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RACIAL SEGREGATION IN GEORGIA PUBLIC SCHOOLS 1994 – 2001 : TRENDS, CAUSES AND IMPACT ON TEACHER QUALITY

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Abstract

Using data on all public elementary schools and teachers in Georgia for the years 1994 to 2001, we document trends in black-white racial segregation among schools, analyze the causes of this segregation, and report the impact of school segregation on the characteristics and turnover of teachers. We find that in the last years of the 20th century Georgia experienced a slight trend toward increased black-white segregation across schools. In most parts of the state, segregation between school districts is the source of the segregation between schools. There is evidence that within-district segregation is related to residential segregation and the number of schools in the district. The most striking finding is the relationship between the percentage of black students and teacher turnover. White teachers, who compose over 80 percent of the Georgia teaching force, are much more likely to leave schools that serve higher proportions of black students, and these turnover rates increased dramatically over the late 1990s.

Executive Summary

The effort to decrease racial segregation across public schools has occupied a prominent place on the public agenda since the 1954 U.S. Supreme Court decision in Brown vs. Board of Education. In the three and a half decades following Brown, there was a significant decrease in black-white segregation in U.S. public schools. However, since 1988, public schools in the southeastern United States have reversed this trend and have become more racially segregated (Orfield 2001). In this Executive Summary we discuss recent trends in the segregation of Georgia public schools, the causes of this segregation, and implications for teacher quality.

Trends in School Segregation

The Civil Rights Project at Harvard University (2002) reports that of the 13 Southern states in its analysis, Georgia placed only 10th in terms of increased black-white integration in the 1970s. While many Southern states experienced large declines in black-white segregation across schools between 1970 and 1980, Georgia did not. In 1970, the typical black student in Georgia went to a public school that had 35.1 percent white students; by 1980, that percentage had increased to only 38.3 percent.

More recent trends show no big increase in integration. The percentage of students (of any racial or ethnic group) attending schools with fewer than 7 percent black students decreased from 21.7 percent in 1994-95 to 18.9 percent in 2000-01. However, the percentage of students attending predominantly black elementary schools (over 70 percent black) increased over this time period from 17.7 percent to 19.1 percent. About 46 percent of the students enrolled in this latter category of schools come in roughly equal proportions from two school districts–the City of Atlanta and DeKalb County. In addition, there has been a slight increase in the percentage of students attending integrated schools (defined as schools with between

25 and 45 percent black students) over the 1994 to 2001 time period, 20.8 percent in 1994-95 to 21.7 percent in 2000-01.

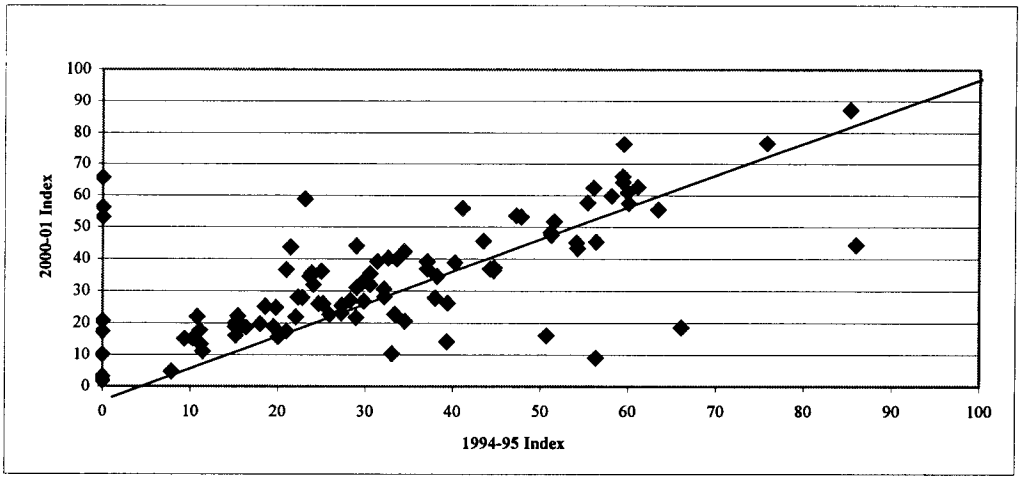
The Atlanta metropolitan region had the highest level of black-white school segregation during the 1994-95 academic year and this trend has persisted over time. Broadly speaking, elementary schools in the northern half of the state tend to be the most segregated, and schools in the southern and southeastern portions of the state tend to be the most integrated. However, all of the regions that experienced increases in segregation remain much more integrated than metropolitan Atlanta

Factors Associated with Segregation

One way of measuring the level of segregation is the percentage of students of one race who would have to change schools in order for all schools to have the same racial composition. If this measure, known as the segregation index, was 100 percent, there would be complete segregation and thus all white or black students would have to change schools to eliminate segregation. Figure A plots the level of segregation in 1994-95 against the level in 2000-01 for each school district that had more than one school in both years. As can be seen, the current level of segregation is closely associated with the level in 1994-95, but there is an upward drift. Large changes are generally associated with districts that went from one school to two or more schools, or that had very small percentage of black students so that the movement of a few students between schools would cause a large change in the measure of segregation.

School segregation within districts is strongly related to residential segregation within districts and to the number of schools in the district. The former is obviously related to school attendance zones, which are generally residence based. We also find there has been an increasing relationship between residential segregation and school segregation within school districts, a result perhaps due to the reduced court pressure to integrate public schools.

FIGURE A. WITHIN-DISTRICT SEGREGATION INDICES FOR ELEMENTARY SCHOOLS



Teachers and the Racial Mix of Schools

Schools with high percentages of white students had a high percentage of white teachers, 96.8 percent in 2000-01. For schools with a majority of black students only 38.9 percent of teachers were white. Thus, racially segregated schools also have racially segregated faculties. Although the differences are small, schools with higher percentages of black students have teachers with a lower probability of having an advanced degree. Regarding advanced degrees, in 1994-95, students in schools with fewer than 7 percent black students were 3.6 percentage points more likely than students in schools with more than 70 percent black students to have teachers with advanced degrees. By 2000-01, this difference was 4.6 percentage points.

Excluding the City of Atlanta and DeKalb County public schools, salaries decrease as the percent black students increase and are about $800 lower for schools with more than 70 percent black students than schools with less than 7 percent black students. Although, Atlanta and DeKalb have high proportions of black students, these two districts pay among the highest in the state.

White teachers are much more likely to leave a largely black school than a largely white school. In 1999-00, 20.4 percent of white teachers left schools with less than 7 percent black students, while 31.2 percent of white teachers left schools with

more than 70 percent black students. Black teachers display a markedly different turnover pattern. The percentage of black teachers leaving their current schools does not vary much across school racial categories; and black teachers who serve in schools with fewer than 7 percent black students have the highest turnover rate (24.2 percent). Thus, we find that white teachers are much more likely to leave schools that serve higher proportions of black students, while there is no clear pattern for black teachers.

Teachers who moved to new schools within their same school district went to schools with higher levels of student achievement and with lower proportions of black students and students in poverty. Relative to their former schools, teachers who moved within a district went to schools with test scores that were 3.4 points higher, had 5.4 percentage points fewer students in poverty, and 3.9 percentage points fewer black students. However, teachers who changed districts experienced much more dramatic changes in these school characteristics. Relative to their former schools, teachers who exited to a new district went to schools with test scores that were 8.0 points higher, had 11.7 percentage points fewer students in poverty, and 13.3 percentage points fewer black students.

Conclusions

Black-white segregation across public schools in Georgia remains a problem early into the 21st Century. The biggest consequences of black-white segregation are that black students are much less likely than white students to have white teachers and schools that serve higher proportions of black students have much higher teacher turnover rates.

We do not provide any direct evidence that the level of segregation within a school district has an effect on student performance. However, we do show that schools with higher percentages of black students have lower quality resources. In particular, such schools experience much greater teacher turnover, particularly by white teachers, have fewer teachers with an advanced degrees, and have more inexperienced teachers.

Teacher turnover may play an important role in disparities in the educational opportunities offered to students across schools. Schools that have relatively large amounts of teacher turnover may be expected to have more low-performing teachers. First, high turnover may lead to a school having less experienced teachers. Second, individual schools that have a large number of individuals willing to teach there relative to the number of available positions may be able to select better teachers than a school with a large of number of positions to fill due to high turnover. This is important since there is evidence that inexperienced teachers perform more poorly and there is strong evidence that teacher quality has a large impact on student outcomes.

Racial Segregation in Georgia Public Schools, 1994-2001: Trends, Causes and Impact on Teacher Quality

I. Introduction

Despite the significant increase in black-white integration in public education between 1954 and 1988, there is evidence that public schools in the southeastern United States are reversing this trend and becoming more racially segregated (Orfield, 2001).[1] Any decrease in integration is problematic, especially if it harms the educational opportunities available to minority students. One mechanism through which segregation across public schools may harm educational opportunities is resource inequities. That is, students in segregated schools may receive lower quality school resources than students in other public schools.

Although there is considerable controversy in the empirical literature about the impact of most school resources on student outcomes (Hanushek, 1996), there is strong evidence that teacher quality has a large impact on student outcomes. Consistent with previous studies, Rivkin, *et al.* (1998) provide evidence that teachers are the most important school input affecting student achievement and that teachers with less than two years of experience perform worse.[2] If school officials can

[1] Orfield (2001) documents that the percentage of black students who attended majority white schools increased from almost zero in 1954 to 43.5 percent in 1998. However, between 1988 and 1998 this percentage decreased to 32.7 percent. One cause of this resegregation may be changes in the legal environment. Integration efforts began when the US Supreme Court ruled in *Brown v. Board of Education* that separate schools are not equal and therefore unconstitutional. It was not until the late 1960's and early 1970's, however, that school districts were given specific guidelines for desegregation by the courts. The 1968 case, *Green v. County School Board*, is particularly important as it ordered every Southern school board to take whatever steps necessary to convert to a unitary system where racial discrimination was no longer present. This case effectively ordered all Georgia school districts to implement desegregation policies that would be supervised by the Federal Court. These desegregation policies were to transition school systems from the old "dual" system and be replaced with a single, "unitary" system that did not discriminate on the basis of race. In the state of Georgia, most systems still operate under desegregation orders, although four districts (DeKalb, Coffee, Chatham, and Muscogee) have been declared unitary in recent years. The increase in unitary status and the possibility that the courts will deem many more districts unitary may have diminished pressure on individual school districts to promote racial integration.

[2] Using detailed information on individual Texas students in grades 4, 5, and 6 and their teachers, Rivkin, *et al.* (1998) find that some teachers consistently lead to much greater educational gains than other teachers. This evidence that "teachers matter" is consistent with many prior studies on the subject.

observe, at least partially, the quality of individual teachers, then schools with a large number of applications relative to the number of open positions, should be able to select better teachers as compared to schools that face a relative shortage of applicants. Thus, schools that face a relatively large exodus of teachers each year will have a more difficult time obtaining quality teachers for their students. Consequently, differential teacher exit rates between schools may be a good proxy for the quality of teachers available to different types of schools.

In this paper, we use recent data on all public schools in Georgia to analyze trends in school segregation and its consequences for the quality of teachers who serve black students. Specifically, this paper (1) measures black-white segregation across Georgia public schools between 1994 and 2001, (2) analyzes the factors associated with differences in school segregation, and (3) notes the impact of school segregation on the characteristics and mobility of teachers.

This paper is organized as follows. Section II describes the data, and Section III describes recent trends in black-white school segregation in Georgia public schools. The causes of intra-district segregation are analyzed in Section IV, and the consequences of this segregation on teacher quality are described in Section V. Conclusions are presented in Section VI.

II. Data

In order to analyze school segregation and the relationship between teacher characteristics and school segregation in Georgia public schools, we obtained information on each public school in Georgia from the Georgia Department of Education (GADOE) and information on each public school teacher in Georgia from the Georgia Professional Standards Commission (GAPSC), including certification status, educational attainment, race, sex, and age. Data collected from the GADOE contains average achievement scores on standardized tests, racial composition and percent eligible for free or reduced lunch for each individual public school in Georgia. Combining these data sets allows us to link teacher characteristics with individual school characteristics. The time period under study begins with the 1994-95 academic year and ends with the 2000-01 academic year.

As is characteristic in the South and West, school districts in Georgia tend to be geographically large. Georgia has 159 counties and each one has its own school district. In addition, 21 cities within these counties have their own school districts, for a total of 180 school districts in the state.

In this paper we report results for elementary schools only, as our high school results are consistent with the elementary school findings. We focus on segregation between non-Hispanic black and non-Hispanic white students; the implications of our analysis do not differ if we use nonwhite instead of black students.[3]

[3] The proportion of students from other racial/ethnic groups is small but is rapidly increasing in Georgia. Between the 1994-95 and 2000-01 academic years, the percentage of students from other groups increased from 4 percent to 7.4 percent.

III. School Segregation

In this section we analyze the racial segregation of Georgia public schools. While many Southern states experienced large declines in black-white segregation across schools between 1970 and 1980, Georgia did not. The Civil Rights Project at Harvard University (2002) reports that of the 13 Southern states in its analysis, Georgia placed 10th in terms of increased black-white integration in the 1970s. In 1970, the typical black student in Georgia went to a public school that had 35.1 percent white students. By 1980, that percentage increased to only 38.3 percent. Other Southern states such as Florida and Tennessee experienced absolute changes in integration in the 1970s that were over twice as large as Georgia's. Given this history of relative stable black-white segregation in Georgia — even during the era of rapidly increasing school integration in most of the United States — we report more recent trends in segregation in Georgia's public schools. We start by considering segregation above the school district level and then move toward within-district school segregation.

School Segregation Statewide and in Urban, Suburban, and Rural Areas

Table 1 presents a black-white segregation index for all elementary schools in selected geographic areas for each of the seven years of our data. The segregation index we employ is the index of dissimilarity (D), for which higher index numbers indicate greater degrees of black-white segregation.[4] The index was constructed using the population of students in all elementary schools in the geographic area, with the school as the unit of observation.[5]

[4] The segregation index is measured as $(100*\sum|(B_i/B)-(W_i/W)|)/2$, where B represents the total number of blacks in the geographic area, W represents the number of whites in the geographic area, and i is the unit of observation (individual school, school district, or census block group) in the geographic area under consideration. We construct segregation indices for schools and neighborhoods. For schools, the index measures the percentage of students of one racial group that would have to change schools in order for all schools in the geographic area to have the same racial makeup.

TABLE 1. SEGREGATION INDICES FOR ELEMENTARY SCHOOLS

Year	State	Rural	Suburban	Urban
1995	60.2	47.0	63.4	58.1
1996	60.5	47.1	64.2	57.8
1997	61.2	47.4	64.7	58.7
1998	61.5	48.5	64.6	58.9
1999	62.0	49.0	64.4	59.8
2000	61.9	48.5	64.5	61.4
2001	62.1	49.6	63.9	62.9

Column 1 of Table 1 shows the segregation index over time for all elementary schools in the state considered together. As shown in column 1, the segregation index for all elementary schools in the state in 1994-95 was 60.2, which is relatively high. The value of the statewide index increased over the 7 years to 62.1, which is a modest increase. Thus, for the 2000-01 academic year, 62.1 percent of students would have had to change schools in order to have the same black-white racial makeup in each school in the state. Statewide, Georgia's public schools have experienced a modest trend toward resegregation over the past seven years.

We also calculated the index for elementary schools in three sub-areas of the state, rural, suburban, and urban areas (Columns 2, 3, and 4). Urban schools (of which there were 227 in 2000-01) are those in the school district of any central city that is in a Metropolitan Statistical Area (MSA), or in the central county if there is no independent city school system. Suburban schools (of which there were 549 in 2000-01) consist of all schools in a MSA other than urban schools. A rural school (of which there were 338 in 2000-01) is any school in a district that is not in a MSA.[6] Taking all elementary schools that are located within a MSA, these suburban schools are the most segregated (D = 63.9 in 2000-01), but over the period there was not much of a change in the value of the segregation index for

[5] We define an elementary school as a school that has a third grade.

[6] The corresponding numbers of urban, suburban, and rural elementary schools in 1994-95 were 231, 466, and 326, respectively. In this analysis of urban, suburban, and rural schools, each of these three geographic areas contains schools in districts that are not necessarily contiguous.

these schools (column 3, Table 1). Urban elementary schools experienced an increase in segregation, with the index increasing from 58.1 in 1995 to 62.9 in 2001. By 2001, the value of the segregation indices for urban and suburban schools were about the same. Rural schools are less segregated, but these elementary schools experienced an increase in segregation over the 7 years, from 47.0 to 49.6.

In previous work, Clotfelter (1999) and others found that the bulk of current school segregation is between school districts, with less segregation within school districts. We duplicate this analysis for Georgia. Table 2 presents black-white segregation indices for elementary school students for the same four geographic areas as in Table 1, but using school districts rather than schools, as the unit of observation. Thus, the indices can be interpreted as measuring the extent to which students would have to move between districts in order for all districts to have the same racial makeup. The values of the inter-district segregation indices are smaller than for the inter-school indices. For example, statewide for 2001, the inter-district segregation index was 50.8 compared to 62.1 for the inter-school index. The statewide inter-district segregation index was 81.1 percent of the value of the inter-school index, which is also essentially the case for suburban districts. Consistent with prior evidence from across the nation, the implication is that for these areas most of the segregation across elementary schools is due to racial differences across districts rather than within districts.

TABLE 2. INTER-DISTRICT SEGREGATION INDICES FOR ELEMENTARY SCHOOLS

Year	State	Rural	Suburban	Urban
1995	50.3	42.2	51.2	28.7
1996	50.6	42.8	51.0	27.9
1997	51.3	43.1	51.6	28.5
1998	51.3	43.8	50.7	27.4
1999	51.3	44.3	49.4	28.4
2000	51.0	43.7	49.0	27.9
2001	50.8	44.7	47.3	27.4

For the rural area, the inter-district and inter-school indices are very similar. This is due in large part to the fact that many rural districts have just one school and hence district and school are identical. The biggest difference between the inter-district and the inter-school segregation indices is for urban areas; the inter-district index is only about half the value for the inter-school segregation index reported in Table 1. This suggests that substantial black-white segregation lies within school districts in urban areas.

There was essentially no change over the period in the value of the inter-district index for the state. There was an increase in the inter-district index in rural areas, a decrease for urban areas, and a larger decrease in the suburbs.[7]

Segregation in Georgia's Twelve Regions

Tables 1 and 2 consider school districts by category without regard to their geographic proximity. Given differences in racial and other characteristics across the state we also consider schools by region, using the State's 12 economic development planning regions. The regions are displayed in Figure 1. There is substantial variation in school segregation across regions in the first school year under study (Table 3). For the academic year 1994-95, the index of black-white school segregation ranged from a low of 17.9 in Region 9 (a largely rural region in the southern part of the state) to a high of 72.5 in Metropolitan Atlanta (Region 3). The wide disparity persisted over time. Broadly speaking, elementary schools in the northern half of the state tend to be the most segregated, and schools in the southern and southeastern portions of the state tend to be the most integrated.

[7] We repeated these analyses for high schools, but do not report the results since the general patterns are similar to those for elementary schools. The exception is that the segregation indices are smaller for high schools. This is due in large part to the fact that over 40 percent of the districts have only one high school, so the segregation that might exist at the elementary school level within a district does not exist at the high school level. This also explains why the inter-district segregation indices are much closer in value to the inter-school indices for high schools.

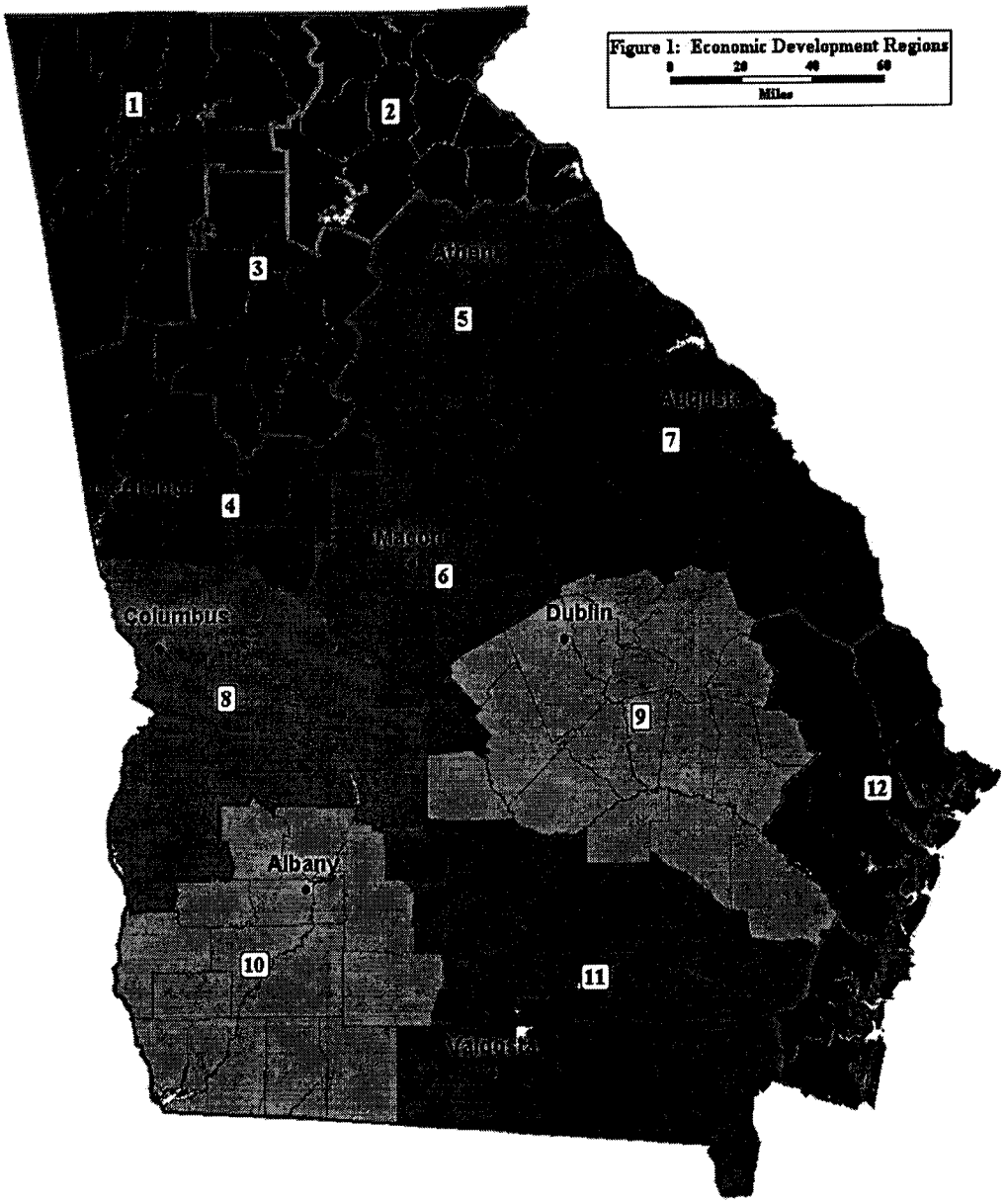


Figure 1: Economic Development Regions
0 20 40 60
Miles
1
2
3
4
5
6
7
8
9
10
11
12
Columbus
Dublin
Albany

TABLE 3. SEGREGATION INDICES FOR ELEMENTARY SCHOOLS BY REGION

	School-Based			Inter-District			
Region	(D) 1995	(D) 2001	Change 95-01	(D) 1995	(D) 2001	Change 95-01	% Black Students 2001
1	59.3	52.6	-6.7	53.0	45.0	-8.0	6.2
2	65.3	63.8	-1.4	53.6	51.5	-2.1	6.2
3	72.4	72.0	-0.4	58.7	56.1	-2.6	24.7
4	40.0	36.0	-4.0	24.5	27.4	2.9	24.5
5	44.6	48.1	3.5	39.8	42.9	3.1	20.0
6	46.3	50.4	4.1	26.2	32.2	6.0	31.0
7	53.3	55.5	2.2	40.2	44.4	4.2	36.0
8	52.1	55.2	3.1	17.6	21.7	4.1	38.3
9	17.9	24.0	6.1	16.0	22.2	6.2	27.1
10	40.9	49.3	8.4	31.8	40.2	8.4	35.1
11	35.4	33.6	-1.7	24.0	27.9	3.9	24.0
12	35.5	43.6	8.1	30.4	34.4	4.0	26.0

Note: the first set of columns report black-white segregation across individual schools, while the second set of columns report segregation across school districts.

A total of five regions experienced declines in segregation over the seven years under study (Table 3). Three regions (regions 2, 3, and 11) experienced modest declines in segregation in the late 1990s. Region 4 experienced a larger decline—from 39.96 in 1995 to 36.05 in 2001. A fifth region (Region 1), in the northwest corner of the state, experienced the largest decline in segregation. Only 6.2 percent of the students in Region 1 are black, so the movement of a small number of black students from one school to another could lead to a large change in the segregation index.

Of the seven regions of the state that experienced increases in black-white segregation across elementary schools, several had large increases in racial segregation. With the exception of Region 11, there were large increases in segregation in the southern regions of the state (regions 8, 9, 10, and 12). However, all the regions that experienced increases in segregation remain much more integrated than metropolitan Atlanta (Region 3).

The inter-district segregation indices tend to be about 80 percent (or more) as large as the inter-school segregation indices (Table 3). Black-white segregation tends to be driven by inter-district segregation especially in more rural regions of the state (regions 1, 9, 10, 11, and 12). Region 8 is the only region with a very large difference between the inter-school and inter-district segregation index, implying large intra-district segregation.

Segregation Within Georgia School Districts

We turn now to intra-district school segregation. Individual school districts can impact black-white segregation within its borders through the drawing of school zones, decisions about the placement and number of new schools, and other means. Thus, an important question is whether segregation increased across schools within districts over the period.

Table 4 presents the distribution of black-white intra-district elementary school segregation indices for 1994-95 and 2000-01. As can be seen, a substantial percentage of the schools districts have a segregation index of zero (43.3 percent in 1994-95 and 41.1 percent in 2000-01); these 2000-01); these districts have only one elementary school and thus by definition these school districts must have a zero segregation index. Over the period 1994 to 2001, several (70 of the 180) districts opened or closed elementary schools. When a district goes from two or more schools to one school, the segregation index goes to zero. And, of course, when the district opened a second school, it is to be expected that the segregation index will increase, sometimes substantially.

In both years, the majority of districts had a low segregation index (Table 4). For example, in 1994-95, 59.4 percent of the districts had an index of 20 or less, and 72.7 percent had an index of 30 or less. In 1994-95 and in 2000-01, 52.0 percent of districts with a non-zero index had an index of 30 or less.

Between 1994 and 2001, there was a slight increase in the value of intra-district segregation indices, reflecting the statewide increase in the segregation index shown in Table 1. For example, in 1994-95, 72.7 percent of the districts had a

TABLE 4. DISTRIBUTION OF WITHIN-DISTRICT SEGREGATION INDICES: 1995 AND 2001

	2001 Value										
1995 Value	**0**	**0-10**	**10-20**	**20-30**	**30-40**	**40-50**	**50-60**	**60-70**	**70+**	**Row Total**	**Row Percent**
0	70	2	2	1	-	-	2	1	-	78	43.3%
0-10	1	8	3	1	-	-	-	-	-	13	7.2%
10-20	1	-	10	5	-	-	-	-	-	16	8.9%
20-30	1	-	2	11	7	2	1	-	-	24	13.3%
30-40	-	-	2	5	9	2	-	-	-	18	10.0%
40-50	-	-	-	-	4	1	3	-	-	8	4.4%
50-60	1	1	1	-	-	5	3	4	1	16	8.9%
60-70	-	-	1	-	-	-	2	1	-	4	2.2%
70+	-	-	-	-	-	1	-	-	2	3	1.7%
Column Total	74	11	21	23	20	11	11	6	3	180	100.0%
Column Percent	41.1%	6.11%	11.7%	12.8%	11.1%	6.1%	6.1%	3.3%	1.7%	100.0%	

segregation index of 30 or less, while in 2000-01, 71.6 percent had an index value of 30 or less. There were more districts that experienced an increase in within-district segregation than experienced a decrease. Within-district segregation decreased for forty districts, increased in 60 districts, and did not change by more than one point in 80 districts. The unweighted mean index across all districts increased slightly, from 18.3 in 1994-95 to 18.8 in 2000-01.[8]

To further explore the change in the value of the intra-district segregation indices, we regressed the 2000-01 intra-district index (D2001) against the 1994-95 (D1995) index for all districts. The resulting estimated regression equation is:

$$D2001 = 4.03 + 0.81\ D1994 \quad R^2 = 0.67$$

$$(t=3.34)\ \ (t=18.8)$$

The high R^2 implies that intra-district segregation has been rather stable over the period. The regression also suggests that districts that were more segregated in 1994-95 were, on average, less segregated in 2000-01. In particular, districts with an index of less than (greater than) 21 in 1995 had, on average, higher (lower) values of the index in 2000.

Figure 2 contains a plot of the segregation indices for 1994-95 and 2000-01 for all districts other than those with a zero segregation indices in both years, along with a 45-degree line. Points above the line are districts for which the index increased over the period. There is a slight tendency for the points to lie about the 45-degree line, but clearly there was not a significant aggregate increase in the intra-district segregation indices, although there were substantial changes in individual districts. There were eight school districts that had segregation index of 0 in 1994-95 and a positive segregation index in 2000-01. Of these eight districts, seven increased the number of elementary schools from one to two or three. The other district had about one-tenth of one percent black students in 2000-01, up from zero percent in 1994-95 (Forsyth County).

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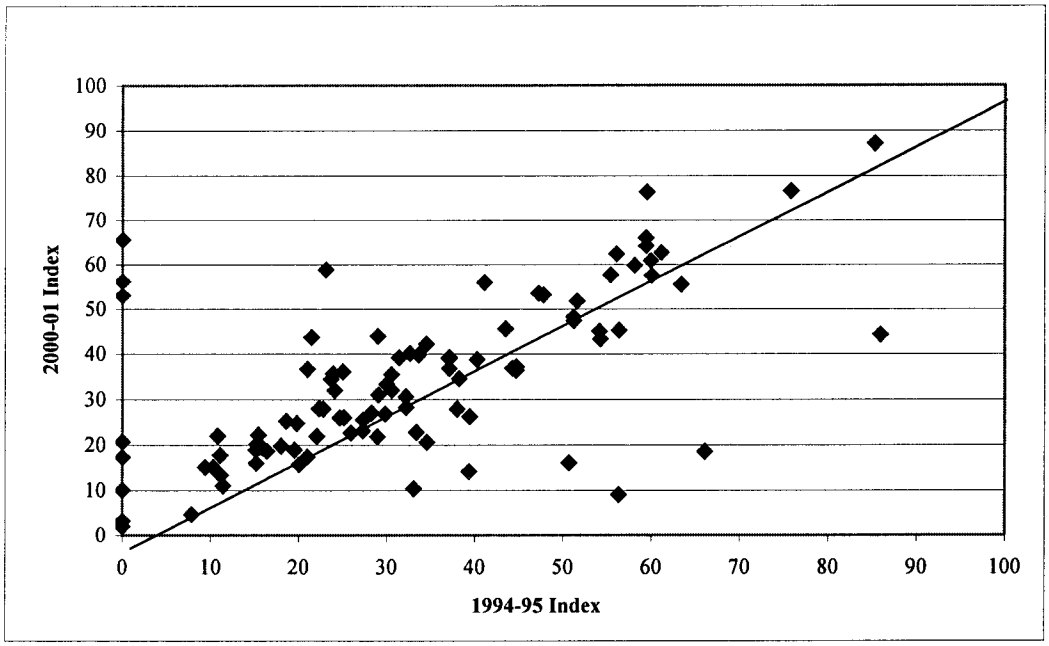
[8] We repeated the analysis for high schools, and found very similar results.

FIGURE 2. WITHIN-DISTRICT SEGREGATION INDICES FOR ELEMENTARY SCHOOLS



Six school districts experienced large decreases in intra-district segregation over the seven-year period. Of these, four had less than 2 percent black students, so that a movement of a few black students could dramatically change the value of the index. Another district had a reduction in the number of elementary schools, which could explain the decrease in the value of the segregation index. The decrease in the index for one district (Troup County) is unexplained. Figure 2 thus implies that there was substantial inertia in intra-district segregation over the seven-year period.

IV. Causes of School Segregation Within Districts

Georgia has almost no inter-district school choice, and thus black-white segregation between school districts is largely the result of residential segregation between districts. Given that an individual district has limited ability to alter inter-district segregation, we focus on the causes of intra-district school segregation. To that end, we estimate regression equations in an effort to identify some of the factors associated with the differences and changes in the value of the segregation indices within districts.

We expect that the intra-district segregation index for elementary schools will be:

- Positively related to residential segregation. To the extent that the pattern of attendance at elementary schools is based on residential proximity to the school, we would expect that residential segregation and school segregation in a district will be positively related.

- Negatively related to the number of elementary schools in the district. The fewer the number of schools the less opportunity there is for racial groups to be segregated into separate schools; therefore, we expect that the fewer schools in the district, the lower the level of segregation.

- Positively related to the percentage of the population that is black. The likelihood that white parents will avoid sending their children to school with black students may increase as the proportion of black students increases.

Table 5 defines the variables used in the regressions, while Table 6 contains the regression results. Column 1 in Table 6 lends support to the first two of the expectations, namely that more residential segregation and more elementary schools lead to more school segregation within the school district. However, the coefficient on percent black is negative, contrary to expectations, but it is small and statistically insignificant.

Column 2 of Table 6 uses the change in the intra-district segregation index as the dependent variable. This equation has a poor overall fit (the R^2 is only 0.033), a

TABLE 5. VARIABLE DEFINITIONS

Variable	Definition
SchSeg01	Intra-District Elementary School Segregation Index for 2001
ChSchSeg	Change in the Intra-District Elementary School Segregation Indices for 2001 and 1995
ResSeg	Residential Segregation for 2000
ElemSchs	Number of Elementary Schools in District in 2001
%BK	Percentage of the District Population that is Black in 2000
ChElemSchs	Change in the number of elementary schools between 1995 and 2001
ChResSeg	Change in residential segregation between 1990 and 2000
Ch%BK	Change in the percentage of the population that is black between 1990 and 2000

TABLE 6. REGRESSIONS FOR ELEMENTARY SCHOOL SEGREGATION

	Dependent Variable (t-statistics in parentheses)	
Independent Variables	**SchSeg01**	**ChSchSeg**
Intercept	-0.380	0.480
	(0.09)	(0.49)
ResSeg	0.353	---
	(3.91)	
ElemSchs	0.997	---
	(8.69)	
%BK	-0.064	---
	(0.91)	
ChElemSchs	---	3.17
		(0.95)
ChResSeg	---	0.213
		(2.01)
Ch%BK	---	0.328
		(1.36)
R^2	0.436	0.033

result that is not unexpected for equations estimated as differences. The only coefficient that is statistically significant is the change in the residential segregation index, which suggests that an increase (decrease) in residential segregation is a good predictor of an increase (decrease) in school segregation.

We have seen that intra-district school segregation has increased and that school segregation within districts is strongly related to residential segregation within districts. A further question is whether over the period intra-district school segregation became more closely matched with intra-district residential segregation. Since the courts seem to view school integration as a less pressing legal issue today than in 1994, perhaps the degree of school segregation will more closely match residential segregation today than in 1994. Unfortunately, we do not have residential segregation for 1995, and thus, we are forced to average the 1990 and 2000 segregation indices, implicitly assuming that the trend is linear. These residential segregation indices are computed using block groups from each decennial Census.

For all 180 school districts, the correlation between school segregation and residential segregation increased from 0.408 in 1995 to 0.440 in 2000, a small, but positive change. In order to control for the effect of a large percentage change in the number of elementary schools on school segregation, we also considered only districts with 5 or more elementary schools in 1995. For this set of 51 districts, the correlation between residential and school segregation increased from 0.579 in 1995 to 0.773 in 2000. (If we further increase the minimum number of schools, the difference in the correlation coefficients increases.) These results suggest that school segregation within districts more closely matched residential segregation in 2000 than in 1995.

Finally, it is worth noting that as the school segregation index *increased* statewide from 60.2 in 1994-95 to 62.1 in 2000-01, the index of residential segregation *decreased* statewide – from 58.1 to 56.7 between 1990 and 2000. Where there has been an increasing relationship between residential and school segregation within school districts, there has been a departure from this pattern statewide. Perhaps

a portion of this increased residential integration of blacks and whites is due to residential integration by households without school-aged children.

As stated previously, there is a concern that granting individual districts unitary status will lead to more racial segregation within those school districts. We know of four Georgia school districts that have achieved unitary status — Chatham, Coffee, DeKalb, and Muscogee. The Chatham County school district, which serves the residents of Savannah and other Chatham County residents was declared unitary in 1988. Although there could have been an increase in within-district segregation between 1988 and the start of our data, there was a substantial increase in school segregation within Chatham between 1994-95 and 2000-01, the segregation index increasing from 34.5 in 1994-95 to 42.3 in 2000-01. Interestingly, residential segregation declined in Chatham County in the 1990s (from 67.5 in 1990 to 61.6 in 2000). Coffee County, which is a small county in southeast Georgia, was declared unitary in 1995. During the 1990s the school segregation index increased from 11.2 to 13.3, while residential segregation increased from 39.9 to 42.6. DeKalb County, which lies just east of the City of Atlanta, was declared unitary in 1996, and in 1999 its busing program to promote integration was ended by the courts. Between the 1997-98 school year and 2000-01, the school segregation index for DeKalb increased from 66.6 to 76.4. However, black-white school segregation within DeKalb was increasing even before the declaration of unitary status. Further, residential segregation was increasing over the 1990s as well — Between 1990 and 2000, black-white residential segregation increased from 68.0 to 73.3 in DeKalb. Muscogee County public schools were declared unitary in 1997. Between 1998-99 and 2000-01, within-district segregation increased from 58.7 to 60.9, while residential segregation was largely unchanged in the 1990s. Despite the fact that DeKalb and Muscogee had extremely high levels of within-district segregation before they obtained unitary status, black-white segregation increased after being declared unitary.

V. Teachers and the Racial Mix of Schools

As discussed in the introduction, there is strong empirical evidence that teachers are the most important school resource that positively impacts student achievement (Rivkin, *et al.*, 1998). Therefore, it is important to ask whether black-white segregation across schools leads to an adverse impact on the quality of teachers that serve black students. In this section we examine the consequences of black-white school segregation on teacher characteristics. That is, we consider how the characteristics of schools and teachers differ by the percentage of the school's students who are black.

Categorizing Schools

We placed each school into one of five categories based on the percentage of black students enrolled in the school. The thresholds for each category are round numbers chosen to separate students roughly into quintiles. For example, the first category contains schools that have fewer than 7 percent black students. As shown in the right side columns of Table 7, the percentage of students (of any racial or ethnic group) attending schools with fewer than 7 percent black students decreased from 21.7 percent in 1994-95 to 18.9 percent in 2000-01. However, the percentage of students attending predominantly black elementary schools (over 70 percent black) increased over this time period from 17.7 percent to 19.1 percent. About 46 percent of the students enrolled in this latter category of schools come in roughly equal proportions from two school districts–the City of Atlanta and DeKalb County. In addition, there has been a slight increase in the percentage of students attending integrated schools (defined as schools with between 25 and 45 percent black students) over the 1994 to 2001 time period, 20.8 percent in 1994-95 to 21.7 percent in 2000-01.

Table 8 illustrates how the characteristics of the students differ across the five categories. In both years, the poverty rate (as measured by the percentage of students eligible for free or reduced price lunch) increases and the test score on the 3rd grade

TABLE 7. NUMBER OF STUDENTS AND TEACHERS BY RACIAL CATEGORY OF ELEMENTARY SCHOOLS

Racial Category (% Black Students)	Number of Schools and % of Total		Number of Students and % of Total	
	1994-95	2000-01	1994-95	2000-01
<7%	225	202	273,714	266,418
	22.0%	18.1%	21.7%	18.9%
7% to 25%	208	259	273,068	341,323
	20.3%	23.2%	21.7%	24.2%
25% to 45%	193	209	262,830	306,434
	18.9%	18.8%	20.8%	21.7%
45% to 70%	161	173	228,271	229,039
	15.7%	15.5%	18.1%	16.2%
>70%	236	271	223,254	269,451
	23.1%	24.3%	17.7%	19.1%

TABLE 8. CHARACTERISTIC OF STUDENTS BY RACE OF SCHOOL (ELEMENTARY SCHOOLS)

Racial Category (% Black Students)	Characteristics of Students					
	%Black Students		%Poverty		Reading Score (ITBS-Reading)	
	1994-95	2000-01	1994-95	2000-01	1994-95	2000-01
<7%	3.1	2.8	21.4	18.6	61.5	59.3
7% - 25%	14.7	15.2	29.4	30.0	59.2	54.7
25% - 45%	34.8	35.1	49.2	47.1	52.3	47.7
45% - 70%	56.9	57.5	61.6	59.5	46.2	43.3
>70%	91.6	92.0	79.5	77.0	40.1	38.4

reading test scores deceases as the percent black students increases.[9] Thus, schools that serve higher proportions of black students also serve higher proportions of students in poverty and students who achieve lower scores on 3rd grade reading exams. This pattern existed in both years.

Teacher Characteristics Across Categories

Table 9 provides the characteristics of teachers by school racial category for both 1994-95 and 2000-01. In terms of teacher characteristics, the most pronounced difference across the five groups of schools is the percent white. For the first category in 1994-95, 97.1 percent of teachers were white, while for the fifth category only 41.7 percent of teachers were white. Between 1994-95 and 2000-01, the percentage of white teachers remained roughly constant for all categories other than the fifth category, which experienced the large percentage reduction (6.7 percent) in white teachers.

Although the differences are small, schools with higher percentages of black students have teachers with a higher mean age and a lower probability of having an advanced degree (Table 9). Regarding advanced degrees, in 1994-95, students in schools with fewer than 7 percent black students were 3.6 percentage points more likely than students in schools with more than 70 percent black students to have teachers with advanced degrees. By 2000-01, this difference was 4.6 percentage points. In the 1994-95 academic year, there were no real differences in certification status across the categories of schools–virtually all teachers were fully certified. However, by 2000-01, students in predominantly black schools had about 2 percentage points fewer certified teachers than students in schools in the other categories. Unfortunately, Georgia does not maintain or does not make available other information on teachers such as experience, teaching in field, and score on certification exams.

[9] The test score used is the mean percentile rank of 3rd grade students on the Iowa Test of Basic Skills Reading exam.

TABLE 9. CHARACTERISTIC OF TEACHERS BY RACE OF SCHOOL (ELEMENTARY SCHOOLS)

Racial Category (% Black Students)	Characteristics of Teachers											
	Age		% Advanced Degrees		% White		Salary (Dollars)		%Certified		%Novice	
	1994-95	2000-01	1994-95	2000-01	1994-95	2000-01	1994-95	2000-01	1994-95	2000-01	1994-95	2000-01
<7%	40.8	41.4	45.1	36.8	97.1	96.8	31,253	38,753	95.3	95.3	7.0	7.2
7%-25%	40.5	41.3	44.2	35.4	91.3	92.1	30,575	38,078	95.0	95.4	7.4	7.3
25%-45%	40.9	41.5	42.3	34.5	84.1	85.3	30,037	37,107	94.9	94.8	7.4	7.1
45%-70%	41.1	41.8	42.4	35.3	71.8	72.9	30,320	37,867	94.9	94.9	7.5	7.0
>70%	42.3	41.8	41.5	32.2	41.7	38.9	33,589	39,232	95.4	93.3	6.6	7.7

To analyze the sorting of these three teacher characteristics across schools within districts, we computed simple correlations between within-district segregation of students and within-district segregation of teachers by characteristics. Between 1994-95 and 2000-01, the relationship between within-district segregation of students and the segregation of teachers weakened. For example, the correlation between the segregation index of teachers with advanced degrees and within-district student segregation decreased from 0.21 to 0.15. The correlation of the segregation of teachers by race fell from 0.36 to 0.25 and the correlation with the segregation of novice teachers fell from 0.33 to 0.07. These decreasing correlations suggest a more equitable within-district distribution of these teacher characteristics over time.

Salaries decrease as the percent black students increases over the first four racial categories, but the highest mean salary is for schools in the fifth category. This is due to the higher salaries paid by City of Atlanta and DeKalb County public schools, which account for 46 percent of the students in the fifth category. Excluding those two school districts, schools that serve over 70 percent blacks have teachers who are paid about $800 less on average than schools that serve less than 7 percent black students.

The percentage of teachers that are novices, i.e., under age 27 with less than two years of experience in a Georgia public school, doesn't follow a particular pattern across either the categories or between years. The most significant change is the increase in the fifth category, for which the percent novice teacher increased from 6.6 percent in 1995 to 7.7 percent in 2001. In contrast, Clotfelter, *et al.* (2002b) find that black students in North Carolina public schools are more likely to have novice teachers than are white students. The difference between the two states may be due to two features of the studies. First, we do not observe a consistent measure of teacher experience across school districts. Since our teacher database begins in 1991-92, we are able to determine if an individual was teaching in Georgia since that year. To minimize the chance

of labeling a teacher returning to the Georgia teaching force after a prolonged absence or moving to Georgia from another state, we label teachers as new only if they are under age 27 when they first appear in out database and have not taught in Georgia since 1991-92. More importantly, Clotfelter, *et al.* (2002a) have information on the sorting of students within schools. They find that two-thirds of the black-white difference in exposure to novice teachers occurs within school buildings. Since we do not have access to within-school information in Georgia, it is likely that we underestimate the extent to which black students experience greater exposure to novice teachers. Exposure to novice teachers is important; Rivkin, *et al.* (1998) find that novice teachers generally perform worse than more experienced teachers.

Teacher Turnover

Next, we consider the mobility of teachers between schools and out of the Georgia teaching force. We define teacher turnover as a teacher leaving her current school for any reason -- another school within the district, another school in another district, administration, and out of the Georgia teaching force.[10] Teacher turnover may play an important role in disparities in the educational opportunities offered to students across schools. Schools that have relatively large amounts of teacher turnover may be expected to have more low-performing teachers. First, high turnover may lead to a school having less experienced teachers. Second, individual schools that have a large number of individuals willing to teach there relative to the number of available positions may be able

[10] Interestingly, Scafidi, *et al.* (2002a) find that almost no teachers who leave the Georgia teaching force take a job in Georgia, but outside the public education sector, that pays more than the minimum teaching wage in Georgia.

to select better teachers than a school with a large of number of positions to fill due to high turnover.[11]

As shown in Table 10, white teachers were more likely to leave a largely black school than a largely white school. For 1994-95, only 10.7 percent of white teachers left schools in category one (<7 percent black students), while 18.2 percent of white teachers left schools in the fifth category (>70 percent black students). For 1999-00, there is a similar pattern, but the percentage of white teachers who left is much higher for all categories.[12] In the intervening years, the leave rate for white teachers does fluctuate from year to year, but the trend is upward.

Black teachers display a markedly different turnover pattern. In 1994-95, the percentage of black teachers leaving their current schools does not vary much across school racial categories. Although mobility rates are higher in 1999-00, there is no tendency for higher turnover among black teachers as the percentage of black students increases. In fact, black teachers who serve in schools with fewer than 7 percent black students have the highest turnover rate (24.2 percent). Thus, we find that white teachers are much more likely to leave schools that serve higher proportions of black students, while there is no clear pattern for black teachers.

Over the seven-year period there was a large increase in teacher turnover across all Georgia public schools. Two possible explanations are the increase in the rate at which schools are opened (between 1994-95 and 1996-97 there were 10 new elementary schools per year, while between 1996-97 and 2000-01 there were 15.3 new elementary schools per year) and a state mandated reduction beginning in 2000 in class sizes in elementary grades. Both of these forces have led to a large increase in the need for teachers. Any increase in demand like this may lead to more teacher turnover as at least some newly created positions are filled by veteran teachers.

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[11] The effect of this mobility is compounded by the implications of Bridges (1996), who provides evidence that teachers who had complaints registered against them by parents are generally transferred to schools that serve low SES students.

[12] We report mobility rates for 1999-00 since our data end in 2000-01. Thus, we do not observe whether teachers leave their schools between 2000-01 and 2001-02.

TABLE 10. TEACHER LEAVE RATE BY RACE OF SCHOOL (ELEMENTARY SCHOOLS)

Racial Category (% Black Students)	Percentage of Teachers who Leave the School Following this Academic Year			
	White Teachers		Black Teachers	
	1994-95	1999-00	1994-95	1999-00
<7%	10.7	20.4	12.8	24.2
7% to 25%	12.4	18.7	14.3	19.4
25% to 45%	14.7	22.8	12.5	21.2
45% to 70%	15.7	22.1	13.6	18.7
>70%	18.2	31.2	13.2	20.6

In previous work, Scafidi, *et al.* (2002b) analyzed the turnover of new Georgia teachers, where new teachers are defined in the same way as in this paper (under age 27 and have not taught in Georgia in the past three years). They report that a large proportion of new teachers change schools within the first few years of teaching. In their first few years of teaching, 20.9 percent of new teachers move to a new school in the same school district, while another 12.4 percent move to a teaching position in another school district. Table 11, which is adopted from their paper, shows that there are large differences in the racial composition of the school's student body between teachers who remain in the same school and those who change teaching jobs. Teachers who remained at the same school served a student population that was on average 37.2 percent black. Teachers who moved to other schools within the same district served a student population in the school that they left that was on average 39.3 percent black, while teachers who changed districts served a student population in the school they left that was on average 46.6 percent black. A similar pattern exists for both the poverty status of students and the achievement test score. These numbers indicate that new teachers who left their current schools were more likely to serve minority, economically disadvantaged, and lower achieving students in the year prior to exiting. Teachers who serve fewer minority students, fewer low-income, and higher achieving students are more likely to remain at their current schools.

TABLE 11. CHARACTERISTICS OF ORIGIN SCHOOL IN PRIOR YEAR BY TRANSITION CATEGORY

	Same School	New School/ Same District	New District
Test score	54.5	53.2	51.0
Student poverty rate	46.1	48.1	53.5
Percent Black students	37.2	39.3	46.6

Source: Scafidi, *et al.* (2002b).

Scafidi, *et al.* (2002b) also estimated a statistical model of teacher mobility and retention to isolate the independent effect of each of these factors. This analysis allowed them to determine if each of these school characteristics is related to teacher turnover in a multiple regression framework. They used their results to compute the effect on exit probabilities from changing one of the "baseline" school characteristics by one standard deviation. For the baseline person, the probability of exiting a school is 29.7 percent.[13] Increasing test scores and the school's poverty rate decreases the probability of leaving the current school in a given year, but by a very small amount. By contrast, increasing the percentage of black students by 32 percentage points (one standard deviation) increases the probability of leaving by 6.5 percentage points – a 22 percent increase in the probability of leaving the current school. Thus, the multiple regression results in Scafidi *et al.* suggest that the relationships between student poverty and test scores with teacher turnover are largely spurious in nature and that the race of the student body is the driving factor behind teacher turnover.

The above analysis suggests that teachers who serve higher proportions of minority students are more likely to leave their job – by moving to new schools within their districts, by moving to new districts, and by leaving the public education sector. This suggests that we should expect that the schools to which teachers move will be substantially different than the schools that they leave. Here, we examine this by computing changes in school characteristics experienced by teachers who move to

[13] The baseline person is a non-black female teacher with all other explanatory variables set to the sample means.

new schools. These results are displayed separately in Table 12 for teachers who change schools but remain in the same district (column 1) and who change districts (column 2). Table 12 is adopted from Scafidi, *et al.* (2002b).

TABLE 12. CHANGES IN SCHOOL CHARACTERISTICS OF MOVERS

	New School/ Same District	New District
Test score	3.37	7.98
Student poverty rate	-5.4	-11.7
Percent Black students	-3.9	-13.3

Source: Adopted from Scafidi, *et al.* (2002b)

Teachers who moved to new schools within their same school district experienced increases in the level of their students' achievement, and lower proportions of black students and students in poverty. Relative to their former schools, teachers who moved within a district go to schools with test scores that were 3.37 points higher, had 5.4 percentage points fewer students in poverty, and 3.9 percentage points fewer black students. However, teachers who changed districts experienced much more dramatic changes in these school characteristics. As shown in column 2 of Table 12, relative to their former schools, teachers who exited to a new district went to schools with test scores that were 8.0 points higher, had 11.7 percentage points fewer students in poverty, and 13.3 percentage points fewer black students.

In this section, we have provided strong evidence that white Georgia teachers, who compose over 80 percent of the Georgia teaching force, are much more likely to leave schools that serve higher proportions of minority students. For movers who remain in the Georgia teaching force, teachers leave schools with higher proportions of minority and low-income students and move to schools with lower proportions of these student populations. However, multiple regression analysis identifies the race of the student body as the main factor associated with teacher mobility between schools and teacher mobility out of the Georgia teaching force.

VI. Conclusions and Policy Implications

In this paper we provide analyses of recent trends in black-white segregation across public elementary schools in Georgia, of the causes of this segregation, and of how school segregation impacts the characteristics of teachers that serve black students.

The important findings include:

1. Public schools in Georgia experienced a small increase in black-white segregation in recent years. Between 1994 and 2001, the statewide index of dissimilarity increased from 60.2 to 62.1. About 17.7 percent of students in 1994-95 attended schools with greater than 70 percent black students. This percentage increased to 19.1 percent in 2000-01.
2. Statewide, most of the segregation between schools is due to segregation across school districts. Especially in the suburbs and rural areas, within-district segregation tends to be modest. Urban school districts, however, have substantial within-district segregation.
3. There is great heterogeneity in segregation across the twelve regions of Georgia. The highest segregation between schools is within metropolitan Atlanta.
4. School segregation within districts is significantly related to within-district residential segregation and this relationship increased over time.
5. There is substantial inertia in school segregation over time in virtually all school districts that have more than a small number of black students.
6. The four districts that have obtained unitary status, Chatham, Coffee, DeKalb, and Muscogee each experienced increases in within-district segregation in the time period after unitary status was granted. In Coffee and DeKalb Counties, at least some of this increase may have been due to increasing housing segregation, and in DeKalb a court-ordered end to a bussing program designed to promote integration. The other two districts,

however, experienced increasing school segregation at a time when residential segregation was decreasing (Chatham) or flat (Muscogee).

7. Students in schools with larger proportions of black students are much less likely to have white teachers. Students in schools with fewer than 7 percent black students had about a 97 percent chance of having a white teacher. Students in schools with more than 70 percent black students had about a 40 percent chance of having a white teacher.
8. Disparities in other teacher characteristics – age, advanced degrees, salary, certification, and experience – do not appear to be large across school racial categories. However, within-school segregation could lead to greater disparities in these teacher characteristics.
9. The differences in teacher turnover across school racial categories are immense and have increased over time. In particular, white teachers are much more likely to leave schools that serve higher proportions of black students. In 1994-95, about 11 percent of white teachers left schools that served less than 7 percent black students. In that same academic year, the turnover rate was 18.2 percent of white teachers at schools that served over 70 percent black students. By 2000-01, these turnover rates increased to 20.4 and 31.2 percent respectively.
10. Teachers who changed schools moved to schools that served lower proportions of black students, low-income students, and students that scored higher on achievement exams. This was especially true for teachers who changed school districts.
11. Results adopted from Scafidi, et al. (2002b) demonstrate that the race of the students in the most important factor (from among those considered) explaining the movement of teachers between schools and out of the Georgia teaching force. This was particularly true for white teachers. Black teachers seemed to have more attachment to schools that serve higher proportions of black students.

These eleven findings suggest that black-white segregation across public schools in Georgia remains a problem early in the 21st Century, segregation increased slightly in recent years, and the biggest consequences of black-white segregation are that black students are much less likely than white students to have white teachers and schools that serve higher proportions of black students have much higher teacher turnover rates. The large disparity in teacher turnover rates may be problematic from the standpoint of educational opportunities for black students.

It is clear from our results that white teachers avoid schools that serve larger proportions of black students. Our data do not allow us to make an inference as to why white teachers avoid black schools. Nevertheless, there are several possibilities, including:

- Teachers may desire to teach in schools near where they live. Given the large degree of neighborhood racial segregation, white teachers inevitably migrate to schools with larger proportions of white students, as they live in neighborhoods with large proportions of white households.
- White teachers may feel unsafe in schools with more black students or unsafe in the neighborhoods where these schools are located.
- White teachers may deem black students harder to teach.
- White teachers may be averse to teaching black students because of simple racial prejudice.

Of course, not all white teachers think alike and their motives may be complicated. These are merely four possible reasons why white teachers may avoid schools with larger proportions of black students.

We do not provide any direct evidence that the level of segregation within a school district has an effect on student performance. However, we do show that schools with higher percentages of black students have lower quality resources. In particular, such schools experience much greater teacher turnover, particularly by white teachers, have fewer teachers with an advanced degrees, and have more inexperienced teachers.

References

Bridges, E. M. (1996), "Evaluation for Tenure and Dismissal," in J. Millman and L. Darling-Hammond (eds), *The New Handbook of Teacher Evaluation*, Newbury Park, CA: Sage Publications.

Civil Rights Project, Harvard University (2002), "Race in American Schools at the Beginning of the 21st Century," Cambridge, MA: Civil Rights Project.

Clotfelter, C. (1999), "Public School Segregation," *Land Economics* 75 (4): 487-504.

Clotfelter, C., H.F. Ladd, and J. L. Vigdor (2002a), "Segregation Between and Within Schools: Evidence from North Carolina," working paper, Durham, NC: Duke University.

Clotfelter, C., H.F. Ladd, and J. L. Vigdor (2002b), "Who Teaches Whom? Race and the Distribution of Novice Teachers," paper presented at the American Economic Association Meeting, Atlanta, GA.

Hanushek, E. A. (1996), "School Resources and Student Performance," in Gary Burtless, ed., *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success*, Washington D.C.: Brookings Institution Press.

Orfield, G. (2001), "Schools More Separate: Consequences of a Decade of Resegregation," Boston, MA: The Civil Rights Project, Harvard University.

Rivkin, D., E. Hanushek and J. Kain (1998), "Teachers, Schools and Academic Achievement," paper #6691, Cambridge, MA: National Bureau of Economic Research.

Scafidi, B., D.L. Sjoquist, and T.R. Stinebrickner (2002a), "Where Do Teachers Go?" working paper, Atlanta, GA: Andrew Young School of Policy Studies, Georgia State University.

Scafidi, B., D.L. Sjoquist and T.R. Stinebrickner (2002b), "The Impact of Wages and School Characteristics on Teacher Mobility and Retention," working paper, Atlanta, GA: Andrew Young School of Policy Studies, Georgia State University.

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RECENT PUBLICATIONS

(All publications listed are available at http://frp.aysps.gsu.edu or call the Fiscal Research Program at 404/651-2782, or fax us at 404/651-2737.)

Racial Segregation in Georgia Public Schools, 1994-2001: Trends, Causes and Impact on Teacher Quality. **(Catherine Freeman, Benjamin Scafidi and David L. Sjoquist)**
This report tracks recent trends in the level of student segregation in Georgia public schools and examines possible causes of the trends. FRP Report/Brief 77 (November 2002)

Job Creation by Georgia Start-Up Businesses. **(Lakshmi Pandey and Jeanie Thomas)**
This report examines the success rate of state-up companies in Georgia by industry and by region between 1986 and 2000. FRP Report 76 (November 2002)

Local Tax Base Sharing: An Incentive for Intergovernmental Cooperation. **(Geoffrey Turnbull)**
This report develops and explains the principles for designing effective tax base sharing among local governments as a means of coordinating development incentives. FRP Report/Brief 75 (October 2002)

Firm-Level Effects of Apportionment Formula Changes. **(Kelly D. Edmiston and F. Javier Arze)**
This report utilizes Georgia corporate income tax returns from 1992 - 1998 to examine the effects of its 1995 change in apportionment formula on the levels of sales, payroll, and property in the state. FRP Report/Brief 74 (October 2002)

Local Land Use Policy and Investment Incentives. **(Geoffrey Turnbull)**
This report discusses how the threat of land use regulation affects the pace and pattern of urban development and how legal constraints on policymakers can alter the intended effects of land use controls. FRP Report 73 (June 2002)

Do Local Sales Taxes for Education Increase Inequities? The Case of Georgia's ESPLOST. **(Ross Rubenstein and Catherine Freeman)**
This report examines the equity effects of Georgia's use of the Special Purpose Local Option Sales Tax for Education (ESPLOST). FRP Report/Brief 72 (June 2002)

The Net Economic Impact of Large Firm Openings and Closures in the State of Georgia. **(Kelly Edmiston)**
This report estimates the net employment impact of large firm openings and closures in the State of Georgia. New high technology firms are found to generate considerably more spillover employment than non-high-tech firm openings, and the spillovers are greater the more narrowly high technology is defined. FRP Report/Brief 71 (May 2002)

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This report analyzes the effect of differential income tax treatment of the elderly in Georgia and in the U.S. FRP Report/Brief 70 (April 2002)

Residential Mobility, Migration and Georgia's Labor Force. **(Amy Helling and Nevbahar Ertas)**
This report examines the characteristics of workers who recently moved into and within Georgia and focuses particularly on who is employed in newly created jobs. FRP Report/Brief 69 (February 2002)

Revenue Implications for Georgia of Tax Changes Since 1987. **(Kelly Edmiston, Alan Essig, Catherine Freeman, et al.)**
This report provides estimates of the state revenue impacts of all tax changes since 1987. FRP Report 68 (January 2002)

Georgia's Taxes: A Summary of Major State and Local Government Taxes, 8th Edition. **(Jack Morton and Richard Hawkins)**
A handbook on taxation that provides a quick overview of all state and local taxes in Georgia. FRP Annual Publication A(8) (January 2002)

Does Growth Pay For Itself? Property Tax Trends for School Systems in Georgia. **(Richard R. Hawkins)**
This report examines the relationship between economic growth and Georgia school property tax bases. FRP Report/Brief 67 (January 2002)

Are Small Urban Centers Magnets for Economic Growth? **(Benjamin Scafidi, William J. Smith, and Mary Beth Walker)**
This report estimates a model of county-level job growth and finds an effect of small urban centers on their regional economies. FRP Report/Brief 66 (December 2001)

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Racial Segregation in Georgia Public Schools, 1994-2001: Trends, Causes, and Impact on Teacher Quality

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