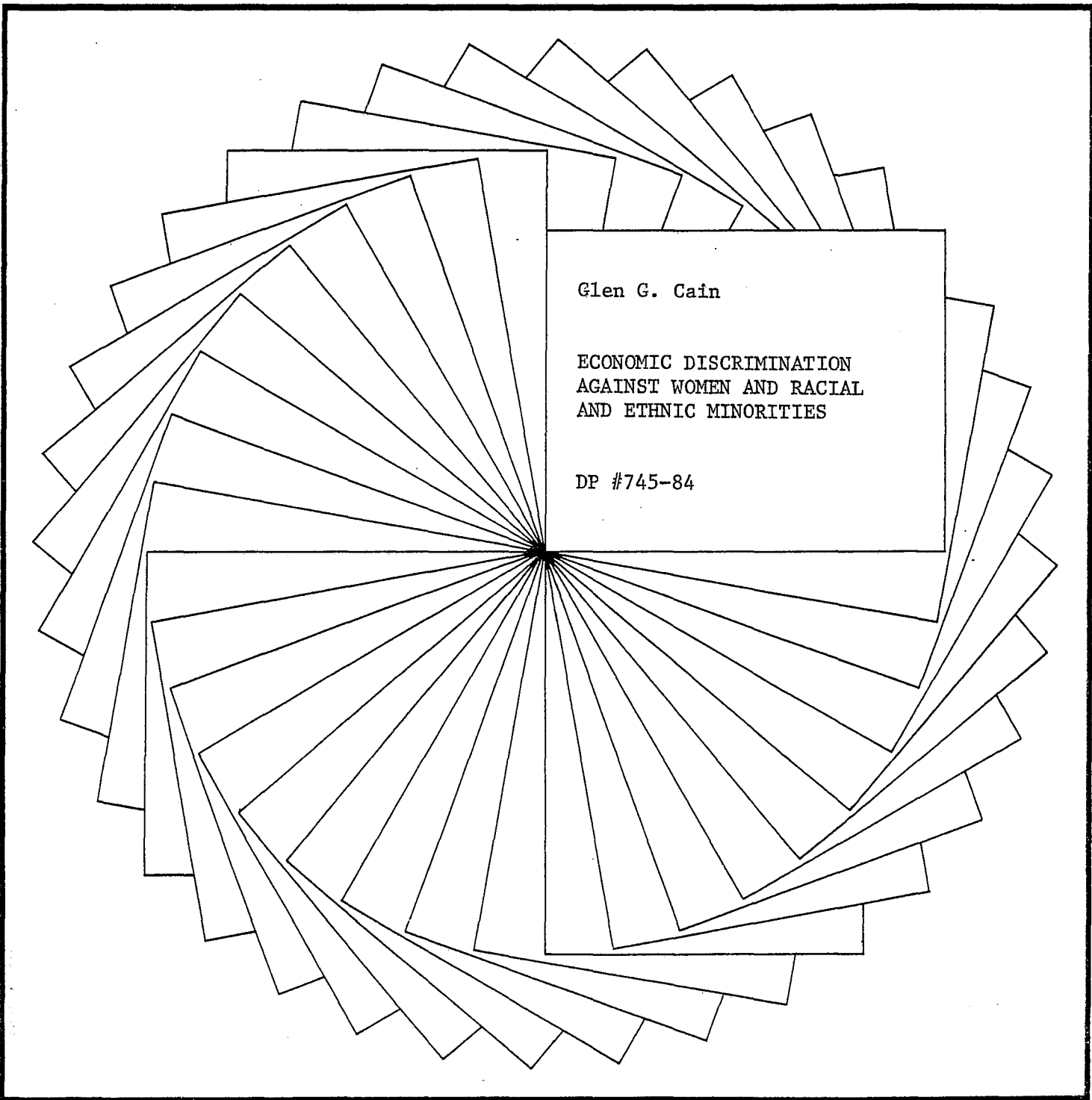


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# IRP Discussion Papers

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ECONOMIC DISCRIMINATION  
AGAINST WOMEN AND RACIAL  
AND ETHNIC MINORITIES

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Economic Discrimination against Women and  
Racial and Ethnic Minorities

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## ABSTRACT

Economics provides two broad definitions of discrimination in the labor market. One is based on disparities in economic well-being between minority and majority groups, and the other is based on disparities in wages paid to comparable workers who differ only in group status. After discussing these definitions, this paper presents Census Bureau data on income differences of blacks, whites, Hispanics, women, and men. Theories of, and empirical research on, economic discrimination against women and minorities are critically surveyed. The paper then considers the relevance of neoclassical economic analyses for government policies of intervention against such discrimination.

## Economic Discrimination against Women and Racial and Ethnic Minorities

This essay deals with how economists define and analyze the problem of discrimination in the economy. More questions are raised than answers are provided. Economics does not yield many answers to this complicated issue, which seems to defy precise measurement, clear theories, or confident policy proposals.

### DEFINITIONS AND MEASUREMENTS

#### Definitions

There are two broad definitions of economic discrimination. Each corresponds to a problem; the first is practical and the second is both theoretical and practical.

First, economic discrimination may be defined as long-lasting inequality in economic well-being between two groups which, for convenience, I will label "majority" and "minority" groups. In practice we often use average (or mean) incomes to measure the inequality between majority and minority groups, although we recognize that money income is not a unique or comprehensive concept of economic well-being. The practical problem apparent from this definition and measure is that various color, gender, and ethnic groups have widely disparate incomes, and this is perceived as an inequity.

Second, economic discrimination is also measured by differences in pay or wage rates for equally productive majority and minority groups.

In addition to the practical implications of this issue, there is the following theoretical challenge to economists:

"How can the same good or service have different prices in a competitive market?"

Here the good in question is labor service, and the price is a wage rate. If the source of different prices for the same good is a noncompetitive market structure, economists analyze this market structure and determine what causes and sustains the barriers to competition.

These definitions can be illustrated with some descriptive statistics. The first definition permits a simple measure of economic discrimination as the mean differences in household, family, or personal income, on the assumption that annual money income is a useful indicator of economic well-being.

Some comparisons of income differences in 1981 among whites,<sup>1</sup> blacks, and Hispanic households (resident(s) of a housing unit) and families (two or more related persons living together) in the United States are shown in Table 1. They reveal, for example, that the average income of a black household, \$14,900, is 63% of that of a white household, which is \$23,700. On a per-person basis, the ratio is only 56%. (See rows 1 and 2, columns 1-3). The smaller ratio of black-to-white household income on a per-member basis reflects the fact that black households are slightly larger: 2.99 persons per household compared to 2.67, as shown in columns 6 and 7 of row 2.

The table is, perhaps, too detailed, and it may be helpful to make the following interpretive remarks:

1. Blacks and Hispanics constitute about 17% of the U.S. population. The total numbers of households and families by ethnic status is shown in

Table 1

Mean Annual Incomes of White, Black, and Hispanic Households  
and Families in the United States in 1981

Demographic Unit	Mean Annual Income (\$000's) and B/W and H/W Ratios <sup>a</sup>					Number of Units (in millions); Average Size of Unit in ( )		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	W	B	B/W	H	H/W	W	B	H
1. Households <sup>b</sup>	\$23.7	\$14.9	.63	\$18.4	.77	72.8	9.0	4.0
2. (per member) <sup>c</sup>	8.9	5.0	.56	5.3	.59	(2.67)	(2.99)	(3.49)
<u>Families</u>								
3. Married-couple families <sup>d</sup>	28.7	21.9	.76	22.1	.77	43.3	3.2	2.3
4. (per member)	8.8	5.8	.66	5.4	.62	(3.27)	(3.79)	(4.07)
5. Female-headed families <sup>e</sup>	15.3	9.8	.61	10.8	.70	6.6	2.6	0.7
6. (per member)	5.4	2.8	.52	3.1	.58	(2.84)	(3.50)	(3.47)
7. Female-headed families as ratio of all families <sup>f</sup>						.12	.41	.23
Families with primary earner working "full-time": <sup>g</sup>								
8. Married-couple families	30.5	25.9	.85	22.3	.73	27.8	1.9	1.5
9. Female-headed families	18.0	13.4	.74	15.9	.88	2.5	0.8	0.2

Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 137, Money Income of Households, Families, and Persons in the United States: 1981 (U.S. Government Printing Office, Washington, D.C.; 1983), Tables 4, 13, and 19.

Notes to Table 1

<sup>a</sup>Incomes are rounded to the nearest hundred, but the ratios are based on unrounded incomes. For example, the original mean household incomes for whites and blacks in the first row are \$23,742 and \$14,856.

<sup>b</sup>Households consist of all persons who live together in a housing unit and include one-person households.

<sup>c</sup>Mean annual income per member is household income divided by the average size of the household. For example, for white households:  $\$23,724/2.67 = \$8,892$ , which, rounded and expressed in thousands of dollars, is 8.9.

<sup>d</sup>The Census Bureau defines a family as two or more persons related by blood, marriage, or adoption, and residing together. In this table, married-couple families do not include a relatively small number of families in which the wife is listed as the owner of the housing unit, which is the definition of the term "householder" that appears in the Census tables.

<sup>e</sup>Does not include a relatively small number of female-headed families with a husband present.

<sup>f</sup>All families include a relatively small number of female-headed families with a husband present.

<sup>g</sup>"Full-time" is defined as working 50-52 weeks for 35 or more hours per week in 1981.

columns 6-8 in rows 1, 3, 5, 8, and 9. Along with other smaller minority groups, such as American Indians and certain Asian immigrant groups, about 20% of the U.S. population is defined to be in an ethnic minority group that faces economic discrimination.

2. The minority-to-majority ratios of income tend to be around .6 or .7, but the table also shows, with some additional calculations, that the average income per member of a black female-headed family is only 32% of the average income per member of a white married-couple family.<sup>2</sup> (Using column 2, row 6, and column 1, row 4, we obtain:  $2.8/8.8 = .32$ .) This is a large difference.

3. Table 1 reveals that one reason why black and Hispanic incomes are lower than that of whites is the larger fraction of female-headed families among the minority groups. See row 7. Also, if both headship status and the presence of a full-time worker as primary earner are "held constant" (comparing likes with likes), the income ratios are sharply raised, although they are still less than 1.0; see rows 8 and 9, columns 3 and 5. These facts suggest that marital instability and slack labor markets are important sources of income inequality among ethnic groups in the United States.

4. Table 1 refers to 1981, but the differences between minority and majority groups were even larger in earlier periods. The gaps have narrowed over the long run.

5. Poverty status for families in 1981 was officially defined to be an annual income of \$9300 or less for a family of size four and of \$7300 or less for a family of size three. Thus, a substantial proportion of minority families headed by women are poor.



6. This type of table could be compiled for other minority groups. Consider two groups that faced discrimination in the past:

- (i) persons of Italian ancestry--the largest group of immigrants to the United States in the twentieth century;
- (ii) persons who state their religious affiliation as Jewish, the vast majority being from Eastern Europe.

The average family incomes of these two groups would be higher than the average in the United States for all other white families.<sup>3</sup>

What adjustments to the available statistics for money income that are shown in Table 1 are required to measure economic well-being more completely? Unfortunately, a satisfactory answer to this question would involve the resolution of philosophical and measurement problems that are beyond my capacity. However, most of the issues that lend themselves to quantification or informed judgments are listed in Table 2. In the table the sources of inequality and the accompanying adjustments are separated into those pertaining to income receipts and those pertaining to expenditures. In measuring income receipts there are further distinctions among the issues of (a) the proper measures of income from a household's assets (or wealth components); (b) the appropriate demographic unit of analysis; and (c) allowances for government taxes and subsidies and for survey biases.

There is not the space to discuss each of these adjustments. Perhaps it will suffice to infer from Table 2 that the money measures in Table 1 understate the true degree of inequality between blacks and whites, and, by extension, between majority and minority ethnic groups generally.

In Table 3 the earnings of workers, instead of the incomes of families, are shown. If we consider earnings as a measure of economic

Table 2

## Sources of Inequality in Economic Well-Being, Illustrated with a Comparison of Black and White Families in the United States

Source	Judgment as to Whether Accounting for the Source Would Make the Conventional Black-White Income Ratio <u>More</u> or <u>Less</u> Equal (No adjustment needed, N.A., implies that the conventional ratio already allows for the source)
<u>Income Receipts</u>	
Asset ownership	
Property (income-earning)	N.A.
Property (non-income-earning: car, owner-occupied house, etc.)	Less (blacks have less wealth in these types of durable goods)
Human capital (wage earnings)	N.A.
Human capital (nonpecuniary aspects of work)	Less <sup>a</sup>
Defined for "household" as unit	
Adjust for family or household size	Less (unless the comparison is already "per member") <sup>b</sup>
Adjust for multiple earners to allow for "leisure" consumption	More (whites have 1.65 earners per family; blacks, 1.47) <sup>c</sup>
Allowance for government taxes, transfers, and survey bias	
Taxes	Slightly more (reflecting the moderate degree of progressivity in the tax system)
Money transfer payments	N.A.
Nonmonetary transfer payments to nonaged persons (primarily Food Stamps)	More (about 25% of black and 8% of white families receive these forms of noncash transfers) <sup>d</sup>

--table continues--

Table 2, continued

Source	Judgment as to Whether Accounting for the Source Would Make the Conventional Black-White Income Ratio <u>More</u> or <u>Less</u> Equal (No adjustment needed, N.A., implies that the conventional ratio already allows for the source)
Allowance for government taxes, transfers, and survey bias, cont.	
Nonmonetary transfer payments to aged persons (medical care and housing subsidies)	Less <sup>e</sup>
Nonmonetary public benefits (parks, police service, etc.)	Less <sup>f</sup>
Nonreported income	?
<u>Expenditures</u>	
Discriminatory pricing--housing, capital markets, consumer credit, etc.	Less <sup>f</sup>
Expenditures on "regrettables"--items that do not directly produce utility, such as health maintenance, transportation to work, "waiting times"	Less <sup>f, g</sup>

<sup>a</sup>Personal judgment that blacks have, on average, jobs with less prestige and less pleasant working conditions.

<sup>b</sup>See Table 1.

<sup>c</sup>Source: Table 29 in source cited in Table 1.

<sup>d</sup>Source: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 136, Characteristics of Households and Persons Receiving Selected Noncash Benefits, 1981 (U.S. Government Printing Office, Washington, D.C.), 1983, p. 3.

<sup>e</sup>These forms of transfer payments came primarily from the Social Security system, and white persons benefit disproportionately for two reasons: (1) eligibility and payments tend to be positive related to earnings during preretirement years; (2) whites live longer.

--table continues--

## Table 2, continued

<sup>f</sup>A personal judgment.

<sup>g</sup>For a definition and application of the concept of "regrettable" expenditures, see William Nordhaus and James Tobin, Is Growth Obsolete? (National Bureau of Economic Research 50th Anniversary Colloquium, Columbia University Press, New York, 1972).

well-being among workers, Table 3 shows economic discrimination by the first definition, specified above. By the second definition of economic discrimination, however, Table 3 would provide a measure only if we considered the worker groups--three ethnic groups and two gender groups--to be equally productive--a term that will be discussed below.

In Table 3, ratios ranging from .5 to .7 characterize most of the comparisons between minority men and white men and between women and men within each ethnic group. However, minority women earn around 90% of the earnings of white women. The earnings ratios of women to men and of black men to white men are smaller for "all workers" than for "year-round, full-time workers." The reason is that women and black men have lower wage rates when fully employed and are also less likely to work full-time. (See the ratios in parentheses in the last three columns of the last two rows.)

The two definitions of economic discrimination I have offered may be summarized in two succinct mathematical expressions:

$$(1) D_1 = \bar{Y}_{MAJ} - \bar{Y}_{MIN},$$

where  $D_1$  is the first measure of discrimination, using the overall average income,  $\bar{Y}$ , for majority and minority households (or families). It may be considered to measure societal economic discrimination.

$$(2) D_2 = \bar{W}_{MAJ/PROD} - \bar{W}_{MIN/PROD},$$

where  $D_2$  is the second measure of discrimination, using the average wage for equally productive majority and minority workers. The vertical bar in the subscript to  $\bar{W}$  indicates that relevant productive characteristics (to be defined below) are being "held constant" when the comparison

Table 3

Mean Earnings and Numbers of Workers and of Year-Round, Full-Time Workers for Men and Women;  
Whites, Blacks, and Hispanics, United States, 1981

	Mean Annual Earnings (\$000's) and B/W and H/W ratios <sup>a</sup>					Numbers of all Workers, in Millions, and Year-Round, Full-Time Workers as a Ratio of All Workers in ( ) <sup>b</sup>		
	W	B	B/W	H	H/W	W	B	H
All Workers								
Men	\$17.5	\$11.6	.67	\$12.5	.72	58.2	5.7	3.6
Women	8.3	8.0	.97	7.5	.90	45.7	5.6	2.5
Women/Men	.48	.69		.59				
Year-Round, Full-Time Workers								
Men	22.8	15.7	.69	16.5	.72	(.65)	(.58)	(.61)
Women	13.3	12.0	.90	11.5	.87	(.44)	(.49)	(.45)
Women/Men	.58	.76		.70				

Source: Table 55 in source cited in Table 1.

<sup>a</sup>Earnings are rounded to nearest hundred, but the ratios are based on the unrounded earnings. For example, the earnings for whites and blacks in the fourth row are \$22,791 and \$15,660, respectively. The use of median earnings, which are about 8 percent lower, would not much change the comparisons.

<sup>b</sup>A year-round, full-time worker is one who works (or is paid for) 50-52 weeks and 35 or more hours per week.

between groups is made.  $D_2$  may be considered to express labor market discrimination--obviously a narrower concept than  $D_1$ .

It is useful to show how the two measures are related by specifying the assumptions under which they coincide. First, let the demographic unit of observation for  $D_1$  be the individual or, equivalently, a one-person household. Second, let all income consist of labor earnings and assume that all persons work a standard number of hours per year. These assumptions would change  $\bar{Y}$  to  $\bar{WH}$ , where  $\bar{H}$  is the standard number of hours worked. With  $\bar{H}$  assumed the same for majority and minority workers, the only remaining difference between  $D_1$  and  $D_2$  would be the fact that  $D_1$  represents a difference in unconditional means, and  $D_2$  a difference in conditional means--conditioning on the productivity differences. If it is assumed that there are no productivity differences, on average, then in combination with the other assumptions just mentioned,  $D_1 = D_2$ .

#### The Problem of Measuring Productivity Differences

Implicit in  $D_2$ , or Model (2), is the proposition that the group status that defines the majority or minority group has no intrinsic effect on productivity. This proposition may simply be viewed as defining the economist's measure of wage, or labor market, discrimination, in which any measured negative effect of group status on wages, after controlling for productivity, is defined to be discrimination. What productivity variables, which refer to characteristics of the workers, should be held constant to measure  $D_2$ ? The criterion I propose is that the variables that are held constant in Model (2) should not be determined by the process of discrimination under analysis. Consider the following two applications of this criterion.

Case 1: Assume the analysis pertains to a given employer or firm, and that we ask whether white workers are paid more than black workers after taking account of (holding constant) the available productivity variables. Let us further assume that a panel of experts provides us with the worker characteristics that determine productivity in the given firm. The productivity variables might include previous vocational training, tests of manual dexterity, age, years of schooling, and so on. However, to meet the above criterion, each variable should be exogenous to the employer; that is, the characteristic should not be affected by the employer's behavior. If it did, it might reflect discrimination. Thus, a variable defined as "supervisor's rating" would not be admissible.

Case 2: Assume the analysis pertains to the entire labor market. We ask whether white workers are paid more than black workers after holding constant an admissible set of productivity variables that meet the criterion that they are not affected by the process of discrimination under analysis. But because the entire labor market is under analysis, variables like "previous training" almost surely reflect previous discrimination in the labor market, so they are not admissible.

Unfortunately, there is no simple rule in market-wide studies for determining when a variable may be appropriately held constant. Among the variables mentioned in Case 1, age would be appropriately held constant as an exogenous variable. Years of schooling would be held constant if we believed that the decision to attain schooling did not reflect discrimination in the labor market. Perhaps less education among minorities reflects societal discrimination--not labor market discrimination but "pre-labor-market discrimination." On the other hand, blacks



and women may perceive that higher levels of schooling yield smaller earnings for them than for white men. If this were true, then these groups may have curtailed their schooling, in which case educational attainment would reflect labor market discrimination.

Certain genetic differences might be admissible in analyzing differences in pay between men and women, but it seems appropriate to dismiss these as unproven when examining ethnic discrimination. Even considering, say, physical strength as a genetic difference between men and women, we may agree that this is not an important explanation for pay differences in the modern urban society. On the other hand, the cultural, and partly biological, differences between men and women in the division of labor between market work and housework--raising children, in particular--may be considered exogenous, or it may not.

Determining the productivity variables that are admissible is the first step in estimating Model (2) to measure  $D_2$ . Accurate measures of the agreed-upon variables are also needed.

Three Cases of Economic Discrimination in the United States According to the Second Definition (Wage-Rate Differences)

Table 3 shows a ratio of minority-to-majority earnings that is less than 1 for all three types of comparisons: black to white, Hispanic to white, and female to male. If admissible (or exogenous) productivity characteristics are taken into account, the following conclusions are likely to emerge.

Hispanics: Their lower pay may be partly explained by their disadvantage in English-language skills and by the recency of their immigration to the United States. Both characteristics may be considered exogenous in measuring labor market discrimination.

Women: Their lower pay in the labor market may be partly explained by their specialization in work in the "home sector" and by their alternative source of income from other family members. A crucial issue is the extent to which women's specialization in housework is voluntary or imposed.

Blacks: Their lower pay indicates a very strong case for discrimination, although there is difficulty in separating labor market discrimination from various forms of pre-labor-market discrimination.

Two final points: First, labor market discrimination is not necessarily related to immigration. The ancestors of blacks generally came to the United States before the ancestors of whites. Only the discrimination against Hispanics may be related to their recency of immigration. Second, there has been no mention of segregation in the economic definitions of discrimination. Segregation appears to be irrelevant to the economist's definition. This issue will be discussed later.

#### ECONOMIC THEORIES OF DISCRIMINATION

In the previous section I have shown how economists define and measure economic discrimination, although the empirical implementation of Model (2) will be discussed in the next section. The primary source of economic discrimination is found in the labor market, because labor earnings are by far the most important source of income differentials between majority and minority groups. In this section I address the question of how economists explain--or at least theorize about--economic discrimination. The section will be disappointing to any reader who

expects to find simple and, especially, satisfactory theories.

Economics, in my opinion, is weak in this area.

### Basic Concepts of the Economic Theories of Discrimination

Economic theories of discrimination deal almost exclusively with discrimination in the labor market and they deal almost exclusively with the demand side of the market. Recall that the theoretical challenge mentioned above is to explain how workers who are intrinsically equal in productivity receive unequal wages. Thus, the supply side of the market is effectively neutralized by the assumption of either equal productivity or "controlled-for" productivity differences.

A useful and pervasive specification of discrimination in demand by an individual economic agent is a willingness-to-pay to avoid contact with the minority group or, equivalently for my purposes, a willingness-to-pay for contact with the majority group. This specification, which is due to Gary Becker, expresses and measures prejudice as a prejudicial taste (preference) in money terms.<sup>4</sup>

This definition also involves the central principle that will erode discriminatory outcomes if competition in markets is assumed; namely, that competition, which assumes many producers and mobility among economic agents, will lead to the separation of groups to avoid the costs of contact. Once separated, economic discrimination disappears, given the definition of economic discrimination as different wages for equally productive workers. Thus, segregation is a mechanism for eliminating discrimination in competitive markets. This is a rather depressing conclusion for those who favor competitive markets and an integrated society as well as the elimination of discrimination.

Of course, this conclusion does not mean that segregation is necessary to eliminate discrimination in competitive markets. Collective action to offset the effects of discriminatory tastes or changes in those tastes can be accomplished without seriously restricting competition in markets. Nor does the conclusion mean that segregation will be commonly observed as a concomitant of no discrimination, as witness the Republic of South Africa.

Indeed, the conclusion about the incompatibility of discrimination with competitive models--I emphasize the word models because this is only a theoretical proposition--is not agreed to by all economists. There is not the space to defend the proposition in any detail, but see the useful articles by Kenneth Arrow and Finis Welch.<sup>5</sup> If competition is not assumed, then there are several additional models of discrimination. To conserve space, I provide only a taxonomy of these various models--for competitive and noncompetitive markets--to convey to the reader a sense of the extensive theoretical analysis of the problem by economists.

#### A Taxonomy of Economic Theories of Discrimination

1. Neoclassical Theories: Exact Models. (The term "exact" implies that the expected values or means of the variables fully describe the outcome of interest.)

a. Competitive Theories (no monopolies or collusive behavior among economic agents)

- (i) Consumers are the source of discriminatory preferences.
- (ii) Workers are the source of discriminatory preferences.
- (iii) Employers are the source of discriminatory preferences.

The neoclassical theories concerning these forms of discrimination under this market structure imply that there will be no long-run (sustained) wage differential between equally productive majority and minority workers. This result is a consequence of the principle that competitive markets will reward the least-cost producer; indeed, the least-cost producers are the only survivors. A necessary condition for least costs is that majority workers be paid no more than equally productive minority workers.

(i) This result may be briefly illustrated with the case of consumer discrimination. Assume that all workers are equally productive and that consumers (who are predominantly white) are willing to pay a price,  $p$ , for a good produced by white workers. If, however, there is customer contact with the producers, the consumers consider the effective price for a good produced by black workers to be  $p' = p + d$ , where  $p$  is the cost of production and  $d$  is the monetary value of white consumers' distaste for contact with black producers. Clearly, most goods and services are not produced with customer contact. Thus, consumers would not discriminate against, say, clothing or automobiles according to the color of the workers in clothing or automobile factories. For these goods the price would simply be  $p$ , regardless of the color of the workers. Therefore, black workers would specialize in the production of goods with no customer contact and, in so doing, avoid being paid a wage lower than that of an equally productive white worker, which would be the outcome if they competed with whites in, say, retail selling, where there is customer contact. Competition, activated by worker mobility and the incentives of firms to produce their product at the lowest cost,

eliminates the discriminatory wage difference. This model does result, however, in segregation of the workers by industry.

(ii) Similar motivations, actions, and outcomes characterize the response to worker or employer discrimination. If white workers discriminate against black workers by acting as if they require a higher wage to work with black workers, then the work forces will become segregated by color, but there should be no wage differential by color for equally productive workers.

(iii) If employers discriminate against black workers by acting as if the labor cost (wage) of a black worker is higher than the labor cost (wage) of an equally productive white worker, then any employer who does not discriminate will be able to undersell his competitors. Only the nondiscriminatory employers (assuming there are some) survive, and the extinction of the discriminatory employers results in the disappearance of wage differences by color for equally productive workers.

#### b. Monopoly Theories

- (i) Product monopoly
- (ii) Firm or employer monopsony
- (iii) Workers' monopolies (trade unions)
- (iv) Government as monopolist: wage regulation, and other impediments to competition

Each of the monopoly models offers the theoretical possibility for sustained discrimination, but none has persuasive empirical support. Let us consider each briefly to indicate their shortcomings.

(i) Product monopoly does not imply monopoly power in the labor market. The monopolist must have this power and must be willing to forgo money profits to overpay white workers (or male workers, etc.),

and the monopolist must be willing to repel the efforts of non-discriminating capitalists from "taking over" (buying out) the monopoly and increasing the monetary return on the investment. Surely the stockholders of a monopoly corporation desire to see maximum profits earned. These considerations imply limited scope for discrimination due to product monopoly.

(ii) Monopsony, in which an employer is the sole buyer of labor in a market, is theoretically important, because it is the neoclassical model of exploitation. Workers are captive in a market where there is only one employer, or where a group of employers collude and act as one buyer. Monopsony represents a rare area of common ground between neoclassical and Marxian models of the labor market. I doubt, however, that the monopsony model is empirically important in modern times, when markets are larger, the one-industry town has declined, and workers are mobile--assisted in this respect by automobiles.

(iii) Workers' monopolies, in the form of trade unions, are potentially an important source of discrimination against minority workers. We know that unions attempt to gain economic rents for their members in the form of above-competitive wages, and that this requires that the unions must limit entry. Thus, the union's control over entry, its domination by majority-group workers, and its ability to raise wages above competitive levels gives the majority group the capacity to discriminate against minorities without being at a competitive disadvantage, as they were in the competitive model. Historically, American trade unions have been guilty of many specific acts of discrimination against minority groups. Despite these theoretical and historical arguments, the most thorough empirical study of the effects of unions on white-black and

male-female wage differences does not show that unions are an important source of economic discrimination.<sup>6</sup> This study will be discussed in the next section.

(iv) The government may regulate labor markets in ways that promote or retard the status of minority workers. A much-discussed example is the minimum wage law. Laws that regulate prices may effectively prevent the competitive principle of least-cost production from operating, and, thereby, prevent a discriminatory advantage to majority workers from being eliminated by competition. On the other hand, governments have enforced laws against discrimination and have aided minority workers in other ways. The net result of these conflicting policies is not clear.

In conclusion, there is surprisingly little empirical evidence that the various monopoly theories explain much of the labor market discrimination that exists and has persisted in the United States.

2. Neoclassical Models with Imperfect Information: Statistical Models of Discrimination. The theory of statistical discrimination has a superficial appeal. We begin with the recognition that firms must hire, pay, place, and promote workers without perfect knowledge about the workers' current and future productivity. This leads to the proposition that firms may rely, in part, on various observable demographic characteristics of the workers as indicators of productivity. Thus, if firms believe black workers are, other things equal (such as, say, years of schooling, etc.), less productive than white workers, they will pay blacks less. Moreover, there may well be less reliability in various conventional indicators of productivity for minority workers than for majority workers. Despite these conditions, the two postulates of the



competitive model--large numbers of firms and the survivor principle for least-cost producers--will lead to a tendency for average payments to workers to equal their average productivity. The statistical uncertainties affect the groups' variances (or dispersion) of wages, but not their averages.<sup>7</sup>

3. Institutional Theories of Economic Discrimination. Institutional theories refer to a varied group of historical, legal, and case-study analyses of labor market discrimination. They lack a formal structure and are limited in their generalization. At the same time these studies are able to deal with more complicated structures than the economic neoclassical models; they may describe the interrelations of the combined forces of, say, monopolistic industries, trade unions, government regulation, and community prejudices. I believe that there are many useful and persuasive examples of discrimination in the institutional literature.<sup>8</sup> However, a generalizable theory has not been developed.

The foregoing sketch of the economic theories of discrimination has had limited objectives. The main message is the absence of an agreed-upon theory. The problem is not that there are no proposed models, or that they lack logical consistency. Rather, there are many, but none has convincing empirical support--a point reemphasized in the next section. Consequently, the economist is not on firm ground when called upon to suggest policies for reducing the disparities in economic outcomes due to discrimination. Policies are discussed in a subsequent section.

#### EMPIRICAL ANALYSES OF LABOR MARKET DISCRIMINATION

Aside from simple descriptive statistics, empirical research on economic discrimination may be divided into two types. (1) The first tests

hypotheses suggested by the theories, such as the proposition that discrimination is less in competitive industries. Recall that discrimination in the labor market is measured by the difference or ratio of minority and majority wages or earnings. (2) The second type of empirical work is the estimation of the extent of discrimination under a variety of conditions; for example, estimating the change in the relative wages of minority workers over time, over the course of the business cycle, or in different industries, and so on.

### Testing of Hypotheses

Hypothesis testing has not produced firm conclusions. One reason is that the theories often yield ambiguous predictions. For example, discrimination may be predicted to exist in the short run but not in the long run, and there may be no basis for determining the time required for the transition. Also, the theories suggest many economic influences, and the empirical work usually concentrates on one influence in isolation.

A useful study is the previously mentioned one by Ashenfelter of the earnings of blacks and whites and of men and women in relation to membership in a labor union. (Membership was actually defined by being in a job covered by a collective bargaining contract.) This study may be viewed as testing the hypothesis that labor unions are a source (or cause) of economic discrimination. Ashenfelter found that the white-black wage difference was reduced, rather than increased, by unions; and that the male-female difference was slightly increased.

The explanation is that black workers are somewhat more likely to be union members than whites and that the effect of unions on wages is somewhat larger for blacks than whites. On the other hand, women are

less likely to be union members and, when they are union members, their wage gains are smaller than those of men. The importance of Ashenfelter's study is that it offered no support for a neoclassical hypothesis of discrimination by unions, which appeared stronger theoretically than the hypotheses rationalizing discrimination by other economic agents--consumers, employers, or governments.

#### Estimation of Discrimination

A single specification of the previously mentioned statistical model may serve to illustrate the method by which economists estimate discrimination.

Let  $Y$  = the wage rate for a worker;

$X_1, X_2 \dots X_K = \underline{X}$  = a vector of the worker's productivity characteristics;

$Z$  = a categorical variable, defining the minority status of a worker;

$e$  = a random error term.

Let the relation be linear and additive:

$Y = \underline{XB} + AZ + e$ , where  $\underline{B}$  and  $A$  are coefficients representing the effects of  $\underline{X}$  and  $Z$ . This sort of statistical relation has been estimated with many data sets, representing a wide variety of conditions and time periods. We find the coefficient,  $A$ , to be negative, and its value measures discrimination as the dollar difference between minority workers (when  $Z = 1$ ) and majority workers (for whom  $Z = 0$ ), holding productivity ( $= \underline{X}$ ) constant. However, as mentioned earlier, there is considerable ambiguity about the proper set of  $X$ -variables to hold constant.

There are two general types of bias in the above specification. As mentioned in the first section, if the values of the X-variables reflect discrimination, the method understates the amount of discrimination. A second type of bias is due to the inevitably incomplete specification of the function determining wages. We recognize that the X's can only be the productivity variables that are observed and measurable; that there are omitted variables, some of which may be known to the worker and employer, but not to the statistical analyst. These omitted variables are captured in (represented by) the error term, and their omission will bias the A-coefficient if the omitted variables are, on average, systematically related to Z.

Sometimes the statistical analyst will merely assume a negative relation between Z and the omitted productivity variables that positively affect Y. Clearly, if this is assumed, it follows that A overstates discrimination--measured A is larger than the "true" A. However, I do not believe that the omitted variable problem should be referred to as a systematic bias. The omission of variables can lead to a bias in either direction.

#### 1. Market-Wide Studies

In market-wide studies of the above statistical equation, it is common to observe the following pattern for the ratio,  $\hat{Y}_{MIN}/\hat{Y}_{MAJ}$ , where the "hat" symbol refers to the "predicted value" of Y:

- (i) .6 when the X's are not included;
- (ii) .7 when clearly exogenous X's are included--such as age, years since immigration, region of residence, and so on;

(iii) .8 to .9 when the X's include such variables as industry, occupation, and years with the firm, which in my view are endogenous to the process of discrimination under analysis.

To illustrate, several analysts claim that a ratio of around .9 is found for the Hispanic/white ratio, holding constant the following variables:

- age (Hispanics tend to be younger);
- education (Hispanics tend to have much less schooling);
- years of residency in the United States;
- a variable measuring whether English was the primary language spoken at home when growing up.

When comparing women and men the ratios rise from .5 to .8 or so when variables like marital status, numbers and ages of children, hours worked per year, and years of labor market experiences are held constant. Note that each of these variables might be considered to reflect labor market discrimination--that is, women work less in the market and more at home because they are not offered equal employment opportunities and equal wages as men. Note also that controlling for age and education would not much affect the ratios, because the means of these variables tend to be the same for men and women.

## 2. Studies of Individual Firms

It may be illuminating to consider the use of the statistical model in the analysis of discrimination in individual firms. In the United States the statistical analyses are sometimes offered as evidence in court cases or other litigation proceedings stemming from anti-discrimination laws.

Again, the model holds constant a variety of worker characteristics that are assumed to represent productivity--here, productivity to the firm. As noted earlier, many variables, like years of schooling, which may reflect market-wide discrimination, are clearly exogenous to the individual firm. Moreover, if the issue is "fairness" in the treatment of employees, rather than fidelity to an abstract ideal of "true productivity," then the selection of variables may be determined from the employer's explicit criteria for hiring, retention, promotion, and pay. These can be specified with relative precision, and they may be examined to determine if they do or do not reflect employer discrimination.

Unfortunately, the analyses of data from a single firm have two serious faults that limit their use for assessing market-wide discrimination. First, the sample is small and non-randomly selected. Data for one company refer to only one industry and a few occupations. The role of market discrimination in determining the allocation or distribution of minorities among industries and occupations is not examined. Second, we seldom know the selection rules that determine how the workers become applicants to or attached to the firm. Nor do we know whether the company's tactics of or reputation for discrimination affect the number and composition of minority workers who apply for jobs at the firm.

Thus, the statistical model can address a narrowly defined issue of discrimination among a select group of workers in a firm. But, up to now, the studies of individual companies do not permit an assessment of market-wide discrimination.

I conclude that the estimating equation discussed in this section serves the following purposes: (a) it provides a way of monitoring discrimination over time and in different contexts; (b) it may suggest

policy variables to manipulate, showing which X-variables have a large effect on earnings; (c) it helps to determine whether an individual firm is discriminating. Nevertheless, the empirical research taken as a whole does not have a solid theoretical foundation, and it requires subjective interpretations.

#### WELFARE AND POLICY IMPLICATIONS

##### The Relevance and Irrelevance of Conventional Neoclassical Analyses of Discrimination

Early in their training, economists learn three principles that will make them realize their limitations in policy and welfare analyses of discrimination.

1. Economists learn to distinguish between efficiency and equity as criteria of economic performance. Efficiency is concerned with increasing total income; equity deals with the distribution and inequality of incomes. Economics provides methods for evaluating changes in efficiency on a scale of "better" or "worse," but not for evaluating changes in distribution. Economics may be especially useful in examining the effects of monopoly and of other types of market failure that lower total income. As we have seen, these often have distributional consequences that harm minority groups.

2. Economists recognize that economic welfare does not depend on money income alone--nonmonetary dimensions that reflect people's tastes must be taken into account. Economists, as economists, have no basis for distinguishing between the ethical merits of different tastes; between, say, physical attractiveness on the one hand and race or religion on the

other hand. As citizens we may, of course, have strong opinions about such matters.

3. Finally, economists are trained to take or accept tastes as given. This agnostic position reflects the fact that the economist does not know the causal structure of tastes. Tastes are fundamentally determined by causes that are in the realms of ethics, aesthetics, psychology, cultural history, and other noneconomic fields.

There is a world of difference between (a) predicting how income and prices systematically affect the behavioral manifestation of one's preferences, and (b) predicting or explaining one's preferences. There is also a world of difference between predicting behavioral responses and judging the ethical quality of these responses. Economists are comfortable in assuming that more income is better, only because the preference for an expanded choice-set is nearly universally accepted.

I conclude from these three principles of conventional economic analysis that economists are not equipped to analyze how to change tastes nor how to weigh existing tastes. An illustration of the limits of economics is found in the previous distinction between economic discrimination and segregation. Segregation is not only compatible with the absence of economic discrimination, but it may be the cause of the elimination of economic discrimination. But who would deny society the right to label segregation as discriminatory and a detriment? More pointedly, consider that several laws in the United States prohibit an employer from refusing to hire someone on the basis of color, whereas it is legal for an employer to refuse to hire someone on the basis of physical attractiveness. Economics has nothing to say about the justness of these laws.



## Government Strategies for Intervention

Economics can be used to suggest and analyze certain policies on the basis of their predicted outcomes, particularly as they affect wages and employment. The policies available to government may be grouped into the following three categories. In the spirit of the current mood of pessimism regarding the effectiveness of government programs, I will mention some limitations of these policies.

1. Macroeconomic policies that lead to full employment are conducive to narrowing the income gap between minority and majority groups. Periods of low unemployment in the United States have consistently been the periods when blacks have made their most impressive gains in absolute and relative (to white) terms. Unfortunately, the experiences of all the Western nations in recent years have shown the difficulty in achieving full employment.

2. Income transfer programs are microeconomic policies for using the tax and transfer powers of governments to equalize incomes. The limitations of these programs have been widely discussed. They are criticized for fostering dependence, for creating disincentives to work and self-reliance, for stigmatizing the recipient groups, and for antagonizing the group that is taxed.

3. Structural labor market policies are microeconomic attempts to raise the incomes of affected groups by raising their wages. They may be classified as supply or demand policies.

Supply-side policies typically refer to education and training programs that attempt to raise a worker's earning capacity. They tend to be directed to low-income workers, with no special reference to the

worker's race, gender, or ethnic identity. In this regard, the supply-side policies tend to differ from the demand-side policies.

Microeconomic demand-side policies might also be general, such as public employment programs or wage subsidies to unemployed or underemployed workers. However, the demand policies that have received most attention are those that (a) directly forbid discrimination in hiring, placement, pay, or employment security; or (b) promote preferential treatment to minority groups in their hiring, placement, pay, and employment security. Preferential treatment is also called "affirmative action."

No sharp boundary separates "preventing discrimination" and "affirmative action," but the latter has created the most controversy and opposition. Critics refer to affirmative action as "reverse discrimination" and claim that it is unethical and illegal. The method may rely on "quotas" for hiring minorities, and critics claim that this requires employers to depart from merit or productivity standards. Indeed, conventional criteria used by employers to recruit, place, and pay workers may involve written tests and supervisors' ratings that are challenged by antidiscrimination agencies on the grounds that these criteria effectively discriminate against minorities and have no demonstrable connection to merit. Thus, the agencies seek to disallow the procedures in favor of others that are race-neutral, and employers complain. Currently the Reagan administration is shifting government and court policies away from affirmative action.

Evaluating the Effectiveness of Policies

There has been a great deal of research on evaluating these microeconomic supply and demand policies. The results of these evaluations have provided mixed verdicts. Critics allege that the programs have wasted taxpayers' funds, harassed businesses, and have had little positive effects for minorities. This verdict is the one that has been apparently translated into the recent political decisions to curtail the programs in the United States. Supporters of the programs point to studies that show favorable benefit/cost results of the supply-side programs and to numerical gains in employment as a result of the anti-discrimination and affirmative-action programs.

The difficulty in evaluation as a scientific exercise is the classic problem of trying to make inferences from an uncontrolled experiment. For example, we observe an outcome for a group of workers, some of whom participated in the program or, alternatively, had the program imposed on them. To make a causal link between program status and the outcome, we have to convince ourselves that the circumstances or factors that selected the workers into the program are either: (a) known and controlled for in the evaluation, or (b) known to be unrelated (uncorrelated) to the outcome.

It is very difficult to know enough about the selection process and about all the causes of the outcomes to justify either assumption (a) or (b). Legislators and the courts, therefore, seldom rely on the research of economists or other social scientists to determine whether the programs should be continued or terminated.

## CONCLUSION

I will end with a statement of mixed pessimism and optimism, referring to the United States. The pessimistic note is that the ideology of the current government and public opinion--both obviously dominated by the majority group--favor curtailing the positive action programs to improve the economic status of minorities. Moreover, the current recession has worsened the status of minorities relative to the trend over the past 15 years.

The optimistic note is that the laws banning discrimination in employment, as well as in housing and education, remain in force and are secure. Also, the recession is ending. I would like to believe that blacks, Hispanics and other minorities will attain equality with the majority group, as have other groups of immigrants to the United States.

## NOTES

<sup>1</sup>The term "white" will be used to refer to non-Hispanic whites.

<sup>2</sup>The term "female-headed" refers to a household or family in which, usually, the primary earner is an adult woman without a husband present.

<sup>3</sup>Barry R. Chiswick, "The Earnings and Human Capital of American Jews," Journal of Human Resources, 18 (Summer 1983), 313-336; and "The Economic Progress of Immigrants: Some Apparently Universal Patterns," in Contemporary Economic Problems, 1979, ed. William Fellner (Washington, D.C.: American Enterprise Institute, 1979).

<sup>4</sup>Gary S. Becker, The Economics of Discrimination (Chicago: The University of Chicago Press, 1971; original edition, 1957).

<sup>5</sup>Kenneth J. Arrow. "The Theory of Discrimination," in Discrimination in Labor Markets, ed. O. Ashenfelter and A. Rees (Princeton, N.J.: Princeton University Press, 1973); Finis Welch, "Human Capital Theory: Education, Discrimination, and Life Cycles," American Economic Review, 65 (May 1975), 63-73.

<sup>6</sup>Orley Ashenfelter, "Racial Discrimination and Trade Unionism," Journal of Political Economy, 80 (May/June 1972), 435-464.

<sup>7</sup>These ideas, along with some special cases of sustained discrimination, are presented by Dennis J. Aigner and Glen G. Cain in "Statistical Theories of Discrimination in the Labor Market," Industrial and Labor Relations Review, 30 (January 1977), 175-187. As discussed in this article, the special cases in which the model predicts discrimination do not seem to be empirically important.

<sup>8</sup>For two illustrations, see the legal case studies in Herbert Hill, Black Labor and the American Legal System (Washington, D.C.: The Bureau

of National Affairs, Inc., 1977); and the case study of discrimination against black workers in the Southern railroad industry in Malcolm Ross, All Manner of Men (New York: Reynal and Hitchcock, 1948).