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THE SCHOOLING OF SOUTHERN BLACKS: THE ROLES OF LEGAL ACTIVISM AND PRIVATE PHILANTHROPY, 1910–1960*

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Improvements in education and educational quality are widely acknowledged to be major contributors to black economic progress in the twentieth century. This paper investigates the sources of improvement in black education in the South in the first half of the century and demonstrates the important roles of social activism, especially NAACP litigation and private philanthropy, in improving the quality and availability of public schooling. Many scholars view education as a rival to social activism in explaining black economic progress, but such a view misses the important role of philanthropic and legal interventions in promoting education.

I. INTRODUCTION

Improvements in educational attainment and the quality of education are universally acknowledged to be major factors contributing to the advance of African-Americans in the labor market over the past century [Smith and Welch 1989; Donohue and Heckman 1991; Card and Krueger 1992a]. At the turn of the last century, roughly 90 percent of blacks lived in the South. Southern schools were inferior to schools elsewhere in the country, and black Southern schools were decidedly inferior to those of whites. Many blacks did not have access to high schools and had to travel long distances to attend elementary schools with poorly qualified teachers, primitive facilities, and short term lengths (see Myrdal [1944] and Margo [1990]).

The landmark 1954 *Brown v. Board of Education* decision of the U. S. Supreme Court overturned the “separate but equal” doctrine that had governed Southern schooling and had implicitly

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sanctioned discrimination in the public provision of educational services in the first half of the twentieth century. By the time the court decision was rendered, however, the gap in measured school quality inputs between blacks and whites had already largely been eliminated. It is remarkable that improvements in Southern black schools occurred at a time when blacks were largely excluded from political life (through discrimination in voter registration) and before the federal government played any significant role in funding primary and secondary schooling. School funding and expenditure decisions were made by state and local governments accountable to electorates that were virtually 100 percent white, although blacks constituted 30 percent of the Southern population.

This paper studies the factors that led to improvements in black Southern schools at a time when blacks were excluded from the Southern political process. Two factors are shown to have played a prominent role, while a third plausible explanation is eliminated. Private philanthropy by Northern foundations was a major factor in enhancing black educational quality in the period 1919–1930, but white schools also improved over this time period, and philanthropy did little to increase the schooling quality of blacks relative to whites. Litigation by the NAACP in the 1930s and 1940s succeeded in raising black schooling quality both relatively and absolutely. However, migration from rural to urban areas within the South had little effect on relative schooling quality. Migration from the South to the North raised both relative and absolute schooling quality for the children of migrants compared with the children of blacks and whites who stayed in the South.

Our study builds on the pioneering research of Bond [1934], Myrdal [1944], and Margo [1990]. Myrdal, noting the virtually complete disenfranchisement of Southern blacks during the first four decades of the twentieth century, was the first to question why black schools were funded at all given the direct connection between voting rights and the share of public services a group receives. Bond was one of the first to analyze the discriminatory educational funding practices in Southern segregated school systems, including the alleged practice by local school boards of redistributing state funds allocated to black students to white

schools.¹ Margo considers several possibilities, including the threat of legal intervention if resources allocated to black and white schools differed too greatly, the support of philanthropic foundations, and the threat of black migration with the consequent loss of inexpensive labor and school revenue. These studies point to the importance of different factors in bringing about observed gains in educational quality at a time when blacks were excluded from voting, but they present only limited empirical evidence on the relative importance of these factors.

Our study uses school-district-level data for the state of Georgia and state-level data for seventeen Southern states over a 50-year period to document school quality trends and to relate these trends to demographic changes, philanthropic efforts, and legal activity. Our analysis of the rich, district-level data in Georgia provides insights into the discriminatory practices that existed in the provision of education and into other factors that led to improved educational opportunities for Southern blacks. When it is credible to do so, we quantify the impact of different factors to determine which are primarily responsible for quality improvements in different time periods. For example, we show that black schools built with the assistance of Northern philanthropy represented about a third of the overall value of black school property by 1936 and greatly increased the availability of schools for black children. Using statewide schooling quality data for all Southern states, we perform an event-history analysis examining the impact of NAACP litigation on schooling quality. Litigation led by the NAACP emerges as the dominant factor behind relative gains in teacher salary that occurred in the 1930s and 1940s as well as an important factor in explaining gains in other school quality measures. Our lower bound estimate of the effect of litigation on relative teacher salaries is that it explains roughly 60 percent of the gain that occurred within eight years of the litigation.

There has been an ongoing debate about the importance of markets and secular factors relative to social interventions in accounting for black economic progress (see the analyses of Smith

1. The state allocations were equitable due to a holdover from the Reconstruction: "The Reconstruction legislatures placed schools for the two races on an equal basis" [Bond 1969, p. 203]. Rather than overturn the law, Southern whites turned the funds allocated to blacks by the state law into a source of revenue for white children at the local level. Myrdal [1944], Pritchett [1986], and Margo [1990] further corroborate the practice of funding white schools at the expense of black students.

and Welch [1989] and Donohue and Heckman [1991]). This debate has centered on the question of whether progress has come largely through gradual improvement in cohorts of black workers, due to improvements in the quality and quantity of their schooling, or whether improvements occurred across cohorts at the same time, due to civil rights policy, tight labor markets, and affirmative action. Both sides of this debate have implicitly assumed that improvements in education and educational quality are secular factors, outside the scope of the debate. Our evidence challenges this presumption. Social activism in the form of interventions of philanthropic foundations and litigation by the NAACP played a substantial role in improving black schooling quality in the segregated South and in improving black economic status in the twentieth century.

The plan of this paper is as follows. Section II describes our data and briefly summarizes trends in Southern schooling quality over the period from 1910–1960. Section III analyzes the absolute improvement in black schooling quality that occurred in the first half of this 50-year period. Section IV analyzes the second half of this period when improvements in black schooling led to convergence in empirical measures of quality inputs for black and white schools. Section V briefly discusses the impact of migration over the entire period, and Section VI concludes.

II. OVERVIEW OF TRENDS IN SCHOOLING QUALITY AND AVAILABILITY: 1910 TO 1960

II.A. The Data on Schooling Quality

This paper studies inputs into the educational process, such as teacher salaries and certification levels, and summary measures of school conditions, such as pupil/teacher ratios and school term lengths. We have collected measures of school quality inputs for the 1910–1960 period from two sources. School-district-level data for Georgia are gathered from the *Annual Reports of the Georgia Board of Education* [1910–1960], which kept separate records for white and black schools up to 1960. We focus on the state of Georgia, which appears to be fairly representative of the South in terms of its trends in schooling quality, because it has the most complete available district-level data series, enabling us to calculate race-specific empirical measures of schooling quality inputs for each school district. We analyze total enrollment, av-

erage attendance, length of school term, number of teachers, teacher-certification and education levels, and total disbursements to teachers. We also obtained state-level data on school quality measures (term length, teacher salaries, and pupil-teacher ratios, based on both pupils in attendance and pupils enrolled) from the *Biennial Survey of Education* [1910–1960], published by the U. S. Office of Education, which reports race-specific data for Southern segregated school systems until 1954. We consider two measures of the pupil/teacher ratio because the average number of students actually in attendance diverges substantially from reported enrollments. We emphasize the attendance-based measure in our analysis, because enrollments in Southern states were sometimes inflated by school authorities to secure state funds apportioned on the basis of student head counts [Bond 1934]. The teacher certification measures serve as a direct indicator of teacher quality, although the certification process was also subject to discrimination.² Appendix 1 provides additional information on the data we use.

II.B. Schooling Quality Trends over Time

Tables Ia and Ib document large differences in measures of school quality for black and white schools in Georgia in the early part of this century. For example, in 1911 black teachers were paid less than half of what white teachers earned—a pattern that would endure for roughly 30 years. Relative to white schools, the number of pupils per teacher in black schools was higher, with about twenty additional enrolled students per class, and term lengths were shorter by three to four weeks. Moreover, in 1911 only 16 percent of the black teachers, compared with 35 percent of the white teachers, had at least two years of postsecondary education; the proportion of black teachers with state certification was also commensurately lower. Nevertheless, the tables reveal that measured school-quality inputs in Georgia improved in absolute terms for both races over most of the period 1910 to 1960. Even during the Great Depression of the 1930s, teacher salaries for both races gained in real terms. However, there was little

2. Multiple certification types exist in each of the years examined, and these types change over time. From 1911 to 1930 advanced teacher training consisted of attending a normal school. After 1930 the reports give the actual number of years of training attended. Appendix 1 describes the data and, in particular, explains how the certificates were grouped to create a comparable time series over the 1911 to 1960 period.

TABLE Ia
GEORGIA SCHOOL QUALITY MEASURES FROM 1911-1960 FOR SELECTED YEARS^a
STANDARD DEVIATIONS ARE IN PARENTHESES.

Year	Pupil/teacher ratio, enrollment-based			Pupil/teacher ratio, attendance based			Term length (days)			Per diem teacher salary (1960 dollars) ^b		
	Black	White	Ratio	Black	White	Ratio	Black	White	Ratio	Black	White	Ratio
1911	60 (15)	40 (9)	1.51	37 (16)	26 (7)	1.42	119 (29)	134 (30)	0.89	3.11 (1.35)	6.90 (2.30)	0.46
1920	59 (13)	41 (9)	1.44	40 (11)	31 (7)	1.29	129 (30)	143 (30)	0.90	2.36 (1.53)	5.49 (2.38)	0.43
1930	48 (12)	35 (6)	1.37	36 (11)	27 (7)	1.33	131 (32)	153 (25)	0.86	3.80 (2.82)	9.08 (4.17)	0.42
1938	43 (10)	30 (5)	1.43	33 (9)	24 (4)	1.36	153 (18)	170 (10)	0.90	4.81 (2.78)	10.42 (4.56)	0.46
1950	36 (5)	32 (4)	1.13	29 (5)	25 (3)	1.16	177 (7)	180 (0.85)	0.98	11.33 (2.11)	14.40 (2.47)	0.79
1960	31 (3)	29 (3)	1.07	29 (2)	24 (2)	1.21	180 (0.00)	180 (0.00)	1.00	20.00 (2.83)	20.48 (2.84)	0.98

a. The data pertain to grades K-12. For enrollment-based pupil/teacher ratio and term length, the table shows the mean for each quality measure given by the average of all the district means weighted by enrollment for that district. For attendance-based pupil/teacher ratio, the district mean is weighted by the average daily attendance for each district, and for per diem teacher salary by the number of teachers in each district.

b. The deflator used to adjust for inflation is the national Consumer Price Index for each year [U. S. Bureau of the Census. Historical Statistics of the United States, Part I Consumer Price Indexes, All Items Series E 135-166].

TABLE Ib
 GEORGIA TEACHER CERTIFICATION LEVELS, 1911–1960
 (FOR TEACHERS OF GRADES K–12)

Year	Proportion of teachers with 2+ years of postsecondary education			Proportion of teachers with state certification		
	Black	White	B/W ratio	Black	White	B/W ratio
1911	.16	.35	0.45	NA	NA	NA
1930	.14	.52	0.27	.49	.92	0.53
1938	.35	.83	0.42	.56	.97	0.58
1942	.64	.93	0.69	.82	.98	0.84
1944	.63	.87	0.72	.75	.94	0.80
1950	.91	.95	0.96	.97	.98	0.99

The state certification system was established in 1915 and revised in 1930. The amount of postsecondary education required for each level of certification was reconstructed from descriptions in the Georgia Board of Education reports (see Appendix 1).

change in *relative* quality over the first half of the 50-year period; for all six quality measures in Table I, the black/white ratio in school inputs did not improve monotonically until the late 1930s.

Figure I demonstrates the substantial increase in the black to white ratio of four different quality measures that took place in Georgia in the late 1930s and early 1940s. Term lengths and pupil/teacher ratios began to converge after the mid-1930s, and teacher salaries began a steep upward course toward equality after 1944.³ Progress was substantial enough that in some cases

3. In addition to per diem salary adjusted by the national Consumer Price Index, we also compute two other measures of teacher salary: raw per diem salary, and the ratio of Georgia salaries to national means. All three measures show a sharp increase in salaries for black teachers in the period after 1944. (Table I, footnote b gives the source for CPI.)

Conceivably, though, our unadjusted black/white teacher salary ratios may obscure an important causal explanation for the relative salary gains of black teachers. During the first three decades of our sample, Georgia had few black high schools. Therefore, black teachers were predominantly employed in elementary schools (see Joiner [1979]). Because the qualification levels and pay of elementary school teachers are lower, differences in teacher pay by race partly reflect the difference in the elementary school/high school proportions. To explore whether this compositional effect is an important determinant of the relative black salary gains, we calculated teacher wage ratios that are adjusted for differences in teacher composition. The adjustments were performed in two ways, first using a constant weighting based on the white teacher proportions and then weighting by the black teacher proportions. This adjustment increases the black-white salary gap somewhat in 1920, but causes it to fall in other years. Overall, this compositional effect does not account for much of the racial wage disparity, and does not alter the story of sharp black relative teacher salary gains in the 1940s. A table showing the adjusted wage ratios is available from Petra Todd upon request.

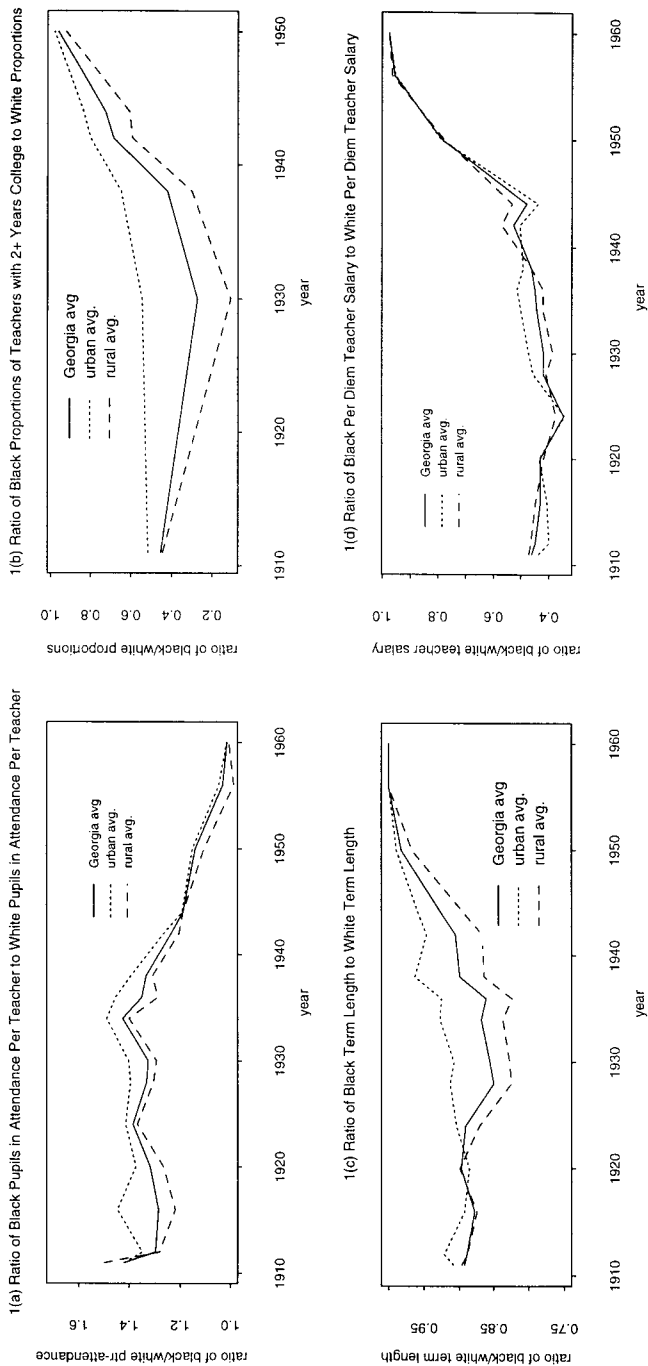


FIGURE I
Black to White Schooling Quality Ratios over Time

by 1950, and in all cases by 1960, the white and black school systems in Georgia had become virtually identical according to the depicted empirical measures of quality inputs.⁴ Moreover, Figure I reveals that the trends are the same in rural and urban counties.

The patterns observed for Georgia are representative of the South as a whole. Figure II shows the time series of black/white relative schooling quality for the entire South over the period from 1910–1960 for three schooling quality measures—the attendance-based pupil/teacher ratio, term length, and per diem teacher salary. The pattern for Georgia is remarkably similar to that observed for the South as a whole, which leads us to extrapolate our conclusions based on the rich data available for Georgia to the entire region.⁵

Our district-level schooling quality data for Georgia can also be used to examine how school resources varied across districts within the state.⁶ In the early years of our sample, within-state variability in quality is of the same magnitude as between-state variability. The ratio of the standard deviation to the mean of Georgia county pupil/teacher ratios was roughly one-quarter for whites and one-third for blacks in 1911, but both of these ratios were cut in half by 1960. The large variability that was present in class sizes at the start of the century gradually declined as both very small and very large classes tend to disappear. By 1960, most of Georgia's classes converged to a uniform size of 20 to 30 students for both whites and blacks.⁷

4. Around 1960, Southern states stopped reporting separate school quality measures by race even though most schools were still segregated at that time.

5. The states used in constructing the average are Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Texas, Tennessee, Virginia, and West Virginia. Disaggregating by state, we find that in Maryland, Oklahoma, and West Virginia there was never much of a racial gap in measured pupil-teacher ratios. In Louisiana, Florida, South Carolina, and Mississippi, the racial gap was larger than in Georgia.

6. For the 1910 to 1960 time period, school districts in Georgia roughly correspond to counties. The exceptions are urban school districts, which correspond to town centers. However, no county had more than three or four school districts.

7. Graphs are available on request. The interquartile range for blacks is 11 in 1911, 10 in 1931, 6 in 1942, and converges to 1 in 1960. For whites the corresponding numbers are 7, 5, 5, and 3. This substantial within-state variability has relevance for econometric studies analyzing the influence of schooling quality on labor market earnings, because these studies rely only on state average quality measures and ignore within-state variability. See, e.g., Card and Krueger [1992b] and Heckman, Layne-Farrar, and Todd [1996a, 1996b]. By a standard errors-in-variables argument, the use of state averages under these circumstances causes a

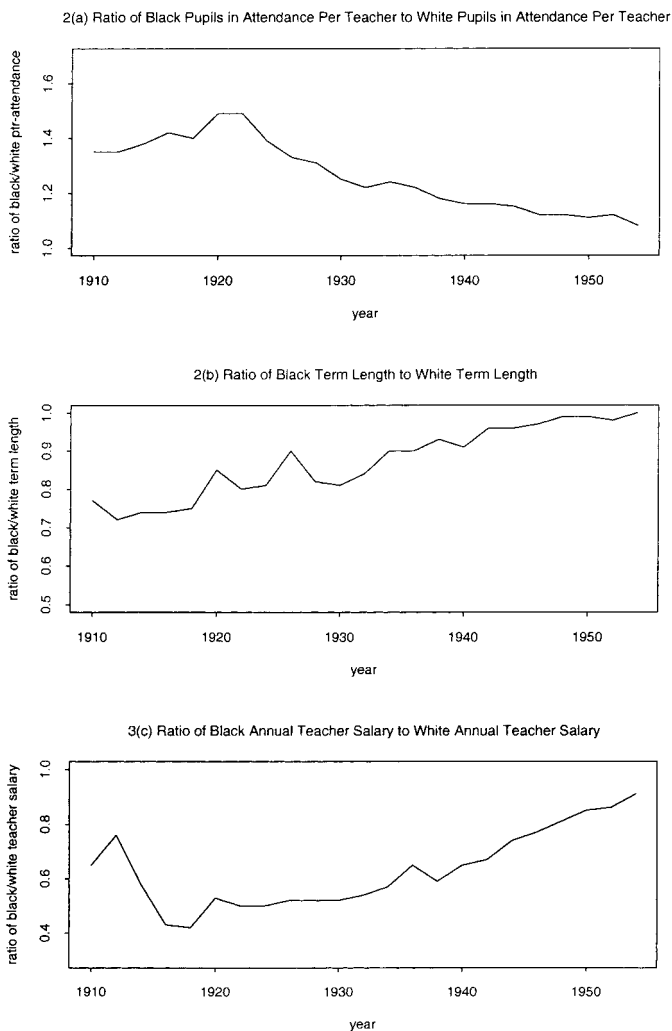


FIGURE II

Southern Average Black/White Schooling Quality Ratios over Time

Note: Southern averages are averages of state means weighted by black enrollment.

II.C. Schooling Quality and School Enrollment Effects

Even though relative schooling quality did not increase throughout the early period, there were substantial relative gains

downward bias in the estimated impact of schooling quality on earnings. This bias would be larger for older cohorts for which within-state variability is greatest.

in black school attendance. These gains stemmed in part from changing parental characteristics (such as literacy) that made parents more likely to send their children to school [Margo 1987]. They also stemmed in part from the great expansion in the availability of black schools in the South in the first third of the century. As a result of these factors, there was substantial convergence in the rate of schooling attendance for blacks and whites even during periods when the aggregate measures of schooling quality for black and white students were remaining constant. Anderson [1988] uses Census data to calculate the percent of the Southern school-age population enrolled in school for 1900 and 1940.⁸ In 1900 only 22 percent of Southern black children age 5 to 9 and 52 percent age 10 to 14 were in school, as compared with 37 percent and 76 percent of white children. By 1940 the black percentages had risen to 66 percent and 90 percent compared with 65 percent and 91 percent for whites.⁹ The large racial disparity in the school attendance rates of blacks and whites had largely been eliminated by the end of the 1930s.¹⁰

School attendance rates depend both on the decision to send children to school and on school availability. The school-building program (described below) that was undertaken with assistance and guidance from philanthropic foundations gave large numbers of black school children the option of attending school. In addition, improvements in school quality made it more likely that students would have chosen to attend schools that were available.¹¹

III. PHILANTHROPY AND ABSOLUTE IMPROVEMENTS IN SCHOOL QUALITY: 1910 TO THE MID-1930S

The period of absolute gains in quality levels in black schools without any gains relative to white schools (abstracting from gains in school availability) approximately covers 1910 through

8. See Anderson [1988, Tables 5-1 and 5-2].

9. Greater school attendance does not necessarily translate into greater educational attainment. Black students were held back more frequently than whites [Thompson 1939]. Especially in the early years of our sample, a high proportion of teenage children in school indicates that those children had not made it through the upper elementary grades.

10. Georgia experienced a similar pattern of converging attendance although the state lagged the South as a whole in this measure: parity had not quite been attained by 1940, although it was by 1960.

11. As school quality improved on an absolute basis throughout this century, attendance increased, as documented in Margo [1987], Card and Krueger [1992b], and Heckman, Layne-Farrar and Todd [1996b].

the mid-1930s. During this quarter century, the nation experienced World War I, the Great Migration, a decline in agriculture accompanied by a growth in manufacturing, and the Depression.¹² Below we study how these different factors are related to changes in educational quality, focusing on two primary factors: rural-urban migration and philanthropy. We find that absolute school-quality improvements for both race groups in Georgia are only weakly related to the population redistribution that resulted from within-state migration. Philanthropic contributions played a substantial role in improving the absolute quality of black schools and enabled them to keep pace with the rate of improvement of white schools without, however, closing the gap.

In the early twentieth century the educational options of black Southern children were poor or nonexistent, and only a small fraction of the school-age population attended schools. A major campaign of school building was needed, yet the disenfranchised black population had little influence over elected officials, and many white Southerners wished to limit black education as much as possible. A strong organizational and financial impetus behind the school-building campaign in the early part of the century came from Northern philanthropists.

The three most influential philanthropic foundations were the Rosenwald Fund, the Jeanes Fund, and the Slater Fund. Active from the late 1800s through the 1930s, the Slater Fund's main contribution was funding high schools for black children in counties that had none [Slater 1928]. The Anna T. Jeanes Fund, operating from 1908 through approximately 1928, supported the salaries of so-called "Jeanes supervising teachers." Even at the height of the program around 1920–1921, Georgia only had about 30 of these senior African-American teachers [Liston 1928]. However, Jeanes "supervisors" improved quality in ways that are not easily quantified by serving as supervisors of the black school system, training other teachers, and working together with the Rosenwald Fund to raise funds and facilitate establishment of new schools [Embree and Waxman 1949]. The activities of the Slater Fund and the Jeanes' Fund were coordinated by the General Education Board, an organization established by J. D. Rocke-

12. The Depression generally lowered schooling quality everywhere, but it did not decrease black relative schooling quality. Between 1930 and 1934 black schools in the South improved slightly relative to white schools in terms of term length and teacher salary even though absolute measures declined [Wilkerson 1939].

feller in 1895. An important contribution of this Board was that it provided funding for state agents who served as assistant state superintendents in charge of the parallel black school system, coordinating the state and philanthropic activities that benefited black schools [Bond 1969].¹³

The most important of the philanthropies specifically targeting black public elementary schools was the Rosenwald Fund, established in 1917 by Julius Rosenwald, then president of Sears, Roebuck and Company. It disbursed \$4.4 million (nominal) in direct expenditures for the building of almost five thousand black schools from 1917 to 1932, which was 15 percent of the \$28.4 million total cost of building these schools [Embree 1936]. The funds were mainly allocated to primary schools in rural areas and to "county training schools" that offered some upper level grades for the purpose of training rural school teachers.¹⁴ In the later years of its operation, from 1932 to 1947, the Rosenwald Fund shifted its focus from building schools to providing teacher training, improving school libraries, and providing transportation for students.

Table II summarizes, by state, the number of Rosenwald school buildings, their cost, and value as of 1936. Of the 4907 buildings constructed with Rosenwald money by 1936 in the segregated Southern states, 261 were built in Georgia, with a monetary contribution from the Fund in the amount of \$.22 million (nominal).¹⁵ Columns 3 and 6 report Rosenwald contributions as a percent of state totals, both in terms of number of schools for black children and in terms of the value of those schools. Rosenwald schools represented 20 percent of all school buildings for black children in the segregated South and, because of their substantially higher quality, 32 percent of the value of

13. The GEB provided funding both for black and white education in the South and administered the Jeanes Fund and the Slater Fund but not the Rosenwald Fund. Its balance statement from 1902–1930 shows \$1.2 million spent on black medical schools, \$1.3 million on black high schools, \$1 million on teacher salaries, and an additional \$11 million on black "colleges and schools." It appears that most of the \$11 million went toward a few so-called industrial institutes (Hampton, Tuskegee, and Spelman). The GEB also contributed toward white education in the South and in fact spent nearly ten times the amount on white education (\$153 million) as on black education, especially on white Southern colleges and medical schools.

14. Teacher salaries in county training schools were sometimes subsidized by the Slater Fund.

15. By 1944, after the conclusion of the Rosenwald building program, the Fund had built a total of 5357 schools for black children [Embree and Waxman 1949].

TABLE II
ROSENWALD CONTRIBUTIONS TO BLACK SCHOOL BUILDINGS IN TWELVE SOUTHERN STATES^a

State	Value of property									
	Number of buildings			Total black school value (in millions)	Value of Rosenwald- built schools as of 1936	Fraction of property value in Rosenwald schools	Measure of inequity in school spending by race ^b	Rosenwald school capacity, 1931 ^b		
	All black schools	Rosenwald- built schools	Fraction Rosenwald					Fraction of black school-age population	Fraction of black teachers employed	
Total reporting	24,454	4,907	.20	68.9	22.2	.32		.21 ^c	.29 ^c	
Alabama	2,603	407	.16	4.7	1.3	.27	.36	.12	.19	.19
Arkansas	1,438	389	.27	2.6	2.0	.74	.40	.33	.41	.42
Florida	1,014	125	.12	4.9	1.4	.29	.31	.15	.23	.20
Georgia	3,111	261	.08	5.7	1.4	.24	.28	.09	.14	.15
Louisiana	1,675	435	.26	NA	NA	—	.33	.20	.30	.37
Maryland	536	153	.29	8.8	0.9	.10	.71	.25	.27	.21
Mississippi	3,339	633	.19	3.2	2.9	.89	.21	.16	.26	.28
North Carolina	2,456	813	.33	12.5	5.2	.41	.48	.35	.43	.40
South Carolina	2,466	500	.20	5.2	2.9	.55	.22	.25	.33	.36
Tennessee	1,208	373	.31	NA	NA	—	—	.35	.43	.37
Texas	2,810	527	.19	14.1	2.5	.18	.45	.22	.27	.24
Virginia	1,798	381	.21	7.0	1.9	.27	—	.19	.27	.24

a. Source: Wilkerson [1939, p. 33].

b. Source: Bond [1934]. State funds were allocated per pupil without regard to race, but funds were often redistributed at the local district level away from the black schools [Bond 1934]. The number shown in the table represents the school expenditures per black pupil divided by the total state dollars apportioned per pupil. For example, if the state apportioned one dollar per student, but only fifty cents was spent on black pupils, then the inequity index shown in the table would equal 0.5.

c. Source: Julius Rosenwald Fund Archives, Fisk University, box 331 folder 2.

black school property. The Fund estimated that more than one-third of black students attended Rosenwald-financed schools in the South in 1932 [Rosenwald Fund 1932].

In addition to the direct effect of increasing the availability of schooling, philanthropic activity may have also had an indirect effect on school quality measures through its efforts to improve teacher education and to set minimum standards for its schools. For example, the Fund stipulated a five-month term for Rosenwald schools and a minimum salary of at least \$2.80/day. The insistence on these minimum standards for Rosenwald schools contributed to the rise in the term length in Southern black schools that is evident in the Georgia data presented in Table Ia. Also, a term-length pilot project funded by Rosenwald contributed small amounts of money (\$89,000 in total) for teacher salaries, which was matched by the school district, to extend school terms by one or two months.¹⁶

Aware of the potential problems of substitution and "crowding-out" of public funds, the philanthropies targeted funds toward projects that could not easily be diverted to other uses and took steps to prevent displacement of existing funding. For example, the Rosenwald Fund stipulated terms designed to ensure state, county, and community commitment to the new schools. Funding was only granted under the following conditions: (1) the state and county contributed money up front to the building and agreed to maintain it as a regular part of the school system; (2) local white citizens contributed money or land for the school site, and local blacks demonstrated a "desire for education" by furnishing volunteer labor or money; and (3) school term lengths were set at a minimum of five months, with the Fund agreeing to help build teachers' homes if the school authorities guaranteed an eight-month term. [Embree and Waxman 1949, p. 39]. The Rosenwald fund limited substitution possibilities by mainly funding physical capital, in the form of school buildings built in large part by volunteer local labor, which could not easily be diverted away from black education. Similarly, the Jeanes Fund trained African-American supervisory teachers who were solely employed in black schools.¹⁷

To receive funding, black residents typically submitted an

16. None of this money was spent in Georgia, however.

17. With few exceptions, black schools were fully staffed by black teachers, and white schools were fully staffed by white teachers (see Pierce et al. [1955]).

application for aid and were then visited by a fund representative who specified terms under which aid would be provided and assisted in organizing fund-raising rallies. The terms always required substantial matching contributions from local residents and from the public school system. In 1917, of the total cash contributions to the school-building program, the Rosenwald Fund contributed 32.6 percent, rural black citizens 45.5 percent, white citizens 5.9 percent, and public tax funds 16 percent. One reason the fund was so successful in eliciting substantial contributions from local black residents is that there already existed a strong tradition of "self-help," whereby black citizens donated money, labor, and land to finance the black schools that were receiving little support from public tax revenues [Anderson 1988].

Although it is conceivable that school improvements might have taken place in the absence of philanthropic interventions, there is substantial evidence that local school authorities were unwilling to invest in black schools. For example, in 1911 Alabama's school superintendent noted that many counties were accumulating surpluses in a special state school fund allocated for use in building and repairing schools. After using the funds to build or repair white schools, the local school authorities were reluctant to use the remaining funds to build or repair black schools [Bond 1969]. The general lack of support for black schools is also evident in the fact that in 1928 in Alabama, only 53 percent of the potential Rosenwald monies were used due to lack of sufficient matching funds.

Like the Marshall Plan, the Rosenwald Fund created incentives that promoted participation by all parties and made substitution difficult.¹⁸ By providing money from outside the state, relying on volunteer labor and local contributions, and requiring (initially) only minimal money from the state, the Fund made it easier for reluctant school officials to agree to the improvements. As described by Bond [1934], "The success of the Rosenwald Fund in stimulating public tax bodies to assume the responsibility of building schools for Negroes is found in the fact that in the first year of the plan, only 17 percent of the money expended came from public sources, while in 1931, public funds amounted to 72 percent of the total expenditures." If philanthropy functioned as a catalyst for local and state efforts, as Bond suggests, then the

18. See De Long and Eichengreen [1993] for a discussion of the incentives in the Marshall Plan.

value of philanthropic dollars in school budgets does not fully capture its impact.¹⁹ However, the decrease over time in the percentage of school expenditures paid by the fund may also have been due, in part, to the fact that the earlier, school-building phase of the fund's operation required larger capital outlays.

Another way that the philanthropies maximized the impact of their donations was by carefully choosing which states received aid. The Rosenwald Fund appears to have targeted states providing the least amount of state funding for black school districts. Column 7 of Table II, labeled "Measure of inequity" lists the percent of per capita apportioned state educational funds that black students actually received. For example, if the state apportioned \$1 for each pupil (regardless of race), then the typical Georgia county spent only 28 cents of that amount on the average black student (with the remaining amount being diverted to white schools). Comparing the inequity index figure to the preceding column indicating the percentage contribution of the Rosenwald Fund to the value of black schools in the state shows that the Rosenwald Fund tended to contribute more to states providing the smallest percentage of potential expenditures on black students. (The Kendall-Tau correlation between these measures is .56.) For reasons that are not clear, Georgia, despite its high inequity index score, had the lowest percentage of Rosenwald schools of the twelve states listed in Table II—only 8 percent of its black schools were Rosenwald schools in 1932. In 1927 around 14 percent of black rural school children in Georgia were attending Rosenwald schools as compared with the Southern average of 23 percent [Smith 1928]. Nonetheless, the much higher quality of Georgia's Rosenwald schools is reflected by the fact that Rosenwald schools represented one-fourth the value of all black schools in the state. Under the assumption that Rosenwald contributions did not crowd out other funding, the overall impact of the school building program was to increase the value of black school property in the south by one-third.²⁰ The states

19. The Fund's internal studies of its effectiveness focused on the way the Fund increased the value of school property. The overall value of school property increased by 140 percent between 1920–1930; the Fund estimated that its schools represented 40 percent of that increase [*Decade of Increase in Schoolhouse Property for Negroes* 1930].

20. Ideally, one would like to estimate econometrically what schooling quality would have been in the absence of philanthropy as a way to assess the extent of any crowding out of public expenditures. The data demands of such an exercise are prohibitive, since it would require information on both philanthropic and

experiencing the largest increases were Arkansas and Mississippi, where Rosenwald schools represented 74 percent and 89 percent of the total value of school property in 1936.

The Rosenwald Fund's primary aim was to increase educational opportunity by creating new schools. The sheer number of new schools built by the fund offers one explanation for the rising black enrollments relative to the school age population and for the convergence of black and white attendance rates between 1900 and 1940, previously noted. One major inequality in school availability that the Northern philanthropies did not at first address was the highly unequal provision of high schools. For white children, new high schools were being built throughout the South in the early part of the century, reflecting a national movement for universal high school education (see Goldin and Katz [1999]). The number of high schools for whites in Georgia grew from four in 1904 to 122 in 1916, but as late as 1916 not a single public high school in the state would accept black students.²¹ No Northern philanthropic agency gave money for a public black high school in the South until 1926, well after most Southern cities had opened at least one black high school on their own.²² By 1932, however, the Rosenwald Fund reported that one-tenth of its schools "had high school work ranging from two to four years" [Rosenwald Fund 1932]. These were mainly common schools giving extended courses.

Those Northern philanthropies that became involved in building and funding secondary education, such as the Rosenwald Fund and the Slater Fund, emphasized the Tuskegee model of industrial education over academic education for blacks. However, Pierce et al. [1955] maintain that few schools ever provided the type of vocational training that would have prepared blacks

public expenditures by county, neither of which we have. It would also require solving the selection problem arising from the fact that philanthropies allocated funds partly according to need. Nonetheless, given the substantial proportion of black schools that were built in the Rosenwald school-building program and the array of other Northern philanthropic contributions to southern black schools, the aggregate effect of Northern philanthropy on black schooling was considerable under any reasonable assumption of the percent of crowding out of public funds that it might have generated.

21. The complete absence of black high schools represented a step backwards. As discussed in Section IV, at least one black high school in Georgia had been closed by governmental decree in the late nineteenth century, prompting a legal challenge that failed in the United States Supreme Court.

22. Anderson suggests that these urban schools were founded partly out of concerns about delinquency in the growing urban black population.

for highly skilled industrial jobs, both because such training was more expensive than a traditional education and because of opposition by white workers who did not want to face black competition for skilled jobs.

IV. EXPLAINING RELATIVE QUALITY IMPROVEMENTS: MID-1930S–1960

During the second phase of quality improvement, beginning in the mid-1930s, black school quality improved both absolutely and relatively to white schools. These gains, which begin in the late 1930s, come too late for philanthropy to be a major contributing factor as the level of philanthropic contributions to black schools declined after the early 1930s. We turn now to another leading candidate that coincides closely with the timing of these gains: legal action. Later, we also consider the effects of other possible contributing factors including World War II.

IV.A. The Impact of Legal Action

Figure I(c) demonstrates the substantial change in the ratio of black to white term lengths in Georgia after 1937. This change was prompted by the passage that year of a Georgia statute mandating that all schools, irrespective of race, hold class for a minimum of seven months. The sharp increase noted in Figure I reveals that the law did not merely formalize a practice already adopted by most schools.

Although the proximate cause of the improvement in school term length in Georgia was a single legislative act, the forces that led to overall relative gains in other schooling inputs across the South were more complicated. Some background on the relevant legal history will clarify both the nature and likely impact of litigative measures designed to address racial discrimination in schooling. The century opened with very little encouragement for those looking to the federal judiciary to assist Southern blacks in their effort to secure adequate education. The Supreme Court (1896) decision in *Plessy v. Ferguson* upheld as constitutionally permissible a state law requiring railroads to provide “separate but equal accommodations for the white and colored races.” Although the precise holding ultimately proved to be highly adverse to blacks, as Justice Harlan had predicted in his lone dissent, the doctrine of separate but equal at least held out the possibility of ensuring equality of resources for blacks. Three years after *Plessy*, however, Justice Harlan himself undercut this promise,

when black parents in Georgia complained about the closing of a black high school at a time when a high school for white girls (though not for white boys) was supported by public taxation. In *Cumming v. Richmond County Board of Education*, Justice Harlan, now writing for a unanimous Supreme Court, stated that the particular decision of the school board was not rooted in hostility toward blacks, because the closing of the black high school that would have served 60 students was implemented to provide primary education to about 300 black schoolchildren. Moreover, three church-affiliated high schools accepted black students for the same fee as had been required to be paid for attending the closed black public high school. In rejecting the equal protection claim, Justice Harlan wrote: "the education of the people in schools maintained by state taxation is a matter belonging to the respective states, and any interference on the part of Federal authority with the management of such schools can not be justified, except in the case of a clear and unmistakable disregard of rights secured by the supreme law of the land." *Cumming* came to stand for the proposition that segregated schools were constitutional and that federal courts should not interfere, absent extraordinary circumstances, with the decisions of state and local school authorities.²³

IV.B. NAACP Litigation

Starting in the late 1920s, the NAACP began planning an organized attack on the discriminatory practices followed by Southern school boards, using *Plessy v. Ferguson* as leverage for change.²⁴ The NAACP found that the seven Southern states with the worst records in terms of unequal school allocations—Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and South Carolina—had school segregation laws that did not mandate equal funds for blacks. In his 1931 report, Nathan Margold, a white, liberal corporate attorney from New York who drafted the legal strategy for the NAACP, recommended that lawsuits be brought alleging violations of the equality mandate of *Plessy* in all seven of these states. The strategy the NAACP adopted came to

23. Kousser [1980] reviews events leading up to the *Cummings* case, offers interpretations of Justice Harlan's opinion in the case, and analyzes the consequences of *Cummings* for Southern education.

24. A \$100,000 grant from the American Fund for Public Service (funded by Bostonian Charles Garland) initiated the legal plan, underscoring once again the impact of Northern philanthropy. See Beezer [1986].

be known as the "Margold Plan." Although not determinative, the fact that the greatest departures from equality in funding of black and white schools came in states without state legal protections for blacks increases the likelihood that the assertion of the protections of federal law beginning in the late 1930s could (and did) narrow the gap.

Perhaps at least in part influenced by the interests of its middle-class black constituency, the NAACP adopted a strategy of seeking to require school districts to pay equally qualified white and black teachers the same salary. Finding a black teacher willing to file a lawsuit during the Depression proved difficult. Fearing potential violence and job loss during bleak economic times, black teachers naturally were reluctant to take what would be viewed as a highly provocative act. Nevertheless, the fortuitous event that the NAACP's attorney, future Supreme Court Justice Thurgood Marshall, was a member of the bar in the state of Maryland, coupled with the fact that the state had a teacher-tenure law, which inhibited school boards from firing teachers who filed suit, led the NAACP to file its first teacher salary equalization case in Maryland in 1936.²⁵

Although this case and several other of the early suits led to some encouraging local successes, they did not generate published opinions that might have broader precedential value. A 1939 decision in the case of *Mills v. Board of Education of Anne Arundel County* by a federal court in Maryland provided the NAACP with the desired precedent.²⁶ But although the NAACP successfully secured an injunction in *Mills* against discrimination based on race in the setting of teacher salaries, its victory was only partial. The court indicated that differences in pay that were based on merit rather than race were permissible. Not surprisingly, the ruling enabled school boards to use subjective "merit" standards to disguise continued racial discrimination, making it harder for black teachers to prove discrimination. Despite this limitation, the *Mills* decision provided an important precedent to black teachers for use in subsequent litigation and for use as a bargaining tool in negotiating settlements. For example, in January of 1940 the NAACP sent copies of the *Mills* decision to the Prince Georges County School Board (Maryland), which was then embroiled in a similar case. The school board quickly responded,

25. See Tushnet [1987] for details.

26. 30 F. Supp. 245.

voluntarily equalizing salaries in exchange for dismissal of the lawsuit.²⁷ In 1941 Maryland passed an act equalizing all salaries and repealing earlier statutes setting separate minimums for white and black teachers.²⁸

The NAACP's lower federal court victory in *Mills* was followed a year later by its first federal appellate court success. The Fourth Circuit Court of Appeals in *Alston v. School Board of City of Norfolk, Va.* cited *Mills* in ruling that separate and discriminatory pay schedules constituted a clear case of discrimination that was prohibited under the 14th Amendment.²⁹ In response to *Mills* and *Alston*, many school boards adopted merit-based pay systems, which at times resulted in black teachers receiving the white salary minimum while white teachers would earn more based on "merit."

To shed light on the issue of whether discrimination or merit differences explains the racial gap in teacher salaries, we examined whether discrepancies in average black and white teacher salaries track differences in certification and training levels, as would be expected if Georgia school districts did not discriminate against African-American teachers, but merely paid all teachers according to merit. Our two measures of relative teacher quality—the average ratio of black/white percentage of teachers who had advanced certificates and college training—had converged to 80 percent by 1943 while the black/white teacher salary ratio was still stuck at about half that level. This evidence supports Margo's [1990] conclusion that discrimination and not the qualifications of teachers was largely responsible for salary discrepancies.

IV.C. Teacher-Salary Litigation in Georgia

In response to successes in Maryland and other Southern states, the NAACP in 1941 filed the first petition to equalize salaries in Georgia. For many years Atlanta had maintained a two-tier system of paying teachers by race. When the overtly discriminatory salary system was abolished, the NAACP challenged the new "merit" system in 1943 as discriminatory in practice. This case, *Davis v. Cook*, was to be both the most protracted and the most important teacher salary case in Georgia.³⁰ After

27. 1940 NAACP Annual Report.

28. Maryland Act of 1941, Chapter 515.

29. The states of the Fourth Circuit were Maryland, West Virginia, Virginia, North Carolina, and South Carolina.

30. *Davis v. Cook*, 80 F. Supp. 443 (Northern District Court of Georgia, 1948).

reviewing voluminous statistical data, the federal trial court concluded that the wide salary differences between black and white teachers could be attributed only to unlawful discrimination. The court's 1948 decision (the suit was initiated in 1943) held that a teacher salary schedule that was not discriminatory on its face could still be unlawful if, in practice, the salary schedules were applied in an unequal way, to the detriment of black teachers.³¹

To determine how teacher salary increases in Georgia correspond to the timing of the court cases, reconsider Figure I(d), which shows the black/white ratios of daily teacher salaries. From 1911 through the mid-1930s, black teachers in Georgia received a low and roughly constant fraction of the amount paid to white teachers. Starting in the late 1930s, corresponding with the beginning of the NAACP's civil litigation campaign, the black/white ratio appears to jump before dipping in 1942. The dramatic gain in black relative teacher salaries then begins around 1944, following the initiation of the federal litigation in *Davis v. Cook*. This relative salary improvement continued until, by 1956, after the famous *Brown v. Board of Education* ruling, black teachers and white teachers received almost identical pay on average.³²

Assessing the importance of events like civil litigation using a single time series of wages is a perilous activity. Although the analysis seems to indicate that NAACP litigation had a strong impact on relative teacher salaries in Georgia, a simple pattern established by a before-and-after comparison can arise from many confounding factors. The simple comparison does gain plausibility, however, because competing explanations such as increased teacher training and, as we establish later, WWII labor shortages do not closely match the timing of increases in teacher salaries. Moreover, because we have statewide teacher-salary data for a number of Southern states that experienced equalization litigation, we can test whether black relative salary gains

31. In 1949 the *Davis v. Cook* decision was overturned on appeal as the circuit court ruled that the plaintiff had to first exhaust his administrative remedies before bringing suit. Despite this procedural setback, the case nonetheless supported the drive for teacher salary equalization as the appellate court stated that the ostensibly neutral teacher salary schedules were applied in a way that appeared to be based "on color only." The appeal was filed by Cook against Davis (see *Cook v. Davis*, 178 F. 2d 595 (5th Circuit, 1949)).

32. The NAACP changed its tactics in the late 1940s, moving to a direct attack on segregation. The new approach culminated in the *Brown* case, which was filed in 1951. In part, the shift in strategies was due to decreasing marginal returns to additional equalization cases. It was also due to increased support from the black community and the federal government for a more aggressive assault on segregation. See Tushnet [1987].

respond in a similar fashion to litigation filed at different points in time. Therefore, we next consider whether other Southern states exhibit similar patterns in the timing of relative teacher-salary increases and civil litigation.

IV.D. Teacher Salary Increases throughout the South

Figure III plots black/white relative teacher salaries for the seven states initially targeted by the NAACP in the Margold plan (Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, and South Carolina), as well as for four other Southern states (Maryland, North Carolina, Texas, and Virginia). The figure indicates the initial filing dates of key NAACP civil cases, and identifies the two states (Mississippi and North Carolina) that did not have teacher-salary equalization cases filed. The general pattern that emerges from a visual inspection of the eleven graphs is that there is virtually no progress in closing the substantial earnings deficits of black teachers relative to white teachers until litigation is initiated within the state, at which point sharp relative improvement occurs within a year. This description seems completely accurate for eight of the eleven states, with the NAACP litigation occurring in the following years: 1936 (Maryland), 1940 (Virginia), 1941 (Florida, South Carolina), 1942 (Alabama, Louisiana), and 1943 (Georgia, Texas). The fact that the upturn occurs at roughly the time of the filing of the NAACP litigation and that the filings are spread out over a seven-year period for eight different states buttresses the conclusion that the litigation caused the increase in black relative teacher salaries.

The three states in which the description seems less compelling merit discussion. First, litigation was commenced in Arkansas in 1942, but the upturn appears not to commence until 1945. Second, Mississippi in one sense conforms to the general pattern and in another sense does not. Although Mississippi was initially targeted, the NAACP did not file litigation suits there, and salary equalization took place slowly. By 1952 black teachers were still paid a mere 60 percent of white teacher salaries in this state, whereas teacher salaries for blacks and whites were roughly equal by that year in all the other states except Arkansas and Louisiana (where the black/white teacher salary ratio was close to 90 percent) and South Carolina (where it was close to 80 percent). Thus, if our general pattern is one of limited black relative salary gains in the absence of litigation, then Mississippi can be taken as reflective of the pattern. The only caveat is that, starting in about

1949, there was an upturn in black relative salaries even in the absence of litigation. At that late date, the handwriting was on the wall, and the state may have followed the strategy of moving toward equalization as a way to avoid racial integration.³³

Third, although Mississippi experienced no litigation and had the overall worst record in terms of discriminatory pay differentials, North Carolina actually had one of the best records without ever being sued for teacher salary equalization (although the NAACP did file successful school facility equalization cases in the state). North Carolina is therefore the only counterexample to teacher salary equalization in the absence of litigation. The state is unusual in that, in the midst of the Depression, the North Carolina General Assembly adopted a number of measures designed to improve education. The state legislature established a statewide eight-month school term minimum for both whites and blacks, and, acknowledging the threat of civil litigation in 1934, the State Superintendent of Public Instruction urged the General Assembly to raise the pay of black teachers. Beginning in 1938, the legislature responded by appropriating increasing sums each year to fully equalize salaries by 1945. The effect of this legislation is clearly discerned in Figure III.³⁴ Accordingly, North Carolina conforms to the overall pattern that the improvement in the ratio of black/white teacher salaries comes via either NAACP-initiated judicial pressure or direct state legislative action, perhaps encouraged by the prospect of litigation.

For a further assessment of the impact of NAACP litigation, we compared the black/white teacher-salary ratio for nine Southern and border states before and after each state's first salary equalization case was filed. (The United States Department of Education Biennial Surveys do not provide a full time series, but we have teacher salaries for every other year from at least 1910 through 1954, with a few gaps.) Table III gives the mean percent change in the teacher wage ratio for states with equalization cases and, for comparison, the mean percent change in the wage ratio before and after a fixed reference year (1943) for five other Southern and border states without equalization cases.³⁵ The table provides further general support for the pattern of sharper improvement over similar time periods in black relative teacher

33. See footnote 38 below.

34. See Tushnet [1987].

35. We take the year of litigation to be the filing date.

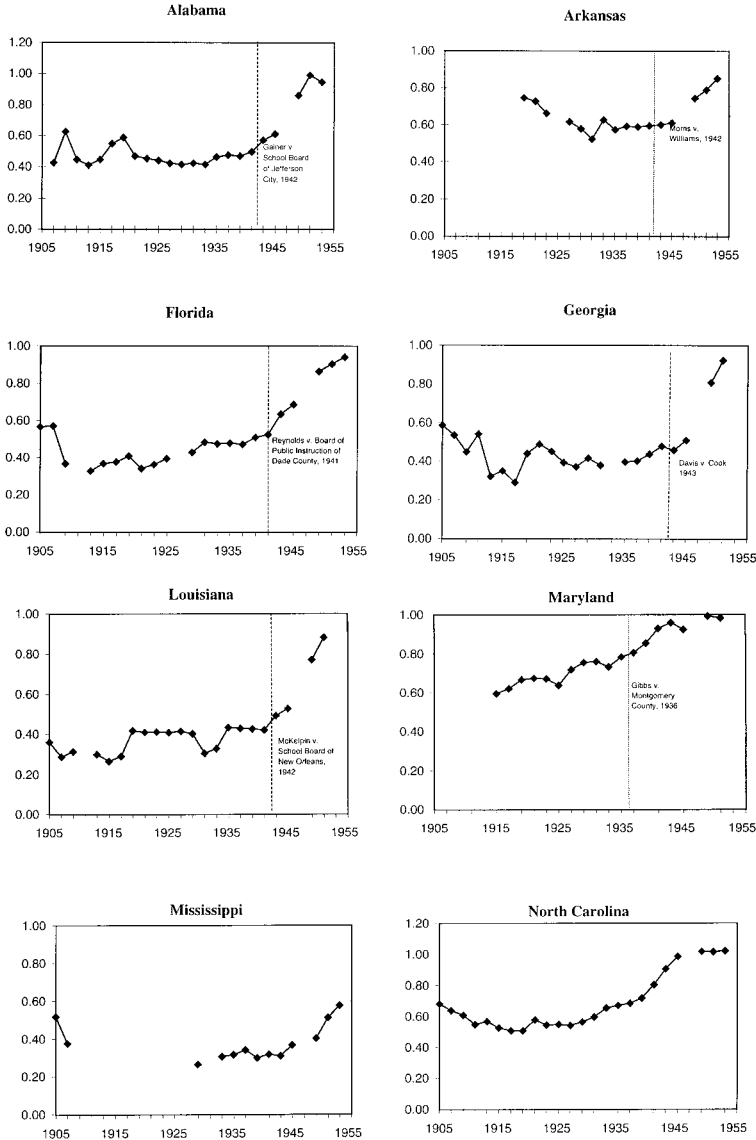


FIGURE III
Black/White Teacher Salary Ratios, Selected Southern States

salaries in states with NAACP litigation than in those without. In all nine states with litigation, the black/white teacher-salary ratio narrowed substantially more after the NAACP cases were

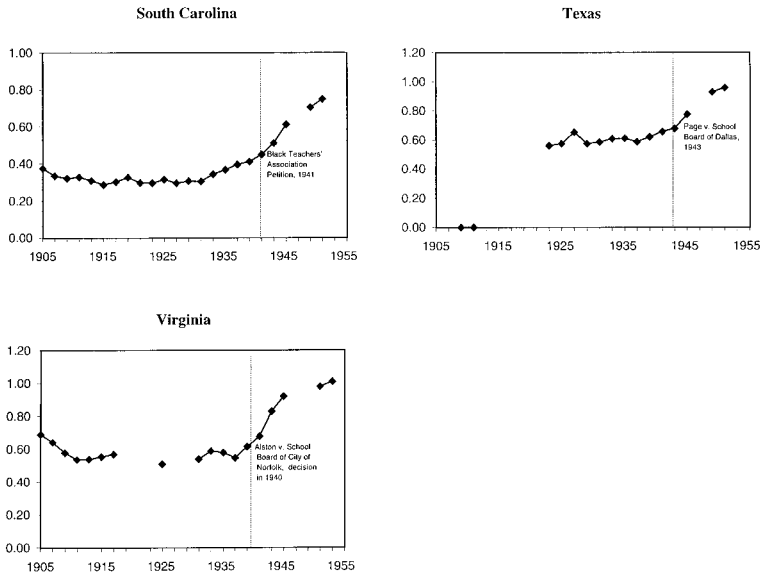


FIGURE III
Continued

filed than in the years preceding the litigation, and in five states without litigation, there is no consistent pattern of greater improvement before or after 1943.

IV.E. A Panel-Data Analysis

Table IV presents a more rigorous statistical test of the impact of NAACP teacher-salary equalization litigation on not only the black/white ratio of teacher salaries but also on other measures of relative black schooling for the 1930–1953 period. The empirical results presented in the first four columns of the table are from the panel data regressions of the black/white teacher wage ratio on state and year fixed effects and on indicators for year relative to the litigation year, modeled in four different ways.³⁶ Column (1) reveals that NAACP litigation elevates the black/white teacher salary ratio by 6.5 percentage points, and the result is marginally statistically significant. Column (2) posits that the effect of NAACP litigation will not be immediate and

36. For states without litigation, the litigation indicators equal zero for all years.

TABLE III
PERCENT CHANGE IN BLACK-WHITE MEAN TEACHER SALARY RATIO BEFORE AND
AFTER LITIGATION FOR SEGREGATED SOUTHERN AND BORDER STATES^a

Segregated states with teacher salary equalization litigation			
State	Year of litigation (filing date)	Percent change in eight years before litigation ^b	Percent change in eight years after litigation ^b
Alabama	1942	9	63
Arkansas	1942	5	26
Florida	1941	6	71
Georgia	1943	20	115
Louisiana	1942	2	65
Maryland	1936	3	20
South Carolina	1941	21	74
Texas	1943	8	41
Virginia	1939	0	57
Segregated states without litigation			
State		Percent change before 1943	Percent change after 1943
Delaware		-8	32 ^c
Mississippi		0	63
Missouri		43	6
North Carolina		19	17
Oklahoma		6	-9 ^c

a. The segregated Southern and border states include the indicated fourteen states plus Tennessee, Kentucky, and West Virginia. Results for Tennessee (a litigation state) and for Kentucky and West Virginia (nonlitigation states) are not available because of missing data.

b. The second and third columns show the percent change in the wage ratio for the eight years before and the eight years after the litigation case (or before and after 1943 for nonlitigation states). The base year used in calculating percentages is the year that occurs eight years prior to litigation. The year of litigation is included in the after-litigation percentage calculation.

c. Because of missing data, the percent changes for Delaware are based on four-year intervals and for Oklahoma on two-year intervals.

uniform (as in column (1)), but may grow by a constant amount over time from the date the decision is rendered. This specification yields a growth of about 1.4 percentage points per year following litigation that is highly statistically significant. Column (3) models the postlitigation effect in yet another way, by allowing a postlitigation step function (as opposed to the single before-after effect of column (1) and the constant yearly increase after litigation of column (2)).

These estimates suggest that some time elapses before the full impact of the litigation is felt—the effect increases over each

TABLE IV
EFFECT OF TEACHER-SALARY LITIGATION ON RELATIVE BLACK/WHITE QUALITY MEASURES BASED ON POST-1930 SAMPLE (1930-1953)
(STANDARD ERRORS ARE IN PARENTHESES.)

Specification	Black/white teacher salary ratios				Pupil/teacher ratio				Term length			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Postlitigation indicator	0.065 (0.034)	—	—	—	-0.151 (0.033)	—	—	—	0.048 (0.013)	—	—	—
Postlitigation * years since litigation	—	0.014 (0.004)	—	—	—	-0.012 (0.003)	—	—	—	0.006 (0.003)	—	—
1-2 years postlitigation	—	—	0.050 (0.033)	0.044 (0.038)	—	—	-0.023 (0.035)	-0.051 (0.039)	—	—	0.022 (0.012)	0.027 (0.019)
3-4 years postlitigation	—	—	0.080 (0.048)	0.074 (0.051)	—	—	-0.118 (0.019)	-0.132 (0.020)	—	—	0.038 (0.017)	0.041 (0.022)
5-6 years postlitigation	—	—	0.175 (0.055)	0.169 (0.058)	—	—	-0.132 (0.034)	-0.134 (0.035)	—	—	0.039 (0.018)	0.041 (0.020)
>7 years postlitigation	—	—	0.146 (0.053)	0.139 (0.055)	—	—	-0.180 (0.039)	-0.195 (0.035)	—	—	0.076 (0.028)	0.077 (0.030)
0-2 years prelitigation	—	—	—	-0.012 (0.020)	—	—	—	-0.081 (0.023)	—	—	—	0.020 (0.016)
2-4 years prelitigation	—	—	—	-0.022 (0.023)	—	—	—	-0.058 (0.015)	—	—	—	-0.015 (0.018)
Mean of dependent variable	0.707	0.707	0.707	0.707	1.125	1.125	1.125	1.125	0.960	0.960	0.960	0.960
Std. of dependent variable	0.248	0.248	0.248	0.248	0.150	0.150	0.150	0.150	0.079	0.079	0.0789	0.079
R ²	0.89	0.89	0.92	0.92	0.74	0.74	0.76	0.77	0.76	0.75	0.76	0.77
Number of observations	144	144	144	144	250	250	250	250	164	164	164	164

All specifications include unrestricted state effects and year effects. Year of litigation corresponds to the filing date of the case. States included (for all years when data are available) are segregated Southern and border states (Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia) plus the District of Columbia. Standard errors are Huber-White standard errors.

of the six years following the successful litigation. As a further check that the effects do indeed stem from the litigation, the specification shown in column (4) includes indicators for 0–2 years and 2–4 years prior to the litigation. The estimated coefficients are statistically insignificant and of the opposite sign. Overall, then, the panel data analysis using state and year fixed effects confirms that NAACP litigation significantly elevated black relative teacher salaries.³⁷ Using the regression in column (4) of Table IV, we see that eight years after the filing of NAACP litigation, the ratio of black to white teacher salaries rose by almost fifteen percentage points. For states such as Arkansas and Maryland, this represents the entire increase in this ratio over that eight-year period. Indeed, for six of the nine litigation states shown in Table III, at least half of the relative gains in black teacher salaries are explained by the litigation effect in our regression model. In the remaining three states, the contribution was still substantial, representing 47 percent of the gain in Virginia, 43 percent in Florida, and 43 percent in Georgia. The unweighted mean estimate across all nine of these states is 60 percent. Moreover, these are lower bound estimates, because our regression models would not capture any spillover effects from threatened or anticipated litigation, or from the ultimate tactic of Southern school districts in the late 1940s and early 1950s trying to stave off NAACP-engineered school integration by improving black schools. Our evidence indicates that Myrdal was right when he predicted in 1941 that “the skillful strategy of the NAACP is

37. Our estimates are not sensitive to whether we use the post-1930 or the full sample from 1911–1953 (results available from the authors). However, since we have already seen that other factors that are omitted from the regression, such as philanthropy, were very important in the earlier time period, we focus on the post-1930 estimates. In addition to the specifications reported in Table IV, we also estimated panel-data regressions that included state-specific time trends instead of the year effects and state fixed effects. In those specifications, the estimated litigation effects for the three school quality variables tend to be even larger. Last, we used the panel data framework to explore the nature of the influence of the major federal appellate court decision rendered in an NAACP teacher salary lawsuit—that issued by the Fourth Circuit Court of Appeals in *Alston*. In general, we assume that a lawsuit filed in a certain state would influence subsequent relative black/white teacher salaries within that state. But *Alston*, which as discussed above was filed in Virginia in 1939, might have been expected to have an added and broader effect on the other states that made up the Fourth Circuit Court of Appeals, once that court issued its ruling. The panel data analysis reveals that the effect of *Alston* on black relative teacher salaries in the other states of the Fourth Circuit was positive and statistically significant. Its inclusion strengthens the effect of the litigation variable on teacher salaries, which further suggests that the estimated effects of NAACP litigation discussed in the text are lower bound estimates.

probably going to enforce a raise in the wages of Southern Negro teachers over the next decade" [1944, p. 903].

Although the NAACP litigation directly pertained to teacher salaries, we also examine in columns (5)–(12) whether this litigation had any effect on other schooling quality measures. Columns (5)–(8) and columns (9)–(12) show analogous results using the black/white ratio of both the pupil/teacher ratio and term length as the dependent variables, respectively. The regression estimates suggest that, in response to NAACP litigation, school boards improved black schools along several quality dimensions. This finding is important for two reasons. First, it underscores that the NAACP pressures succeeded in improving the entire array of measured schooling inputs for black students. Second, the finding also undercuts the argument discussed in the next section that the improvements in teacher salary came not from the NAACP litigation but rather from labor shortages stimulated by World War II. If it had been the case that teacher shortages induced by the War had stimulated the teacher salary gains, then one would expect that pupil/teacher ratios would have risen as school districts would have tried to economize on the suddenly scarcer input. But this is just the opposite of what we find: pupil/teacher ratios in black schools fell both in absolute and relative terms during this time period.

Even though the civil suits were successful in increasing black teachers' pay, higher salaries would not necessarily generate immediate increases in actual teaching quality. Paying existing teachers more money does not immediately improve teaching practices. Nonetheless, salary increases matched pay to training and would, over time, attract and retain higher quality teachers, thereby benefiting black school children in the segregated Southern schools.

The heightened outside focus on teacher pay likely stimulated increases in other schooling quality inputs for black children. Southern states clearly sought to maintain separate school systems, and improving the relative quality of black schools was a proactive measure intended to stave off integration. Our findings document the success of the basic two-part strategy of the NAACP litigation campaign. Initially, the NAACP successfully used the equality mandate of the separate-but-equal doctrine to secure improvements in black schools, and only when measured school quality inputs had largely been equalized did the NAACP strategy shift toward the direct challenge of segregation itself by

filing the *Brown v. Board of Education* case in 1951, which generated the momentous Supreme Court decision in 1954.³⁸ Ironically, the turmoil and opposition that followed the decision in *Brown* may have diminished the quality of black schooling in the South until the next major Congressional and Supreme Court interventions in public elementary and secondary education came in the late 1960s. (See Donohue and Heckman [1991] and Boozer, Krueger, and Wolkon [1992].)

IV.F. Effects of World War II

A potential competitor to our finding that NAACP litigation boosted the relative salaries of black teachers is that labor shortages induced by World War II generated the black salary increases. Two points should be noted about this argument. First, one might expect the labor shortage to have less of an effect in the teaching sector relative to other sectors, because teachers were mostly women (although war-related work certainly increased their options).³⁹ Second, the argument cannot explain the relative gains of black teachers unless the alleged World War II-induced teacher shortage was more severe for black teachers. Margo [1990] suggests this was the case in noting that between 1942 and 1946 the number of black male elementary school teachers in the South fell by 53 percent.⁴⁰ Although this number seems to confirm a sharp drop in supply, the number of black, male elementary school teachers was rather small. When we examine the

38. An NAACP suit filed in Irwin County, Georgia in September, 1949, sought redress for the inferior quality of black schools. A year later in September of 1950, in the wake of two favorable rulings won by the NAACP in fighting desegregation in graduate education, the NAACP filed a suit in Atlanta asking for either equalization of facilities for black schoolchildren or their admission to white schools. The hope of avoiding possible court-ordered desegregation then encouraged school and state officials to push for rapid equalization [O'Brien 1997].

39. Census data for 1940 reveal that 82 percent of white teachers and 83 percent of black teachers were women. The sample only includes persons born and living in the United States.

40. Margo [1990] uses a log-linear demand and supply model to infer that the supply curve for teachers in the South shifted leftward in every year except 1942–1944 and the demand curve shifted right by about 7.7 percent per year. He concludes that increasing demand and decreasing supply contributed about equally to raising the wages of black teachers. These estimates rely critically on the assumption that demand and supply are log-linear functions of the teacher wage. Moreover, the traditional model may not be able to capture the basic factor—NAACP litigation—that we argue explains changing teacher wages. For example, an increase in black teacher salaries prompted by a court order to eliminate discriminatory pay schedules, might not lead to a decline in the number of black teachers, as a traditional linear-in-wages demand function would predict, if the state simply allocated more money to the teaching sector to pay for the wage increase.

change in the total number of teachers by race for the seventeen Southern and border states, there are very few instances in which the total number of teachers declines by more than 10 percent. For the most part, declines are on the order of 2–5 percent and are observed in both the white and black teaching sectors. For some states, we do not observe any declines in the number of black teachers (Alabama, Louisiana, Missouri, and South Carolina).

Thus, we conclude that changes in the total numbers of teachers were fairly modest. Because changes in teacher wages took place in both the white and black teaching sectors, it is unlikely that WWII-induced labor shortages were instrumental in increasing the black/white teacher salary ratio. However, if teacher salaries did increase as a result of a war-induced reduction in the supply of teachers, one would expect school authorities to substitute away from the more costly teacher input by elevating pupil/teacher ratios, and as we saw in the previous section, this did not occur.

V. MIGRATION AND SCHOOLING QUALITY

The 50-year period we have been discussing coincides with two well-known demographic trends in the South: massive outmigration to the North and migration from rural to urban areas within the South. Over the decades, the black migration rate from the South stood at 5.1 percent (1910–1919), 8.4 percent (1920–1929), 3.7 percent (1930–1939), 12.5 percent (1940–1949), and 11.5 percent (1950–1959). Outmigration rates in Georgia were even higher with over one-fifth of all blacks departing in the 1920s, and another quarter departing during the 1940s.⁴¹ For whites, there was also a persistent, albeit much lower outmigration rate from the South and from Georgia.⁴² The great black outmigration was counterbalanced by high black birthrates, which kept the black population in Georgia at a roughly constant level. But, with a growing white population, African-Americans

41. See Hamilton [1959] for a detailed analysis of migration trends in the South during this period. Much of the earlier outmigration from Georgia in the 1920s involved the reuniting of families separated by an earlier wave of migration before World War I [Weatherford 1934]. The character of this wave of migration was therefore often selective of women and school-age children. In fact, the population of African-American school-aged children in Georgia declined by 11.9 percent during the period 1920–1930.

42. These figures are based on the “survival rate” method of calculating migration rates, described in Appendix 1.

TABLE V
PERCENTAGE BREAKDOWN OF GEORGIA AND SOUTHERN POPULATION BY RACE AND
RURAL/URBAN RESIDENCE

Year	Georgia				South			
	Black	White	Rural	Urban	Black	White	Rural	Urban
1910	45	55	79	21	30	70	77	23
1920	42	58	75	25	27	73	72	28
1930	37	63	69	31	25	75	66	34
1940	35	65	66	34	24	76	63	37
1950	31	69	55	45	22	78	51	49
1960	28	71	45	55	21	79	41	59

South includes the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, and Texas. (Source: Historical Statistics of the United States, Part I Table Series A 195–209 (population), Series C 25–75 (intercensal migration)).

fell from 45 percent of Georgia's total population in 1910 to 28 percent in 1960. The percentage of all Georgians living in urban areas grew from 21 percent to 55 percent (see Table V). The entire South exhibits similar, albeit less dramatic, trends: the black population fell from 30 percent to 21 percent over the period 1910 to 1960, and the urban population rose from 23 percent to 59 percent.

Clearly, the black outmigration to Northern cities substantially improved the quality and availability of schooling since Northern schools were superior to the segregated black schools of the South.⁴³ One might also imagine that shifts within the state or within the South in general might also contribute to black relative schooling quality improvements, but here, the evidence suggests, the effect is rather small, as we now document.

V.A. Comparison of Rural and Urban Schooling Quality Levels

In 1910, three-quarters of both black and white children attending school were in rural areas, compared with only about

43. Myrdal [1944, p. 339] notes that in 1935–1936 Mississippi and Georgia spent only \$9 on each black school child (and five times more on each white), while New York spent more than \$115 on each student with relatively little difference between blacks and whites. Although Northern blacks were poorer than Northern whites, they were more concentrated in urban areas, which in general had better schools than those open to rural white Northern schoolchildren. Thus, Myrdal concluded that “there is little difference between Negro and white schools in the North either in quality of instruction and facilities or in the content of the courses” [p. 945].

45 percent in 1960. Figure I reveals the generally superior average schooling quality levels of urban as opposed to rural districts in Georgia over time.⁴⁴ The salaries and certification levels of teachers tended to be higher in urban areas and term lengths were longer. The sole exception was the pupil/teacher ratio, which tended to be higher in urban districts due to the small size of schools in the rural area. As families migrated away from farms, one-room schoolhouses closed, and schools were able to realize returns to scale, so the higher pupil/teacher ratios in the urban schools to some degree understates the schooling quality advantages that resulted from moves out of rural areas. Of course, a major benefit from urban migration was access to secondary schools that were not available in many rural areas.⁴⁵ By 1960, though, the differences in measured schooling quality inputs between rural and urban areas had been eliminated.

The large gap in the quality of rural and urban schools early in the century has led a number of scholars to contend that migration from rural to urban areas within the South has been a primary reason for black school-quality gains in the early part of the century (see, e.g., Myrdal [1944], pp. 947–950). Even though relocation to urban areas typically moved students to better quality schools, the lesson of Table V is that the migration to cities improved the quality of schools for both blacks and whites. Therefore, since the *ratios* of quality measures for blacks relative to whites were similar in rural and urban areas, the general shifting of the population did not substantially improve the black schooling quality relative to white schooling quality. Indeed, as we next show, the direct contribution of within-state migration to absolute improvements in schooling was surprisingly modest.

V.B. Quality Decompositions

To investigate how much of the observed change in state-level average measures of schooling quality can be accounted for simply by changes in the geographic location of the population, we begin by decomposing the Georgia state-level changes by race

44. See Appendix 1 for the Census definitions of urban and rural and for how we classified districts as urban or rural.

45. Note that this factor would be captured in earnings equations used to test racial disparities since a pure “availability” effect translates into more years of education, which is measured in Census data. Our particular interest is in understanding when the Census measure biases the estimate of the racial disparity in earnings because it does not reflect greater quality improvements enjoyed by blacks.

in each quality measure into (a) change due to migration and participation in schooling across counties (changing enrollment weights) and (b) change due to within-county improvements. Let q_{ir}^t denote the mean quality in county i , in year t , for race r , and p_{ir}^t the percentage of pupils in the county district out of total enrollment for race r at time t . The change in mean quality over two time periods is decomposed as

$$\bar{q}_r^{t+1} - \bar{q}_r^t = \sum_{i=1}^I p_{ir}^{t+1} \cdot (q_{ir}^{t+1} - q_{ir}^t) + \sum_{i=1}^I (p_{ir}^{t+1} - p_{ir}^t) \cdot q_{ir}^t,$$

where I is the total number of counties and an overbar above a variable denotes its mean (taken over counties). The first term on the right-hand side is the change in the quality measure over time (within county), and the second term is the change in the weights over time due to migration and to changes in enrollment rates.⁴⁶

Table VI shows the results of this decomposition for three measures of school quality for white and for black schools. The column of Table VI labeled "Total change" shows the total change in the relevant quality variable over the particular period of time, while the columns "Between county" and "Within county" show how much of that change resulted from improvements across counties and within counties. The conclusion from both the white and black decompositions is that within-county improvements consistently account for most of Georgia's schooling quality gains for both white and black students. These decompositions suggest that migration and changes in enrollment patterns across counties were not a key factor in generating improvements in black (or white) schools, since the bulk of changes in the quality measures came from within-county gains.⁴⁷ In results available from the authors on request, we reach a similar conclusion when we decompose the state into rural and urban school districts. Most of the growth in the quality of schooling in the state arises from

46. We lack annual data on the black school-age population and cannot further decompose the second term into population shifts across counties and enrollment changes within a county for a given population.

47. Using data for the census years 1910, 1920, 1930, 1940, and 1960, the only years for which county-level population Census data are available, we compute the change in enrollment proportions across counties due to (a) differential change in enrollment rates across counties and (b) changes in the distribution of the population across counties. We find overall, counting both rural and urban counties, the growth in enrollment offsets decline in the population over most periods.

TABLE VI
DECOMPOSITION OF CHANGE IN GEORGIA'S QUALITY MEASURE INTO
WITHIN COUNTY AND BETWEEN COUNTY CHANGES

Quality measure	Year	White schools			Black schools		
		Total change	Between county	Within county	Total change	Between county	Within county
Pupil/teacher ratio	1911-1920	4.4	0.1	4.3	3.8	-0.3	4.1
	1920-1930	-3.1	-0.2	-2.9	-1.2	-0.4	-0.8
	1930-1942	-2.9	0.3	-3.2	-9.6	-0.4	-9.2
	1942-1956	0.3	0.3	-0.1	-3.8	0.7	-4.5
Term length	1911-1920	9.6	1.3	8.4	9.5	1.3	8.2
	1920-1930	16.3	2.9	13.4	10.3	2.8	7.5
	1930-1942	19.0	0.0	19.1	26.9	0.3	26.5
	1942-1956	1.6	0.0	1.5	14.9	1.2	13.7
Teacher salary	1911-1920	-1.7	0.2	-1.8	-0.9	0.1	-1.0
	1920-1930	3.8	0.6	3.2	2.1	0.3	1.8
	1930-1942	1.8	0.1	1.7	1.1	0.1	1.1
	1942-1956	9.5	0.2	9.3	14.4	0.4	14.0

The table shows year-by-year effects aggregated across subsets of years.

within-geographical unit growth and not from population redistribution. Although this finding may seem counterintuitive, it simply reflects the fact that the absolute school quality improvements within counties were large relative to the magnitude of the population shifts from low-quality to high-quality school districts.

VI. CONCLUSIONS

This paper explores the sources of improvements in schooling quality for Southern blacks at a time when they had little political power and there was substantial discrimination in the distribution of schooling funds. Supplementing our state-level data for Southern and border states with detailed district-level data for the state of Georgia, we document trends in various schooling quality inputs for black and white schools. In addition to our major focus on the effect of philanthropic activity and civil rights activity led by the NAACP, we explicitly consider the influence of a variety of other factors in improving the absolute level of black school quality and its level relative to white schools, including migration, World War II, and state legislation. Table VII shows a time line of each of the factors discussed in this paper as they occurred during the 1911 to 1960 time period.

TABLE VII
TIMELINE OF EVENTS AFFECTING BLACK SCHOOL QUALITY IN THE SOUTH
1910–1960

Year	Events
1913	First Rosenwald school built
1917	Beginning of large-scale Rosenwald building program Start of U. S. involvement in WWI
1918	End of WWI
1926	Height of Rosenwald building program (in terms of money spent on building)
1928	End of Jeanes Supervising Teachers program
1931	End of the Rosenwald building program
1936	NAACP files first teacher pay equity case (Maryland)
1937	Georgia's Seven-Month-Term Length Law Enacted
1941	NAACP files first petition in Georgia for teacher pay equity
1941	Start of U. S. involvement in WWII
1943	<i>Davis v. Cook</i> case filed
1944	New merit teacher pay system initiated in Georgia
1945	End of WWII
1946	Georgia's constitutional school system reorganization
1948	Favorable <i>Davis v. Cook</i> decision rendered
1949	<i>Davis v. Cook</i> decision reversed
1951	<i>Brown v. Board of Education</i> filed
1954	<i>Brown v. Board of Education</i> rendered

While measured school-quality inputs improved in absolute terms for both black and white students over the years 1911 to 1960, we distinguish between two distinct periods of improvement. From 1910 to the mid-1930s, black measured schooling quality improved in absolute terms but not in relative terms. From the late 1930s to 1960, black schooling inputs improved in relative terms and ultimately converged to white schooling quality levels.

Philanthropic activity was a major force in improving black schools during the early years of our sample. We present evidence that the activities of the Rosenwald Fund, the Jeanes Fund, and the Slater Fund were substantial in magnitude and that the foundations structured the incentives of their programs to maximize their influence by stimulating local participation in improving black schools. They focused on providing resources that were not easy to divert to other uses, such as physical capital and teacher training, and targeted resources to states needing them most. Their activity increased access to black schools and im-

proved the quality of the schools at a time when blacks had little political power. However, philanthropy cannot explain the convergence in black/white schooling quality measures, which began in the late 1930s and 1940s, at a time when the major educational philanthropies had largely ceased their activities.

This paper argues that interventions that were external to the Southern economy were important in changing the quantity and quality of schools available to African-Americans. General economic forces, such as migration to urban areas and northern states and changes in industrial composition, had some influence on schooling quality levels but do not explain the particular timing of relative gains in schooling quality in Georgia. Because migration from rural to urban areas within the South does not appear to be a driving force behind the black relative gains in schooling quality, and because the advent of WWII does not match the timing of relative increase in teacher salaries, we must look elsewhere for the explanation. What remains as the most attractive explanation for the rapid gains in relative black/white educational quality is legal action in the form of a minimum term length law and civil suits regarding teacher pay equity, which are closely synchronized with relative improvements in quality. Across the entire South, the civil litigation campaign launched by the NAACP emerges as the dominant factor behind relative gains in teacher salaries, with mean lower-bound estimates of roughly 60 percent of the total relative salary gains for black teachers.⁴⁸

The human capital explanation for the black/white wage convergence that occurred after 1965 emphasizes the importance of black schooling quality gains in bringing about black relative wage gains and downplays the importance of civil rights activity. A key finding of this study is that the story of black relative schooling quality improvements buttresses rather than refutes the role of social activism as a primary contributing factor to black economic progress.

48. Studies downplaying the importance of *Brown v. Board of Education* on black school reform, such as *Hollow Hope* by Rosenberg [1993], overlook the twenty years of legal activity, and the progress it generated, that preceded *Brown*. Indeed, *Brown* should be recognized as an important step in a lengthy process of change that started with the 1930 NAACP report on teacher wage inequalities and culminated with the Civil Rights Act of 1964 and some ensuing federal legislative and judicial initiatives in the late 1960s. These private and governmental actions were part of an interrelated effort to achieve the same goal: the end of legalized racial discrimination.

DATA APPENDIX

Our school-quality data are based on district-level data for white and black schools reported in the *Annual Reports of the Georgia Department of Education*. For each school district in existence in a given year, the annual reports give enrollment figures, students in daily attendance, term lengths, and teacher-salary disbursement data separately by race. The data we collected pertain to grades K–12.

Urban/Rural Classification

Because one of our aims is to examine differences between urban and rural schooling, we designate each school district as urban or rural based on the following guidelines:

1. Urban districts, congruent with the borders of incorporated towns or cities with populations sufficient to meet the prevailing Federal census definition of “urban” (i.e., more than 2500 inhabitants);
2. Rural districts, congruent with rural census tracts which may or may not be county level.

In 1911 about three-quarters of the Georgia counties had all rural districts. The percentage of counties without a single urban district decreased to 65 percent in 1928, remained stable through 1938, and then decreased to 57 percent in 1944, and to 40 percent in 1960. The percentage of school districts classified as rural ranges from 82 percent in 1911 to 45 percent in 1960.

Treatment of Missing Data

The study makes use of two levels of aggregation of Georgia school-quality data: the school district and the county. School district divisions, despite the finer grain analysis afforded by their use, do not remain stable during the period under study which leads to an apparent problem of missing data. As cities grew in the early 1920s, school districts were added to the rosters. When school districts were then consolidated in the 1930s, they appear as missing in later periods. A 1945 revision of the Georgia state constitution eliminated still more districts [Joiner 1979]. In all, 181 school districts were in existence after 1960, including 159 counties and 22 independent city systems. Of these 181, nine are missing all data before 1916, twelve are missing all data before 1924, and five are missing all data before 1928. In most of these cases, it is probable that the missing school district data are due to

the district's abolition in the 1930s or 1940s, or to its creation after 1916. In most cases, data on a district that was not available in the reports were coded as missing. However, in a few cases (eleven districts), black student data were not reported for a district that previous and subsequent reports indicated had no black students. These missing data were imputed to zero. We also corrected a typographical error in Crawford County's reported total teacher disbursements in 1924 (a decimal point in the wrong place) and used 1925 teacher salary data for Atlanta instead of the 1924 data, since Atlanta did not report teacher salaries in 1924.

Despite these gaps, we are able to use district level data for point estimates of the quality measures and for our investigation of urban/rural differences. We take a mean of the quality measures from whatever units were reported that year, weighted by their enrollment and the number of teachers for that year. For our time series analysis of Georgia as a whole (the decompositions) we use the more stable county units. For county measures, we took a weighted mean of the district level data for each county (recoding two counties which were absorbed into Fulton County in the 1930s).

Teacher-Certification Data

Certification data were collected from the *Annual Reports of the Georgia Department of Education* for 1911, 1930, 1938, 1942, 1944, and 1950. There were three basic systems of certification and reporting during this period: the 1911 system, the 1930 system, and the post-1936 system. Since these systems cannot be directly compared across time, we converted them into years of postsecondary training, using descriptions of the teacher training required for licensure found in the reports.

From 1911 until 1930, certification levels were reported as permanent or temporary licenses, with permanent licenses further subdivided into first, second, and third grade licenses. In addition, reports give the number of "normal trained teachers" who may hold any type of license. Normal school training was relatively advanced, and as such we consider it to be equivalent to two or more years of college training in later years. By 1930 school boards adopted a more complex certification scheme, with two kinds of certificates, professional and provisional, and several levels within each kind of certificate. For both professional and provisional types, we group together the College, Normal, and High School certificates as advanced; Elementary certificates are

included in a separate category. Beginning in 1938, those who held state licenses—the great majority of teachers—were broken down by years of educational attainment, from five years to less than one year of college.

To compare these differing systems across years, we constructed two variables, the fraction of certified teachers in each district and the fraction of teachers with two or more years of postsecondary education. Normal trained teachers in 1911, “advanced” certified teachers in the 1930s, and teachers with two or more years of postsecondary education reported from 1938 on are included in the second variable. This measure turned out to be more meaningful because by the 1940s nearly all teachers were state certified.

Migration Estimates

The Census provides population counts for each Georgia county for each decade. Before 1950, the population is broken down into “White,” “Negro,” and “other races;” in 1950 and 1960 the census division is consolidated to “white and “non-white.” However, the impact of this discrepancy is small, given the very small reported number of nonwhite, non-Negro persons living in Georgia before 1960. Similarly, we group together the native and foreign-born white population due to the small number of immigrants to Georgia in this period relative to the non-Southern states.

To estimate a decennial migration rate for each Georgia county, we first estimate a population growth rate for each county. The estimated number of migrants from each county is then given by the population size expected in each county from the growth rate (birthrate minus death rate) minus the population size actually observed at the end of each decade. We thus calculate a population growth rate per year, g , given by the birthrates for each race minus their death rates. This information was available specifically for Georgia from 1930 onward. In 1920 Georgia did not register deaths, so we used the birthrates and death rates of South Carolina, a neighboring state very similar to Georgia in later years in terms of population growth rates. In 1910 no Southern state collected death statistics. We therefore used the national birthrates and death rates for that year. We estimate the 1910 black population growth rate from the reported white and total rates and the ratio of blacks to whites in the population.

We estimate the migration rate using the "forward survival" technique. Given this yearly population growth rate, g , and the size of the population at year 0 (1910), then the population at year 1, p_1 , is given by $p_1 = p_0 (1 + g - m)$, where m is the rate of migration. At year 10 the population size is $p_{10} = p_0 (1 + g - m)^{10}$. Since we know the actual population at year 10, m is estimated by $m = 1 + g - [p_{10}/p_0]^{1/10}$.

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