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Trends in Relative Black-White Earnings Revisited

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The narrowing of the black-white earnings gap between 1960 and the mid 1970s represents one of the most significant episodes of relative progress for African Americans in U.S. history. After two decades of analysis, however, there is still controversy over the relative importance of government policy -- specifically the Civil Rights Act of 1964 -- in engendering the gains of the 1960s and early 1970s. At issue is the exact timing of improvements in black workers' relative earnings. The effect of the Civil Rights Act should have been concentrated after 1965. In contrast, other factors such as more and better schooling for black workers should have led to steady improvements throughout the period. Furthermore, Civil Rights legislation should have affected workers of all ages, whereas changes in school quality and quantity should only have affected newly entering cohorts.

This paper uses longitudinal Social Security earnings data from 1957 to 1974 to re-examine the precise timing of changes in the earnings differentials between black and white male workers. Following the recent literature on wage dispersion we make use of several different measures of the racial disparity in earnings. This type of analysis has been infeasible in the past because Current Population Survey (CPS) micro data sets are unavailable before 1964, and because published tabulations lack sufficient detail to follow particular cohorts over time.

Our analysis of cohort-level earnings reveals a discrete break in the upward trend in black men's relative wages after 1964. This finding is consistent with the important role many researchers have attached to the Civil Rights Act of 1964 (e.g., Freeman (1973),

Vroman (1974), Donohue and Heckman (1992)). On the other hand, we find evidence of an upward trend in black workers' relative earnings prior to 1965 (particularly for Southern workers), suggesting that other factors also contributed to the economic progress of black men between 1960 and 1975.

I. Decade-Long Trends

Table 1 summarizes trends in the black-to-white ratio of various measures of annual earnings using data from the Decennial Censuses and March CPS.¹ As is well known, the ratio of mean earnings of blacks relative to whites increased substantially between 1960 and 1980 and then stagnated in the 1980s (see the last row). Between 1960 and 1970, for example, the black-white ratio of average earnings for men age 20-59 increased by 7 percentage points. It grew another 6 percentage points between 1970 and 1980, but was constant over the 1980s. Similar results hold for a comparison of median earnings (denoted p50/p50), and for a comparison of the 75th percentile of black earnings to the 75th percentile of white earnings (denoted p75/p75).

If there are economy-wide changes in the distribution of earnings over time, however, Juhn, Murphy, and Pierce (1991) have argued that a better measure of racial earnings disparity is one that compares the median black worker to a white worker in a similar position in the overall earnings distribution. Juhn,

¹Because 1990 Census data are not yet available, the 1990 data are derived from the 1990 and 1991 March CPS files.

Murphy and Pierce note that the median black male earns about as much as the 25th percentile white male. Consequently, Table 1 also gives the ratio of median black male earnings to the 25th percentile of white male earnings (denoted $p50/p25$). Interestingly, this ratio shows a greater secular increase than the others in the Table -- a gain of 34 percentage points between 1960 and 1989-90. Unlike the other relative earnings measures this ratio continued to increase between 1980 and 1990.

Table 1 also contains relative earnings ratios for ten-year birth cohorts. Between 1960 and 1970 the ratios of mean earnings show only small increases for each of the three continuing cohorts. Similar findings led Duncan and Hoffman (1983), Smith and Welch (1989), and Card and Krueger (1992) to conclude that virtually all of the reduction in the overall black-white earnings gap in the 1960s resulted from the entry of younger cohorts (with smaller racial wage gaps) and the exit of older cohorts (with larger racial wage gaps). On the other hand, the ratios of medians show larger increases within cohorts, especially for younger workers. The $p50/p25$ ratio increased for the two older cohorts, but declined substantially for the youngest continuing cohort. A comparison with trends over the 1970s and 1980s suggest that it is typical for the median black worker to lose ground relative to the 25th percentile white worker as a cohort ages from its 20s to 30s. Moreover, the decline in the $p50/p25$ ratio between 1960 and 1970 (-0.12) is smaller than the decline for the 1940s cohort between 1970 and 1980 (-0.37) or the decline for the 1950s cohort between

1980 and 1989-90 (-0.27).

An important conclusion from Table 1 is that trends in relative earnings are sensitive to the earnings measure used in the analysis. In part, past studies may have reached different conclusions about the size of within-cohort gains in black men's relative earnings because they focused on different summary measures.

II. Social Security Earnings Records

We created a new source of data on black-white earnings trends by pooling together data from the 1973 and 1978 linked Current Population Survey-Social Security Earnings Records (CPS-SER) files. Our pooled CPS-SER file contains administrative earnings data for a sample of 61,707 black and white men each year between 1957 and 1974. Unfortunately, the Social Security tax ceiling creates a problem of censored earnings for many workers. In some years, the Social Security maximum is below the earnings of the median white male. Black men are far less likely to have censored earnings than whites. Another problem with Social Security data is incomplete coverage; Alvey and Cobleigh (1978) estimate that 90 percent of workers were covered by Social Security in 1973.²

To assess the reliability of the Social Security data Figure 1 compares trends in the aggregate black-white earnings ratio based

²Although the Social Security earnings histories are far from ideal, we note that changes in the design of the CPS in 1966 cloud time-series analyses based on that data set (see Ashenfelter, 1970).

on our CPS-SER file and on CPS data. We report CPS-SER results for the whole country, and separately for workers who lived in the South in 1973 or 1978. The CPS-SER figures are for an evolving sample of men age 20-59 each year.³ Similarly, the CPS data pertain to all men age 14 and older in each year. The CPS series represents the ratio of median black earnings to median white earnings. Because of censoring, we report CPS-SER data on the ratio of the 40th percentiles of earnings.⁴ The relative earnings series are highly correlated, although the Social Security data display a stronger trend prior to 1965, especially in the South.

To summarize the trends in Figure 1 we regressed the black-white earnings ratio on a constant, a linear time trend, and a post-1964 trend. For the CPS series, these regressions indicate a narrowing of the gap by 0.14 percentage points per year before 1965, and a significantly greater rate of convergence after 1965 (a total of 1.36 points per year). Using the nationwide Social Security data, however, the regressions indicate a 0.92 percentage point annual rate of convergence before 1965, with an insignificant 0.21 percentage point per year increase in the trend after 1965.⁵

³One minor difficulty is that men included in our CPS-SER sample of earners in 1959 (for example) have to have been alive in 1973 or 1978. We have examined the age and earnings distributions in the CPS-SER data and believe that the biases induced by nonrandom mortality are small.

⁴The 40th percentile of white earnings for the whole U.S. is above the taxable maximum in 1965, leading to a gap in Figure 1.

⁵Our findings here contrast with Vroman (1991), who also analyzes nationwide Social Security earnings data. Vroman finds that the post-1965 trend is greater than the pre-1965 trend. But it is unclear how censoring is handled in Vroman's data, and the

Figure 2 presents comparisons of the median black worker to the 25th percentile white worker. In addition to avoiding censoring problems in the white earnings distribution, the p50/p25 comparison has the advantage of crudely controlling for any economy-wide changes in the shape of the earnings distribution. The estimates are based on the evolving sample of workers between the ages of 20 and 59 each year. As would be expected from Table 1, the p50/p25 ratio displays a greater increase than the ratio of medians or 40th percentiles. Interestingly, the figure indicates that black workers suffered a relative earnings decline between 1962 and 1965. After 1965, however, there was sustained improvement in black workers' relative earnings until the early 1970s.

Judging from Figure 2, the median black worker in the South gained almost 15 percentage points relative to the 25th percentile white worker between 1966 and 1968. The Social Security earnings data also show a sizeable increase in relative earnings for blacks outside the South, although the growth took place more slowly. Perhaps surprisingly, Figure 2 suggests that the relative position of blacks in the South began to decline in the late 1960s, while it continued to increase outside the South. One should bear in mind, however, that the regional breakdowns are based on individual residence in 1973 or 1978 (rather than place of residence in the year of earnings) and may be biased by selective migration.

Social Security maximum increased considerably after 1965.

III. Within-Cohort Analysis Based on Social Security Earnings

The CPS-SER earnings histories enable us to examine trends in relative earnings for given cohorts over time. By examining the time-series patterns of black-white relative earnings for fixed cohorts, we can assess alternative explanations for the improvement in the economic position of workers between 1960 and 1970. Most importantly, if changes in schooling are the primary explanation for black workers' relative gains, we would not expect to find an increase in the black-white earnings ratio within cohorts. On the other hand, if the Civil Rights Act led to an increase in economic opportunities for black workers, we would expect to find an upturn in black-white earnings ratios after 1965 within cohorts. Finally, if secular factors such as Northern migration contributed to black workers' economic progress, we would expect to find an upward trend in the black-white earnings ratio for given cohorts prior to 1965.

Figure 3 displays the ratio of median black earnings to the 25th percentile of white earnings for three cohorts of workers in each year between 1957 and 1974. Remarkably, the figure shows an upturn in black workers' earnings for each cohort after 1965.⁶ To summarize these time-series relationships, we again regressed the black relative earnings ratio on a constant, a time trend, and a post-1964 time trend. The results are reported in Table 2. The regressions confirm the visual impression of an acceleration in

⁶Following specific birth cohorts over time with March CPS data, Bound and Freeman (1989; pp. 41-45) find an upward trend in black workers' earnings relative to white workers, but they are unable to examine within-cohort trends prior to 1963.

black-white earnings convergence after 1965. The 1910-19 cohort closed the racial gap in earnings by 1.68 points per year after 1965, while the 1920-29 cohort closed the gap by .89 points per year after 1965. For both of these cohorts there was an upward trend in blacks earnings relative to whites prior to 1965, but the post-1964 trend is significantly steeper.

The pattern displayed by the 1930-39 cohort is especially noteworthy. Between 1957 and 1964, the median black worker in this cohort lost substantial ground on the 25th percentile white worker. But the decline in black workers' position was arrested in 1965, and between 1965 and 1974 the median black worker gained 12 percentage points on the 25th percentile white worker.

We have performed a similar analysis on the subsample of men living in the South in 1973 or 1978. These results lead to qualitatively similar conclusions, although the pre-1965 trend is greater for the 1910-19 cohort in the South than for the same cohort nationwide, whereas the post-1964 trend is greater for the 1920-29 cohort in the South than for the same cohort nationwide.

IV. Further Analysis of the Within-Cohort Gains

To gain a better understanding of the convergence illustrated in Figure 3 we used Census data to investigate the average characteristics of workers who earned within 2.5 percent of the median or 25th percentile worker in their race and cohort. Within each birth cohort black workers near the median black earner have lower education than white workers near the 25th percentile white

worker. For example, in 1960 black workers near the median black worker have an average of 7.5 years of education, whereas white workers near the lower quartile white worker have an average of 9.5 years of education. These figures are hardly different in 1970. By 1980, however, the gap in education between the median black worker and the lower quartile white worker fell to about half a year. Black men with earnings close to the median black earner are also far more likely to live in the South than are white men with earnings close to the 25th percentile white earner. We conclude that the relative earnings gains documented in Figure 3 and Table 2 occurred for poorly-educated Southern black workers.

Lastly, we used the CPS-SER data to examine participation rates of black and white workers. One explanation for the closing of the black-white earnings gap in the 1960s is that lower-earning black workers were led to withdraw from the labor market by the increasing generosity of social welfare programs (Butler and Heckman, 1977).⁷ The fact that overall labor force participation rates declined more for black men than white men between 1960 and 1970 is consistent with this view.

Here, we measure participation by the probability of employment in the covered sector within a calendar year. For each ten-year birth cohort, we calculated the fraction of the population with earnings from covered employment by race and year. An examination of the black-to-white ratios of covered employment rates indicates

⁷Brown (1984) and Welch (1990) present evidence suggesting that racial differences in labor market dropouts do not have a significant impact on the black-white earnings gap.

no discrete change after 1965. If anything, black workers' covered employment rates increased relative to those of whites in the mid 1960s. This pattern suggests that selective labor force withdrawal cannot account for the trend-shift in the rate of convergence of black-white relative earnings after 1965.

V. Conclusions

We have assembled a new micro data base to re-examine trends in black-white relative earnings for specific cohorts of male workers between 1957 and 1974. To control for possible changes in the overall distribution of earnings, we focus on the ratio of median black earnings to the 25th percentile of white earnings. The results show a uniform increase in the trend toward equality for black workers relative to whites after 1965. In Card and Krueger (1992) we concluded that about one-fifth of the reduction of the black-white earnings gap between 1960 and 1980 can be attributed to changes in measured school quality for black workers. Improvements in school quality would not be expected to generate a discrete change in the black-white earnings gap for a cohort after it entered the labor market. Coupled with micro studies of affirmative action programs (see Leonard (1990) for a survey), and previous time-series studies of CPS and Social Security earnings data, our within-cohort analysis suggests that the Civil Rights Act of 1964 played a significant role in the narrowing of the black-white earnings gap in the 1960s.

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Table 1

Black/White Earnings Ratios for All Men Age 21-60 and by Cohort, 1960, 1970 & 1980
Comparison of Selected Percentiles and Arithmetic Means

Birth Cohort	1960			1970			1980			1990		
	p50/p50	p50/p25	p75/p75 means									
1900-09	0.52	0.77	0.60	0.60	0.83	0.64	0.68	1.00	0.73	0.66	1.10	0.71
1910-19	0.57	0.75	0.62	0.65	0.84	0.66	0.70	1.00	0.73	0.67	1.05	0.74
1920-29	0.56	0.75	0.62	0.67	0.88	0.67	0.72	1.02	0.77	0.72	1.06	0.68
1930-39	0.56	1.00	0.64	0.70	1.39	0.78	0.76	1.33	0.76	0.76	1.31	0.78
1940-49												
1950-59												
1960-69												
Age 21-60	0.54	0.85	0.63	0.63	0.96	0.68	0.69	1.10	0.77	0.69	1.19	0.72

Notes: Data for 1960, 1970 and 1980 are from the Decennial Censuses. Data for 1990 are from the March 1990 and 1991 CPS.

Table 2

Summary of Time-Series Pattern of Relative Earnings Within Cohorts

Variable	1910-19 Cohort	1920-29 Cohort	1930-39 Cohort
Constant	0.88 (0.02)	0.87 (0.01)	1.39 (0.03)
Trend ($\div 100$)	0.03 (0.36)	0.40 (0.23)	-6.35 (0.44)
Years Since 1964 ($\div 100$)	1.65 (0.54)	0.49 (0.34)	8.09 (0.66)
R-Squared	0.83	0.83	0.94

Notes: Standard errors in parentheses. Dependent variable is ratio of median black earnings to the 25th percentile of white earnings. Sample size is 18. The means (and standard deviations) of the dependent variables are: 0.937 (0.066) in column 1; 0.918 (0.042) in column 2; 1.029 (0.129) in column 3.

Figure 1
 Ratios of Black and White Earnings
 Various Data Sources and Quantiles

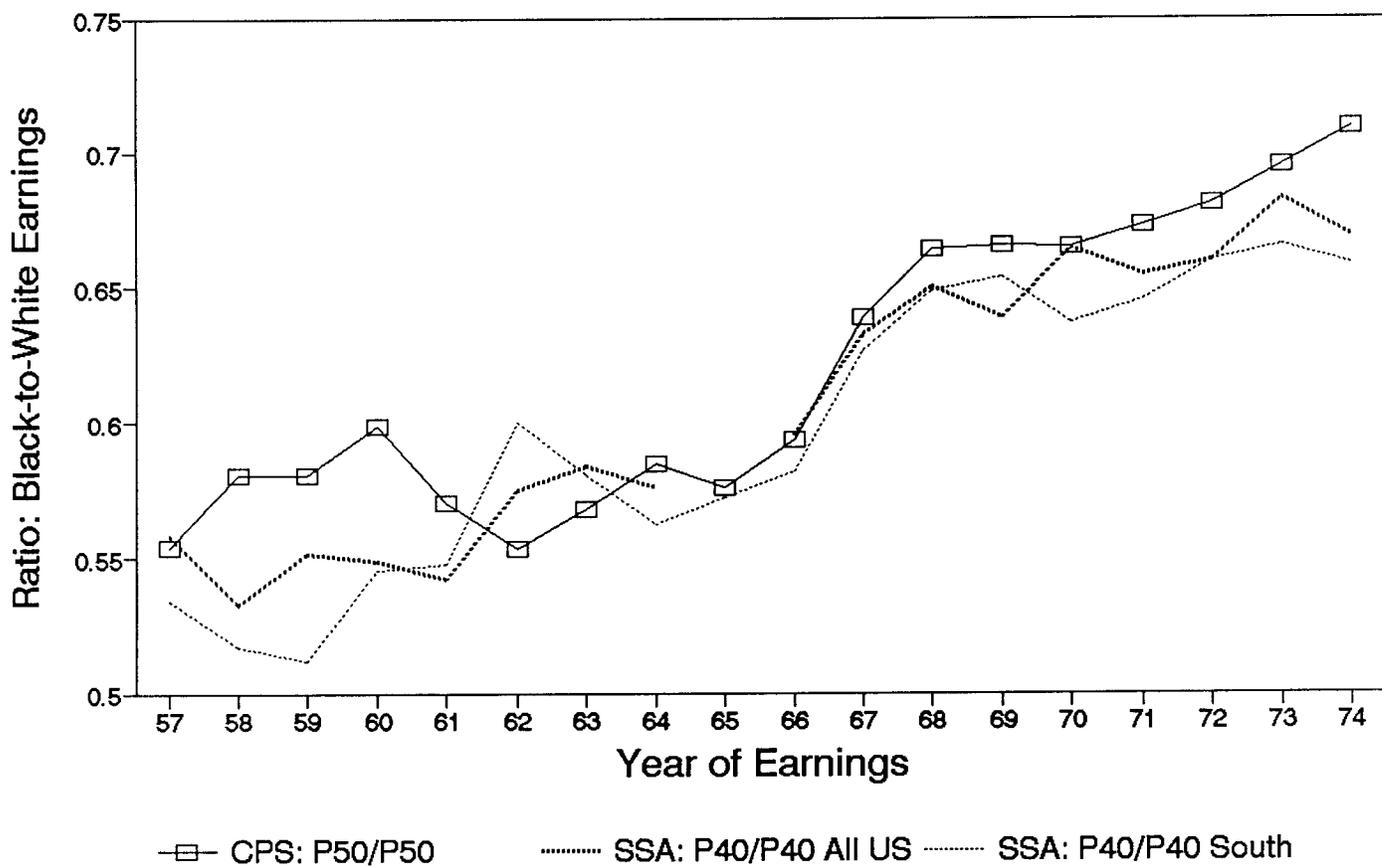


Figure 2
 Ratios of Black-White SSA Earnings
 Median Black/25th Percentile White

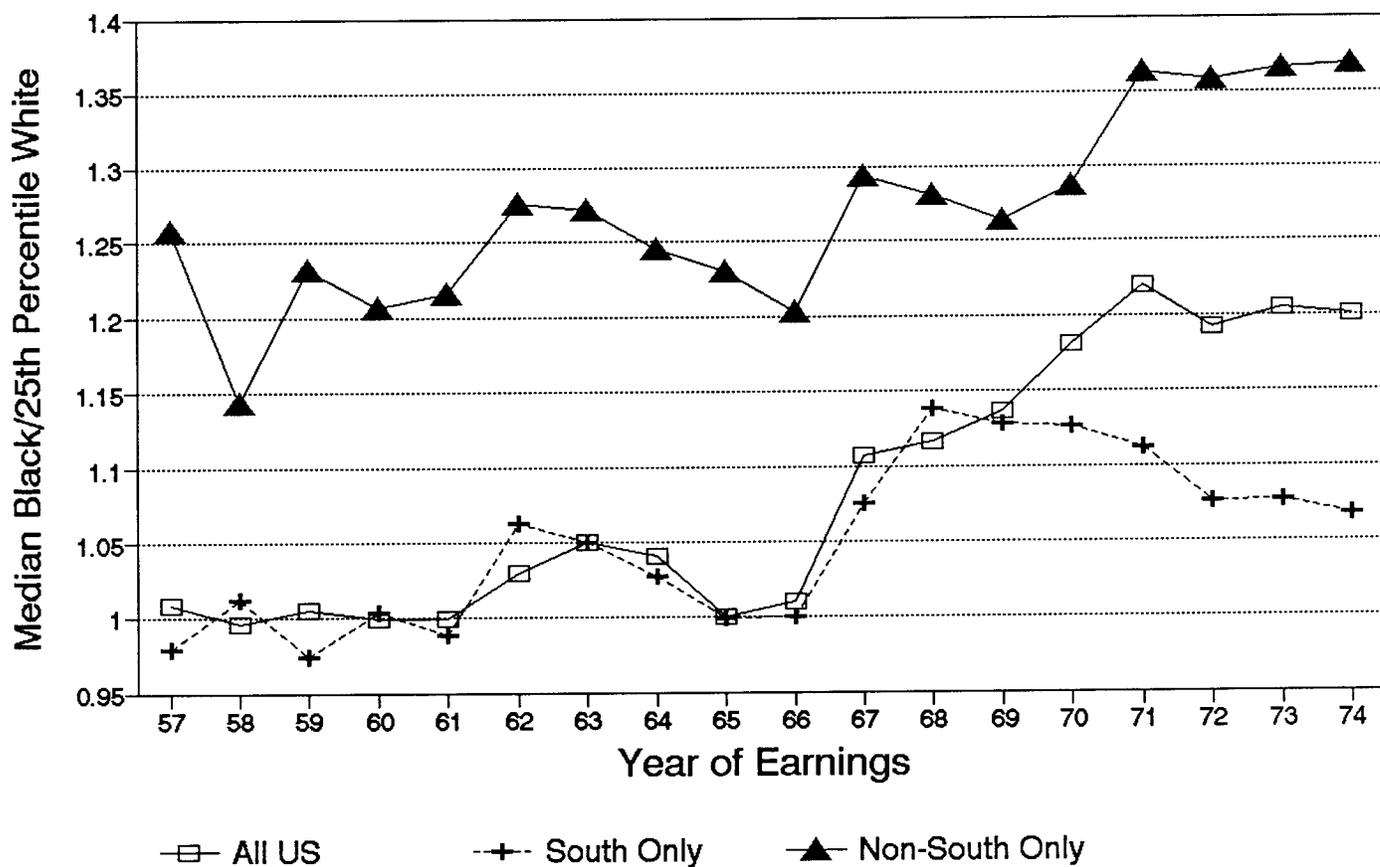


Figure 3

Ratio of Black-White SSA Earnings Median Black/25th Percentile White

All Men

