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The New Promised Land: Black-White Convergence in the American South, 1940-2000

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Abstract

The black-white earnings gap has historically been larger in the South than in other regions of the United States. This paper shows that this regional gap has closed over time, and in fact reversed during the last decades of the twentieth century. Three proposed explanations for this trend focus on changing patterns of selective migration, reduced discrimination in Southern labor markets, and lower levels of school segregation and school resource disparities in the modern South relative to the North. Evidence suggests that reductions in Southern labor market discrimination explain rapid regional convergence in racial wage gaps between 1960 and 1980. The more recent decline and reversal of the regional difference appears to be related to narrower disparities in school quality and lower segregation levels in the South. Controlling for region of birth and region of residence, young adult blacks and whites who were educated in the South have the narrowest disparities in earnings and other socioeconomic outcomes.

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1. Introduction

Over the past thirty years, labor economists have paid considerable attention to the persistent gap in earnings between American whites and blacks. Early papers in this literature focused on the significant reduction in racial inequality that took place in the 1960s and 1970s (Freeman 1973; Link and Ratledge 1975; Smith and Welch 1989; Donohue and Heckman 1991; Card and Krueger 1992, 1993). Later papers focused on the slowdown and reversal of this trend that began sometime in the late 1970s and continued through the 1980s (Juhn, Murphy and Pierce 1991; Bound and Freeman 1992; Grogger 1996). As new evidence, much of it indicating renewed progress in recent years, continues to amass, a number of interesting and important questions remain without consensus answers from the literature. How important are investments in primary and secondary schooling to the eradication of racial disparities in socioeconomic outcomes? Does significant labor market discrimination persist in the twenty-first century? Can we expect the cohorts reaching the labor market in the next decade or two to experience greater racial equality than their immediate predecessors?

This paper provides insight into these and other questions by focusing on a relatively understudied dimension of the black-white earnings gap: its regional variability.¹ Two generations ago, the unadjusted gap in black and white earnings was twice as large in the American South as in other regions of the country (see Figure 1). Even adjusting for basic individual characteristics, the gap was nearly half again as large in the South as in the North.²

¹ Bound and Freeman (1992) present the most noteworthy existing regional analysis of black-white earnings gaps.

² For sake of brevity, the three Census regions other than the South (Northeast, Midwest, and West) will occasionally be referred to as “the North” in this paper.

Over the subsequent sixty years, this regional difference in the racial earnings gap has all but vanished. In fact, some evidence suggests that the regional difference has reversed: the South is now closer to racial earnings inequality than the North. Why has the South demonstrated more rapid progress? What does the South's progress suggest about the likely future direction of racial inequality in America?

To answer these questions, the paper develops three hypotheses, which are then tested in a number of empirical specifications. First, the apparent accelerated progress in the South could reflect selective migration out of the South in the early part of the century, followed by selective return migration in the latter decades. The "Great Migration" of rural Southern blacks to Northern cities prior to World War II involved a disproportionately educated segment of the population (Margo 1990). In later years this selection pattern moderated, and return migration associated with economic growth in the South occurred (Vigdor 2002). The selective migration hypothesis suggests that regional variation in the black-white earnings gap should disappear upon controlling more comprehensively for individual ability. Second, changes in the Southern labor market, whether legally enforced or gradually adopted, may have reduced any discrimination penalty. Finally, the eradication and reversal of the excess racial disparity in the South may be associated with the transformation of Southern schools from legally segregated to the most integrated in the country (Orfield 1983). School segregation is a necessary prerequisite for resource disparities between children of different races, and school segregation is significantly higher in the North than in the South.

Evidence culled from a number of different sources provides at least some support for each hypothesis. Cohort-specific analysis suggests that the most dramatic decline in the regional

wage gap disparity applied to cohorts educated before Southern schools integrated. Panel data analysis of the National Longitudinal Survey of Youth 1979 cohort shows that controls for more extensive family background characteristics, or for individual fixed effects, are sufficient to eliminate any link between region of residence and the black-white earnings gap among individuals educated in the post-Civil Rights era. The NLSY also shows that the narrowest black-white earnings gap is among those individuals who lived in the South at age 14, controlling for region of birth and residence, suggesting a strong role for schooling or other contextual factors specific to the late childhood and adolescent years.

Further investigation yields more support for the hypothesis that disparities in school quality influence the relationship between region, race and earnings. Census and National Center for Education Statistics data show that blacks living outside the South experience greater residential and school segregation than those living in the South. Southern schools exhibit smaller racial gaps in inputs such as student-teacher ratios and peer poverty rates. These regional patterns can be entirely explained by lower segregation levels in the South. Data from the NLSY 1997 cohort show that black-white disparities in the probability of students self-reporting threats of violence against them are also smaller in Southern schools. Finally, controlling for school characteristics reduces the magnitude of the estimated relationship between region, race, and educational attainment outcomes in the NLSY97 cohort.

Section 2 presents basic evidence on the link between region, race and earnings. Section 3 discusses explanations for the observed patterns. Section 4 presents basic tests illuminating the relative importance of the three explanations. Section 5 probes the school quality hypothesis in greater detail. Section 6 concludes.

2. Racial inequality in the South and elsewhere, 1940-2000

2.1 Raw differences

Figure 1 presents the most basic evidence on economic inequality in the South and in other regions, based on decennial Census data from 1940 to 2000. The graph displays the raw difference in mean log earnings between non-Hispanic black and white males by region in each year.³ The racial disparity is expressed as a positive number, with higher levels indicating greater relative disadvantage for blacks and a value of zero indicating equality between races.

Between 1940 and 1970, the black-white earnings gap was significantly larger in the South than in the North. Both regions follow a similar time trend until 1970: racial disparities shrank in the 1940s, rose in the 1950s, and shrank again in the 1960s. The two regions travel remarkably different paths between 1970 and 1980. The Southern trend over this decade mirrors that of the previous decade: rapid progress, perhaps attributable to the enactment and enforcement of Civil Rights laws clearly targeted at the labor market discrimination practiced most vigorously in the South prior to 1964 (Donohue and Heckman 1991). The black-white gap

³ This graph, and regressions reported later, use the log of annual earnings as an economic outcome measure. This departs somewhat from existing literature, which tends to focus on hourly wages averaged over a week or annually (see, for example, Grogger 1996; Card and Krueger 1992). There are two primary rationales for using the annual earnings measure. From a statistical perspective, the use of earnings eliminates concerns regarding measurement error in hours or weeks worked. Regression estimates based on annual earnings should therefore be more precise than those based on annual earnings divided by the multiple of hours worked per week and weeks worked. From an economic perspective, the hours and weeks worked decisions are potentially interesting in their own right: for example, discrimination against blacks might take the form of being offered fewer opportunities to work overtime, rather than pure wage disparities. Results using an estimate of log hourly wage are qualitatively similar to those reported in this paper.

It should also be noted that analysis of log earnings eliminates individuals with zero earned income. Changes in labor force participation patterns over time may explain some portion of the trends observed here, but past attempts to account for selective withdrawal from the labor market suggest that overall conclusions regarding racial progress are not altered (Butler and Heckman, 1977; Brown 1984). Later analysis will employ a strategy similar to that of Neal and Johnson (1996), imputing low earnings to labor force non-participants and estimating wage gaps using median regression.

outside the South increased over the same time period, possibly reflecting the decline of manufacturing activity in Northeastern and Midwestern cities (Bound and Freeman, 1992). The net result is substantial convergence across regions. The relative reduction of racial earnings disparities in the South shown here mirrors Bound and Freeman's (1992) analysis of CPS data, which shows that Southern wage gaps declined relative to those in the Northeast and Midwest, with the South actually relinquishing its title as most unequal region around 1987.⁴ Since 1980, black-white disparities have exhibited little change in either region. There is some evidence of further convergence during the 1990s; once again, black-white earnings gaps shrank in the South but exhibited a slight upward trend in other parts of the country.

2.2 Regression evidence

The racial disparities observed in Figure 1 necessarily reflect a combination of two factors: disparities in individual characteristics associated with labor market productivity and differential rewards for those characteristics in the labor market (Oaxaca 1973). Table 1 provides some insight into the decomposition of these two factors, by reporting the results of simple earnings regressions that control for two basic individual characteristics associated with labor market productivity -- age and educational attainment -- in addition to race and region, for each Census microdata sample since 1940.⁵ The coefficient on the black indicator variable, reported

⁴ Regression analysis below will confirm that the corrected black-white gap became narrower in the South sometime within the last two decades.

⁵ The sample in each regression is limited to black and white males age 18-65 with positive earnings in the year prior to the Census enumeration. Controls for educational attainment may be suspect here, as education is a potentially endogenous choice variable (Johnson and Neal, 1996). Estimates in Table 2 below omit controls for

in the first row, identifies the proportional black-white earnings gap outside the South. The interaction between the black and South indicators, in the third row, shows the difference in racial earnings gaps across regions.

Comparison of the coefficients in Table 1 with Figure 1 shows that some part of the black-white gap outside the South, and a large portion of the difference between Southern and Northern gaps, can be attributed to differences in age and education across races and across regions. Whereas Figure 1 shows that the Southern black-white gap in log earnings exceeded the Northern gap by nearly 0.4 in 1940, Table 1 shows a regression-adjusted point estimate of only 0.13. For the period between 1940 and 1970, the regression results show a pattern of intermittent progress in the North, as indicated by the coefficient on the black indicator and stagnation in the South, reflected in the sum of the main black effect and the black-South interaction. The regression-adjusted Northern gap falls by more than one-third over this time period, with the greatest progress in the 1940s and 1960s. The Southern gap remains virtually unchanged for the first two decades, if anything increasing through 1960, after which point it declines both absolutely and relative to the Northern gap. There is also some evidence of economic progress for all Southern residents: the estimated coefficient on the South indicator variable falls by more than half during this time period.

The 1970s witnessed a stark reversal of previous trends, consistent with the unadjusted pattern shown in Figure 1. Outside the South, the progress made over the previous 30 years was largely erased during this decade. Within the South, however, the nascent trend toward greater racial equality continued. The Black-South interaction term falls to less than a fifth of its 1970

education.

value in 1980.⁶ The interaction coefficient of -0.038 also suggests a regional discrepancy substantially smaller than the unadjusted one shown in Figure 1.

Since 1980, Table 1 suggests that there has been virtually no trend in the black-white earnings gap in either region. The Black-South interaction terms displays a slight trend towards zero. In 2000, the estimated difference in earnings between blacks and whites of equal age and educational attainment is roughly 27% in the North and 29% in the South. This difference between regions is statistically significant, although one might easily question its economic significance. Taken at face value, Table 1 suggests that essentially all the reduction in black-white earnings inequality observed in the latter half of the twentieth century can be attributed to changes in labor market outcomes in the South.

2.3 Factoring in labor market non-participants

By focusing on the logarithm of earned income, the analysis in Table 1 necessarily omits individuals reporting zero earnings in the year prior to the Census. Differential rates of labor market non-participation by race and region could conceivably skew this analysis (Butler and Heckman 1977; Brown 1984; Neal and Johnson 1996). For example, apparent progress by Southern blacks relative to whites and Northern blacks could result from an increasing tendency for low-potential earnings members of this group to exit the labor force. The analysis in Table 2 tests this interpretation using the relatively straightforward methodology put forward by Neal and

⁶Another noteworthy change over this time period involves the returns to education. As previous research has shown, the returns to education increased substantially between 1970 and 1980 (Juhn, Murphy and Pierce, 1991). The relative fall in black wages in the North might reflect the lower average quality education received by blacks in that region, many of whom were Southern-born (Card and Krueger, 1992).

Johnson (1996). Individuals with zero reported earnings are assigned a log earnings of zero, corresponding to annual earnings of \$1. Coefficients are then estimated by median regression. The assumption made in this analysis is that labor market non-participants would have posted earnings below the median among individuals with identical covariate values.⁷

This procedure strengthens the conclusion that black-white earnings gaps have converged more rapidly in the South. Indeed, whereas Table 1 indicates that the Southern racial wage gap is significantly wider in the South at the most recent Census, median regression with imputed low earnings levels for non-participants leads to the opposite conclusion: black-white gaps in *potential* labor market earnings are now statistically significantly narrower in the South. This procedure also indicates that the absolute magnitude of gaps in potential earnings is quite large: black males have potential earnings 62% lower than white males of the same age outside the South; the corresponding gap is 55% in the South.

2.4 Other groups: age cohorts and female workers

Table 3 replicates the median regression specifications reported in Table 2, restricting the sample to black and white males between the ages of 25 and 40 in each year, and imputing a log earnings of zero for labor market non-participants. The age restriction begins the process of separating cohort from period effects, a process that will continue in Section 4 below. This separation provides considerable insight into the economic forces underlying changes in the earnings distribution (Card and Krueger 1992).

⁷ This assumption is less credible when the set of covariates includes endogenous indicators of labor market productivity such as education. Hence, as in Neal and Johnson (1996), these specifications omit controls for educational attainment.

In some ways, the experiences of successive young cohorts reflect the more general population. The time pattern of black-white earnings gaps in the North, and North-South gaps within the white population, is almost identical for successive cohorts of young adults and the population as a whole. The black-white earnings gap in the South shows a more dramatic time trend for successive cohorts than in the population at large. The coefficient on the black-South interaction term is more negative in 1940 and 1950, and more positive in 1990 and 2000. Progress towards racial equality in the South is thus more prominent across age cohorts than within them.

Has the labor market experience of females mirrored that of males? Table 4 addresses this question, replicating the OLS regression specifications of Table 1 using samples of black and white females with positive labor market earnings.⁸ Taken at face value, the results suggest a remarkable degree of black-white convergence in earnings between 1940 and 2000. This conclusion should be tempered by the knowledge that female selection into the labor market operates differently within the black and white populations (Neal, 2004). Nonetheless, another pattern clear in this set of results is the rapid, though incomplete, convergence of the Southern racial earnings gap to levels more comparable to those found in the North.

The incomplete convergence of the Southern and Northern racial earnings disparities may relate to differential patterns of labor force participation by race and region. Table 5 presents some evidence culled from 2000 Census microdata to support this interpretation. Labor force

⁸ Analysis of female earnings does not employ the Neal and Johnson (1996) imputation/ median regression technique, since the assumption that female non-participants have potential earnings below the median for their age, race and region is less likely to be accurate (Neal, 2004). As discussion below will indicate, selection into the labor market is a serious concern with this analysis.

participation rates for white females is 3.5 percentage points lower in the South than it is in the North. Among black females, labor force participation rates are 0.8 percentage points *higher* in the South. This disproportionate labor force participation by Southern black females may explain the wider racial earnings disparity in the South to the extent that marginal labor force participants have lower potential earnings. The second row in Table 5 suggests that this may indeed be the case: while both white and black Southern female labor force participants are less likely to have graduated from high school than their Northern counterparts, the disparity is wider in the black population. Put differently, the white-black disparity in high school graduation rates among Southern female labor force participants is over 10 percentage points, while the comparable disparity in the North is just under 4 percentage points.⁹

Although the regression specifications in Table 4 controlled for educational attainment, the patterns in Table 5 strongly suggest that differential female labor force participation patterns explain the difference between male and female regional convergence patterns. Taken as a whole, the evidence points clearly to more rapid black-white convergence in the South, and to the emergence of the South as the region with the narrowest racial income disparity.

3. Why has the South caught up with the North?

Existing literature and basic economic theory point towards three explanations for the relative erosion of Southern racial wage gaps. First, all or part of the apparent gains by Southern

⁹ Neal (2004) shows that the modal black female labor force non-participant is a single mother, while the modal white non-participant is a married mother. The regional differences in the characteristics of labor force participants might relate to lower levels of welfare provision in the South, which would lead more single mothers to choose work over welfare receipt.

blacks in the period since 1970 may be illusory, an artifact of changes in location decisions by whites and blacks of varying ability levels. A second possibility is reduced racial discrimination in labor markets, which probably had a disproportionate impact in the South. Finally, the transformation of Southern public schools from wholly segregated to the nation's most integrated may have brought, or accompanied, a reduction in racial discrepancies in the quality of human capital investment. This section discusses each hypothesis in turn, and proposes simple empirical tests for their evaluation.

3.1 Selective Migration

Millions of Southern-born blacks relocated to different regions of the country between 1910 and 1970. In the first major wave of migration, which took place before 1940, highly educated blacks were disproportionately likely to migrate (Bowles 1970; Margo 1990; Vigdor 2002). Thus, in 1940 the population of blacks residing in the South would have occupied the lower ranks of the observed human capital distribution. This fact would explain the discrepancy between the raw regional differentials shown in Figure 1 and the smaller gap estimated in regressions controlling for education.

In later years, the flow of black migrants from the South contained a higher proportion of less-educated individuals. Highly educated Southern black migrants were actually more likely to choose a Southern destination city, controlling for other destination characteristics, in the postwar era (Vigdor 2002). The decline in selective out-migration, coupled with a potentially selective in-migration as blacks returned to the South after the 1960s, might explain a significant component of the overall decline in black-white earnings gaps.

If all the patterns observed in Figure 1 and Table 1 can be attributed entirely to selective migration, then more complete controls for individual ability and human capital investment should reduce region-race interaction terms to zero. Region of residence should be irrelevant to individual earnings; the correlation between region and earnings should entirely reflect the differential location decisions of individuals with different human capital levels.

To some extent, the evidence presented in the preceding section supports the selective migration hypothesis. Controlling for the best available measures of human capital investment does have the effect of reducing the magnitude of region-race interactions. The remarkable change in the region-race interaction term between 1970 and 1980, however, is harder to explain with a pure selection story. Most historical accounts of the Great Migration place the turnaround of the migration flow at an earlier point in time; moreover, the return of blacks to the South has been occurring steadily over recent decades and did not really peak in the 1970s.

3.2 Labor Market Discrimination

Previous literature has found evidence supporting the notion that black economic fortunes experienced a discrete jump following the passage of the Civil Rights Act in 1964 (Freeman 1973; Donohue and Heckman 1991; Card and Krueger 1993). It is reasonable to expect that this legislation would have had a disproportionate impact in the South, where racial discrimination was more firmly ingrained in all aspects of society. Chay and Honore (1996) find evidence confirming a link between the passage of Civil Rights laws and black-white convergence in the South. Consistent with this view, the results presented above suggest that convergence between regions began in the 1960s and accelerated in the 1970s, as the Northern economy stumbled

while the Southern economy forged ahead (Bound and Freeman, 1992).

The labor market discrimination hypothesis implies that the relative progress for Southern blacks observed in Table 1 should apply to all blacks, regardless of their age cohort (Card and Krueger 1992). This prediction distinguishes the hypothesis from the human capital hypothesis described below. It also implies that to the extent that regional differences in discrimination still exist, outcome disparities should be robust to more extensive controls for individual ability. To explain the apparent reversal of regional patterns among young cohorts in Table 2, a proponent of the pure form of this hypothesis would have to maintain that labor market discrimination in the South is now less prominent than in the North.

3.3 Disparities in Human Capital Investment

The hypothesis that changes in black educational attainment and the relative quality of black education explain the convergence of black earnings has been subjected to empirical test for at least three decades (Welch, 1973; Link and Ratledge 1975; Akin and Garfinkel 1980; Juhn, Murphy and Pierce 1991; Card and Krueger 1992; Boozer, Krueger and Wolkon, 1992; Grogger 1996). These empirical tests do not arrive at any consensus, particularly regarding the importance of education quality, which is by its nature a difficult variable to measure.¹⁰ Betts (1995) and Grogger (1996), for example, find significant high school fixed effects in earnings regressions controlling for a wide array of individual background characteristics, suggesting that some factor common to all students attending the same school correlates strongly with later earnings. These high school fixed effects are not highly correlated, however, with variables

¹⁰ The broader literature on the link between school resources and student or graduate outcomes has generally found mixed results. See Hanushek (1997) for a recent review of this literature.

traditionally used as indicators of school quality, such as pupil/teacher ratios or the length of the school year. Card and Krueger (1992), using data on older cohorts derived from Census microdata, find significant relationships between exactly these variables and adult earnings.¹¹

While the empirical importance of school quality differentials, especially within recent age cohorts, is a subject of some debate, an intriguing circumstantial case links changes in school quality to the reversal of regional variation in the black-white earnings gap. Within a single generation, the South transitioned from a regime of institutionalized school segregation to the region with the nation's most integrated schools (Orfield 1983). The relative success of school integration in the South can be attributed at least in part to the region's relatively low residential segregation and its comparatively large school districts (Cutler, Glaeser and Vigdor 1999; Clotfelter, Ladd and Vigdor 2003). School segregation, in turn, is a necessary (though not sufficient) condition for the existence of racial disparities in school resources. The modern trend towards greater racial equality in the South might therefore be attributable to smaller school resource disparities in that region. Section 5 below returns to these specific conjectures regarding region, race and school quality.

The human capital investment hypothesis implies that the link between region, race and earnings operates at least to some extent through the region in which individuals were educated. If variation in school quality were the only factor influencing racial gaps across regions, then region of residence should be an insignificant predictor of earnings after controlling for region of education.

¹¹ Betts (1996) discusses the methodological differences between studies that might explain the disparate results. In particular, evidence of links between school quality and earnings tend to use state-level average measures of school quality, rather than school-level measures.

4. Evaluating the hypotheses with data on labor market outcomes

This section reports the results of three labor market-oriented empirical tests suggested by the discussion above. The first test, which utilizes microdata from four successive Census enumerations, examines the extent to which regional progress in the black-white earnings gap can be observed within a single age cohort, as predicted by the labor market discrimination hypothesis. The second and third use data from the National Longitudinal Survey of Youth (NLSY) 1979 cohort, which consists of individuals born between 1958 and 1965. The NLSY79 allows the use of more extensive family background controls and individual fixed effects. Moreover, it is ideally suited for testing the relevance of region of education relative to region of residence, since it records region of residence at age 14 for each respondent.

4.1 Is Southern convergence a period effect? Evidence from Census Microdata

The regression specifications in Table 3 track the economic outcomes of a single birth cohort over time using Census microdata. In the cohort born between 1940 and 1949, individuals born and raised in the South would have been the last group to attend *de jure* segregated schools through the high school years (Card and Krueger 1992). If improvement in Southern labor market conditions, rather than gains associated with school integration, explain recent regional trends in black-white disparities, then this group's experience should mirror the overall trends observed in earlier tables. To test these hypotheses, regression specifications exactly matching those presented in Table 1 above are given in Table 6.

Like the population at large, the 1940-49 birth cohort experienced substantial

convergence in racial disparities across regions between 1970 and 1980.¹² This convergence can be attributed both to widening of the Northern racial gap and to a reduction in the Southern gap. Whereas the regional difference continues to decline in earlier specifications, for this cohort 1980 represents a high water mark in the convergence between Northern and Southern racial disparities. Between 1980 and 2000, this cohort experienced a reduction of the Northern black-white gap, so that the current degree of racial inequality in the North resembles that observed in 1970. While there has also been progress in absolute terms in the South, the Southern earnings gap increased markedly relative to the North between 1980 and 1990 and remained effectively unchanged in 2000. Thus, while analysis of the population at large and young cohorts in particular suggests continued progress in regional convergence after 1980, this cohort's experience leads to the opposite conclusion.

This evidence points towards the reasonable conjecture that a significant portion of the convergence between North and South in the 1970s, and by extension the 1960s, can be attributed to broad changes in the labor market. Southern members of the 1940s birth cohort, who did not received the benefit of attending integrated schools, and for whom school quality is an essentially fixed factor over time, experienced convergence between 1970 and 1980. To be consistent with a selective migration explanation, this age cohort would have to have exhibited disproportionate migration of skilled workers to the South in the 1970s, but away from the South in the 1980s and 1990s. Given the relatively steady growth and re-orientation of the Southern economy over this time period, this pattern seems unlikely. Nonetheless, it is not possible on the

¹² It should also be noted that the Black-South interaction term is smaller for this cohort than for the population at large, roughly in line with the interaction reported for 25-40 year olds in Table 2.

basis of this evidence to eliminate at least some role for selective migration in the convergence between North and South.

4.2 Evidence from the NLSY '79

The NLSY '79 offers several advantages over Census microdata. It permits controls for a wider array of individual and family background characteristics. It also allows observation of geographic location and labor market outcomes at multiple points in time, enabling a study of the relative importance of region of birth, region of education, and region of residence in racial earnings disparities. Table 7 presents the results of regression specifications that employ an unbalanced panel of individual/year observations, with each individual's earnings observed as many as 11 times, at biannual intervals between 1980 and 2000. Each specification includes controls for age and educational attainment, region of residence effects and year fixed effects. The first four specifications control for additional variables not available in Census microdata: the educational attainment of the respondent's biological father and mother, and the respondent's own AFQT score. The final specification controls for individual fixed effects. As in earlier analysis, the sample here is restricted to males.

The first regression in Table 7 comes closest to matching the specifications presented in earlier tables. The results bear a strong resemblance to those derived from Census microdata. The black-white gap in log earnings among individuals residing outside the South is estimated at -0.321, a value comparable to the estimates derived from Census observations on young males in 1980, 1990 and 2000. The main effect of residing in the South is negative and significant. The greater magnitude may be explained in part by the inclusion of other region effects in this

regression, which reveal that earnings in the Midwest and West also tend to be significantly lower than in the omitted Northeast region. The Black-South interaction term is positive and insignificant, suggesting that racial disparities in wages are effectively independent of region of residence after controlling for individual characteristics. The individual characteristics themselves are generally significant predictors of earnings. The returns to age are stronger in this sample than in any Census microdata sample, likely because they are identified in part from longitudinal rather than cross-sectional variation. Respondents with more educated fathers earn more, as do those with higher AFQT scores. Educational attainment, included as a set of categorical variables in the regression but excluded from the table, also significantly predicts higher earnings.

The link between region of residence and earnings appears even weaker after controlling for region of birth. As the second regression in Table 7 indicates, the impact of Southern residence is essentially transferred in its entirety to the control for region of birth.¹³ This specification identifies the black-white earnings gap for individuals born in the South and elsewhere. Among Northern-born males, the earnings gap is comparable to that estimated for Northern residents in the preceding regression. The earnings gap among Southern-born males is roughly one-quarter smaller according to the point estimate associated with the Black-Born in South interaction, but this estimate is not significantly different from zero.

An even stronger association between region, race and earnings appears in the third regression, which shifts attention to a respondent's region of residence at age 14. The black-

¹³ The sample size is smaller in this specification because some respondents lack information on region of birth. Similar missing data issues explain variation in sample size in later regressions. Restricting the sample to those individuals with valid data on all variables used in the table does not seriously affect the results.

white earnings gap among individuals who lived in the South at age 14 is estimated to be roughly one-third smaller than the gap among those who lived elsewhere. The Black-lived in South at age 14 interaction is statistically significant in this case. Similar to the previous specification, controlling for region of residence at age 14 eliminates any significant difference in wages between individuals living in the South and Northeast. Instead, there is a significant negative effect associated with living in the South at age 14. Interestingly, point estimates suggest that whites living in the South at age 14 earn less than those who lived in other regions, but the opposite pattern holds for blacks.

The fourth regression controls for region of birth, residence at age 14, and current residence simultaneously, incorporating interactions with race for each variable. An intriguing and statistically significant pattern appears in this specification. As in the preceding regression, the wage gap between blacks and whites is significantly lower among those individuals who resided in the South at age 14, other things equal. For the first time, region of residence becomes a significant correlate of the black-white earnings gap, with a negative sign implying that racial disparities are greater among those who currently reside in the South, other things equal. Of the three main South effects, only the control for region of birth holds significant explanatory power: Southern born individuals of all races have lower earnings, other things equal.

Together, these results imply that the greatest racial earnings disparity is between those individuals who resided in the North at age 14 but subsequently moved to the South. The point estimate for the earnings gap for these individuals, -0.475, is more than four times the magnitude of the estimated gap among blacks and whites who resided in the South at age 14 and subsequently moved to the North. This group has the smallest estimated black-white earnings

gap; lifelong Southerners are second-smallest, lifelong Northerners are second-largest.

The final regression specification in Table 7 adopts a more aggressive strategy for controlling for unobserved individual characteristics. Individual fixed-effects absorb all time-invariant personal traits. This model by necessity omits controls for region of birth and region of residence at age 14 since those are time-invariant characteristics. This model will determine whether individuals who move from North to South or vice-versa in their working years experience any significant change in their earnings, and whether these changes vary significantly by race.

The results confirm earlier findings that the black-white earnings gap for males in this age cohort are effectively independent of region of residence. The point estimate suggests a slightly larger black-white gap in the South, but is not statistically significant. Overall, the results in this table suggest that the appearance of a lower racial wage gap in the South is not attributable to any regional difference in labor markets. Indeed, the Southern and Northeastern labor markets look fairly well integrated in these specifications. The selective migration and human capital hypotheses remain as plausible hypotheses for this recent pattern. The selective migration theory is ultimately difficult to disprove. Nonetheless, the strong relationship between earnings disparities and region of residence at age 14 suggests a prominent role for disparities in education quality, or other contextual factors specific to childhood or adolescence, in the generation of economic inequality. The next section is devoted to a further examination of this possibility.

5. Contemporary evidence on region, race, and education quality

School segregation is neither a necessary nor sufficient condition for disparities in school

quality to exist. Likewise, neighborhood segregation is a necessary but not sufficient condition for disparities in neighborhood quality.¹⁴ Nonetheless, evidence that blacks experience greater segregation in the North would certainly support the contention that such disparities are more severe in that region.

Table 8 presents evidence on the extent of racial segregation in schools and neighborhoods in the South and elsewhere. using relatively recent data from the National Center for Education Statistics' Common Core of Data for 1996-97 and the 2000 Census. Using a number of different measures, blacks outside the South experience greater segregation than those within the South. Southern blacks attend schools that are on average 36% white, while black students in other regions attend schools that are 30% white. Northern whites also experience less integration at school, attending schools that are on average 5% black compared to 16% black in the South.

Evidence of school segregation exists even at the coarser school district level. The typical Northern black student attends school in a district that is only 34% white, whereas Southern black students attend schools that are on average 43% white. The racial composition of the typical Northern white's district closely mirrors that of the typical school: 6% black, compared to 19% black in the South.

These various statistics can be effectively summarized as segregation indices. The commonly used index of dissimilarity measures the fraction of the black or white population that

¹⁴ School segregation is not a necessary condition for disparities in school input quality because school inputs such as teacher quality may vary in quality within a school (Clotfelter, Ladd and Vigdor 2004). School and neighborhood segregation are not sufficient conditions for disparities because it is at least theoretically possible to have "separate but equal" schools or neighborhoods.

would have to switch schools, districts, or neighborhoods to achieve an even distribution across space (Massey and Denton, 1988; Cutler, Glaeser and Vigdor 1999). By this measure, Northern schools and school districts are significantly more segregated than Southern schools and districts. Nearly three-quarters of Northern black students would have to switch schools to achieve an even distribution across the region. The comparable figure for Southern schools is roughly three-fifths: still a high number, but significantly lower than in the North. Remarkably, if actions were taken to eliminate all segregation within school districts, a very large amount of across-district dissimilarity would remain, particularly outside the South. More than 70% of Northern black students would have to switch *districts* to attain an even distribution by race throughout the region; the Southern figure is slightly below half.

Some portion of this disparity in school segregation can be attributed to disparities in residential segregation. Neighborhood racial composition data from the 2000 Census reveal that the degree of dissimilarity experienced by the typical Northern black exceeds that experienced by the typical Southern black by a wide margin (Glaeser and Vigdor, 2003). The index of isolation, which measures the exposure of blacks to other blacks within neighborhoods, shows a similarly large gap between regions.¹⁵

Although there need not be a direct link between school segregation and school resource disparities, Table 9 documents that such disparities do exist and vary systematically between the South and other regions. The figures in the first four rows of this table are derived from the Common Core of Data, merged in some cases with expenditure information from the 1997

¹⁵ Higher residential segregation in the North suggests that other causal mechanisms linking adolescent residential location to young adult outcomes may also explain black-white convergence in the South (Cutler and Glaeser, 1997).

Census of Governments. Columns (1), (2), (4) and (5) report school or district-level means weighted by white and black enrollment. Columns (3) and (6) compute the interracial disparity in the North and South respectively. Column (7) presents a difference-in-difference estimate calculated by subtracting the Southern disparity from the Northern disparity.

In all regions of the country, per pupil expenditures for instruction tend to be higher in schools that serve a disproportionate share of black students. This pattern, attributable to school finance equalization measures adopted over the past quarter-century, has been noted previously (Hoxby, 1996). Nonetheless, it is interesting to note that the excess of spending in disproportionately black schools is *greater* outside the South – a pattern inconsistent with the general hypothesis that school segregation leads to lower school input quality for blacks. As subsequent comparisons will make clear, however, dollars spent is a relatively crude proxy for quality of inputs provided.

Nationwide, black students disproportionately attend schools with higher average class sizes. Experimental and quasi-experimental evidence suggests that class size is an important determinant of achievement (Angrist and Lavy 1999; Krueger 1999; see Hoxby 2000 for contrary evidence). Northern blacks experience class sizes that are on average 0.76 students larger than Northern whites. The comparable disparity in the South is 0.23 students, leading to a difference-in-difference measure of Northern black disadvantage equal to roughly one-half student per classroom.

Recent theoretical and empirical literature in the economics of education has paid considerable attention to the relation between peer characteristics and individual achievement (see, for example, Hanushek, Kain, Markman and Rivkin 2001; Nechyba and Vigdor 2004).

Black students in all regions clearly tend to have more black classmates than students of other races. The correlation between race and income implies that blacks attend disproportionately poor schools as well. The Common Core of Data provides information on the number of students in each school who participate in the U.S. Department of Agriculture subsidized school lunch program, a crude but widely used measure of socioeconomic status. In both South and North, the typical black student attends a school where at least half of all students participate in this means-tested program. White students, on average, attend more affluent school, but the disparity between White and Black is once again more pronounced in the North. The Northern black-white disparity is half again as big, in percentage point terms, as the gap in the South.

Black students not only attend poorer schools in both regions; the school districts serving the typical Black student also feature a higher share of students receiving subsidized lunch. Again, this racial disparity is more pronounced in the North than in the South.

The final three rows in Table 9 look at differences in school characteristics reported by respondents in the National Longitudinal Survey of Youth 1997 cohort. These characteristics pertain to the schools that respondents attended in the 1996-97 school year, when they were between 12 and 16 years old. The NLSY97 data confirm the general pattern on class size found in the CCD; the black-white class size gap is significantly larger (not to mention opposite-signed) in the North relative to the South.

The NLSY97 data also permit observation of school characteristics not usually observed in administrative data, related to the overall security and environment in the school itself. Respondents indicated the number of times they had something of value stolen at school and the number of times another person threatened to hurt them at school; these variables are coded as

dichotomous indicators for purposes of this analysis. Fear of exposure to violence is an important factor in the location decisions of poor households (Katz, Kling and Liebman 2004); Table 11 below shows that exposure to threats of violence is a very strong predictor of the decision to drop out of high school. For both types of incidents, theft and threats of physical harm, the black-white disparity outside the South is greater than that within the South. The difference-in-difference in threats of harm is statistically significant. Overall, the difference between the schools attended by Whites and Blacks is considerably more stark, along a number of dimensions, outside the South.

Can these racial disparities in school input quality be attributed directly to segregation, either at the school or neighborhood level? Table 10 presents empirical tests of this question, using geocoded NLSY97 observations that have been linked to school and neighborhood segregation measures at the metropolitan area level. These probit specifications focus on the two school input measures displaying evidence of a significant difference-in-difference indicating wider racial disparities in the North: student teacher ratios and threats of violence.¹⁶

The first regression in Table 10 confirms that the black-white disparity in large class sizes is significantly larger in the North than in the South: the coefficient on the Black-South interaction is significantly less than zero. The second regression adds controls for dissimilarity indices measured using school and neighborhood racial composition data, plus interactions of those indices with the Black indicator variable. Including these additional controls switches the sign and eliminates the statistical significance of the Black-South interaction. The

¹⁶ Table entries are marginal effects rather than true probit coefficients. Where appropriate, standard errors in these regressions have been corrected to account for the fact that segregation indices vary at the metropolitan area, rather than individual, level.

disproportionately large racial gap in class size outside the South, then, can be attributed to higher levels of segregation. Residential segregation appears to be the strongest predictor of disparities in class size; the interaction between the residential dissimilarity index and the Black indicator is positive and statistically significant at the 10% level.¹⁷

The third regression specification confirms that the racial disparity in the probability of being physically threatened in school is wider in the North than in the South. As the final regression shows, this pattern is robust to controls for segregation and interactions of segregation with race. Black students are more likely to report being threatened in metropolitan areas with high degrees of school segregation, holding residential segregation constant. Interestingly, the metropolitan areas with the lowest rates of black exposure to threats of violence are those with high residential segregation yet low school segregation – in other words, metropolitan areas that employ busing or other strategies to counteract segregation in schools.

These results suggest that reducing Northern segregation, in and of itself, would not ameliorate all the school environment disparities found in that region. The more positive learning environment found in Southern public schools serving black students appears to go beyond the greater tendency for such schools to enroll a significant number of white students.

To this point, the empirical results in this paper have shown that the black-white earnings gap is most narrow among those individuals residing in the South at the time they attended school, that many measures of racial school resource disparities are narrower in the South, and

¹⁷ These results suggest that disparities in class size may be one causal mechanism underlying Cutler and Glaeser's (1997) finding that black socioeconomic outcomes are significantly worse in more segregated metropolitan areas, and Boozer, Krueger and Wolkon's (1992) finding that school segregation is an important determinant of black male wages.

that lower levels of school and residential segregation can explain at least some of these narrower disparities. There has been no effort to directly link segregation and school input measures directly to the socioeconomic outcomes of blacks and whites in the South and elsewhere. These links have been explored extensively in previous literature (Link and Ratledge 1975; Boozer, Krueger and Wolkon, 1992; Card and Krueger 1992; Grogger 1996; Cutler and Glaser 1997). Table 11 adds some new evidence to this literature, relating an outcome measure for NLSY97 respondents, the high school dropout decision, to school input measures and segregation indices. High school dropouts are identified as those who report not being enrolled in school and having no high school diploma as of 2001, when respondents were 16-20 years old.

As in earlier results using the NLSY79 cohort, there is significant evidence that the racial disparity in this outcome measure is narrower in the South than in the North. The first three probit specifications examine this difference-in-difference, using an increasing number of control variables. The interaction between the Black indicator and a measure of whether a respondent lived in the South at age 12 is negative and statistically significant in the first basic DD regression, and in the second model, which controls for respondent age, sex, and educational attainment of the respondent's biological mother and father. The third model adds the respondent's 1997 percentile score on the PIAT test of mathematical ability, which may be construed as either an exogenous measure of ability or an endogenous indicator of school quality in years prior to 1997. In either case, inclusion of this variable does not significantly impact the coefficients of interest. In the final specification, the significant and negative DD interaction term reflects the relative equality of conditional dropout rates across races in the North, coupled with a significantly *higher* conditional dropout rate for whites in the South.

Do differences in school resources across race and region explain this pattern? The table's third regression introduces controls for three school input measures available in the NLSY: a categorical class size measure and indicators for whether the respondent was the victim of theft or threats of violence in school in 1997. As foreshadowed, exposure to threats of violence is a significant positive predictor of dropout behavior: the point estimate suggests that students exposed to such threats were 6.4 percentage points more likely to drop out of school than similar students who did not receive such threats.

Including these controls reduces the magnitude of the Black-South interaction term by about 10%, in the process reducing its statistical significance. While this evidence is not overwhelming, it does suggest that the racial and regional disparities in the included measures can explain at least some of the narrower racial gaps now being observed in the South. More complete measures of school quality might do an even better job of explaining this pattern.

Adding controls for school and neighborhood segregation to the specification reduces the sample size somewhat, since metropolitan school and housing segregation measures are not defined for those respondents living outside of metropolitan areas. Coefficients on the segregation measures and interaction terms themselves are generally small and not statistically significant. Moreover, the Black-South interaction term actually increases in magnitude and significance in this specification. Resource disparities may explain some portion of the narrower racial gap in the South, but segregation in and of itself apparently does not.

6. Conclusions

In the mid-twentieth century, racial inequality in America was most pronounced in the

South. By the end of the century, some younger cohorts actually experienced less racial inequality in the South than in other regions. The analysis in this paper attributes this remarkable turnaround to several factors. The South's great leap forward in racial equality between 1960 and 1980 appears to have been fueled largely by the Civil Rights Act and other measures targeting discrimination in the labor market. Subsequent improvements appear related to narrower disparities in education quality, or other important variables associated with the adolescent years. The narrowest black-white wage gaps are now to be found among those receiving at least some secondary education in the South, rather than those born or residing in that region. Southern schools are also less segregated on the whole and feature fewer racial disparities in several key input variables. Residential segregation is also narrower in the South.

What does the South's experience imply for America's future? To the extent that racial convergence in the South reflects the successful integration of public schools, future cohorts may exhibit only limited further progress. Over the past two decades, school segregation has been increasing nationwide and in the South in particular (Orfield and Eaton, 1996; Clotfelter 2004). While still modest by national standards, continued pressure from Federal courts to reduce integration efforts and from parents to provide neighborhood schools and more specialized academic programs may have the effect of eroding past trends in school segregation still further. As demonstrated in this paper, school segregation is neither a necessary nor sufficient condition for the existence of racial disparities in school quality, but increased separation by race certainly increases the likelihood that new disparities will develop.

Achieving anything resembling Southern levels of school integration in the North would be close to a political impossibility. Northern school districts are more segregated than Southern

schools: even achieving perfect integration in Northern districts would still leave the region's schools more segregated on the whole. This pattern can largely be attributed to the use of smaller school districts in the North, along with greater degrees of residential segregation. Pressure against school district consolidation in large metropolitan areas is likely to be overwhelming, and it is unclear whether any policy intervention could reduce the degree of residential segregation in most American cities.

Overall, racial disparities in American labor markets may show improvement over the next decade or two, as the last cohorts educated before *Brown vs. Board* age out of the labor market. Further improvements, while feasible in theory, will be economically and politically difficult. The goal of any such improvements, surprisingly enough, will be to make the rest of America look more like the South.

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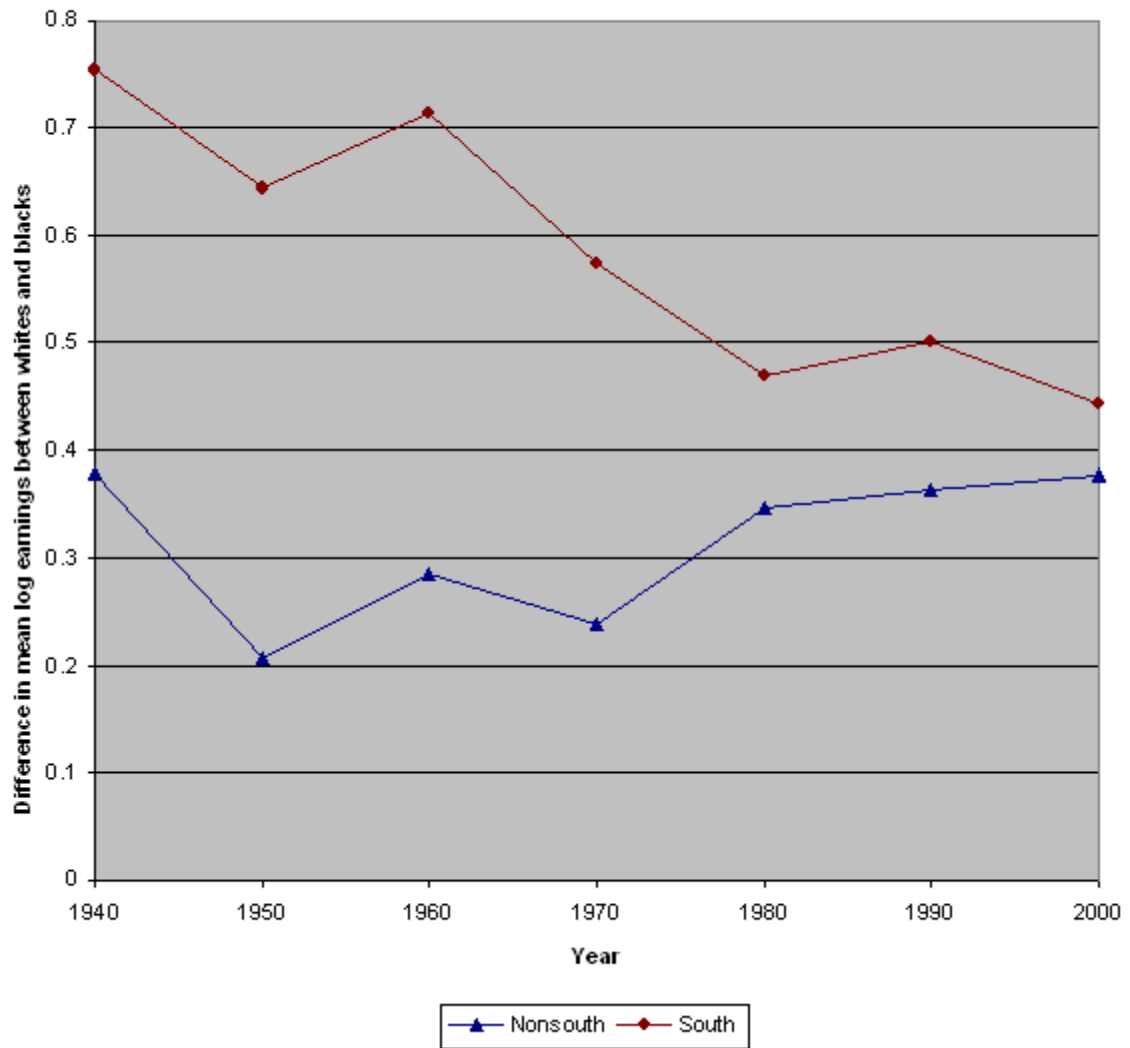
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Figure 1: Black-White log earnings differences by region



Note: Figure represents the unadjusted gap in mean log earnings between white and black males.
Data source: IPUMS.

Table 1: The regression corrected black-white earnings gap in the South and North 1940-2000

Independent Variable	1940	1950	1960	1970	1980	1990	2000
Black	-0.321 (0.010)	-0.217 (0.014)	-0.281 (0.006)	-0.209 (0.008)	-0.298 (0.006)	-0.316 (0.005)	-0.269 (0.005)
South	-0.225 (0.004)	-0.169 (0.007)	-0.184 (0.003)	-0.107 (0.003)	-0.051 (0.003)	-0.061 (0.003)	-0.015 (0.003)
Black*South	-0.131 (0.013)	-0.245 (0.019)	-0.232 (0.009)	-0.209 (0.008)	-0.038 (0.008)	-0.026 (0.008)	-0.018 (0.007)
Age	0.158 (0.001)	0.137 (0.001)	0.169 (6.3*10 ⁻⁴)	0.201 (5.8*10 ⁻⁴)	0.195 (6.2*10 ⁻⁴)	0.213 (6.4*10 ⁻⁴)	0.191 (4.5*10 ⁻⁴)
Age squared	-0.002 (1.0*10 ⁻⁵)	-0.001 (1.7*10 ⁻⁵)	-0.002 (7.8*10 ⁻⁶)	-0.002 (7.2*10 ⁻⁶)	-0.002 (7.8*10 ⁻⁶)	-0.002 (7.9*10 ⁻⁶)	-0.002 (5.2*10 ⁻⁶)
1-4 grades completed	0.050 (0.012)	0.081 (0.024)	0.169 (0.014)	-0.104 (0.018)	0.284 (0.028)	0.082 (0.032)	0.175 (0.041)
5-8 grades completed	0.399 (0.011)	0.322 (0.023)	0.506 (0.013)	0.202 (0.016)	0.469 (0.026)	0.203 (0.023)	0.216 (0.023)
9 th grade completed	0.586 (0.012)	0.508 (0.025)	0.686 (0.014)	0.357 (0.016)	0.619 (0.026)	0.303 (0.024)	0.016 (0.023)
10 th grade completed	0.693 (0.012)	0.579 (0.024)	0.724 (0.014)	0.399 (0.016)	0.656 (0.026)	0.340 (0.023)	0.040 (0.022)
11 th grade completed	0.706 (0.013)	0.596 (0.025)	0.695 (0.014)	0.330 (0.016)	0.629 (0.026)	0.270 (0.023)	0.134 (0.022)
12 th grade completed	0.845 (0.011)	0.656 (0.023)	0.855 (0.013)	0.564 (0.016)	0.916 (0.026)	0.652 (0.022)	0.582 (0.021)
Some college	0.934 (0.012)	0.424 (0.024)	0.826 (0.014)	0.502 (0.016)	0.875 (0.026)	0.700 (0.022)	0.701 (0.021)
College graduate	1.229 (0.013)	0.749 (0.025)	1.130 (0.014)	0.851 (0.016)	1.143 (0.026)	1.076 (0.022)	1.128 (0.021)
R ²	0.267	0.178	0.291	0.348	0.298	0.335	0.381
N	287,531	102,450	390,289	472,515	514,088	545,698	602,158

Note: Standard errors in parentheses. Sample derived from IPUMS data on white and black males age 18-65 with positive earnings. Beginning in 1970, the sample is restricted to the non-hispanic population. Samples are weighted using IPUMS weights where appropriate.

Table 2: Median regression results with imputed earnings for non-working males

Independent Variable	1940	1950	1960	1970	1980	1990	2000
Black	-0.454 (0.024)	-0.299 (0.015)	-0.345 (0.006)	-0.257 (0.011)	-0.507 (0.001)	-0.543 (0.005)	-0.620 (0.008)
South	-0.748 (0.009)	-0.372 (0.006)	-0.302 (0.003)	-0.184 (0.004)	-0.122 (0.001)	-0.111 (0.002)	-0.091 (0.004)
Black*South	-0.169 (0.028)	-0.321 (0.019)	-0.360 (0.008)	-0.257 (0.011)	-0.048 (0.002)	-0.008 (0.007)	0.068 (0.011)
Age	0.379 (0.002)	0.216 (0.001)	0.204 (5.5*10 ⁻⁴)	0.227 (7.6*10 ⁻⁴)	0.255 (1.6*10 ⁻⁴)	0.307 (5.4*10 ⁻⁴)	0.290 (0.001)
Age squared	-0.005 (2.2*10 ⁻⁵)	-0.003 (1.6*10 ⁻⁵)	-0.002 (6.7*10 ⁻⁶)	-0.003 (9.4*10 ⁻⁶)	-0.003 (2.0*10 ⁻⁶)	-0.004 (6.5*10 ⁻⁶)	-0.003 (1.1*10 ⁻⁵)
Pseudo-R ²	0.050	0.031	0.043	0.063	0.058	0.061	0.050
N	420,279	136,295	484,867	521,485	620,132	664,086	701,342

Note: Standard errors in parentheses. Sample derived from IPUMS data on white and black males age 18-65. Individuals with zero earnings are assumed to have potential earnings below the median for their region, race and age. Beginning in 1970, the sample is restricted to the non-hispanic population. Samples are weighted using IPUMS weights where appropriate.

Table 3: Median regressions for young males in the South and North 1940-2000

Independent Variable	1940	1950	1960	1970	1980	1990	2000
Black	-0.491 (0.025)	-0.294 (0.020)	-0.352 (0.011)	-0.323 (0.008)	-0.410 (0.004)	-0.539 (0.011)	-0.553 (0.007)
South	-0.582 (0.010)	-0.254 (0.008)	-0.212 (0.006)	-0.153 (0.003)	-0.106 (0.002)	-0.101 (0.005)	-0.091 (0.004)
Black*South	-0.298 (0.030)	-0.415 (0.026)	-0.335 (0.011)	-0.210 (0.013)	-0.036 (0.006)	0.028 (0.015)	0.113 (0.009)
Age	0.183 (0.014)	0.220 (0.012)	0.170 (0.004)	0.140 (0.006)	0.204 (0.003)	0.155 (0.008)	0.173 (0.005)
Age squared	-0.003 (2.1×10^{-4})	-0.003 (1.9×10^{-4})	-0.002 (5.4×10^{-5})	-0.002 (9.0×10^{-5})	-0.003 (4.9×10^{-5})	-0.002 (1.2×10^{-4})	-0.002 (8.4×10^{-5})
Pseudo-R ²	0.026	0.015	0.022	0.022	0.019	0.018	0.015
N	162,943	54,185	182,327	173,839	239,229	278,490	251,965

Note: Standard errors in parentheses. Sample derived from IPUMS data on white and black males between 25 and 40 years old. Individuals with zero reported earnings are assumed to have potential earnings below the median for their region, race and age. Beginning in 1970, the sample is restricted to the non-hispanic population. Samples are weighted using IPUMS weights where appropriate.

Table 4: The black-white female earnings gap in the South and North 1940-2000

Independent Variable	1940	1950	1960	1970	1980	1990	2000
Black	-0.355 (0.025)	-0.103 (0.022)	-0.072 (0.011)	0.149 (0.009)	0.171 (0.007)	0.140 (0.006)	0.076 (0.006)
South	-0.199 (0.012)	-0.157 (0.011)	-0.116 (0.006)	-0.002 (0.005)	0.018 (0.004)	-0.023 (0.003)	-0.018 (0.003)
Black*South	-0.680 (0.030)	-0.539 (0.029)	-0.623 (0.015)	-0.475 (0.012)	-0.242 (0.010)	-0.193 (0.009)	-0.108 (0.008)
Age	0.098 (0.002)	0.094 (0.002)	0.077 (0.001)	0.085 (9.7*10 ⁻⁴)	0.101 (8.6*10 ⁻⁴)	0.149 (7.9*10 ⁻⁴)	0.153 (7.3*10 ⁻⁴)
Age squared	-0.001 (3.1*10 ⁻⁵)	-0.001 (2.8*10 ⁻⁵)	-0.001 (1.5*10 ⁻⁵)	-0.001 (1.2*10 ⁻⁵)	-0.001 (1.1*10 ⁻⁵)	-0.002 (9.9*10 ⁻⁶)	-0.002 (9.1*10 ⁻⁶)
1-4 grades completed	-1.109 (0.040)	0.068 (0.050)	0.063 (0.034)	-0.188 (0.035)	-0.003 (0.048)	-0.069 (0.053)	0.158 (0.059)
5-8 grades completed	-1.190 (0.037)	0.148 (0.046)	0.315 (0.032)	0.034 (0.030)	0.039 (0.041)	-0.062 (0.034)	-0.006 (0.033)
9 th grade completed	-1.185 (0.040)	0.283 (0.049)	0.413 (0.033)	0.103 (0.031)	0.068 (0.042)	-0.043 (0.034)	-0.017 (0.033)
10 th grade completed	-1.157 (0.040)	0.383 (0.049)	0.476 (0.032)	0.162 (0.031)	0.110 (0.041)	-0.007 (0.033)	0.057 (0.031)
11 th grade completed	-1.204 (0.042)	0.353 (0.050)	0.469 (0.033)	0.158 (0.031)	0.119 (0.041)	-0.060 (0.033)	-0.007 (0.030)
12 th grade completed	-0.998 (0.037)	0.645 (0.047)	0.762 (0.032)	0.455 (0.030)	0.442 (0.041)	0.357 (0.032)	0.416 (0.029)
Some college	-0.842 (0.039)	0.564 (0.048)	0.736 (0.032)	0.418 (0.030)	0.491 (0.041)	0.524 (0.032)	0.597 (0.029)
College graduate	-0.496 (0.040)	0.925 (0.048)	1.237 (0.032)	0.956 (0.031)	0.850 (0.041)	0.955 (0.032)	1.056 (0.029)
R ²	0.103	0.134	0.128	0.110	0.101	0.169	0.209
N	114,182	51,745	224,838	310,095	413,492	489,437	528,995

Note: Standard errors in parentheses. Sample derived from IPUMS data on white and black males age 18-65 with positive earnings. Beginning in 1970, the sample is restricted to the non-hispanic population. Samples are weighted using IPUMS weights where appropriate.

Table 5: Explaining the larger black-white gap among Southern females

	Black females		White females	
	North	South	North	South
Labor force participation rates	71.8%	72.6%	74.3%	70.8%
Percent of labor force participants who are high school graduates	58.5%	51.1%	64.7%	61.6%

Note: Statistics based on 2000 IPUMS data for black and white females between 18 and 65 years of age.

Table 6: Analyzing the black-white gap by region for the 1940-1949 birth cohort

Independent Variable	Age 21-30 1970	Age 31-40 1980	Age 41-50 1990	Age 51-60 2000
Black	-0.232 (0.002)	-0.382 (0.007)	-0.371 (0.008)	-0.502 (0.012)
South	-0.115 (0.001)	-0.116 (0.003)	-0.113 (0.003)	-0.134 (0.005)
Black*South	-0.216 (0.002)	-0.101 (0.010)	-0.171 (0.011)	-0.122 (0.016)
Age	1.239 (0.003)	0.194 (0.015)	0.078 (0.019)	0.772 (0.036)
Age squared	-0.022 (5.0*10 ⁻⁵)	-0.003 (2.1*10 ⁻⁴)	-0.001 (3.3*10 ⁻⁴)	-0.008 (3.2*10 ⁻⁴)
Pseudo-R ²	0.073	0.010	0.006	0.007
N	129,289	135,737	134,096	129,726

Note: Standard errors in parentheses. Sample derived from IPUMS data on non-hispanic white and black males. Individuals with zero reported earnings are assumed to have potential earnings below the median for their region, race and age. Samples are weighted using IPUMS weights where appropriate.

Table 7: Black-White earnings gaps in the NLSY '79

Independent Variable	Dependent variable: ln(earnings + self empl. income + military income)				
Black	-0.321 (0.041)	-0.326 (0.042)	-0.360 (0.042)	-0.320 (0.045)	—
Reside in South	-0.113 (0.032)	-0.025 (0.039)	-0.039 (0.038)	-0.001 (0.045)	-0.034 (0.033)
Black*Reside in South	0.035 (0.050)	—	—	-0.155 (0.063)	-0.085 (0.057)
Born in South	—	-0.119 (0.039)	—	-0.126 (0.060)	—
Black*Born in South	—	0.084 (0.054)	—	-0.001 (0.101)	—
Lived in South at age 14	—	—	-0.093 (0.038)	-0.010 (0.060)	—
Black*Lived in South at age 14	—	—	0.121 (0.053)	0.228 (0.101)	—
Age	0.299 (0.018)	0.300 (0.018)	0.301 (0.018)	0.301 (0.019)	0.337 (0.010)
Age squared	-0.004 (2.87*10 ⁻⁴)	-0.004 (2.91*10 ⁻⁴)	-0.004 (2.89*10 ⁻⁴)	-0.004 (2.93*10 ⁻⁴)	-0.004 (1.57*10 ⁻⁴)
Mother's years of education	0.005 (0.006)	0.007 (0.006)	0.006 (0.006)	0.006 (0.006)	—
Father's years of education	0.013 (0.005)	0.014 (0.005)	0.013 (0.005)	0.013 (0.005)	—
AFQT score (/100)	0.361 (0.053)	0.382 (0.055)	0.362 (0.054)	0.383 (0.055)	—
Midwest region	-0.160 (0.031)	-0.158 (0.031)	-0.149 (0.031)	-0.151 (0.031)	-0.177 (0.037)
West region	-0.145 (0.037)	-0.142 (0.038)	-0.137 (0.037)	-0.138 (0.038)	-0.041 (0.036)
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Categorical educ. attainment controls	Yes	Yes	Yes	Yes	Yes
Indiv. fixed effects	No	No	No	No	Yes
R ²	0.407	0.411	0.408	0.410	0.698
N	27,663	26,754	27,197	26,476	33,047

Note: Sample consists of black and white males in the NLSY not currently enrolled in school with positive earnings, self-employment income, or military income. There are up to 11 observations for each individual; specifications utilize unbalanced panels. Standard errors, in parentheses, have been adjusted to reflect potential clustering at the person level in the first four specifications.

Table 8: Segregation in the South and Elsewhere

Measure	Non-South	South	Difference
Percent black in the typical white student's school	4.9%	16.0%	-11.1%
Percent white in the typical black student's school	29.5%	35.8%	-6.3%
Percent black in the typical white student's district	5.7%	19.0%	-13.3%
Percent white in the typical black student's district	34.1%	42.6%	-8.5%
Black-white dissimilarity at the school level	0.743	0.584	0.159
Black-white dissimilarity at the district level	0.718	0.498	0.220
Black-nonblack residential dissimilarity at the MSA level, weighted by black population	0.688	0.553	0.155
Black-nonblack residential isolation at the MSA level, weighted by black population	0.435	0.364	0.071

Source: Common Core of Data for 1996-'97 school year, 2000 Census, author's calculations.

Table 9: Difference-in-Difference estimates of racial school input disparities by region, 1996-'97

School input measure	Non-South averages			South averages			Diff.-in-Diff. (7)
	Whites (1)	Blacks (2)	Diff. (3)	Whites (4)	Blacks (5)	Diff. (6)	
Per pupil expenditure for instruction (CCD/Census of Governments)	\$3,792	\$4,272	-\$480	\$3,154	\$3,215	-\$61	-\$419
Student-teacher ratio (CCD)	18.95	19.71	-0.76	17.23	17.46	-0.23	-0.53
Percent of school receiving subsidized lunch (CCD)	20.6%	54.2%	-33.6%	29.3%	50.7%	-21.4%	-12.2%
Percent of district receiving subsidized lunch (CCD)	16.3%	37.8%	-21.5%	29.6%	43.8%	-14.2%	-7.3%
Student-teacher ratio above 18 (NLSY97)	34.3%	40.8%	-6.5%	35.1%	30.2%	4.9%	-11.4%*
Student had something of value stolen at school (NLSY97)	21.9%	31.3%	-9.6%	25.2%	30.4%	-5.2%	-4.4%
Someone threatened to hurt student at school (NLSY97)	21.2%	26.9%	-5.7%	28.0%	20.1%	7.9%	-13.6%*

Note: Population parameters derived from CCD and Census of Governments are weighted by White and Black enrollment in each school or district. Statistics derived from NLSY97 are for White and Black sample members. * denotes a Difference-in-Difference significantly different from zero at the 5% level. This test is not applied to CCD or Census of Governments data; these sources provide information on the entire population thus statistical inference is not necessary.

Table 10: Does segregation explain black-white school input disparities?

Independent variable	Student-teacher ratio above 18		Someone threatened to hurt student at school	
Black	0.043 (0.033)	-0.508** (0.125)	0.096** (0.029)	0.210 (0.172)
South	0.129** (0.021)	0.106 (0.075)	0.089** (0.018)	0.074** (0.029)
Black*South	-0.096** (0.039)	0.099 (0.133)	-0.164** (0.022)	-0.174** (0.038)
School segregation index	—	-0.330 (0.382)	—	-0.186* (0.111)
School segregation*Black	—	-0.154 (0.445)	—	0.332* (0.194)
Residential segregation index	—	0.263 (0.406)	—	0.120 (0.090)
Residential segregation*Black	—	1.350* (0.695)	—	-0.494** (0.227)
Pseudo-R ²	0.010	0.023	0.012	0.014
N	2,935	2,935	3,063	3,063

Note: Table entries are results of probit specifications rescaled to indicate marginal effects. Standard errors in parentheses. Standard errors in second and fourth specifications have been corrected for potential clustering of error terms within metropolitan areas. Data sources are geocoded NLSY 97, NCES Common Core of Data for the 1996/97 school year, and the 2000 Census. All specifications utilize NLSY cross-sectional weights and survey responses taken in 1997.

Table 11: Explaining the black-white gap in high school dropout rates in NLSY97

Independent variable	Dependent variable: respondent is not currently enrolled and has no HS diploma in 2001				
Black	0.088** (0.033)	0.039 (0.028)	0.005 (0.024)	0.006 (0.024)	0.021 (0.098)
Lived in South at age 12	0.067** (0.018)	0.039** (0.016)	0.036** (0.015)	0.033** (0.015)	0.025 (0.022)
Black*Lived in South at age 12	-0.060* (0.028)	-0.058** (0.022)	-0.055** (0.021)	-0.050* (0.022)	-0.061** (0.017)
Student-teacher ratio above 18	—	—	—	0.011 (0.012)	0.003 (0.017)
Something stolen at school	—	—	—	-0.010 (0.013)	-0.002 (0.016)
Threatened at school	—	—	—	0.064** (0.016)	0.037** (0.020)
School segregation	—	—	—	—	-0.045 (0.088)
Black*School segregation	—	—	—	—	0.050 (0.150)
Housing segregation	—	—	—	—	0.020 (0.089)
Black*Housing segregation	—	—	—	—	-0.096 (0.187)
Controls for age, sex, parental education	No	Yes	Yes	Yes	Yes
Controls for PIAT score	No	No	Yes	Yes	Yes
Pseudo-R ²	0.011	0.142	0.176	0.184	0.205
N	2,787	2,787	2,787	2,787	1,795

Note: Table entries are results of probit specifications rescaled to indicate marginal effects. Standard errors in parentheses. In last column, standard errors have been corrected for potential clustering of error terms at the metropolitan area level. School input variables and PIAT math test percentile score measured in 1997, when respondents were 12-16 years old. Respondents are 16-20 years old in 2001. Restricting sample to respondents with PIAT test scores implies that all respondents were in no greater than 9th grade in 1997. Control for age is categorical; controls for biological father's and mother's education are linear. All specifications are weighted by NLSY cross-sectional sample weights for 2001.

** denotes a coefficient significant at the 5% level, * the 10% level.