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BLACK-WHITE EARNINGS OVER THE 1970S AND 1980S:
GENDER DIFFERENCES IN TRENDS

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ABSTRACT

This paper uses CPS data to analyze gender differences in black-white annual earnings trends over the 1970s and 1980s. We find that in at least two respects black women fared better than men over this period. First, due to decreasing relative annual time inputs for black males, but not black females, black women experienced increases in both annual earnings and estimated wages compared to white women, while black men gained only in terms of wages compared to white men. Second, since the gender earnings gap among whites was narrowing during this time, as black women's wages rose relative to white women's, they also made faster progress relative to white males than did black males. In other important respects, however, the experience of black men and women over the period was similar. First, for both groups, while earnings and wages relative to whites of the same sex rose during the 1970s, they stagnated or declined during the 1980s. Second, in contrast to the 1960s, younger blacks did not fare better than older blacks during the 1970s and 1980s. While in 1971, both unadjusted wage ratios and adjusted earnings ratios were highest within each sex group for labor market entrants, by 1988 these ratios were fairly similar across experience groups.

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Introduction

Research on black/white earnings trends through the early 1970s (e.g., Freeman, 1973; Smith, 1979; Smith and Welch, 1977) suggests that starting in the 1950s for women and in the 1960s for men, black earnings increased relative to those of whites of the same sex.¹ Both educational and occupational shifts appear to have contributed to these earnings increases, and some studies suggest that anti-discrimination legislation also played a significant role (e.g., Freeman, 1973; Beller, 1978; Brown, 1984).² An additional finding of interest was that, particularly among males, gains tended to be larger for younger blacks. Under the assumption that younger blacks would retain a substantial portion of these gains as they aged, this was taken as an optimistic finding for the future economic progress of blacks.

Recent research has presented evidence of a slowdown in wage convergence for males during the 1980s which it is argued is associated with increasing returns to both measured and unmeasured skills (Juhn *et al.* 1989; O'Neill 1990). Trends for black women have not yet been analyzed but are potentially of importance for understanding these trends: to the extent that explanations for the 1980s slowdown that focus on skills are correct, we should expect to find similar patterns among females as among males.

In this paper, we update and extend previous work by examining black-white earnings trends over the 1970s and 1980s focussing on gender differences and on the role of educational and occupational shifts in explaining the trends. Given the importance of age differences in earlier periods, the analysis is performed separately for three groups defined in terms of

¹More recently Smith and Welch (1986) have also emphasized long term gains for black males over the 1940-1980 period. Montgomery and Wascher (1987) have examined race differentials within the manufacturing and service industries during the 1970s.

²Others, e.g., Smith and Welch (1986) argue that anti-discrimination legislation played a minor role.

potential labor market experience. In light of race differences in unemployment rates, we focus on annual earnings (rather than weekly wages) and specifically identify the impact of race differences in trends in part-time employment and annual weeks worked on the earnings differential. While earnings are only one dimension of race differences in economic outcomes (Cotton 1989), we believe they are an important one worthy of detailed study. Since relative labor force participation rates of blacks have fluctuated over this period, we also examine the potential impact on the results of adjustment for selectivity bias in both measured and unmeasured characteristics (Butler and Heckman, 1977; Darity, 1980).

We use data from the 1972, 1982 and 1989 Annual Demographic Files of the Current Population Surveys (CPS). The 1972 and 1982 CPS data (with information on 1971 and 1981 earnings) were selected because they allow us to observe changes over a decade and because economic conditions were reasonably comparable, with both 1971 and 1981 following cyclical troughs in the preceding year (Moore and Zarnowitz, 1986). The unemployment rate was higher in 1981 (7.6 percent) than in 1971 (5.9 percent) but that was generally the case in the late 1970s and the early 1980s compared to the earlier period.³ Similarly, while black unemployment rates increased relative to white's between 1971 and 1981 and black relative labor force participation rates declined, this again reflects secular trends rather than cyclical factors.⁴ The 1989 CPS (1988 earnings data) was selected as the most recent year

³The unemployment rate was 2.3 points higher in 1979 (the most recent cyclical peak prior to 1981) than in 1969 (the most recent cyclical peak prior to 1971).

⁴Between 1971 and 1981, the difference in unemployment rates between black and white males (females) increased by 5.0 (4.2) points, compared to an increase of 4.1 (3.8) points between 1969 and 1979. Similarly, the race difference in participation rates for males increased by 3.2 points (1971-81) compared to 4.0 points (1969-79), while the black female advantage in participation rates declined by 5.0 points (1971-81) compared to 5.4 points (1969-79).

available at the time the analysis was performed. Economic conditions differed considerably from 1981, but this reflects general differences between the poor performance of the economy in the early years of the decade and the economic expansion that followed. As the overall unemployment rate declined to 5.5 percent in 1988, the black-white unemployment rate gap decreased for both males and females, while the black-white labor force participation differential fell for males.⁵

Regression Model and Empirical Procedures

In order to analyze earnings trends, the following regressions are estimated separately for race-gender-experience groups in each year:

$$(1) \quad \text{LNY} = B_T'X + e_1$$

$$(2) \quad \text{LNY} = B_D'X + B_O'OCC + e_2$$

where LNY is the natural log of annual earnings, X is a vector of variables measuring human capital, demographic and locational characteristics; OCC is a vector of dummy variables for major occupational category⁶ and employment in the government sector; B_T , B_D and B_O are vectors of coefficients; and e_1 and e_2 are random error terms. The coefficient on an explanatory variable (x_j) in equation 2 (b_{dj}) measures the direct effect of x_j on log earnings, controlling for occupation, while the coefficient on x_j in equation 1 (b_{tj}) measures the total effect of x_j on earnings taking into account both its direct effect and its indirect effect via occupational attainment.

⁵Between 1981 and 1988, the race difference in unemployment rates decreased by 2.2 points (males) and 1.7 points (females). The race difference in participation rates decreased by 2.2 points for males and remained unchanged for females.

⁶Since CPS occupational codes were changed from 1970 to 1980 Census categories by 1989, the 1989 detailed categories were recoded to major occupational categories on the basis of U.S. Department of Commerce (1983).

The variables in X include measures of education,⁷ potential labor market experience and its square, the natural log of annual weeks worked, dummy variables for part-time work, veteran status (males only), and marital status, as well as number of children (women only),⁸ and dummy variables for three regions and urban residence. OCC includes dummy variables for government employment and major occupational category. The occupational variables are specified somewhat differently for males and females because gender differences in employment distributions resulted in too few observations in some categories to form the same set of dummy variables for both sexes.⁹

Our sample consists of individuals aged 18 to 64 who worked at least one week during the previous year and whose wage and salary income was at least \$100. We excluded individuals with any self-employment income, members of the military, those in farming occupations,¹⁰ and, for the youngest experience group, those who were in school.¹¹ We also excluded all individuals for whom data on income from wages and salaries were missing and therefore imputed by the Census.¹²

⁷That is, years of school completed and splines for education less than 8 years (experience group 20+ only) and more than 12 years.

⁸This is included to capture the impact of time out of the labor force for childbearing and child-rearing (Hill 1979).

⁹The categories are: professional or managerial, clerical or sales, and, for males, craft worker, operative, and laborer; and, for females, blue collar worker and private household worker. The reference category is service worker.

¹⁰The proportion of individuals meeting other sample selection criteria who were in farm occupations was small: 1.3, 1.4 and 1.3 percent of white males in 1971, 1981 and 1988; 3.1, 3.2 and 1.9 percent of black males; 0.6, 0.5 and 0.5 percent of white females; and 1.6, 0.9 and 0.3 percent of black females.

¹¹Those reporting school as their major activity during the survey week or as the reason for part-year work were excluded.

¹²In 1976 (and again in 1989) the Census changed its method of imputing income to individuals with missing data, breaking the comparability of income series data (Lillard, Smith, and Welch, 1986).

A standard technique (e.g., Blinder 1973) is used to decompose black-white earnings differentials in each year into a component due to race differences in the means of the variables and a component that is unexplained (i.e., due to race differences in coefficients including the constant term). We consider both equations (1) and (2) to identify the role of occupational shifts in producing the observed earnings trends. The unexplained portion of the pay differential is commonly viewed as due to labor market discrimination or unmeasured skill differences or both.

As noted above, given shifting relative participation rates of blacks, sample selection bias is a concern in estimating black-white earnings trends. Selectivity with respect to either measured or unmeasured factors may occur. As an example of the former, suppose that the propensity of blacks with low educational attainment to participate in the wage and salary sector decreases relative to white's. Trends in wage ratios calculated on the basis of participants will then be biased upward. As an example of the latter, suppose that among those with the same measured characteristics, participation in the wage and salary sector becomes increasingly selective of those with higher wage offers among blacks in comparison to whites. Then the trend in black-white wage ratios will again be overestimated.

A conventional approach is to adjust for selectivity bias with respect to unmeasured characteristics by using a technique suggested by Heckman (1980) to obtain consistent estimates of the earnings equation. This approach has, however, come under increasing criticism for its lack of robustness:

"...seemingly small misspecifications may generate large biases in estimates..." (Manski, 1989, p.356). In addition to being extremely costly given the large number of equations estimated here, we found in previous work (Blau and Beller, 1988) that coefficients on the selectivity variable were

very imprecisely estimated for blacks, making this approach not very informative for this group. Thus, we examine the sensitivity of our results to adjustments for selectivity in measured and unmeasured characteristics by expanding on a technique employed by Smith and Welch (1986).

To adjust for potential selectivity bias, we attempt to simulate what the relative wage trends would have been had the participation rates of blacks and whites remained at their initial year (1971) levels.¹³ We refer to those included in the regression sample as "participants" and those excluded as "nonparticipants." Following Smith and Welch (1986), we begin with the following relationship for adjusted wages in year t (0-1971, 1-1981 or 1988)¹⁴:

$$(3) \quad W_{A1} = W_{P1} \cdot w + W_{N1} (1-w)$$

where W_{A1} =the adjusted wage in year 1; W_{P1} =the observed wage of participants in year 1; W_{N1} =the wage attributed to "dropouts" (or "entrants") in year 1; and $w=p_1/p_0$ where p =the participation rate. The intuition behind equation (3) when the participation rate has declined is that "dropouts" are added back in and W_A in say 1981 is computed as a weighted average of the wages of participants and nonparticipants (dropouts) with the weights being determined by the ratio of the 1981 to the 1971 participation rate. In the case in which participation has increased, W_A is the wage that would obtain in 1981 if the entrants were subtracted out.

To adjust for selectivity with respect to measured characteristics, we implement (3) using an estimated wage of nonparticipants to proxy W_N . That is, W_N is obtained by estimating equation (1) for participants and evaluating

¹³A common reference year is used to facilitate comparisons across all three years.

¹⁴While our approach is similar to Smith and Welch (1986), they apply the adjustment to longitudinal comparisons and focus solely on one variable, education, in making the adjustment.

it at the observed means of nonparticipants. We adjust for possible participant-nonparticipant differences in unmeasured characteristics by assuming that a nonparticipant receives a lower wage than a participant with the same measured characteristics. We examine the impact of two arbitrarily selected "adjustment factors" (i.e., proportions of the wage of an otherwise similar participant which a nonparticipant receives), 0.8 and 0.6. (An adjustment factor of 1 assumes that nonparticipants receive the wage predicted by the earnings regression.) While it is theoretically possible for nonparticipants to have either higher or lower wage offers than participants with the same measured characteristics,¹⁵ we have focussed on the latter case since this would be the situation of most concern for an adverse effect on black-white trends.

Overview of Trends

Black-white unadjusted annual earnings ratios and estimated wage ratios for the 1971-88 period are shown in Table 1. Estimated wage ratios adjust for part-time employment and weeks worked over the year by evaluating equation (1) at the white (male) means for the part-time and log weeks variables.¹⁶ The trends are shown for each race-gender group as a whole and for three experience groups defined by potential labor market experience equal to 0-9 years, 10-19 years, and 20+ years (figures for the group with 7-16 years of experience in 1988 are shown in parentheses).

Table 1 suggests that black women fared better than black men over the 1970s and 1980s in at least two respects. First, taking the 1971-88 period as

¹⁵Both Reimers (1983) and Blau and Beller (1988) find evidence that, among males, participants are a negatively selected group.

¹⁶We adopt this procedure rather than simply calculating a wage because in the 1972 CPS hours information is available only for the week preceding the survey. In light of this data limitation, adjustment for part-time vs. full-time employment in a regression context was believed to be the preferable approach.

a whole, they experienced increases in both annual earnings and estimated wages whereas black males gained only in terms of estimated wages. Gains in estimated wage ratios were, however, similar (8.6 percent) for the two groups. The less favorable trend in annual earnings for black males reflected declining relative time inputs of blacks in the 0-9 and 10-19 experience groups due to an increase in part-time work in the case of the former and both an increase in part-time work and a decrease in annual weeks in the case of the latter. In contrast, among women only the youngest group of blacks experienced decreases in relative time inputs, in this case because increases in annual weeks among blacks did not keep pace with increases among whites.

Second, during the 1971-88 period and especially in the 1980s, the gender gap narrowed substantially among whites, with the female-to-male wage ratio increasing by 22.3 percent (12.4 points). Thus, as the wages of black women increased relative to white women, the black female-to-white male wage ratio increased at an even faster pace, by 32.7 percent (14.8 points) in comparison to an increase of 8.6 percent (5.9 points) in the black male-to-white male ratio.

In a number of other respects, however, the experience of black men and women over the 1971-88 period was similar. First, for both groups, while earnings and wages relative to whites of the same sex rose during the 1970s, they stagnated or declined during the 1980s. Second, in contrast to the 1960s experience, younger blacks did not fare better than older blacks. Taking the period as a whole, the largest gains of any gender-experience group were for older (experience 20+) black women who increased their wage ratio from 72.5 percent in 1971 to 87.3 percent in 1988 and older black males were the only group of men to increase their relative annual earnings over the period. During the 1970s, wage gains for younger black males (0-9 experience group)

were no greater than those for older males, and the relative wages of younger women were stable while those of older women increased substantially. Moreover, for both black men and women, wage ratios actually fell over the 1980s for the 0-9 experience group, with considerably larger declines in annual earnings ratios. Black women in the 10-19 experience group also saw a decrease in their wage ratio in the 1980s.

The consequence of these varying trends by age was a dramatic alteration in the relationship between estimated wage ratios and potential labor market experience. In 1971, for both men and women, the ratio was highest for labor market entrants and declined across experience groups from 76.0 (91.5) percent for male (female) entrants to 65.7 (72.5) for males (females) in the 20+ experience group. By 1988, estimated wage ratios were fairly similar across experience groups at 75 to 77 percent among males and 88 to 92 percent among females.

To track the experience of the 1960s (1970s) entry cohort over the 1970s (1980s), we may compare the wage ratios for the 0-9 experience group in 1971 (1981) to the ratios for the 10-19 (7-16) experience group in 1981 (1988). Among males, while the ratio for the 1960s and the 1970s entry cohorts did decline with age, they still exceeded the ratio for the 10-19 experience group ten (seven) years earlier. Thus, for males, as in the past, the higher wage ratios of entering cohorts relative to older blacks was a source of cross-sectional earnings growth for the 10-19 experience group throughout the 1970s and 1980s. For females, this was the case only in the 1970s as the 1960s black entry cohort not only retained but actually increased their relative wages as they aged. However, not only was the wage ratio of the 1970s entry cohort lower than that of the 10-19 experience group in 1981, it decreased

further with age causing the decline in the wage ratio of the 10-19 experience group between 1981 and 1988 noted above.

Adjustment for Selectivity Bias

The results of our illustrative adjustments for selectivity bias are shown in Table 2. The rows headed labor force give the estimated wage ratio for labor force participants as presented in Table 1. Under the rows headed adjustment factor, we present the results of the adjustments described above. The findings suggest that the 1970s trends for black males and females in the youngest experience group are most affected by the adjustment. Adjusting for the decrease in the relative probability of sample inclusion that occurred for blacks during that time¹⁷ results in a stable to declining black-white wage ratio (rather than an increase) for males, and a declining (rather than a stable) ratio for females. While these results are illustrative rather than conclusive, they suggest that gains for younger blacks over the 1970s estimated on the basis of observed wages may be overstated.

There are also some indications of adverse effects for blacks in other experience groups in either the 1970s or the 1980s. However, in all but one case, the trends remain the same as those described above based on observed wages. The exception is that when an adjustment factor as low as .6 is employed (an extremely low value), all relative wage gains for black women in experience group 10-19 over the 1970s are eliminated. Finally, it is particularly noteworthy that the finding of large relative wage gains for older black women in the 1970s remains even after this adjustment for selectivity bias.

¹⁷The probability of sample inclusion is related to participation rates but is also affected by other factors such as school enrollment, employment at some time during the year, self employment, and participation in the military.

Decomposition of the Earnings Trends

We now turn to an analysis of the observed trends in earnings ratios by experience group (Table 3). In each year, the white earnings functions are employed to evaluate the impact of race differences in the means of the variables on the log earnings differential ($LN\bar{Y}_w - LN\bar{Y}_b$). The remainder is considered "unexplained" and may reflect the impact of discrimination or race differences in unmeasured factors. Changes over the 1971-81 and 1981-88 periods are shown in the final four columns of Table 3. The final two rows for each experience group show the unadjusted and adjusted black-to-white earnings ratios.¹⁸ Unless otherwise indicated, we focus on the total effects of the variables (given in the second column for each year) rather than the direct effects (given in the first column).

Looking first in greater detail at the role of annual time inputs, we see that among males, blacks' lesser annual time inputs produced a substantial earnings differential in favor of whites in each year in all experience groups. For the younger two, this differential increased, lowering the earnings ratio over the 1971-88 period by 16.6 percent for the 10-19 experience group,¹⁹ with the effect roughly equally divided between the 1970s and the 1980s, and by 4.7 percent for the 0-9 experience group during the 1980s.

For women, the impact of race differences in time inputs tended to differ across experience groups, as did trends over the period. In 1971, time inputs contributed little to the differential in the youngest (0-9) experience group, lowered the differential in the 10-19 experience group, and raised the

¹⁸The predicted differentials are computed using weighted means (based on sampling weights provided by the CPS). Thus, the predicted unadjusted earnings ratios shown in Table 3 may differ slightly from the actual unadjusted earnings ratios shown in Table 1.

¹⁹For ease of exposition we refer to these as percentage effects although they are only approximately so.

differential among the oldest (20+) experience group. Adverse trends in relative time inputs substantially slowed the earnings progress of blacks in the youngest (0-9) experience group, reducing the earnings ratio by 10.8 percent over the 1971-88 period. In contrast, relative time inputs increased substantially in the oldest (20+) experience group, explaining over one third of their large earnings gains between 1971 and 1988.

In comparing the sources of earnings increases for men and women, especially for the 1970s when most of the gains occurred, the most striking finding is the larger role which occupational upgrading played for women than for men. In 1971, race differences in occupation lowered the relative earnings of blacks in all gender-experience groups, with larger effects for older blacks, particularly older black women. With the exception of men in the 0-9 experience group, shifts in occupational distributions by major occupational category worked to reduce black-white earnings differences over the 1970s.²⁰ For black men and younger black women the gains in earnings due to occupational upgrading were only moderate. But for older (experience 10+) black women the impact of occupational shifts was substantial. Between 1971 and 1988, changes in occupational distributions increased the earnings ratio by 10.5 percent for the 10-19 experience group (with virtually the entire effect occurring in the 1970s) and by 18.9 percent for the 20+ experience group (with 84.1 percent of the effect occurring in the 1970s). These gains were largely due to a reduction in private household employment of black women in these two experience groups.

²⁰The finding for younger black males was actually due to rising occupational premia for professional, managerial and craft jobs where blacks were underrepresented rather than to an increase in occupational differences between blacks and whites.

In 1971, 27.1 (10.7) percent of black women in the 20+ (10-19) experience group were private household workers in comparison to only 2.7 (1.5) percent of whites. By 1981, black women in the 10-19 experience group were no more likely to be private household workers than whites. Race differences in the proportion employed in these jobs in the oldest (20+) experience group decreased substantially, to 11.1 percent of blacks versus 1.6 percent of whites in 1981 and to 7.2 percent of blacks versus 1.5 percent of whites in 1988. For the 10-19 experience group, this shift alone is sufficient to account for 87.4 percent of the contribution of occupation to the 1971-81 change in the race earnings differential (the period during which the equalization in private household employment occurred). For the 20+ experience group, it accounts for 69.8 percent of the 1971-88 earnings change attributable to occupation.

The decline in the concentration of black women in private household employment over the 1970s and 1980s was part of a long-term trend. In 1940, fully 60 percent of black women were private household workers falling to 36 percent in 1960 (Malveaux and Wallace, 1987). Tabulations from our CPS data show a further decrease to 16.6 percent in 1971 and 3.5 percent in 1988. Our data further suggest that these observed cross-sectional changes represent a "vintage effect" where a younger cohort of blacks with a more similar occupational distribution to whites replaces an older cohort with a greater disparity. Tabulations of our CPS data indicate that in 1971, 4.2 percent of black women in the 0-9 experience group were private household workers, only slightly higher than the 1.4 percent figure for the 10-19 experience group in 1981. Similarly, in 1971, 17.6 percent of black women aged 54 or under with at least 10 years of potential experience were private household workers. This was not very much higher than the 11.1 percent of black women in the 20+

experience group who held such jobs in 1981. In 1981, 6.5 percent of black women aged 57 or under with at least 13 years of potential experience held private household jobs compared to 7.2 percent of the 20+ experience group in those positions seven years later.

The impact of occupational shifts on earnings differentials was considerably less for women in the 1980s, as this process played itself out. For men, adverse occupational shifts actually increased the earnings differential over the 1980s. This was due to a growing underrepresentation of blacks in managerial and professional jobs in conjunction with, for the 0-9 and 20+ experience groups, a rise in the returns to these jobs.

Examining next the role of educational attainment, we see that in 1971 blacks' lower educational attainment relative to whites increased the earnings differential in all gender-experience groups, but that rising relative educational attainment reduced the black-white differential for all groups over the 1970s. The largest effects were for young black males (0-9 experience) where a reduction in the black deficit in years of schooling from 1.28 in 1971 to .42 in 1981 increased the earnings ratio by 8.4 percent. Effects on other groups were considerably smaller. In contrast to the 1970s, educational shifts in the 1980s increased the earnings differential among younger (experience 0-9) workers of both genders. For males this was due to a small increase in the race disparity in educational attainment of 0.2 years coupled with an increase in the return to education beyond high school.²¹ For females the education gap remained about the same (0.4 years), but the returns to years of schooling increased.

²¹O'Neill (1990) presents evidence of a decrease in the race education gap among 20-34 year olds between 1980 and 1988 using CPS data. Given her broader (14 year) age range and her exclusion of 18 and 19 year olds, her 20-34 year old group most likely represents a combination of our experience groups 0-9 and 10-19. We also found a decrease in the education gap for the latter group.

An interesting gender difference emerges in the nature of the impact of education on earnings. For men the direct and total effects of education on earnings changes are virtually identical, even where, as in the case of the 0-9 experience group in the 1970s, the impact of rising relative educational attainment is quite large. In contrast, among women, where education effects are substantial (in experience groups 0-9 and 20+ over the 1970s), over half of the total effect of education is due to its indirect effect on earnings via occupational upgrading of blacks.

Finally we consider the impact of changes in the unexplained differential on the observed trends. These may reflect changes over time in the degree of labor market discrimination or in unmeasured characteristics. Since occupational differences may reflect the choices of employers as well as workers, we focus on the total rather than on the direct effects. As may be seen in Table 3, among both men and women in the 0-9 experience group, changes in the unexplained differential were unfavorable throughout the 1971-88 period resulting in falling adjusted ratios. Whereas in 1971 younger black men (women) were estimated to earn 88.4 (96.2) percent of whites with the same measured characteristics, by 1988 this figure had fallen to 81.8 (93.2) percent. The adjusted ratio also fell for black women in the 10-19 experience group during the 1980s from virtual parity in 1981 (99.3 percent) to 94.1 percent in 1988.

In contrast, for other experience groups and years, declining unexplained differences worked to reduce the race differential. The largest impact occurred for older women during the 1970s where a reduction in unexplained differences increased the earnings ratio by 11.9 percent in the 20+ experience group and by 8.1 percent in the 10-19 experience group. A comparison of the direct and total effects of the unexplained differential

indicates that these large total effects were due to the occupational upgrading of women in these two experience groups described above. It may be noted that the fact that these unexplained differentials go in opposite directions for different experience groups suggests that they are more likely to reflect shifts in unmeasured characteristics (or in their returns) than in the extent of labor market discrimination.²² Moreover, the similarity of our findings for males and females suggests that the same underlying factors were at work for both groups.

As in the case of the estimated wage ratios, we find a pronounced change in the relationship between the adjusted earnings ratio and potential labor market experience. While in 1971, for both men and women, the adjusted ratio was highest for labor market entrants, by 1988 ratios were fairly similar across experience groups ranging from 81 to 84 percent among males and from 91 to 93 percent among females. Also mirroring the results for the estimated wage ratios, we find that the higher ratios of entering cohorts relative to older blacks were a source of cross-sectional earnings growth for the 10-19 experience group for the 1971-88 period for males and for the 1971-81 period for females, but that the lower ratio of the entering cohort in 1981 was a source of a cross-sectional earnings decline for females in the 10-19 experience group in the 1980s.

Conclusion

In this paper we analyze trends in black-white annual earnings differentials by gender over the 1970s and 1980s. We find that in at least two respects black women fared better than men over this period. First, a major obstacle to the earnings progress of black males, but not of black

²²In this respect our findings are consistent with the conclusions reached by Juhn et.al. (1989) and O'Neill (1990).

females, over this period was a decrease in their relative annual time inputs. As a result, while black women experienced increases in both annual earnings and estimated wages, black men gained only in terms of wages. Wage gains over the period were, however, similar (8.6 percent) for the two groups. Second, since the gender earnings gap among whites was narrowing during this time, as black women's wages rose relative to white women's, they also made substantial progress relative to white males. The black female-to-white male wage ratio increased by 32.7 percent (14.8 points) compared to a considerably smaller increase of 8.6 percent (5.9 points) in the black male-to-white male ratio.

In other important respects, however, the experience of black men and women over the period was similar. First, for both groups, while earnings and wages relative to whites of the same sex rose during the 1970s, they stagnated or declined during the 1980s. Second, in contrast to the 1960s, younger blacks did not fare better than older blacks. While in 1971, both unadjusted wage ratios and adjusted earnings ratios were highest within each gender group for labor market entrants, by 1988 these ratios were fairly similar across experience groups. Indeed, women in the 20+ experience group had the largest increases in relative earnings of any gender-experience group over the period. Their large gains were tied to a reduction in their concentration in private household employment, a development which also benefitted women in the 10-19 experience group. Blacks of both sexes in the youngest experience group actually experienced declining wage ratios during the 1980s and our adjustment for selectivity bias suggests that the weakening of their relative wage position may have begun in the 1970s.

The evening out of adjusted and unadjusted ratios across experience groups may be viewed in part as a positive development in that it reflects considerable progress for older blacks. However, it is a disquieting

development to the extent that it resulted not simply from earnings gains for older blacks but also from relative declines in earnings of younger blacks compared to whites with the same measured characteristics. The fact that trends in unexplained earnings differentials go in opposite directions for different experience groups--up for the youngest group and down for the others--suggests that they are more likely to reflect shifts in unmeasured characteristics (or in their returns) than in labor market discrimination. The similarity of our findings for males and females further implies that the same underlying factors were at work for both groups. Regardless of the source of these trends, they are of serious concern. They imply that the progressive entry of relatively higher earning younger blacks and the retirement of lower earning older blacks, a process which in the past increased overall black wage ratios, will not be a source of wage gains for blacks in the 1990s.

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Table 1
Trends in Black-White Annual Earnings and Estimated Wage Ratios, 1971-88^a

	Annual Earnings			Estimated Wages ^b		
	1971	1981	1988	1971	1981	1988
Black males/White males						
All ^c	63.4	66.0	62.3	68.6	74.5	74.5
Experience 0-9	66.4	70.0	59.7	76.0	81.1	75.4
Experience 10-19	63.8	62.9	59.3	67.0	72.8	76.7
(Experience 7-16)			(60.0)			(76.7)
Experience 20+	61.7	65.2	67.6	65.7	71.0	72.8
Black females/White females						
All ^c	82.2	92.4	92.6	81.2	89.7	88.2
Experience 0-9	93.4	86.3	79.4	91.5	91.5	87.6
Experience 10-19	102.1	104.4	102.9	85.8	97.0	91.5
(Experience 7-16)			(98.4)			(89.4)
Experience 20+	70.1	88.7	94.5	72.5	86.1	87.3
Black females/White males						
All ^c	31.0	40.1	46.6	45.2	54.7	60.0
Experience 0-9	43.7	50.9	52.4	59.8	67.1	70.8
Experience 10-19	29.2	39.4	47.9	45.2	55.9	61.5
(Experience 7-16)			(50.3)			(63.9)
Experience 20+	26.5	33.8	42.3	38.9	45.9	52.8
White females/White males						
All ^c	37.7	43.4	50.3	55.6	61.0	68.0
Experience 0-9	46.7	59.0	66.0	65.7	74.2	81.5
Experience 10-19	28.6	37.7	46.5	52.1	60.9	69.0
(Experience 7-16)			(51.1)			(73.3)
Experience 20+	37.8	38.2	44.7	53.0	53.7	60.0

^a Based on geometric means.

^b Computed by evaluating regression equation (1) for each gender-race-experience group at the white (male) weighted means for the part-time and weeks worked variables and at own group means for the remaining variables.

^c Computed as a weighted average of the means for each experience group.

Table 2
 Simulations of the Impact of Selectivity Bias on
 Black-White Trends in Estimated Wage Ratios^a

	Males			Females		
	1971	1981	1988	1971	1981	1988
Experience 0-9						
Labor force	76.0	81.1	75.4	91.5	91.5	87.6
Adjustment factor						
1.0		77.2	74.5		88.1	86.2
0.8		73.6	73.4		83.1	84.4
0.6		69.1	72.0		77.1	82.1
Experience 10-19						
Labor force	67.0	72.8	76.7	85.8	97.0	91.5
Adjustment factor						
1.0		72.4	75.7		95.0	89.8
0.8		71.2	75.4		88.2	82.5
0.6		69.7	74.9		80.2	73.9
Experience 20+						
Labor force	65.7	71.0	72.8	72.5	86.1	87.3
Adjustment factor						
1.0		70.6	72.7		85.9	87.9
0.8		69.2	72.4		84.4	86.0
0.6		67.5	72.1		82.7	83.6

^a Earnings are standardized for time input on the basis of the white means of those included in the wage regression sample.

Table 3
Decomposition of the Log Earnings Differential
(White Functions)

	Change									
	1971		1981		1988		1971 - 1981		1981 - 1988	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
MALES										
EXPERIENCE 0-9										
Due to Means	0.306	0.284	0.233	0.192	0.324	0.282	-0.073	-0.091	0.091	0.090
Occupation	0.025	---	0.043	---	0.058	---	0.017	---	0.015	---
Education	0.113	0.114	0.030	0.030	0.057	0.068	-0.083	-0.084	0.027	0.037
Time	0.142	0.143	0.149	0.151	0.193	0.198	0.007	0.008	0.044	0.047
Unexplained	0.101	0.123	0.118	0.159	0.163	0.201	0.016	0.035	0.046	0.042
TOTAL	0.408	0.407	0.351	0.351	0.488	0.483	-0.056	-0.056	0.137	0.132
Unadj Ratio	0.665	0.666	0.704	0.704	0.614	0.617	0.039	0.039	-0.090	-0.087
Adj Ratio	0.904	0.884	0.889	0.853	0.849	0.818	-0.015	-0.030	-0.040	-0.035
EXPERIENCE 10-19										
Due to Means	0.251	0.209	0.260	0.227	0.373	0.331	0.009	0.018	0.113	0.104
Occupation	0.057	---	0.043	---	0.058	---	-0.014	---	0.015	---
Education	0.082	0.096	0.060	0.067	0.034	0.043	-0.022	-0.029	-0.026	-0.024
Time	0.061	0.061	0.135	0.137	0.223	0.228	0.075	0.075	0.087	0.091
Unexplained	0.203	0.243	0.192	0.221	0.136	0.174	-0.011	-0.022	-0.056	-0.047
TOTAL	0.454	0.452	0.453	0.448	0.509	0.505	-0.002	-0.004	0.057	0.057
Unadj Ratio	0.635	0.636	0.636	0.639	0.601	0.604	0.001	0.003	-0.035	-0.035
					(0.612)	(0.615)				
Adj Ratio	0.816	0.784	0.825	0.801	0.873	0.840	0.009	0.017	0.048	0.039
					(0.878)	(0.847)				
EXPERIENCE 20+										
Due to Means	0.315	0.246	0.265	0.211	0.275	0.205	-0.049	-0.035	0.010	-0.006
Occupation	0.104	---	0.082	---	0.098	---	-0.022	---	0.016	---
Education	0.079	0.112	0.078	0.102	0.068	0.094	-0.001	-0.010	-0.010	-0.008
Time	0.072	0.074	0.060	0.062	0.061	0.063	-0.012	-0.012	0.000	0.001
Unexplained	0.168	0.236	0.136	0.189	0.099	0.169	-0.031	-0.047	-0.038	-0.019
TOTAL	0.482	0.482	0.402	0.400	0.374	0.374	-0.080	-0.083	-0.028	-0.026
Unadj Ratio	0.617	0.617	0.669	0.670	0.688	0.688	0.052	0.053	0.019	0.017
Adj Ratio	0.846	0.789	0.873	0.828	0.906	0.844	0.027	0.038	0.033	0.016
FEMALES										
EXPERIENCE 0-9										
Due to Means	0.066	0.040	0.081	0.058	0.179	0.159	0.014	0.018	0.099	0.101
Occupation	0.046	---	0.027	---	0.033	---	-0.019	---	0.006	---
Education	0.037	0.062	0.025	0.032	0.035	0.047	-0.012	-0.029	0.010	0.014
Time	-0.006	-0.008	0.021	0.020	0.098	0.100	0.028	0.029	0.077	0.079
Unexplained	0.011	0.039	0.038	0.057	0.048	0.070	0.027	0.019	0.011	0.013
TOTAL	0.077	0.079	0.118	0.115	0.228	0.229	0.041	0.036	0.109	0.114
Unadj Ratio	0.926	0.924	0.888	0.891	0.796	0.795	-0.038	-0.033	-0.092	-0.096
Adj Ratio	0.989	0.962	0.963	0.944	0.953	0.932	-0.026	-0.018	-0.010	-0.012

Table 3 (Cont'd)
 Decomposition of the Log Earnings Differential
 (White Functions)

	Change									
	1971		1981		1988		1971 - 1981		1981 - 1988	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total	Direct	Total
EXPERIENCE 10-19										
Due to Means	0.033	-0.105	-0.020	-0.056	-0.060	-0.095	-0.053	0.049	-0.040	-0.038
Occupation	0.147	---	0.044	---	0.042	---	-0.103	---	-0.002	---
Education	0.037	0.056	0.022	0.038	0.020	0.031	-0.015	-0.018	-0.002	-0.007
Time	-0.153	-0.160	-0.108	-0.116	-0.132	-0.139	0.045	0.044	-0.024	-0.022
Unexplained	-0.047	0.088	-0.028	0.007	0.030	0.061	0.019	-0.081	0.058	0.054
TOTAL	-0.014	-0.017	-0.048	-0.049	-0.031	-0.033	-0.034	-0.033	0.018	0.016
Unadj Ratio	1.014	1.017	1.049	1.051	1.031	1.034	0.035	0.034	-0.018	-0.017
					(0.990)	(0.993)				
Adj Ratio	1.048	0.915	1.029	0.993	0.971	0.941	-0.019	0.078	-0.058	-0.053
					(0.944)	(0.920)				
EXPERIENCE 20+										
Due to Means	0.375	0.141	0.093	-0.001	0.027	-0.046	-0.282	-0.142	-0.066	-0.045
Occupation	0.279	---	0.120	---	0.090	---	-0.159	---	-0.030	---
Education	0.049	0.085	0.031	0.056	0.029	0.048	-0.018	-0.029	-0.002	-0.008
Time	0.027	0.031	-0.054	-0.056	-0.079	-0.084	-0.080	-0.087	-0.025	-0.028
Unexplained	-0.021	0.216	0.000	0.097	0.025	0.095	0.022	-0.119	0.024	-0.002
TOTAL	0.354	0.357	0.093	0.096	0.052	0.049	-0.260	-0.261	-0.042	-0.048
Unadj Ratio	0.702	0.700	0.911	0.908	0.950	0.953	0.209	0.208	0.039	0.044
Adj Ratio	1.022	0.806	1.000	0.908	0.975	0.910	-0.022	0.102	-0.024	0.002

NOTES

In each year, the total differential (T), mean effect (M), and unexplained differential (U) are equal to:

$$T = \sum_i b_{iW} x_{iW} - \sum_i b_{iB} x_{iB}$$

$$M = \sum_i b_{iW} (x_{iW} - x_{iB})$$

$$U = T - M = \sum_i x_{iB} (b_{iW} - b_{iB})$$

where b_{ij} and x_{ij} are the regression coefficient and weighted mean of the i th variable for the j th race group (w =whites, b =blacks) and year subscripts are omitted to simplify notation.

The unadjusted (R_X) and adjusted (R_A) ratios are equal to:

$$R_X = e^{-T} \text{ and } R_A = e^{-U}.$$

Results for the 7-16 experience group in 1988 are shown in parentheses.