CHANGE IN THE RACIAL COMPOSITION OF OCCUPATIONS, 1960-1970

How Much Progress for Blacks?

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This study estimates change in the racial inequality of employment during the 1960s, a decade characterized by substantial economic growth and significant government antidiscriminatory activity. The focus is on the influence of (1) structural change, as measured by industrial and occupational growth, and (2) indicators of industrial structure (e.g., profitability, concentration) on change in the racial composition of occupations within industries. The analysis indicates that black workers in both white-collar and blue-collar occupations made relative employment gains primarily in expanding sectors of the economy. The structural growth that occurred in the 1960s, therefore, had substantial benefits for black employment opportunities. Extrapolating from our findings on black employment gains in the 1960s, we conclude that there is little reason to expect dramatic progress in positional inequality for blacks today given current political and economic conditions.

> It is likely that at no time in recorded history has racial equality received as much attention as during the 1960s in the United States. [Smith and Welch, 1977].

There has been considerable attention among sociologists and economists regarding the extent to which the socioeconomic achievement of blacks has progressed in recent decades (Farley,

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1977, 1984; Reich, 1981; Hout, 1984). Many researchers argue that the status of blacks began to show marked improvement during the 1960s (Smith and Welch, 1977; Freeman, 1981). This claim generally is substantiated by findings indicating that, between 1960 and 1970, the black-white earnings differential narrowed and the effect of race on earnings sharply decreased (Farley, 1977; 1984; Smith and Welch, 1977; Duncan and Hoffman, 1983). Some researchers also view changes in racial differentials in occupational distribution as evidence of the economic progress of blacks in the 1960s (Wilson, 1978; Freeman, 1981: pp. 252-253). Farley (1977) found that the occupational prestige of nonwhite occupations rose in the 1960s as blacks moved out of farm laborer and factory jobs, leading him to conclude that the occupational distributions of white and nonwhite males had become increasingly similar during that period.

There has been considerable debate in the literature, however, concerning the extent to which changes in the gap in earnings and in occupational distribution portend genuine economic progress for blacks. Reich (1981), for example, challenges the conclusion that racial inequality is coming to an end. He argues that the growth of black professionals and managers has occurred primarily among the lowest-paying professional and managerial occupations. Further, Reich notes that race differentials in unemployment and male labor force participation have widened since the 1950s, which suggests that the black underclass has been unaffected (or even harmed) by the observed aggregate changes in black socioeconomic status.

It is clear that more evidence is needed to clarify the nature and extent of change in blacks' labor market status relative to whites during the 1960s in order to assess the likelihood of additional improvement in the future. There have been several competing explanations offered in the literature in an attempt to account for the recent changes in the relative status of blacks in the labor market. Among the authors who argue that blacks have achieved greater equality with whites is a debate surrounding whether this progress is due to improvements in education and other worker qualifications (Smith and Welch, 1977) or to government activity, such as Affirmative Action legislation (Freeman, 1981, Feinberg,

1985). Another factor implicated in the relative improvement of black status is the substantial growth of the U.S. economy during this period (Reich, 1981; Feinberg, 1985), as evidenced by the nation's GNP increasing 50% between 1960 and 1970 (Bluestone and Harrison, 1982). Researchers also have noted that black migration to urban areas in the North opened up new opportunities for some black workers (Reich, 1981; Turner, Singleton, and Musick, 1984).

The relative economic improvement of blacks during the 1960s also may reflect other structural changes during the decade, such as occupational or industrial changes in the labor market (Singelmann and Browning, 1980). Previous research has identified important shifts in the distribution of blacks across occupations (Farley and Hermalin, 1972; Collins, 1983) and industries (Browning, 1975). Yet the implications of recent changes in occupational and industrial structures on blacks' relative labor market opportunities are still not well understood. The present article attempts to provide new evidence on this issue by examining change between 1960 and 1970 in one important aspect of racial inequality: the racial composition of occupations within industries. This focus will allow us to examine how employer-related factors influence blacks' relative opportunities in specific positions in the workplace, thereby increasing our understanding of how structural factors affect the permeability of occupational boundaries to minority workers.

This study draws on two basic research traditions in order to develop a theoretical model to explain changes in the racial composition of occupations. The first perspective emphasizes that structural changes in the economy have altered the composition of labor demand among industries (Franklin and Resnik, 1973; Singelmann and Browning, 1980; Killingsworth, 1968). Changes in the production process within industries and the shift among industries from goods to services both have resulted in less demand for a low-skilled, poorly educated work force—categories in which blacks are overrepresented. The second tradition focuses on how occupational and industrial characteristics related to certain employment practices (e.g., antidiscrimination policies) affect black employment opportuni-

ties (Bonacich, 1976; Kaufman and Daymont, 1981; Burnam, 1973). Unfortunately, little research attempts to identify the relative contributions that each of these factors makes to changes in the employment opportunities of blacks.

This study provides evidence on these issues by examining how structural change as measured by occupational and industrial growth influences change in the racial composition of occupations within industries. Models are estimated that examine the ramifications of two types of structural change: employment shifts among industries and among occupations within an industry (and the joint effect of these shifts). In addition, several industrial characteristics related to employment practices (e.g., concentration, profitability, capital intensity) are included in the models in order to assess their impact on changes in racial composition.

Several scholars have observed that certain black workers benefited from the changes of the 1960s much more than others. That is, professional, middle-class blacks experienced economic gains during the decade, while more disadvantaged black workers and the "underclass" of unemployed blacks did not (Reich, 1981; Collins, 1983). It is important, therefore, to examine change in racial inequality across a wide variety of occupational skill levels in order to assess variable progress among black workers. In addition, some have argued that economic growth benefits more disadvantaged black workers because of the growth of jobs, whereas antidiscriminatory policies such as Affirmative Action are more likely to promote the economic status of skilled, professional-level minority workers (Wilson, 1978; Feinberg, 1985). Our analysis of the influence of industrial characteristics and occupational and industrial growth on decadal change in racial composition will shed light on this issue as well as contribute to the general debate on the extent of economic progress of black workers during the 1960s.

THE INFLUENCE OF STRUCTURAL CHANGE

Between 1960 and 1970, the three major blue-collar occupations—crafts, operatives, and laborers—experienced a relative

decline in their shares of total employment, while white-collar occupations such as professionals and semiprofessionals grew quite rapidly (Singelmann and Browning, 1980; Maume, 1985). Two of the blue-collar occupations, laborers and operatives, are traditional employers of black workers. Much of the decline in employment in blue-collar occupations and the increase in white-collar employment was a consequence of industrial shifts in employment from goods production to service production. Industries low in their relative use of blue-collar occupational skills and high in the use of white-collar skills (e.g., service types of industries) experienced a higher rate of growth than those industries more dependent on blue-collar skills (goods or manufacturing types of industries). Industrial transformation, therefore, influenced the relative tightness of occupational labor markets; it led to a relatively tight white-collar labor market (a market in which whites have traditionally been overrepresented), and simultaneously it helped create a relatively slack blue-collar labor market (a market in which blacks are overrepresented in certain occupations).

Industries also experienced significant internal shifts in occupational composition independent of industrial shifts in the 1960s. As Singelmann and Browning (1980, pp. 252-253) note, changes in the production process within the industry (e.g., the introduction of new technologies, organizational changes, the implementation of new government regulations, and changes in performance standards) form the basis of this internal change in the reliance on various occupational skills. Thus, within the workplace itself, internal shifts influenced changes in the relative tightness of occupational labor markets.

At the same time that industrial and occupational structures were undergoing change, blacks also made significant strides in terms of educational attainment (Farley and Hermalin, 1972). Further, the racial composition of occupational labor markets for the population clearly changed as blacks increased their representation in white-collar occupations.

These structural changes in both demand and supply characteristics suggest two mechanisms by which racial composition of positions may be influenced. First, because the effect of a tight

labor market is to deemphasize job qualifications such as education and experience, racial inequality in employment should be expected to decline—particularly in white-collar occupations—because of structural changes among and within industries. Second, racial inequality of positions may change as a function of the changing racial composition of the labor market. That is, similar to a structural mobility argument (e.g., Sobel, 1983), changes in the racial composition of positions may occur because of changes in the "marginal distributions" (i.e., changes in population distributions) rather than to forces pertaining to the position itself.

The analysis reported here focuses on the consequences of factors pertaining to the positions themselves rather than on the effects of more macrocharacteristics of the entire labor market (i.e., changes in population distributions). As described later, our measure of racial inequality is an index that uses the racial composition of the occupational labor market for the total population to evaluate the inequality of specific positions. Indices of inequality are obtained for both 1960 and 1970, where the racial composition of occupations for the entire population in a given year is used as the standard to evaluate measures of racial composition for specific positions in each of these years. In this manner, we attempt to remove the influence of "structural mobility" in order to assess how industrial and occupational growth influence change in the proportion of blacks in occupational positions.

THE INFLUENCE OF INDUSTRIAL FACTORS RELATED TO EMPLOYMENT PRACTICES

In addition to examining the linkage between changes in racial composition and structural shifts among and within industries, the manner in which industrial characteristics, suggested to be important by theories of discrimination, influence racial inequality also is considered. These theories and their interrelationships are reviewed in detail by Kaufman (1986) and will

not be reiterated here. Generally, past research has attempted to explain variation in racial inequality of employment on the basis of aspects of the industry pertaining to profitability, concentration, size, capital intensity, and unionization. These characteristics of industries reflect the structural differentiation that exists among industries and is the long-term outcome of various strategies designed to guarantee growth and profits (Kaufman, Hodson, and Fligstein, 1981). The influence of each of these industrial characteristics on the change in the racial composition of occupations will be examined in this study. The hypothesized effects of these factors are reviewed below. It should be emphasized that from the perspective of certain theoretical frameworks (e.g., dual economy) the influences of these industrial characteristics on racial composition are often intertwined conceptually as well as empirically. The analysis intended to shed some light on the degree to which these mechanisms operate independently to influence change in racial inequality.

Neoclassical researchers argue that in a competitive market, racially motivated employment practices place firms at a competitive disadvantage because "excess" labor costs (incurred as a consequence of racial preferences in employment) increase the price of the product relative to firms with no racial preferences in employment (Shepherd, 1969; Becker, 1971). Thus it should be the case that firms in competitive industries should attempt to minimize racial inequality in employment. Such industries are not sheltered from the economic forces not to discriminate (Freedman, 1976). Also compatible with this notion, at least in the short term, is the dual economy argument that certain industrial segments serve as shelters from competition, thereby mitigating the forces not to discriminate. Although empirical evidence is limited, available research provides mixed support for these two paradoxically similar perspectives. For example, support for these perspectives is indicated by the findings (Shepherd, 1969; Comanor, 1973; Hodson, 1978) that blacks tend to be disproportionately underrepresented in white-collar positions in industries characterized by high levels of concentration, profitability, capital intensity, and large firm size. With regard to

blue-collar occupations, however, the findings are in contradiction to the neoclassical/dual economy arguments. Hodson (1978) and Kaufman and Daymont (1981), for example, observe that blacks tend to be overrepresented in blue-collar occupations in those same types of industries that blacks are underrepresented in white-collar positions. More recent evidence (Kaufman, 1986) continues to provide mixed support for the neoclassical/dual economy positions; in contradiction to both the dual economy and neoclassical perspectives, Kaufman (1986) found that net of the occupational structure of an industry, market power (e.g., concentration) increased the odds of black employment. However, just as would be predicted by the dual economy and neoclassical perspectives, size and profitability decreased the odds of black employment. Our analysis will contribute new information toward these conflicting findings. Moreover, because of our focus on the effects of industrial characteristics within specific occupational settings, we will be able to assess the similarity of the effects of industrial characteristics across a wide range of occupations.

An alternative argument (and one that generates hypotheses opposite to those above) is that large core industries (i.e., those that are highly profitable, highly concentrated, with large firms, and capital intensive) had an incentive to *increase* the relative employment of blacks during the 1960s due to their high visibility and to government pressures (Burnam, 1973). Thus core industries were more likely to implement Affirmative Action programs in order to achieve greater black representation. Indeed, Kaufman's (1986) findings with regard to the effect of market power support this position. There also is some evidence that Affirmative Action policies have been most beneficial to white-collar, professional-level black workers, whereas economic growth was more beneficial to the more disadvantaged black workers because growth leads to more jobs (Wilson, 1978: Feinberg, 1985). According to this thesis, then, we would expect black representation in professional and managerial occupations to increase at a faster pace in core industries than in peripheral industries on the assumption that the former are more likely to implement Affirmative Action programs. Since our measures of growth refer

to employment shifts among industries and among occupations within an industry, we can also examine the proposition that economic growth is beneficial to blue-collar black workers because it facilitates the establishment of more jobs. If this is the case, then our measures of occupational and industrial growth will be more important than indicators of industrial structure (that would reflect the likelihood of antidiscriminatory activity) in increasing racial equality in employment in blue-collar occupations. It should be the case, however, that growth is a positive force for equality for both blue-collar and white-collar occupations. Our analyses will provide evidence on these issues.

Finally, the potential importance of unionism should be noted. Past research has taken the position that unionism increases racial inequality in employment in blue-collar occupations.[1] Blacks entered the industrial labor pool after unions had become organized (Turner, Singleton, and Musick, 1984), creating a working-class labor market segmented in terms of bargaining power and price (Bonacich, 1976; Marshall, 1974; Beck, 1980). White labor is typically regarded as the incumbent work force and represents relatively high-priced labor. Blacks represent lower-priced labor and are generally regarded as competitors to the incumbents. Incumbent workers' traditional defense against competition has been to control the supply of labor, particularly in terms of controlling entry into an occupation of firm (Rubery, 1978). Race has become a factor in organized labor's and management's attempts to control the supply of labor, because race helps identify supplies of cheap and substitutable labor. We expect, therefore, that unionization will increase racial inequality in blue-collar occupations.

DATA AND VARIABLES

DATA

The analysis is conducted at the industrial level. *Industries* are defined by the 1968 2-digit SIC (standard industrial classification)

codes. A list of these industries is provided in the Appendix. The 1968 2-digit SIC codes originally denoted 78 industry classifications. Only industries in the private sector of the economy are included in the analyses. Several researchers have shown that much of the economic progress of blacks throughout the 1960s occurred in the public sector (Reich, 1981; Collins, 1983; Maume, 1985). According to Collins (1983), blacks in the private sector still remain concentrated in economically underdeveloped areas, or in intermediary positions between white corporations and black consumer and political groups. We focus exclusively on private industries in order to assess change in the occupational representation of black workers, independent of the substantial changes in black employment that have occurred in the public sector during the 1960s. In addition, several of the key industrial characteristics included in our model (e.g., concentration and profitability) are not applicable to public sector industries.

Excluded are 5 industries—4 public sector industries and 1 miscellaneous category.[2] Following Wallace and Kalleberg's (1981) procedures, 5 additional industries are collapsed into other existing categories.[3] These procedures reduce the original 78 industry categories to 68. In order to make the 1968 codes directly comparable to the 1960 codes (a necessary condition to assess change in the variables of interest), 3 additional nonprofit industries are dropped.[4] Remaining are 65 industry categories. These industry categories are matched to the 1960 industry categories on a one-to-one correspondence basis by title. The result is a matched set of industry codes for two points in time, representing the private sector of the economy.

Within industries, ten major occupations are defined in terms of a scheme developed by Freedman (1976). As Freedman notes (1976, p. 166), major U.S. Census occupational groups present certain problems such as highly heterogeneous skill levels within categories, the representation of some occupational functions in more than one category, and industry distinctions among categories. To compensate for these problems, Freedman (1976, pp. 166-169) constructed relatively homogeneous categories with respect to skill, while maintaining the notion of occupational

function. Further, Freedman attempted to eliminate industry distinctions among occupations.[5]

The employment data used in the analysis pertain to the 1-in-1,000 U.S. Census samples for 1960 and 1970. Data for 1970 are coded according to the 1968 SIC codes, and the racial composition measures are computed for each of the 65 industries. The same procedure is used to obtain measures for 1960. Because industries are matched over time, there is a direct correspondence between 1970 and 1960 industry measures.

VARIABLES

Various social forces that are unrelated to the industrial structure can influence the distribution of blacks and whites across occupations. For example, factors such as the growth or decline in the number of blacks and whites in the total labor force, changes in the aggregate educational attainment of blacks and whites, and economic business cycles may influence access to occupational positions and thus lead to changes in the distribution of subgroups across the occupational structure. Because these types of forces could easily be confounded with industrial factors, it is important to control these external forces in models examining the impact of industrial characteristics on changes in the racial composition of occupational positions within an industry.

Following related research examining the distribution of groups across occupations and jobs (see Kaufman and Spilerman, 1982; Simpson et al., 1982), we have chosen to adopt a standardization procedure to control the impact of such exogenous forces. This procedure contrasts the racial composition of occupational positions of industries with the racial composition of the occupation for the entire population. The advantage of this standardized measure is that it indicates the degree to which blacks are over- or underrepresented in a particular occupation within an industry *relative to the labor market in general.* In the context of a panel model, the standardized measure is interpreted as the change in the representation of blacks in an occupational

position within an industry relative to the change in the racial composition of the occupation for the entire population.

The racial composition of the occupational position in an industry is operationalized in terms of the log of the odds ratio (see Hanushek and Jackson, 1977, p. 188; Swafford, 1980). This ratio is specified as $\ln(P_{ij}/\ 1-P_{ij})$, where P_{ij} equals the proportion of incumbents in occupation i and industry j who are black. This measure, as opposed to a simple proportion, often is used in similar research (e.g., Kaufman and Daymont, 1981) because it approximates a linear functional form and reduces the skewness of the distribution. This measure is standardized by dividing it by the log odds of being black in occupation i for the entire population, $\ln(P_{i.}/\ 1-P_{i.})$. Conceptually, the denominator can be thought of as the labor market standard, and industry deviations represent the over- or underrepresentation of blacks in the occupational position based on what one would expect given the racial composition of the occupation in the population. Indices above 1.0 indicate that blacks are overrepresented in the occupation for a given industry; values less than 1.0 denote the underrepresentation of black workers.

As noted above, this study is concerned with the ramifications on racial composition of two types of structural change—employment shifts among industries and employment shifts among occupations within the industry. The first type of structural change is measured in terms of growth. It is operationalized as the proportionate change in the number of incumbents in industry j between 1960 and 1970. The second indicator of structural change is an occupational growth variable, measured as the proportionate change between 1960 and 1970 in the proportion of incumbents in industry j who work in occupation i. This occupational growth measure is calculated separately for each occupational position.

Two additional measures are included in the models as controls. The median education of blacks is included to control for the influence that black educational qualifications may have on the change in racial composition.[6] The second control variable is the percentage of blacks in industry j employed in occupation i in 1960. It is included to control for "traditional" mechanisms in

an industry to allocate blacks to specific occupational positions. It seems likely that the racial composition of an occupational position might shift toward blacks in the case where blacks have traditionally been allocated to this position. That is, there may be some sort of "tipping" effect as has been suggested in the case of female-typed occupation.

Our measures of industrial characteristics are intended to tap those theoretical factors discussed above that have been found to be important determinants of labor market inequality. The operationalization of the measures of industrial characteristics is described in Figure 1; means and standard deviations are also presented. Previous operationalization procedures in the literature have been followed (Kaufman, Hodson, and Fligstein, 1981; Wallace and Kalleberg, 1981). Means and standard deviations of the racial composition indices for 1960 and 1970 are presented in Table 1. This table also contains means and standard deviations for the occupational and industrial growth variables.

FINDINGS

Two panel equations are estimated for each of the ten occupational categories.[7] Model A regresses the measure of racial composition for occupation i in industry j for 1970 on the index measured in 1960 and the measures of industrial organization. Model B adds three variables to the equation—the two measures of structural change, industrial growth and occupational growth, and an interaction term to tap the joint effects of these structural change factors. Contrasts between models A and B will be useful to identify the extent to which the effects of industrial characteristics are accounted for by structural shifts in employment. The results are arranged in two tables. Table 2 pertains to white-collar occupations; Table 3 contains the results for blue-collar positions.

WHITE-COLLAR POSITIONS

As can be seen from Table 2, the consequences of structural shifts in employment are quite dramatic in three of the six white-

Variable Name	Definition	$\bar{X}$	s.d.
CONCENTRATION	The proportion of assets controlled by firms with $100 million in assets (U.S. Internal Revenue Service 1962, pp. 67-101).	.034	.030
PROFITABILITY	Net income per assets (U.S. Internal Revenue Service 1962) (in 1,000,000s).	.043	.062
SIZE	The percent of establishments with fifty or more employees (U.S. Census Bureau 1961a, 1961b, 1961c).	.093	.132
CAPITAL INTENSITY	Assets per employee (U.S. Internal Revenue Service 1962; U.S. Census Bureau 1963) (in 1,000,000s).	.039	.084
UNIONIZATION	The percent of employees who are union members (Weiss 1966).	.395	.346

Figure 1: Operationalization of Industrial Characteristics (N = 65)

collar positions—professionals, semiprofessionals, and sales workers. There is a slight main effect of occupational growth on the change in the racial composition of office clerical occupations. This suggests that internal shifts in the occupational structure within an industry, rather than industrial growth as a whole, increased blacks' representation in clerical positions in the 1960s. In semiprofessional positions, the main effects of both occupational and industrial growth are significant. As hypothesized, industrial growth significantly increases black representation; occupational growth also exerts a positive effect, indicating that, as industries create more jobs in this occupational category, the labor market situation aids blacks in gaining access to these positions. In two of the occupational categories, there is a significant interaction effect. Specifically, the positive effect of occupational growth on blacks' relative access to professional and sales positions increases under conditions of high industrial growth. Clearly, then, growth as represented by these two types of structural change in employment is a major force that shapes the relative employment opportunities of blacks in these white-collar positions.

TABLE 1

Panel A.

Means and Standard Deviations of Racial Inequality Indices by Occupational Category and by Year (N=65)

Occupational Category	1960 $\bar{X}$	1960 s.d.	1970 $\bar{X}$	1970 s.d.
Professionals	.801	.457	.692	.368
Semi-Professionals	.607	.398	.828	.371
Managers	1.170	.383	.958	.241
Office Clericals	.800	.293	.982	.301
Non-Office Clericals	.893	.318	.989	.369
Sales	.564	.389	.668	.363
Crafts	.978	.378	.945	.336
Operatives	.936	.432	.951	.417
Service	.446	.575	.675	.422
Laborers	1.104	.883	1.019	.471

Panel B.

Means and Standard Deviations of Growth Measures (N=65)

	$\bar{X}$	s.d.
Industrial Growth	.061	.366
Occupational Growth		
Within an Industry		
Professionals	.352	1.729
Semi-Professionals	1.984	7.416
Managers	.408	2.223
Office Clericals	.628	1.926
Non-Office Clericals	.003	1.025
Sales	.582	1.900
Crafts	.655	2.930
Operatives	-.059	.406
Service	1.229	3.614
Laborers	.599	1.842

TABLE 2

Panel Effects of Industrial Characteristics on the Index of Racial Inequality in 1970 in Selected Major White-Collar Occupational Categories (N = 65)

Independent Variables	Professionals		Semi-Professionals and Technical		Managers		Office Clericals		Non-Office Clericals		Sales Workers	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Control Measures												
Log Odds in 1960	.689**	.785**	.695**	.731**	.331**	.418**	.713**	.805**	.918**	.903**	.658**	.904**
	(.061)	(.049)	(.082)	(.075)	(.066)	(.085)	(.125)	(.130)	(.145)	(.154)	(.079)	(.069)
Black Education	.012	.004	.051**	.010	.028*	.027	-.001	-.012	-.009	-.015	.014	-.004
	(.016)	(.014)	(.020)	(.019)	(.015)	(.018)	(.020)	(.022)	(.025)	(.027)	(.018)	(.014)
% of Blacks in Occupation in 1960	-.008	.034	-.143	-.286**	-.245*	-.171	-.029	.014	-.081	-.110	-.165	-.044
	(.142)	(.109)	(.156)	(.140)	(.140)	(.145)	(.185)	(.185)	(.222)	(.231)	(.148)	(.113)
Measures of Industrial Structure												
Capital Intensity	-.503	-.285	.150	.699*	.320	.239	-1.395**	-1.152**	-.216	-.126	-1.113**	-.302
	(.366)	(.293)	(.430)	(.396)	(.324)	(.345)	(.446)	(.459)	(.462)	(.508)	(.378)	(.309)
Establishment Size	.153	.174	.100	.131	-.393**	-.414**	.077	.142	-.034	-.044	-.094	.062
	(.209)	(.159)	(.253)	(.217)	(.188)	(.187)	(.244)	(.241)	(.261)	(.271)	(.226)	(.169)

Concentration	1.839 (1.156)	.916 (.936)	1.300 (1.393)	-.524 (1.285)	.015 (1.049)	.499 (1.152)	.056 (1.353)	-.800 (1.426)	-2.963** (1.460)	-3.250** (1.595)	1.567 (1.247)	.366 (.986)
Profitability	-.485 (.541)	-.366 (.410)	-.263 (.625)	-.668 (.564)	-.922* (.462)	-.700 (.478)	-1.096* (.593)	-.998* (.584)	.212 (.683)	.229 (.701)	-.244 (.573)	-.404 (.425)
Unionization	-.030 (.098)	.011 (.081)	-.245** (.119)	-.039 (.115)	.085 (.087)	.023 (.100)	-.057 (.114)	.037 (.124)	.193 (.121)	.208 (.139)	-.206* (.104)	-.006 (.087)
Growth Measures												
Industrial Growth		.219** (.068)		.442** (.102)		-.061 (.075)		.110 (.106)		.056 (.120)		.297** (.074)
Occupational Growth		.187** (.031)		.013** (.005)		.003 (.025)		.081* (.041)		-.019 (.076)		.170** (.026)
(Ind. Growth) x (Occ. Growth)		.167** (.036)		-.012 (.016)		.094 (.105)		.073 (.045)		-.002 (.083)		.156** (.028)
Intercept	.005	-.019	-.001	.284	.362	.270	.541	.493	.284	.357	.277	.133
$\bar{R}^2$	.718	.838	.598	.703	.466	.474	.423	.447	.562	.544	.671	.820

*p<.10
**p<.05

TABLE 3

Panel Effects of Industrial Characteristics on the Index of Racial Inequality in 1970 in Selected Major Blue-Collar Occupational Categories (N = 65)

Independent Variables	Crafts		Operatives		Service		Laborers	
	(A)	(B)	(A)	(B)	(A)	(B)	(A)	(B)
Control Measures								
Log Odds in 1960	.479**	.667**	.659**	.681**	.249**	.222**	.116*	.181**
	(.092)	(.107)	(.098)	(.085)	(.087)	(.084)	(.067)	(.072)
Black Education	.022	-.005	.034	.011	.070**	.049	.001	.018
	(.021)	(.022)	(.022)	(.022)	(.031)	(.032)	(.042)	(.043)
% of Blacks in Occupation in 1960	.229	.272	-.099	-.077	.027	-.035	-.323	.048
	(.178)	(.169)	(.141)	(.124)	(.215)	(.208)	(.286)	(.298)
Measures of Industrial Structure								
Capital Intensity	-1.174**	-.792*	-.960*	-.929**	-.735	-.266	-1.578**	-1.808**
	(.464)	(.468)	(.495)	(.438)	(.712)	(.730)	(.758)	(.811)
Establishment Size	-.071	-.064	-.547*	-.747**	-.124	-.096	-.167	.127
	(.274)	(.257)	(.297)	(.259)	(.407)	(.380)	(.458)	(.445)
Concentration	-2.789*	-3.138**	-.251	-1.851	-2.465	-4.352*	-1.987	-2.067
	(1.515)	(1.557)	(1.563)	(1.546)	(2.268)	(2.288)	(2.497)	(2.589)

Profitability	.191 (.653)	.111 (.623)	-1.382** (.679)	-1.231** (.582)	-1.258 (.962)	-1.209 (.932)	-.609 (1.100)	-1.149 (1.057)
Unionization	.228* (.130)	.199 (.143)	.223 (.144)	.321** (.142)	-.101 (.188)	.054 (.185)	.076 (.211)	-.000 (.219)
Growth Measures								
Industrial Growth		.217* (.111)		.138 (.119)		.273 (.188)		.261 (.176)
Occupational Growth		.040** (.014)		.431** (.094)		-.003 (.016)		.061 (.046)
(Ind. Growth) x (Occ. Growth)		-.002 (.041)		.339** (.131)		.-063 (.038)		-.107 (.131)
Intercept	.287	.324	.131	.372	.128	.310	1.117	.761
$\bar{R}^2$	.432	.501	.597	.706	.217	.325	.203	.285

*p<.10
**p<.05

Most of the effects of the industrial characteristics are consistent with the neoclassical arguments that competition increases the "blackness" of the racial composition of employment. The effects indicate that increases in black representation were largely concentrated in industries that are labor intensive, with small firms, and with low levels of concentration. From the perspective of implementing Affirmative Action policies, we would expect the indicators of core industries to increase black representation in white-collar occupations—particularly professional and managerial positions—on the assumption that such industries would be more likely to implement antidiscriminatory policies. The only effect that is consistent with this thesis (once the growth measures are included in the model) is the modest effect of capital intensity on the racial composition of semiprofessionals and technical workers. However, it should also be noted that most of the effects of the industrial characteristics are not significant, suggesting only modest support for either the Affirmative Action or neoclassical hypothesis.

Importantly, when the growth measures are taken into account in the model, the effects of the industrial characteristics often disappear. For example, the effects of unionization in the semiprofessional and sales occupational categories are reduced to zero when the growth measures are added to the model. The same is true for the effect of profitability in managerial positions and the effect of capital intensity in the sales category. Thus, by ignoring industrial and occupational growth, we might have reached far different conclusions about the determination of change in the relative employment of blacks.

BLUE-COLLAR POSITIONS

Findings in Table 3 indicate partial support for both growth and neoclassical/dual economy hypotheses. In terms of the growth effects, blacks in craft occupations appear to increase their representation due to both industrial growth and occupational growth. In operative positions, the racial composition shifts toward blacks in expanding occupations under the con-

ditions of industrial expansion. As was the case with the three white-collar positions, the relative employment opportunities for blacks in these two blue-collar occupations are substantially linked to the tightness of the labor market.

Turning to the neoclassical/dual economy hypotheses, increases in black representation appear to occur largely in industries that are labor intensive, competitive, and with small firms. We expected unionization to exert a negative effect on all blue-collar occupations. Interestingly, unionization is significant only for the operative category. Moreover, the effect is opposite to that expected. The coefficient does not appear to erect barriers to black employment. Instead, it appears that, particularly in operative occupations, unions are more interested in maximizing its coverage to include all workers regardless of race.

We also expected, based on the arguments pertaining to Affirmative Action policies, that the addition of growth to the models would diminish the effects of the industrial characteristics because growth is suggested by this perspective to be the most important determinant of black opportunities of blue-collar occupations. Although it is true that growth improves opportunities in craft and operative occupations, industrial characteristics are significant determinants of black opportunities and in the opposite direction than this argument would lead one to expect.

Finally, in comparing the findings for blue- and white-collar occupations, it appears that some of the industrial characteristics have a greater impact on racial composition in blue-collar occupations. For example, the negative effect of capital intensity on black employment opportunities is especially marked in blue-collar occupations (although this effect is also present in two lower-status white-collar occupations, office clericals and sales). This suggests that black workers in these occupations are more vulnerable to changes in the nature of work (e.g., technological change), perhaps because black workers have lower levels of general human capital and their job-specific skills are in decreasing demand.

CONCLUSIONS

The combination of substantial economic growth along with significant antidiscriminatory policy that existed during the 1960s had the potential to facilitate economic progress for blacks more than at any other time in our history. However, various investigations of change in black employment during the decade in question have reflected equivocal improvement for blacks. This study has contributed to the debate on black economic progress by estimating change in the racial inequality of occupations between 1960 and 1970, focusing on the effects of occupational and industrial growth. Our findings have indicated that, as expected, occupational and industrial growth had positive consequences for the relative employment of blacks in a number of white-collar and blue-collar occupations. Thus the analysis indicates that the structural shifts among and within industries that occurred in the private sector during the 1960s created a labor market situation highly conducive to improving the relative employment opportunities of blacks. Black workers made relative employment gains primarily in expanding sectors of the economy.

Several industrial characteristics (e.g., capital intensity, establishment size, concentration, profitability, and unionization) also were included in the models. We found that some of the effects of the industrial characteristics on the change in racial composition appear to be a function of growth, since their effects diminished substantially when the growth variables were included. Those significant effects observed for these variables that persisted in the full model generally are consistent with the neoclassical thesis that contends that employers in competitive industries cannot afford to discriminate. Indeed, there is a need to employ inexpensive labor to reduce costs and blacks appear to have met this need. Further, net of concentration, under conditions of high capital intensity in blue-collar occupations and lower-status white-collar occupations, it appears that blacks are at a competitive disadvantage—perhaps because of lower levels of human capital.

We found little support for the observation made by Wilson (1978) and Feinberg (1985) that employment practices in core

industries (e.g., Affirmative Action) lead to an increase in the proportion of blacks in skilled, white-collar occupations, whereas economic growth benefits the more disadvantaged black workers. Our results suggest that economic growth, as measured by occupational and industrial growth in the 1960s, benefited both blue- and white-collar black workers. Clearly, then, these results argue persuasively that growth is a key factor in reducing racial inequality in employment.

What implications do our findings have for the economic progress of blacks during the 1970s and 1980s? The decade of the 1960s had great potential to improve the socioeconomic status of blacks due to a prosperous economy and government commitment. There has been much less economic growth and government antidiscriminatory activity in the two decades following the 1960s. Further, a number of industries are updating their production processes and are becoming increasingly capital intensive. Unfortunately, therefore, our study parallels others that have advocated a pessimistic stance regarding the economic progress blacks have made in recent decades (Reich, 1981; Collins, 1983). If, as we have found, black employment opportunities during the prosperous 1960s were limited to expanding sectors of the economy, given present political and particularly economic conditions, there is little reason to expect much current progress in black employment opportunities.

APPENDIX
Two-Digit SIC Classification of Industries

Two-Digit Code	Industry Name
01	Agricultural production
07	Agricultural Services and hunting and trapping
08	Forestry
09	Fisheries
10	Metal mining
11	Anthracite mining
	Bituminous coal and lignite mining
13	Crude petroleum and natural gas

(continued)

APPENDIX Continued

Two-Digit Code	Industry Name
14	Mining and quarrying of nonmetallic minerals, except fuels
15	Building construction--general contractors
16	Construction other than building construction --general contractors
17	Construction -- special trade contractors
20	Food and kindred products
21	Tobacco manufacturers
22	Textile mill products
23	Apparel and other finished products made from fabrics and similar materials
24	Lumber and wood products, except furniture
25	Furniture and fixtures
26	Paper and allied products
27	Printing, publishing, and allied industries
28	Chemicals and allied manufacturing
29	Petroleum manufacturing and related industries
30	Rubber and miscellaneous plastic products
31	Leather and leather products
32	Stone, clay, glass, and concrete products
33	Primary metal industries
34	Fabricated metal products, except ordnance, machinery and transportation equipment
35	Machinery, except electrical
36	Electrical machinery, equipment, and supplies
37	Transportation equipment
38	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks
39	Miscellaneous manufacturing industries, Ordnance
40	Railroad transportation
41	Local and suburban transit and interurban passenger transportation
42	Motor freight transportation and warehousing
44	Water transportation
45	Transportation by air
46	Pipe line transportation
47	Transportation services
48	Communication
49	Electric, gas, and sanitary services
50	Wholesale trade
52	Building materials, hardware, and farm equipment dealers
53	Retail trade -- general merchandise
54	Food stores
55	Automotive dealers and gasoline service stations
56	Apparel and accessory stores
57	Furniture, home furnishings, and equipment stores
58	Eating and drinking places
59	Miscellaneous retail stores
60	Banking
61	Credit agencies other than banks
62	Security and commodity brokers, dealers, exchanges, and services

Two-Digit Code	Industry Name
64	Holding and other investment companies
	Insurance carriers
	Insurance agents, brokers, and services
65	Real estate
	Combinations of real estate, loans, and law offices
70	Hotels, rooming houses, camps, and other lodging places
71	Personal services
73	Miscellaneous business services
75	Automotive repair, automobile services, and garages
76	Miscellaneous repair services
78	Motion pictures
79	Amusement and recreation services, except motion pictures
80	Medical and other health services
81	Legal services
82	Educational services
84	Museums, art galleries, botanical and zoological gardens
86	Nonprofit membership organizations
88	Private households
89	Miscellaneous services

NOTES

1. This discussion does not attempt to distinguish either conceptually or methodologically between craft and industrial unionism. This position is based on Beck's (1980, pp. 798-799) historical analysis of the distinction between craft and industrial unions. On the basis of his analysis, Beck (1980, pp. 798-799) concludes that

> it is debatable whether the traditional distinction between craft and industrial unions remains as viable as it once was, and, at best, the distinction has become obscure. Even if the distinction has conceptual relevance, it is not clear that it would be possible to effectively operationalize the dichotomy.

2. The SIC industries that are dropped are 91, 94 Federal public administration; 92 State public administration; 93 Local public administration; 99 Nature of business not allocable. As can be observed, industrial characteristics such as concentration and profitability have little conceptual value in describing these industries.

3. The following categories were collapsed into existing categories: (1) anthracite and bituminous coal and lignite mining (SIC code 11); (2) ordinance and miscellaneous manufacturing (SIC code 9); (3) security and commodity brokers, dealers, exchanges and services, and holding and other investment companies (SIC code 62); (4) insurance carriers and insurance agents, brokers, and services (SIC code 64); (5) real estate and combinations of real estate, loans, and law offices (SIC code 65).

4. These industries are SIC 84 museums, art galleries, botanical and zoological gardens; SIC 85 nonprofit membership organizations; SIC 88 private households.

5. A detailed discussion of these procedures can be found in Freedman (1976, pp. 166-169). Despite the care taken in the development of occupational categories, we

recognize that heterogeneity with respect to function exists within occupational categories. There is a serious trade-off that occurs, however, when occupational categories are more detailed. Specifically, certain occupational categories are unrepresented in certain occupations (e.g., bakers in the banking industry). Broad occupational categories help ensure the representation of a specific skill level across a large number of industries. While it is also desirable to examine changes in racial inequality for the 1970 to 1980 period, data limitations make this an extremely difficult task. Specifically, Freedman's procedures in grouping detailed 1960 and 1970 occupational codes (3-digit) into larger occupational categories are designed to maximize the comparability of categories for 1960 and 1970. That is, the procedures were designed to ensure that workers in an occupational category in 1960 would have been similarly classified in 1970. This was facilitated by the fact that the 1970 U.S. classification scheme was a basic expansion of the 1960 scheme. Because of major changes in the U.S. Census Bureau's detailed occupational classification scheme for 1980, however, no reliable method is available to map 1980 occupational codes onto Freedman's occupational classifications or even onto the 1970 U.S. Census occupational classification scheme.

6. The effect of an alternative education measure was also examined—the ratio of black to white educational attainment. This variable was not statistically significant in any of a variety of model specifications.

7. Panel models were estimated using ordinary least squares. Residuals for each model were examined to test for the autocorrelation of disturbance terms (see Markus, 1979, for a discussion of this problem). In no case was the autocorrelation significant, indicating that the OLS regression estimates are unbiased.

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