducing employment.

21. A disparate treatment standard imposed under the Civil Rights Act judges that discrimination has occurred if different procedures are used for different groups of people and if it can be shown that there was an intent to discriminate. Proving intent is difficult, and policies that may appear to be neutral on the surface may nevertheless perpetuate the effects of past discrimination.

22. Courts have moved toward a disparate impact standard, by which it is labor-market results, not motivation, that counts. Under this standard, policies that lead to different effects by race and sex are prohibited unless a business "necessity" can justify their use.

23. Because of occupational segregation, men and women often occupy dissimilar jobs. The comparable worth remedy is based on comparing the skill content, responsibility, and working conditions in jobs for purposes of pay comparisons; however, mandating wage increases for women could reduce the incentives of employers to hire them.

24. The Federal Contract Compliance Program seeks to shift the demand curve for protected classes to the right. Federal contractors are required to file affirmative action plans that state their goals for hiring and promoting members of protected classes (taking into account "availability").

25. Realistic estimates of availability should account for the compensation policy of the firm, the willingness of workers to commute to the firm, the degree to which the firm has incentives to train new employees, and the extent to which job applicants can be induced to move to the firm's labor-market area.

26. Studies to evaluate the effects of government anti-discrimination efforts have focused on time series analyses of earnings ratios and effects on federal contractors (emphasizing changes in employment levels, wages, and quit rates for protected-class workers).

27. (Appendix) Estimating comparable worth earnings gaps typically involves evaluating characteristics of jobs for men and women and estimating the relationship between these characteristics and compensation for white males. This relationship can then be used to estimate what women would receive if they were paid on a basis comparable to men.

28. (Appendix) A precise and informative way of estimating the relationship between point scores and compensation would be to use ordinary least squares regression techniques to fit the "best" line through the observed points on the graph. The estimated coefficient on the point score variable is an estimate of how much a unit change in that variable affects earnings.

◼ Answers to Even-Numbered Review Questions

2. "In recent years, the wage gap between skilled and unskilled workers in the United States has grown. This growth means that measured labor-market discrimination against unskilled Mexican immigrants is also growing." Comment on whether the second part of this statement is implied by the first part.

   Answer: Labor-market discrimination is said to exist when workers who are productively equivalent are systematically paid different wages based on their race or ethnicity (or some other demographic characteristic unrelated to productivity). It is true that rising inequality causes a greater gap between the average wages of native whites and unskilled Mexican immigrants, because native whites are better educated and more skilled, on average. However, the existence (and size) of labor-market discrimination depends on the wage gap between *unskilled native whites* and unskilled Mexican immigrants (that is, between two productively equivalent groups)—so the facts quoted in the statement are not sufficient to determine if labor-market discrimination is growing.

4. Will government-mandated requirements to hire qualified minorities (at nondiscriminatory wages) in the same proportions they are found in the relevant labor force reduce the profits of firms that formerly engaged in employer discrimination? Fully explain your answer.

   Answer: Firms that engage in employer discrimination forgo profits in order to indulge their prejudices. Thus, requiring them to hire and pay qualified minorities in proportion to their availability will not reduce profits. (It will, however, reduce the utility owners derive from their businesses.)

6. You are involved in an investigation of charges that a large university in a small town is discriminating against female employees. You find that the salaries for professors in the nearly all-female School of Social Work are 20% below average salaries paid to those of comparable rank elsewhere in the university. Is this university exhibiting behavior associated with *employer* discrimination?

   Answer: There are different relative demands and supplies by academic field that are reflected in differential salaries. Professors of social work, therefore, may receive relatively low wages because the supply of labor to that field is greater relative to demand. Whatever the cause of the large relative supply of women to the social work field, it is not obvious that this particular university is engaged in the behavior we could attribute to *employer* discrimination.

   Employer discrimination can be observed in two instances. One occurs when, with equal wages for men and women, the employer clearly prefers to hire men over women of comparable productive characteristics. The other occurs when, given a lower market wage for women relative to comparable men, the employer fails to hire an all-female work force. Because the university has apparently hired a nearly all-female work force in the School of Social Work, it does not seem to exhibit this latter behavior.

8. In the 1920s South Africa passed laws that effectively prohibited black Africans from working in jobs that required high degrees of skill; skilled jobs were reserved for whites. Analyze the consequences of this law for black and white South African workers.

Answer: The effects of the law on black Africans were unambiguously adverse. Blacks were crowded into low-paying unskilled occupations, for which the wage was driven down still further by the requirement that blacks could not do other work. Those who would have chosen to obtain training for skilled positions were not able to do so.

The effects of the laws on white workers were ambiguous. Skilled white workers were helped, in the sense that they received higher wages than they would have received otherwise (had blacks been allowed into the skilled trades). Unskilled whites, however, were probably made worse off by this law because of its effects on the unskilled wage. Some unskilled whites, however, reacting to the increased wage differential between skilled and unskilled jobs, would have elected to obtain the training necessary for entrance to a skilled trade.

■ Answers to Even-Numbered Problems

2. Suppose that $MRP_L = 20 - 0.5L$ for left-handed workers, where L = the number of left-handed workers and MRP_L is measured in dollars per hour. The going wage for left-handed workers is $10 per hour, but employer A discriminates against these workers and has a discrimination coefficient, D, of $2 per hour. Graph the MRP_L curve and show how many left-handed workers employer A hires. How much profit has employer A lost by discriminating?

Answer: See the figure. A nondiscriminating employer will hire left-handers until wage = MRP_L. Because $10 = 20 - 0.5L$ when profits are maximized, then $L = 20$ workers for a profit-maximizing employer. Employer A, however, will hire left-handers until wage $+ D =$ MRP_L. Since $10 + 2 = 20 - 0.5L$, then $L = 16$ for employer A. Lost profits equal triangle *ABC*, whose area is $4 \times \$2 \times 0.5 = \$4$ per hour.
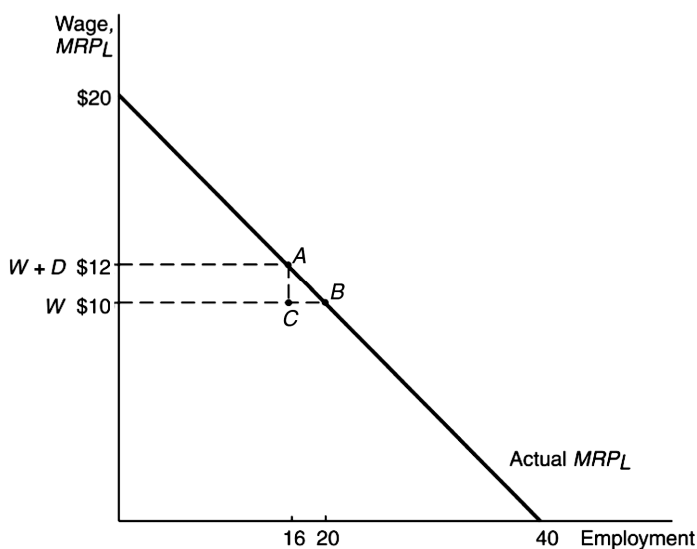
4.   (Appendix) In the market for delivery truck drivers, $L_s = -45 + 5W$ and $L_d = 180 - 10W$, where $L =$ number of workers and $W =$ wage in dollars per hour. In the market for librarians, $L_s = -15 + 5W$ and $L_d = 190 - 10W$. Find the equilibrium wage and employment level in each occupation and explain what will happen if a comparable worth law mandates that the librarian wage be increased to equal the delivery truck driver wage. Use a graph.

Answer: To find the equilibrium wage for truck drivers, set $L_d = L_s$ and solve for W:

$$-45 + 5W = 180 - 10W, \ \text{or} \ 15W = 225, \ \text{so} \ W = \$15 \ \text{per hour}$$

Plugging this into the two equations shows that, for truck drivers, $L = 30$. The calculation for librarians is as follows:

$$-15 + 5W = 190 - 10W, \ \text{or} \ 15W = 205, \ \text{so} \ W = \$13.67 \ \text{per hour}$$

For librarians, $L = 53$. If the librarians' wage were increased to $15 per hour, employers would move back along the L_d curve from Point a to b on the figure below and hire fewer librarians, reducing their employment from 53 to 40.

6.   Suppose the hourly marginal revenue product of all workers in a particular labor market is $MRP_L = 20 - L$, where $L =$ number of workers. The hourly wage rate for women in this market is $W = \$5.75$. What is the gap between MRP_L and wage in this labor market if $L = 12$? Is this gap a reliable measure of discrimination against women in this market?

Answer:

$$MRP_L = 20 - 12 = \$8.$$

The gap between marginal revenue product and wage is thus $2.25.

In a competitive labor market, firms should hire labor until wage $= MRP_L$. If the market is competitive, then it appears that the employers are not doing this and that they could be devaluing MRP_L because of their prejudice. That is, they are acting AS IF women are less productive than they really are.

However, there are other reasons the wages might be less than MRP_L. Workers in whom employers have invested will have wages less than MRP_L (see Chapter 5). Workers who are being paid on an underpayment-followed-by-overpayment pay scheme will be paid less than MRP_L during the underpayment time frame, and more than MRP_L later on (Chapter 11). Also, workers in monopsonistic labor markets will be paid less than MRP_L (Chapter 5).

Thus, the observation that wages are less than MRP_L does not necessarily imply discrimination.

8.   Suppose a researcher estimated the relationship between salary, gender, and age among a group consisting of male and female workers but ignored the fact that, on average, male workers have more work experience than females. The estimated regression of salary on gender and age is

$$S_i = 21354.83 + 239.45 \ G_i + 93.17A_i$$
$$(15252.9) \quad (95.6) \qquad (29.58)$$

where $S_i =$ salary of a worker, $G_i = 1$ if the worker is male and 0 if the worker is female, and $A_i =$ the employee's age. Standard errors of the coefficients are in parentheses.

When experience was included in the regression, the estimated regression is

$$S_i = 21177.75 + 226.27\ G_i + 89.73\ A_i + 443.41\ X_i$$
$$(16111.3) \quad (186.8) \quad (34.64) \quad (47.7)$$

where X_i = years of work experience of the worker.

Comparing the two estimated regressions, does there appear to be salary discrimination by gender? Discuss the implications of omitting the experience variable in the first regression.

Answer: When the variable for experience is omitted from the regression, the coefficient on gender is statistically significant. The positive value of the coefficient indicates that the average male worker earns $239.45 more than the average female worker. However, when the variable for experience is included in the regression, its coefficient is statistically significant but the coefficient on gender is *not* statistically significant at conventional levels (the *t statistic* has a value of only 1.21). Omitting the experience variable from the regression causes an estimation problem because experience has an effect on salary *and* is correlated with gender. When the experience variable is omitted from the regression, both the effects of gender and experience are reflected in the coefficient on gender.

■ Suggested Essay Questions

1. An economic study has found that men who are judged to be "ugly" have earnings that are 9% less than their "average-looking" peers with the same age, education, and occupation; those who are considered "handsome" make 5% more than average. Is this evidence of labor-market discrimination? Discuss fully.

    Answer: Labor-market discrimination is said to exist when some demographic characteristic is associated with lower wages, after controlling for all other factors that influence productivity on the job. The critical issue for the analysis of the wage penalties and premiums associated with "looks" is whether all factors associated with productivity have been accounted for. If ugly doctors are just as proficient at diagnosing disease as others with their same education and age, but consumers prefer better-looking ones, then consumer discrimination can be said to exist. However, if "looks" signal some ability that cannot be easily measured by education, age, or occupation, then the penalties and premiums may be compensating for this hard-to-measure ability. (Indeed, some studies indicate that beauty in prime-aged adults is correlated with intelligence.)

2. A careful study of the wages of Mexican-born unskilled workers in the United States—many of whom are working without proper visa documentation and can be deported—finds that they earn 10% less than unskilled native (white) workers. Is this evidence of wage discrimination in the labor market? In your answer, define "discrimination" and discuss how it can be identified.

    Answer: Labor-market discrimination is defined as paying less to a demographic group that is productively equivalent to a more highly paid group. It can be measured by looking at average wages across demographic groups, holding human capital (or other characteristics that affect productivity) constant. One factor that affects productivity in most jobs is ability to speak English; thus, any study of wage discrimination among immigrants must take language proficiency into account. However, even among workers who have similar skills (including communications skills) *illegal* immigrants are more costly to employ for any given wage rate. They can be deported (employers would then have the costs of replacing them), and employers found employing them are fined or otherwise penalized. Thus, legal status is a variable that must be taken into account when studying discrimination against immigrants.