

# Antidiscrimination Measures of the 1960s and Occupational Mobility: Evidence for Black American Men

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*Based on an economy-wide index, I estimate that the occupational status of U.S. black men, relative to white men, rose an average of .5 percent per year over the 1965-1981 period. After accounting for pre-existing trends, education, and censoring supply factors, approximately 40 percent of the increase remains. I argue that these residual post-1964 effects may be attributed to the antidiscrimination measures of the times, particularly Title VII of the Civil Rights Act of 1964. Although there seems to be some cyclical censoring, I uncover no evidence in support of the secular censoring hypothesis that observed post-1964 black male occupational progress results largely from black male labor supply declines. I assign about one-half of the 21 percent relative earnings gains by black men during 1965-1981 to occupational mobility. Compared with previous findings for black women, however, the results suggest substantially lower gains for black men. In addition, occupational advancement appears to explain a much smaller proportion of the earnings increases for black men than for black women.*

## I. Introduction

I estimate the effect of antidiscrimination measures of the 1960s in the U.S. on the occupational mobility of black men and compare it to that of black women. In light of historically blatant labor market discrimination against blacks in the U.S., Title VII of the Civil Rights Act of 1964 outlawed employment racial discrimination, inter alia. "Affirmative action" was also established in 1965 by the creation of the Office of Federal Contract-Compliance Programs (OFCCP) by Executive Order 11246 to monitor the minority hiring and promotion practices of federal contractors.

In a recent survey, Donohue and Heckman (1991) conclude that the above measures were probably effective in increasing the relative earnings of blacks. Despite this conclusion, there is little evidence regarding the role of occupational mobility in the earnings gains. Much of the evidence on black occupational mobility rests on studies which evaluate the effectiveness of affirmative action. These studies generally conclude that affirmative action failed to significantly improve the relative occupational status of blacks until the mid-1970s (Burman, 1973; Ashenfelter and Heckman, 1976; Goldstein

and Smith, 1976; Heckman and Wolpin, 1976; Leonard, 1984). Yet, the trend in relative black earnings accelerated over this same period when affirmative action was ineffectual, but declined in the mid-1970s when affirmative action was effective.<sup>1</sup> Thus these findings regarding earnings gains, on the one hand, and the effectiveness of affirmative action, on the other, appear paradoxical.

Findings regarding the impotency of affirmative action until the mid-1970s are based on comparing firms covered by federal contracts (contract firms) with those not covered (noncontract firms). As such, these studies are unlikely to capture the *economy-wide* impact of post-1964 antidiscrimination measures, including Title VII of the Civil Rights Act of 1964, for instance, which was geared toward both contract and noncontract firms (Fosu, 1992). Thus, despite little differential effect of affirmative action prior to the mid-1970s, there could indeed be a significant economy-wide impact of antidiscrimination measures on black occupational advancement during that period.

Employing economy-wide time-series data, Medoff (1985) observes an acceleration in the relative occupational status of black males for the 1960-1980 period. However, Medoff uses decennial census data and is, therefore, unable to distinguish among the influences of antidiscrimination measures, pre-existing trends, human capital factors, and secular or cyclical supply censoring.

Using census data, Fosu (1992) develops an annual economy-wide index of occupational mobility for black women and finds, relative to white women or white men, that the index accelerated as of the mid-1960s. After accounting for the effects of previous trends, education, and supply censoring, he attributes a major portion of the occupational improvement to the antidiscrimination measures.

I extend my 1992 framework to black men. I construct an annual index of occupational status of black and white men over 1958-1981, a period for which consistent occupational data are available. In order to isolate the possible effects of the antidiscrimination measures, I employ a structural regression model to account for other relevant factors that may affect the index: pre-existing trends, education, and secular and cyclical supply censoring. The main results regarding the effectiveness of the measures for black men are then compared with those for black women in order to assess possible differential impacts by gender.

## II. The Model

As in Fosu (1992), I construct an inter-temporally fixed-weighted occupational index reflecting mobility across occupations. Consider the following occupational index for the  $i^{\text{th}}$  demographic group at a given point in time:

$$I_i = \sum_{j=1}^N w_j (L_{ij}/L_i), \quad \text{with } \sum_{j=1}^N w_j = 1, \quad (1)$$

where  $L_{ij}$  is the number of the  $i^{\text{th}}$  group employed in occupation  $j$ ;  $L_i$  is the total number of the  $i^{\text{th}}$  group employed;  $w_j$  is the relative "status" weight of occupation  $j$ , assumed to be fixed over time; and  $N$  is the number of occupations.

The above fixed-weighted index is adopted in order to control for factors, such as technological changes, that may affect the relative status of occupations but are unrelated to occupational mobility. Thus, the index reflects only changes in weighted occupational employment over time. As employment flows from a lower- to a higher-status occupation, for example, the value of the index increases.

Employing U.S. Bureau of Labor Statistics (BLS) occupational employment data,<sup>2</sup> Table 1 presents for the years 1960, 1970, and 1980 values of the absolute and relative fixed-weighted indices for black male occupational employment. The occupational-status weights used are the respective occupational median earnings of black and white males.<sup>3</sup> The absolute index shows an increase of 15.5 percent between 1960 and 1980. Its growth rate is 9.3 percent between 1960 and 1970, and 5.7 percent between 1970 and 1980. The relative black/white index increased by 11.3 percent from 1960 to 1980; it rose significantly over both decennial periods.<sup>4</sup>

Following Fosu (1992), I estimate the structural model:

$$y_t = x_{1t}b_1 + x_{2t}b_2 + e_t, \quad t = 1, 2, \dots, T; \quad (2)$$

$$x_{2t} = x_{1t}g_1 + x_{4t}g_2 + v_t, \quad t = 1, 2, \dots, T, \quad (3)$$

where  $y_t$  is a relative black male (versus white male) fixed-weighted occupational index in period  $t$ ;  $x_{1t}$  and  $x_{2t}$  are the row vectors of values in period  $t$  for the pre-determined and endogenous regressors of the structural equation (2), respectively;  $x_{4t}$  is a row vector of values of exogenous censoring variables influencing black male relative labor supply in period  $t$ ;  $b_1$  and  $b_2$  are the respective regression coefficient vectors of the structural equation to be estimated;  $g_1$  and  $g_2$  denote the coefficient vectors of the auxiliary

Table 1  
*Index of Occupational Mobility of Black Males  
1960, 1970, and 1980*

Year	Absolute Index	Relative Index
1960	.097	.925
1970	.106	.987
1980	.112	1.030

*Note:* The absolute index is the weighted arithmetic mean of black male occupational employment, with black male occupational median earnings as weights. The relative index is the respective ratio of the black male absolute index relative to the white male index, calculated similarly, with the white male occupational median earnings as weights (see text for details). Note that since the weights differ between black males and white males, a relative index of 1.000, for example, would *not* indicate occupational equality between black and white males; only changes in the index matter.

equation;  $e_t$  and  $v_t$  are the respective perturbation terms of the structural and auxiliary equations; and  $T$  is the sample period.

All specifications of the structural equation (2) contain the constant term, with the fully-specified model comprising the following as the pre-determined variables: a post-1964 time trend  $LT65$ , an overall time trend  $LTIME$ , a cyclical economic condition variable  $GNPDI$ , and relative education  $LED$  as the human capital variable.<sup>5</sup> Precise definitions of all variables, as well as data sources, are given in Table 2.

$LT65$  is intended to capture post-1964 antidiscrimination measures, while  $LTIME$  reflects pre-existing underlying trends unrelated to these measures. For example, occupational barriers could have been easing even prior to the mid-1960s due to changing sociopolitical conditions. In addition, migration of blacks to the north probably resulted in increases in their educational quality not reflected in the quantity measure,  $LED$  (Smith, 1984). Both  $LT65$  and  $LTIME$  are, therefore, expected to exhibit positive coefficients.

The cyclical economic condition variable  $GNPDI$  should reflect cyclical censoring. That is, an economic upturn would generate an increase in the relative employment of low-skilled black men, thus lowering the index; the reverse would occur in a

Table 2  
*Definition of Variables and Data Sources*

Variable Name	Definition
$LT65$	LOG (1 + $T65$ ); where $T65$ is a post-1964 linear trend, equaling 1 in 1965, 2 in 1966, etc.
$LT75$	Same as $LT65$ , but trend begins in 1975.
$LTIME$	LOG( $TIME$ ); where $TIME$ is a linear trend, equaling 1 in 1947, 2 in 1948, etc.
$GNPDI$	Deviation of the logarithm of real GNP (1972 \$) from a linear trend.
$LOCIND$	Logarithm of black male (BM) occupational index, relative to white males.
$LED$	Logarithm of relative BM median years of schooling.
$LEMP$	Logarithm of relative BM civilian employment.
$LPOP$	Logarithm of relative BM civilian population.
$LRAFDC$	Logarithm of real average benefit per family of Aid to Families with Dependent Children, December each year (1972 \$).
$LRUI$	Logarithm of real average weekly benefit under state Unemployment Insurance programs (1972 \$).

Sources:  $GNPDI$ ,  $LED$ ,  $LEMP$ , and  $LPOP$  are based on data from *Employment and Training Report of the President*;  $LOCIND$  is calculated using data from Bureau of Labor Statistics, *Labor Force Statistics Derived From the Current Population Survey; A Databook*, Vol. 1 (1982) and *Handbook of Labor Statistics 1978* and from Census, *1960 Population Census, Subject Reports, Socioeconomic Status*; data for  $LRAFDC$  and  $LRUI$  are from the *Social Security Bulletin and Historical Statistics of the United States*.

downturn. Hence, the coefficient of *GNPDI* should be negative. Similarly, the right-hand endogenous variable, relative employment *LEMP*, is intended to purge the occupational index of possible secular changes in it that are unrelated to occupational mobility. This is expressed in the auxiliary equation (3), where the censoring variables  $x_{4t}$  are measured by real family benefit of Aid to Families with Dependent Children *LRAFDC*,<sup>6</sup> real average weekly unemployment benefits *LRUI*, and relative population *LPOP*. Secular censoring factors, represented by *LRAFDC*, *LRUI*, and *LPOP*, may influence the relative supply of black males (Butler and Heckman, 1977), which could in turn affect their distribution across occupations in a manner unrelated to occupational mobility (Fosu, 1992). Hence, the inclusion of these variables in the auxiliary equation is intended to screen the index of such supply censoring.

The error term  $e_t$  was serially correlated, and the Beach-MacKinnon maximum likelihood technique was employed as the estimating procedure. Because of the small-sample nature of the estimation, this technique was judged preferable to the alternative Cochrane-Orcutt method (Beach and MacKinnon, 1978).<sup>7</sup> Following Fosu (1992), the double-log specification was used.

### III. Results

Results from the above estimation for the 1958-1981 period are reported in Table 3 for restricted and fully-specified versions of the structural equation. The choice of the 1958-1981 sample period is governed by the availability of reasonably comparable occupational data. Unfortunately, later changes in occupational classification by the BLS have been quite substantial, rendering more recent data incompatible. Besides, for comparability, this period is similar to that covered by the most recent evidence (Donohue and Heckman, 1992; Fosu, 1992).

With the cyclical nature of the economy controlled for, equation (1) in Table 3 reveals a significantly positive overall trend in black male relative occupational mobility over the 1958-1981 period and, more significantly, an additional positive trend during the post-1964 era. The negative and statistically significant coefficient of *GNPDI* also suggests that economic downturns would increase the index by reducing the proportions of those black males located in low-wage occupations; the reverse would occur during upswings. My finding is consistent with the neoclassical hypothesis that disproportionately more disadvantaged and low-skilled workers are laid off during recessions, with such individuals similarly added to the work force during upswings. If so, then the index should rise in economic downturns and fall in upturns. Thus, the censoring hypothesis that observed occupational mobility of black males would increase as a result of labor force withdrawals of the relatively low-skilled is confirmed cyclically.<sup>8</sup> This finding also underscores the need to employ an occupational index based on annual rather than decennial data embodied in previous studies (Medoff, 1985) and to control cyclical factors.

Equations (2) and (3) in Table 3 essentially tell the same story as (1) with respect to the significance of the post-1964 time trend, *LT65*, although the coefficient of the

Table 3  
*Regression Results: Black Male Occupational Mobility  
 Relative to White Males, 1958-1981*  
 (*t*-ratios in parentheses)

Eqn.	Const.	LT65	LT75	LTIME	GNPDI	LED	LEMP	DW	DW	Adj. R <sup>2</sup>	Log of Likelihood Function at Max.
(1)	-.290 <sup>a</sup> (-14.38)	.013 <sup>a</sup> (6.18)	—	.079 <sup>a</sup> (10.62)	-.060 <sup>a</sup> (-2.99)	—	—	2.02	.0034	.995	104.18
(2)	-2.93 <sup>a</sup> (-7.33)	.013 <sup>a</sup> (5.66)	—	.080 <sup>a</sup> (6.77)	-.060 <sup>b</sup> (-2.80)	-.003 (-0.11)	—	2.02	.0035	.995	104.19
(2')	-.028 <sup>c</sup> (-1.85)	.019 <sup>a</sup> (3.69)	—	—	-.092 <sup>c</sup> (-2.00)	.160 <sup>a</sup> (3.35)	—	1.97	.0056	.963	92.70
(3)	-.776 (-.04)	.013 <sup>a</sup> (6.31)	—	.048 <sup>c</sup> (1.87)	-.066 <sup>a</sup> (-3.26)	.051 (1.04)	.080 (1.35)	2.14	.0035	2SLS	105.12
(3')	.355 <sup>a</sup> (5.95)	.014 <sup>a</sup> (6.57)	—	—	-.080 <sup>a</sup> (-3.94)	.138 <sup>a</sup> (6.70)	.171 <sup>a</sup> (6.42)	2.19	.0038	2SLS	102.47
(4)	-.348 (-1.02)	—	-.000 (-.53)	.117 <sup>b</sup> (2.70)	-.098 <sup>c</sup> (-1.79)	.016 (0.18)	.016 (0.16)	1.99	.0051	2SLS	95.99
(5)	.002 (0.01)	.014 <sup>a</sup> (6.51)	-.000 (-1.13)	.056 <sup>b</sup> (2.14)	-.085 <sup>a</sup> (-3.26)	.031 (0.58)	.097 (1.62)	2.18	.0035	2SLS	105.93

Notes: The dependent variable is the logarithm of relative occupational index *LOCIND*, with earnings serving as weight (see text for details). All variables are defined in Table 2.

<sup>a</sup> (<sup>b</sup>, <sup>c</sup>) Statistically significant at the .01 (.05, .01) level (two-sided test).

overall time trend *LTIME* decreases in both magnitude and significance upon inclusion of the education and predicted employment variables. The coefficient of the educational variable *LED*, while positive in equation (3), is negative in equation (2). It is not statistically significant in either equation, however. A closer inspection of the data reveals that black male median years of schooling have been increasing steadily even prior to the mid-1960s, so that *LED* is highly correlated with the overall time trend *LTIME* ( $r = .98$ ). This suggests that *LTIME* probably incorporates education.

To examine the extent to which *LED* might be a substitute for *LTIME*, restricted versions of equations (2) and (3) in Table 3 are re-estimated with *LTIME* omitted. The results, reported respectively as (2') and (3') in Table 3, now reveal a positive and statistically significant impact of education and an increase in the coefficient of the post-1964 trend *LT65*.<sup>9</sup> However, equation (2') and (3') represent poor fits as compared with

(2) and (3), respectively, with the standard error of estimate (*SEE*) increasing and the null hypotheses that (2) and (3) are the respective “correct” specifications being rejected.<sup>10</sup> This outcome suggests that while it may incorporate the time trend of black male education, as measured by the median years of schooling, *LTIME* probably also reflects additional important factors related to black male occupational mobility. These may include improving quality of black male education (Smith, 1984) and possible easing of occupational barriers even prior to the antidiscrimination measures of the mid-1960s.<sup>11</sup> It is important to stress, however, that the post-1964 trend’s coefficient remains robust, irrespective of the exclusion status of the educational variable.

The addition of the employment variable *LEMP*, intended to reflect labor supply conditions, lowers both the magnitude and significance of the pre-existing underlying trend in the index of black male relative occupational mobility ((2) versus (3), Table 3). However, if the censoring hypothesis holds for the post-1964 period, then the addition of *LEMP* should reduce the coefficient of *LT65*. That is, increases (decreases) in relative black male employment due to population and welfare program changes would augment (reduce) the relative representation in the labor force of low-skilled black men and would thus decrease (increase) the relative occupational index for black males. Nevertheless, the entry of *LEMP* results in a change in neither the magnitude nor significance of the coefficient of *LT65*, thus failing to confirm the (secular) censoring hypothesis for the post-1964 era.

Previously reported evidence indicates that affirmative action raised the occupational mobility of black males in contract over noncontract firms, both absolutely and relative to whites, between 1974 and 1980 (Leonard, 1984). Might this finding imply an additional economy-wide trend during this period? To test this hypothesis, a post-1974 time trend *LT75* was introduced. First, *LT65* was replaced with *LT75* (in the fully-specified model) — equation (4) in Table 3. Second, the fully-specified model was augmented with *LT75* — equation (5) in Table 3.

Equation (4) in Table 3 shows that replacing *LT65* with *LT75* yields a negative but very small and insignificant coefficient for the post-1974 trend. In addition, there appears to be a substantial reduction in the goodness of fit, with *SEE* rising, and the log of the likelihood function at its maximum (*LLFTN*) falling rather substantially. Augmenting the model with *LT75* (equation 5 in Table 3) similarly shows a negative but statistically insignificant coefficient for *LT75*. However, *SEE* and *LLFTN* are virtually unchanged (equation (3) vs. equation (5), Table 3). Employing a likelihood-ratio test, the null hypothesis that *LT75* does not belong in the model is not rejected; however, the null hypothesis that *LT65* is excludable from the model is easily refuted.<sup>12</sup> Thus, economy-wide relative occupational mobility of black males, presumably attributable to post-1964 antidiscrimination measures, appears to have occurred much earlier than when the effectiveness of affirmative action was found to be appreciable.<sup>13</sup> It appears, therefore, that the bulk of the observed post-1964 trend could be attributable to Title VII.<sup>14</sup>

I now consider the post-1964 trend’s share of the contribution to the growth in the relative occupational mobility of black men, at least as measured by the index con-

structured herein. The coefficient of  $LT65$  from equation (3) in Table 3 is .013, and the mean annual change in the logarithm of the relative black male occupational index over the 1965-1981 sample period is .005. Therefore, with a mean annual change in  $LT65$  of .137, I estimate that roughly 36 percent of the 1965-1981 growth in the black male occupational mobility, relative to white males, may be attributable to the independent effects of post-1964 trends.

*Implications for Earnings.* What are the implications of the above finding of post-1964 occupational advancement of black males for their relative earnings gains over the period? Estimating an earnings equation that includes occupational mobility, measured by  $LOCIND$ , as an explanatory variable over the 1958-1981 sample period yields the following results (absolute  $t$  ratios in parentheses):

$$LWR = 2.84 + 3.85 LOCIND - .52 LTIME - .05 GNPDI + .63 LED + .67LEMP$$

(1.11) (2.32) (1.57) (0.16) (1.03) (0.86)

$$DW = 1.92, RHO = .263, \text{Log-Likelihood} = 50.36;$$

where  $LWR$  is the natural logarithm of the ratio of black male to white male median earnings; and all other variables are as defined in Table 2.<sup>15</sup> Given the above  $LOCIND$  coefficient of 3.85, the effect of the post-1964 trend  $LT65$  on black male relative earnings via occupational mobility is estimated as .050 (that is,  $3.85 \times .013$ ). Hence, with black male relative earnings growing by an average of .013 yearly, and with  $LT65$  showing a mean annual change of .137, I calculate that the rise in black male occupational mobility attributable to independent effects of the post-1964 trends accounted for roughly 53 percent (that is,  $.137 \times .050/.013$ ) of the black male relative earnings gains during post-1964.

*Comparison with Black Women.* Based on Fosu (1992) and the above results, there are both similarities and contrasts by gender regarding occupational advancement over 1958-1981. Regarding the similarities, first, the pattern of the occupational equation is similar between the two sexes with respect to the importance of the post-1964 trend  $LT65$  relative to the post-1974  $LT75$  trends;  $LT65$  is the more significant trend, suggesting that the acceleration in occupational advancement occurred prior to the mid-1970s when affirmative action was found to be effective. Second, there was cyclical but not secular supply censoring for both sexes.

There are differences as well by gender. First and foremost, the acceleration in the post-1964 trend was substantially lower for black men than for black women. For example, the above results show the coefficient of  $LT65$  to be .013 for black males (equation (3), table 3), compared with that for black females of .048 relative to white women and .057 relative to white men (Fosu, 1992: table 3, equations (3A) and (3B), respectively). Furthermore, the relative occupational index for black women rose over 20 percent during 1965-1981; this contrasts with only 8 percent (.005 per year  $\times$  16 years) for black men. In addition, Fosu (1995) observes that virtually all the post-1964 relative earnings gains of black women could be attributed to occupational mobility. That result contrasts sharply with the finding here for black men showing only about one-half of the earnings increases to be so attributed.



#### IV. *Concluding Remarks*

My study has presented evidence showing increases in the occupational mobility of black men during 1958-1981, both absolutely and relative to white men. Positive trends were observed even prior to the antidiscrimination measures of the mid-1960s. Nearly 40 percent of the increase in the 1965-1981 black male relative occupational index remains, however, even after accounting for prior trends as well as for cyclical conditions of the economy, education, and supply censoring. This occupational mobility "residual" is further observed to explain roughly one-half of the black male relative earnings gains over the post-1964 period.

The study additionally sheds light on the censoring hypothesis that the observed acceleration in black labor market gains after 1964 were attributable to labor supply decreases of the low-skilled rather than demand shifts (Butler and Heckman, 1977). This hypothesis holds cyclically, as proportionately more low-skilled black male workers presumably leave (enter) the labor force during downswings (upswings). There is little support secularly, however. The observed acceleration in black male upward occupational mobility after 1964 is, apparently, little influenced by supply censoring.

In the light of previous findings suggesting that occupational mobility of racial minorities occurred in contract firms as a result of affirmative action in the mid-1970s (Leonard, 1984), I further tested the hypothesis of an economy-wide trend beginning in this latter period. The results do not reveal an additional upward trend starting in the mid-1970s, however. The trend presumably attributable to post-1964 antidiscrimination measures began much earlier than the mid-1970s.

The results for occupational mobility thus complement those showing an acceleration in relative earnings for black Americans beginning in 1965. Apparently, mobility explained a considerable portion of their post-1964 earnings gains. The current evidence thus appears consistent with the intent of Title VII of the Civil Rights Act of 1964. It lends additional credence to the conclusion reached by Donohue and Heckman (1991, p. 1641), based primarily on earnings evidence, that "Federal civil rights policy was the major contributor to the sustained improvement in black economic status that began in 1965."

While the above results for black men appear similar to those obtained previously for black women, there are major differences by gender. In particular, I find that black male relative occupational mobility over the post-1964 period was substantially less than that of black women. Furthermore, the mobility appears to explain a much smaller proportion of the earnings gains for black men than for black women.

## NOTES

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<sup>1</sup>For a recent survey of the literature, see Donohue and Heckman (1991), who argue that the antidiscrimination programs were effective in raising the economic status of blacks in the U.S. Much of their argument is based on earnings rather than occupational standing, however, since their survey also observes that existing studies fail to reveal a significant effect of affirmative action on occupational status prior to the mid-1970s. As examples of studies attributing post-1964 increases in black earnings to the antidiscrimination programs, see also Freeman (1973) and Brown (1984). For those studies indicating a slowdown in black gains as of the mid-1970s, see Cotton (1989a, 1989b), O'Neill (1990), and Blau and Beller (1992), as well as Donohue and Heckman.

<sup>2</sup>*Labor Force Statistics Derived From the Current Population Survey: A Databook*, Vol. 1, (1982); *Handbook of Labor Statistics*, 1978. The occupational categories are: Professional and Technical, Managerial and Administration, Sales, Clerical, Craft and Kindred, Nontransport Operatives, Transport Operatives, Nonfarm Labor, Private Household Service, Other Service, and Private Farm Labor.

<sup>3</sup>Note that the earnings weights are *fixed* and are meant to reflect the hierarchical orderings of the occupations. Thus, an increase in the proportion of black male workers in a higher-order occupation over time reflects occupational mobility. A change in relative occupational earnings, however, does not indicate occupational mobility and leaves the index unaffected. Alternatively, one could use the U.S. Census Bureau's index of occupational status as weights. Experimenting with that index produced similar findings as those reported here, which are available from the author on request. Furthermore, since black and white men might be employed in different jobs even in the same occupation, it was considered preferable to use the occupational earnings specific to each group, in order to control for within-occupation racial job differences. The socioeconomic status weights are, however, based on the occupations and do not reflect differences in job holdings of black and white men within occupations.

Consistent occupational earnings data by race and gender were available for the years 1973-1978, so the respective averages of these years were used as the fixed weights. It must be noted, however, that my basic results regarding the impact of antidiscrimination measures are not sensitive to the precise choice of these weights. Actually, using 1959 occupational earnings as weights produced virtually the same occupational indices.

<sup>4</sup>Note, however, that the weights of the black male and white male indices differ, so that a value of the relative index of 1.0, for example, would *not* indicate occupational equality between black males and white males; only *changes* in the index matter.

<sup>5</sup>For details see Fosu (1992), for example.

<sup>6</sup>While men generally do not qualify for AFDC payments, I hypothesize that a more generous AFDC program might reduce fathers' need to seek employment.

<sup>7</sup>Beach and MacKinnon (1978) found that for small samples the full maximum likelihood estimator was more efficient than the estimator based on the Cochrane-Orcutt method, especially when the data are trended.

<sup>8</sup>Alternatively, it is possible that the business cycle variable *GNPDI* might be reflecting some "true" change in occupational distributions over the cycle. For example, firms could "accommodate" minority workers better in economic upswings than in downturns. (Beller, 1980, for instance, argues that the effectiveness of Title VII would decrease in economic downturns when the monetary and psychic costs of compliance are relatively high.) If so, then the coefficient of *GNPDI* would be positive. My finding of a negative cyclical effect, however, suggests that the censoring factor dominates.

<sup>9</sup>The increase in the *LT65* coefficient is rather slight in the case of (3'), though.

<sup>10</sup>The likelihood ratio test statistic for the null hypothesis ( $H_0$ ) that *LTIME* is excludable equals  $-2\ell n\lambda = -2(92.70-104.19) = 22.98$  for (2) compared with (2'), and equals  $-2(102.47-105.12) = 5.30$  for (3) compared with (3'). With  $\chi^2(1,.05) = 3.84$ ,  $H_0$  is refuted in both cases.

<sup>11</sup>Results on the impact of relative median years of schooling on black relative earnings have generally been mixed. For example, Freeman (1973) reports both negative and positive impacts, which are statistically insignificant, however. Moreover, in earnings equations where Brown (1984) reports positive educational coefficients, the *LTIME* coefficients are negative, suggesting a probable statistical trade-off between the two variables.

<sup>12</sup>The likelihood ratio test statistic for the null hypothesis that the coefficient of *LT75* is zero equals  $-2\ell n\lambda = -2(105.12-105.93) = 1.62$  for (3) compared with (5). Hence, the null hypothesis is not rejected at the .05 level, since  $\chi^2(1,.05) = 3.84$ . On the other hand, the test statistic equals  $-2\ell n\lambda = -2(95.99-105.93) = 19.88$  for (4) compared with (5), so that the null hypothesis that the coefficient of *LT65* equals zero is easily rejected even at the .005 level, for  $\chi^2(1,.005) = 7.88$ .

<sup>13</sup>Other trend variables beginning earlier than 1964 were also experimented with in the manner of *LT75*. However, as in the case of *LT75*, relatively poor fits were obtained when *LT65* was omitted from the regression. Indeed, the importance of prior trends relative to *LT65* might be verified by comparing (3') and (4) in Table 3. Apparently, excluding *LT65* rather than *LTIME* from the regression reduces the goodness of fit of the model as measured by *SEE*.

<sup>14</sup>Alternatively, my finding of no further upward trend as of the mid-1970s, coupled with Leonard's (1984, p. 378) finding for the same period of a "differential impact of affirmative action over and above the effects of general policies," suggests that significant declines in the pre-existing trend might have occurred in the absence of affirmative action. This is because both Title VII and affirmative action (regarding blacks) were in effect as of the mid-1960s. Since the effect of the latter measure was found to be rather minimal prior to the mid-1970s (Ashenfelter and Heckman, 1976; Goldstein and Smith, 1976), the finding of an independent post-1964 upward trend would be attributable primarily to Title VII. However, given Leonard's finding of a positive net effect of affirmative action as of the mid-1970s, an additional post-1974 upward trend would be expected if the pre-existing impact of Title VII was to remain intact.

<sup>15</sup>*LOCIND* and *LEMP* were both endogenously specified. For details see Fosu (1995).

## REFERENCES

- Ashenfelter, Orley and James Heckman. "Measuring the Effect of an Antidiscrimination Program." In Orley Ashenfelter and James Blum, eds., *Evaluating the Labor Market Effects of Social Programs*. Princeton: Industrial Relations Section, Princeton University, 1976, pp. 46-84.
- Beach, Charles M. and James G. MacKinnon. "A Maximum Likelihood Procedure for Regression with Autocorrelated Errors." *Econometrica* 46 (January 1978): 51-58.
- Beller, Andrea H. "The Effect of Economic Conditions on the Success of Equal Employment Opportunity Laws: An Application to the Sex Differential in Earnings." *Review of Economics and Statistics* 62 (August 1980): 379-87.
- Blau, Francine D. and Andrea H. Beller. "Black-White Earnings over the 1970s and 1980s: Gender Differences in the Trends." *Review of Economics and Statistics* 74 (May 1992): 276-86.
- Brown, Charles. "Black-White Earnings Ratios Since the Civil Rights Act of 1964: The Importance of Labor Market Dropouts." *Quarterly Journal of Economics* 99 (February 1984): 379-87.
- Burman, George. "The Economics of Discrimination: The Impact of Public Policy." Unpublished Ph.D. thesis, Graduate School of Business, University of Chicago, 1973.

- Butler, Richard and James J. Heckman. "The Government's Impact on the Labor Market Status of Black Americans: A Critical Review." In Leonard J. Hausman et al., eds. *Equal Rights and Industrial Relations*. Madison, Wisc.: Industrial Relations Research Association, 1977, pp. 235-81.
- Cotton, Jeremiah. "The Declining Relative Economic Status of Black Families." *Review of Black Political Economy* 18 (Summer 1989): 75-85.
- \_\_\_\_\_. "Opening the Gap: The Decline in Black Economic Indicators in the 1980s." *Social Science Quarterly* 70 (December 1989): 803-19.
- Doeringer, Peter B. and Michael J. Piore. *Internal Labor Markets and Manpower Analysis*. Lexington, Mass.: Lexington Books, 1971.
- Donohue, John H. and James Heckman. "Continuous Versus Episodic Change: The Impact of Civil Rights Policy on the Economic Status Blacks." *Journal of Economic Literature* 39 (December 1991): 1603-43.
- Fosu, Augustin K. "Occupational Mobility and Post-1964 Earnings Gains by Black Women." *American Economic Review* 85 (May 1995): 143-47.
- \_\_\_\_\_. "Occupational Mobility of Black Women, 1958-1981: The Impact of Post-1964 Antidiscrimination Measures." *Industrial and Labor Relations Review* 45 (January 1992): 281-94.
- Freeman, Richard B. "Changes in the Labor Market for Black Americans, 1948-1972." *Brookings Papers on Economic Activity* (1973): 63-131.
- Goldstein, Morris and Robert S. Smith. "The Estimated Impact of the Antidiscrimination Program Aimed at Federal Contractors." *Industrial and Labor Relations Review* 29 (July 1976): 523-43.
- Heckman, James J. and Kenneth I. Wolpin. "Does the Contract Compliance Program Work? An Analysis of Chicago Data." *Industrial and Labor Relations Review* 29 (July 1976): 544-64.
- Leonard, Jonathan S. "Employment and Occupational Advance under Affirmative Action." *Review of Economics and Statistics* 66 (August 1984): 377-85.
- Medoff, Marshall H. "Discrimination and the Occupational Progress of Blacks Since 1950." *American Journal of Economics and Sociology* 44 (July 1985): 294-303.
- O'Neill, June. "The Role of Human Capital in Earnings Differences between Black and White Men." *Journal of Economic Perspectives* 4 (Fall 1990): 25-46.
- Smith, James P. "Race and Human Capital." *American Economic Review* 74 (September 1984): 685-98.