College Completion Gaps Between Blacks and Whites: What Accounts for Regional Differences?

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The educational achievement gap between blacks and whites in the United States is wide and widening at the college graduate level. A less known fact is that the size of this racial education gap differs across the various regions of the United States. The difference between the share of blacks and the share of whites with a college degree is especially great in the Northeast, an area of the country known for high average educational attainment.

This paper explores reasons for the differential college completion gaps by race across regions, focusing chiefly on adults between the ages of 25 and 34. Two hypotheses are explored. The first hypothesis is that in some regions black children have lagged far behind their white peers in factors determining access to a college education, while in other regions these differences have not been as pronounced. Family background and educational characteristics from years past can potentially explain current regional patterns in adult educational attainment. Relevant factors include parental education, family income, academic resources and achievement in high school, and affordability of college. In the course of exploring this hypothesis, the study touches briefly on whether the existence of historically black colleges and universities continues to affect blacks' relative educational attainment in the South and, if so, through what channels.

The other hypothesis is that regional college completion gaps reflect ongoing differences among the regions in location preferences on the part of black and white adults. For example, young black college graduates

may prefer to locate in different parts of the country than young white graduates, thereby giving rise to differences in observed black versus white college completion shares among 25- to 34-year-olds. While previous studies have examined the implications of the large black outmigration from the South between 1940 and 1970, this paper concentrates on migration patterns starting in the 1970s.

The study concludes that variation across regions in the magnitude of college completion gaps between blacks and whites is a product both of differences in past factors affecting access to college and of ongoing differences in location preferences of black and white adults. Differential location preferences are especially important in explaining college completion by race for New England and the Pacific region.

I. Inequality in Educational Attainment by Region

In 1970, 12.0 percent of the U.S. non-Hispanic white adult population had completed four years of college. Among non-Hispanic blacks, college graduates represented only 4.8 percent of the population, for a black-white gap of about 7 percentage points (Table 1).[1] By the time of the 2000 Census, the college graduate shares had increased to 27.1 percent for whites and to 14.5 percent for blacks. Thus, the college completion gap had widened to over 12 points.

Since 1970, the black-white gap in high school completion has fallen almost in half, while the gap in college completion has nearly doubled.

The divergence between blacks and whites in college completion shares stands in contrast to the convergence in other measures of educational attainment. For example, in 1970, the black-white gap in high school completion shares stood at 24 percentage points; by 2000, this gap had narrowed to 13 points. Also, by 2000, nearly identical proportions of black and white adults had completed some schooling beyond high school (but less than four years of college).

Table 1
College Completion Shares for Whites and Blacks, U.S. Population
Percent

	1970	1980	1990	2000
Ages 25 and Over				
Whites	12.0	17.4	22.0	27.1
Blacks	4.8	8.4	11.4	14.5
Difference	7.3	9.1	10.6	12.6
Ages 25 to 34				
Whites	18.1	25.8	25.6	32.5
Blacks	6.5	11.6	12.3	15.0
Difference	11.7	14.2	13.3	17.5

Source: U.S. Census Bureau (Census of Population).

Almost all parts of the country saw divergence between blacks and whites in the shares of college completion during the 1970s, 1980s, and 1990s (Figure 1). However, the size of the gap varied across regions. Among the nine divisions defined by the U.S. Census Bureau, the East South Central area had the smallest gap in the year 2000—8 percentage points. The largest differences were in the Northeast: New England and the Middle Atlantic region had gaps in excess of 14 percentage points.

Regional educational differences between blacks and whites can, in part, reflect the age mix of the population. Blacks and whites growing up in an era of legalized segregation or other formal educational barriers for minorities would be expected to exhibit greater differences in educational attainment than subsequent generations. Therefore, regional differences in the age mix of the population could possibly account for some of the observed educational attainment differences between blacks and whites. All things equal, areas with older populations would tend to have greater racial differences in college completion shares than areas with younger populations.

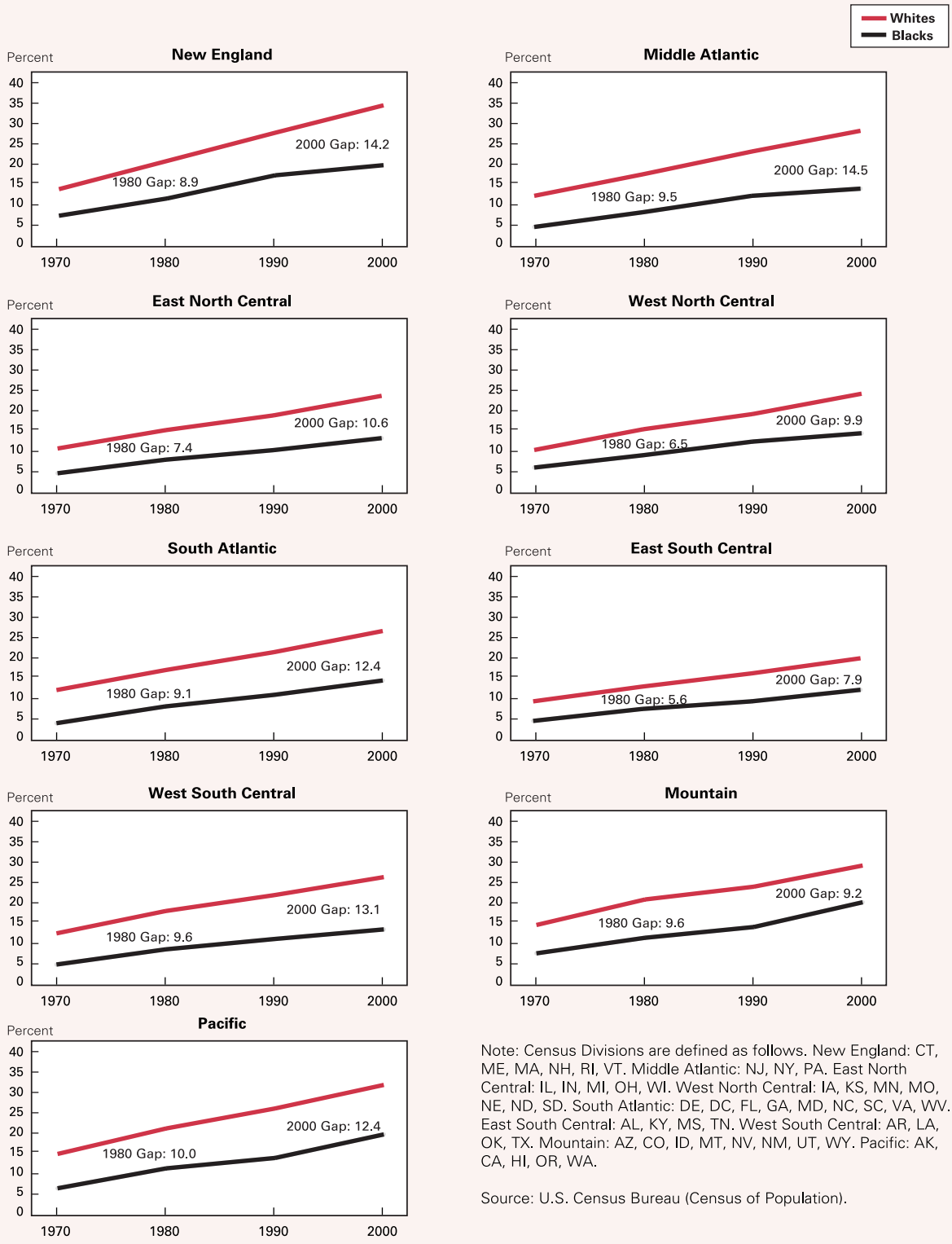
Notwithstanding this demographic argument, the racial disparities in college completion shares among young adults remained large and also varied across different areas of the country. Nationally, the gap between shares of black and white populations between the ages of 25 and 34 who had completed college stood at 17.5 percentage points in 2000, having

[1] All the racial breakdowns in this paper refer to the non-Hispanic portions of the population. For statistics on the educational attainment of Hispanics, whites including Hispanics, blacks including Hispanics, and "other" racial and ethnic groups, see Kodrzycki (2002).

Figure 1

College Completion Shares for Whites and Blacks, Ages 25 and Over

by Census Division



Note: Census Divisions are defined as follows. New England: CT, ME, MA, NH, RI, VT. Middle Atlantic: NJ, NY, PA. East North Central: IL, IN, MI, OH, WI. West North Central: IA, KS, MN, MO, NE, ND, SD. South Atlantic: DE, DC, FL, GA, MD, NC, SC, VA, WV. East South Central: AL, KY, MS, TN. West South Central: AR, LA, OK, TX. Mountain: AZ, CO, ID, MT, NV, NM, UT, WY. Pacific: AK, CA, HI, OR, WA.

Source: U.S. Census Bureau (Census of Population).

risen between 1970 and 1980, fallen slightly between 1980 and 1990, and then risen sharply between 1990 and 2000 (Table 1). Most regions showed increases when the national number was increasing and decreases when the national number was decreasing (Figure 2). But the magnitudes varied. Between 1990 and 2000, the racial educational attainment gap grew much more slowly in southern sections of the country (defined as the South Atlantic, East South Central, and West South Central regions) than outside the South. In 2000, the gap for young adults was as low as 12 percentage points in the East South Central division, while in the Northeast—the region with the largest gap in educational attainment between the races among 25- to 34-year-olds at that time—the gap was over 20 percentage points.[2] New England had a higher overall college completion share than any other region of the country, and young black adults' college completion share was quite high—second only to that in the Pacific area. Thus, the large racial gap in New England was more a reflection of the very high college completion share for young white adults (38.9 percent in 2000, the highest among the nine Census divisions) than of lagging shares for blacks.[3] In the Middle Atlantic region, by contrast, although the overall college completion share was almost as high as in New England, young black adults had only an average college completion share relative to blacks nationally.

The remainder of this article investigates the regional disparities in educational attainment—especially the causes of the large disparities in college completion between young black and white adults in the Northeast. First, it examines differences in educational resources and opportunities for black versus white children growing up in different regions. Then, it turns to an examination of the contribution of differential location preferences of black and white adults. Throughout the study, the approach is exploratory. That is, the research looks at whether or not plausible explanatory factors varied across different parts of the country in ways that may explain college completion patterns. Left largely to follow-on research are analysis of the relative importance of the different determinants of college completion in creating disparate regional patterns, as well as more detailed investigation of cross-regional migration patterns for blacks and whites (such as comparisons of in-migration and out-migration rates for the two races).

II. Determinants of College Attendance and Completion for Blacks and Whites

Studies find that students' college enrollment decisions are heavily influenced by their parents' education, family income, and academic performance in high school. In addition, enrollment depends on the opportunity costs of attending school as opposed to seeking a job, so college attendance increases when immediate labor market opportunities worsen and when the expected returns to a college education rise. Some studies find that high college tuition and fees deter enrollment, but other studies find that college costs are a relatively minor factor, after controlling for other influences such as socioeconomic status, earlier academic achievement, and the relative returns to pursuing a college education as opposed to working.

Evidence on the determinants of college completion is relatively sparse, compared with the evidence on initial enrollment. This is unfortunate because completion rates, as distinct from shares, have been falling in recent decades.[4] (Box 1 explains the distinction between completion rates and completion shares.) In 1970, about one-half of 23-year-olds had enrolled in college for some period after high school graduation, and close to one-quarter had completed a bachelor's degree. Three decades later, about two-thirds of young adults had attempted higher education, but the college graduation share remained barely higher than in 1970. The dropoff in completion rates for blacks was even

[2] The differences between reports by blacks and whites stating that they received some education beyond high school also varied by region, but the patterns were different from those for college completion. In the East North Central and South Atlantic areas, the proportions of 25- to 34-year-old blacks and whites completing "some college" were nearly identical in 2000. In New England and the West North Central and Pacific areas, the "some college" shares for young black adults were about 5 percentage points *higher* than for whites. The differences in black and white college completion shares for 25- to 34-year-olds reported in Figure 2 do not appear to be an artifact of differences in the typical age of college completion in different regions. Limiting the analysis to blacks and whites between the ages of 30 and 34 yields a similar ranking across the Census divisions with respect to the gaps in college completion shares by race.

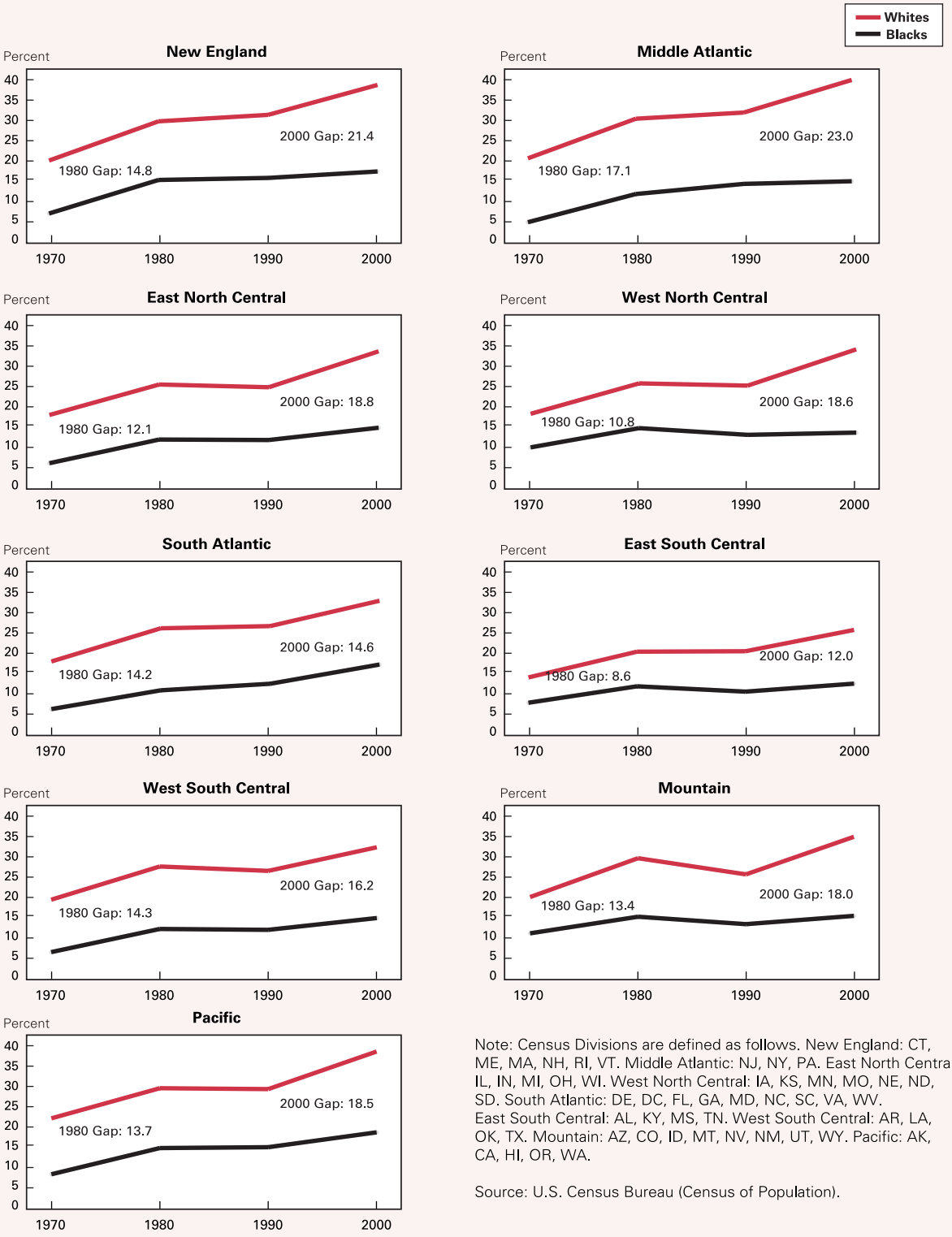
[3] The variation in college completion shares across different parts of the United States was much greater for whites than for blacks. Appendix Table 1 presents college completion shares for young adults in the year 2000 for the 19 states each with a black population greater than that of the Census division with the smallest number of black residents (the Mountain division). Roughly consistent with the data by region, the state with the greatest disparity between blacks and whites was New Jersey, and the state with the smallest was Tennessee. About 41 percent of young white adults in New Jersey had completed four years of college, versus only 24 percent in Tennessee. The difference between the two states in college completion shares for blacks was much smaller—the share was about 16 percent in New Jersey and 13 percent in Tennessee.

[4] Enrollment rates have been rising, so although completion rates have been falling, the increase in the number of graduates has outstripped the population increase, causing completion shares to rise.

Figure 2

College Completion Shares for Whites and Blacks, Ages 25 to 34

By Census Division



Note: Census Divisions are defined as follows. New England: CT, ME, MA, NH, RI, VT. Middle Atlantic: NJ, NY, PA. East North Central: IL, IN, MI, OH, WI. West North Central: IA, KS, MN, MO, NE, ND, SD. South Atlantic: DE, DC, FL, GA, MD, NC, SC, VA, WV. East South Central: AL, KY, MS, TN. West South Central: AR, LA, OK, TX. Mountain: AZ, CO, ID, MT, NV, NM, UT, WY. Pacific: AK, CA, HI, OR, WA.

Source: U.S. Census Bureau (Census of Population).

Box 1
Completion (or Graduate) Share versus Completion Rate

"College completion share," alternatively "college graduate share," or "share of population holding a college degree," measures the share of the population that has completed (graduated from) a college or university at a point in time. Operationally, the numerator is the number of individuals of a particular population who report that they have completed four or more years of college, while the denominator is the total population being considered. In contrast, "college completion rate," as used in this paper, refers to the proportion of individuals from a particular population who enter college and complete the requirements for an undergraduate degree. The numerator is the number of individuals from a given population who have completed college (measured essentially the same way as outlined above), while the denominator is the number of individuals from that population who entered college. Usually, college completion is measured at a point in time that makes allowance for the fact that some students delay college entry and/or upon entry take more than four years to complete college.

College completion shares depend on both college completion rates and college entry (enrollment) rates. For example, over time, the college completion share of the adult population can rise because higher percentages of youth enter college, higher percentages of college students complete college, or both. This relationship is illustrated in the equation below:

$$C/N = C/E * E/N,$$

where C = number of people completing college,
N = population, and
E = number of people enrolling in college.

more pronounced (Turner 2002). Furthermore, a slightly greater percentage of blacks than whites in the 25- to 34-year-old age group reported completing "some college," so gaining an understanding of enrollment decisions is not enough to explain the growing disparity in college completion.

Turner finds that college graduation on the part of a student's mother has a strong influence on whether the student enrolls in college and an even stronger influence on whether the student finishes college. Therefore, the dramatic increase in maternal education in recent decades should have served to raise the completion rates of college students. The fact that college completion rates fell indicates that other factors must have been more than offsetting.

In line with the general literature on the determinants of college attendance, the studies that look explicitly at college attendance differences between minorities and whites reach a variety of conclusions concerning the relative influences of family socioeconomic status, academic preparation, and out-of-pocket costs. Examples of such studies are summarized in Box 2.

The influences of family, schooling, college costs, and the like show up in the college completion data with a lag. For example, the black-white differences in college completion shares among 25- to 34-year-olds by region in 2000 reflect family circumstances, high school achievement, and college costs from at least one or two decades earlier. Therefore, the data cited below from 1970 to 1990 should be interpreted as factors that may have influenced the regional patterns of educational attainment observed in the 1980 to 2000 Censuses. Information on families, secondary school achievement and resources, and college costs since 1990 provides a glimpse of what future Censuses may reveal about educational attainment.

Black-White Differences in Socioeconomic Status by Region

Not unexpectedly, black parents differ from white parents in the percentage who have completed four years of college. In 1970, the national gap in college completion shares between white and black mothers whose oldest child was 5 to 14 years old averaged 4.0 percentage points (Table 2). This gap grew to 6.1 percentage points in 1980, 10.0 percentage points in 1990, and 14.8 points in 2000. (The age range 5 to 14 is used here to facilitate analysis of educational attainment of adults aged 25 to 34. For example, children ages 5 to 14 in 1970 were 25- to 34-year-old adults in 1990.)

In 1970, no more than about 10 percent of the mothers of school-aged children in any region had

Box 2
What National Studies Say about Black-White Gaps in College Attendance Rates

Studies of college attendance by race are in agreement that black students are hampered by their relatively limited economic resources and academic achievement. In addition, some studies find that blacks are more sensitive than whites to college costs and suggest that therefore the sharp increases in tuition in recent decades have served to exacerbate black-white differences in college attendance. Most of these studies focus on entry rates, although there are scattered attempts to track college attendance closer to the point at which students would be completing a four-year degree.

Kane (1994) studied the varying black and white college attendance patterns between 1973 and 1988. He found that, at each income level, blacks were more sensitive to college costs than whites (and that students from low-income families were more sensitive to college costs than those from higher-income families). As a result, as much as one-third of the decline in college entry rates for black teens between the late 1970s and the mid 1980s can be attributed to increases in college costs. On the other hand, the average education levels among the parents of college-age black youths increased significantly throughout the 1970s and 1980s. This contributed to convergence between black and white youth in high school graduation rates and standardized test scores.

Rivkin (1995) analyzed college attendance patterns for the high school class of 1982 and concluded that the black-white gap would largely disappear if blacks were to perform comparably to whites on high school tests of mathematics and reading. For identical test scores, Rivkin found that blacks were slightly more likely than whites to enroll in college right after high school and only slightly less likely to be attending college three years later.[5] In a somewhat similar vein, Constantine and Perna (2000) concluded that, despite their equivalent economic circumstances, black girls were more likely to enroll in college than black boys because of their higher academic achievement in high school. Girls performed better in high school and took more rigorous classes than boys. They also received more support from parents and teachers.

Cameron and Heckman (2001) and Carneiro and Heckman (2003) studied black-white and Hispanic-white gaps in college attendance and completion among males between the ages of 14 and 21 in 1979. Cameron and Heckman found that the gaps in college attendance rates and in the propensity to attend a four-year college would be virtually eliminated if family incomes of minority and white youths were equalized. However, in contrast with Kane, Heckman and his co-authors argue that family income has its greatest influence on forming the ability and college readiness of youth, starting in childhood, not in financing a college education.

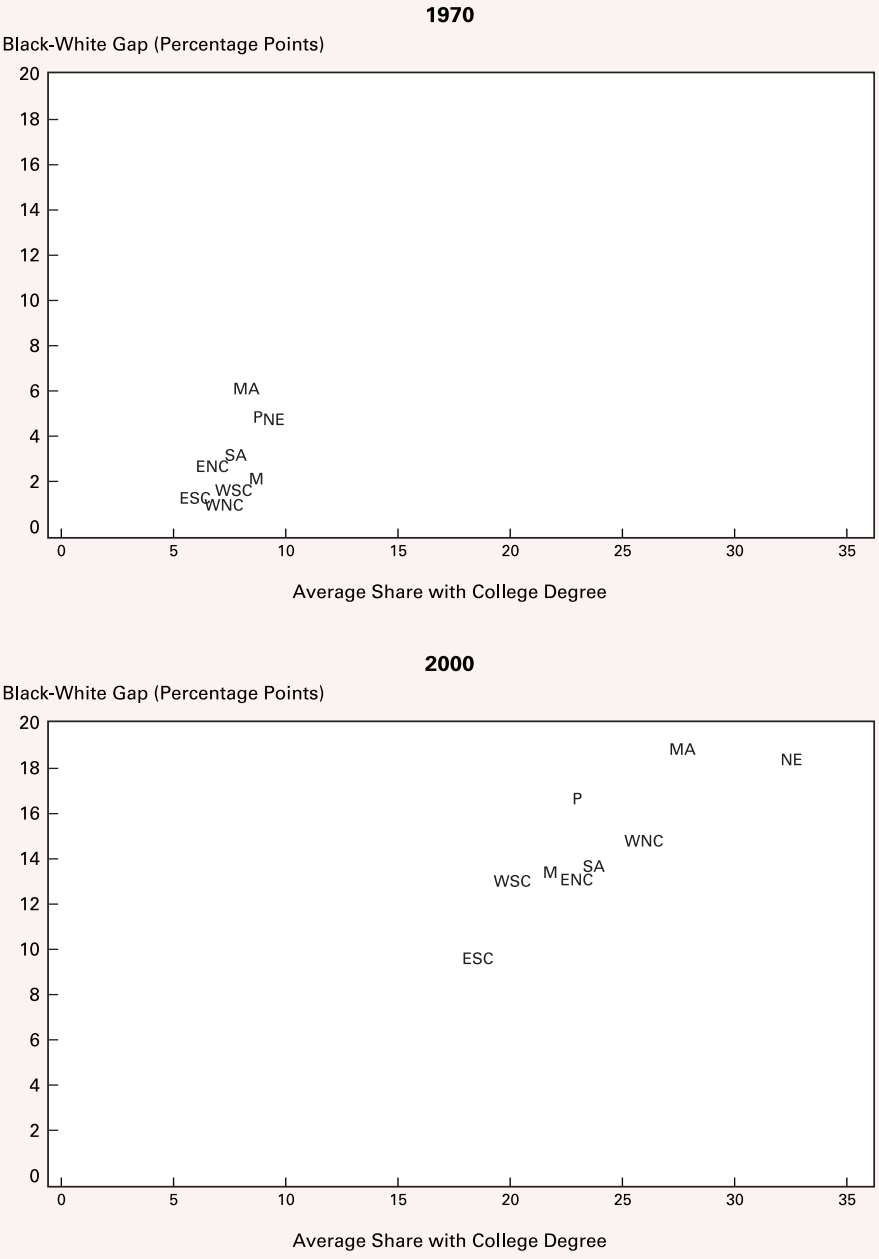
Black and Sufi (2002) focused on college attendance by blacks of different socioeconomic status. Controlling for family background, blacks were more likely than whites to enroll in college in the 1970s. However, this was no longer the case in the 1990s. As a result, Black and Sufi concluded that increases in college tuition have disproportionately affected blacks at the low end of the socioeconomic spectrum. Similarly, Lisenmeier, Rosen, and Rouse (2002) found that blacks are more sensitive to the composition of the financial aid package they are offered than is the case for low-income students in general. A switch from loans to outright grants makes financially needy blacks more likely to enroll in college.

completed college, regardless of race. By 1980, however, regional differences were considerably larger. About 16 percent of white mothers in New England had completed college, while the share for black mothers had increased only slightly—to 7 percent. This black-white gap of almost 9 percentage points in New

[5] The policy implications of Rivkin's research are complex. Jencks and Phillips (1998) offer the most definitive evidence to date on the sources of the black-white test score gap. They note that some of the policies needed to close the gap are expensive, including making reductions in class size and inducing more able instructors to teach in big-city schools. Other measures are not necessarily expensive, but are difficult to implement for other reasons. Examples of such policies include raising teachers' expectations for black students, inducing black students to take more challenging electives, and desegregating schools. Jencks and Phillips also cite the need to improve the cognitive skills of preschoolers through greater emphasis on cognitive development in programs such as Head Start or through improved parenting. They discuss the universal need to emphasize the role of hard work over heredity in producing academic achievement. Despite the extensive analysis offered in their volume, Jencks and Phillips offer a conservative assessment of what is known: "While we are convinced that reducing the gap is both necessary and possible, we do not have a detailed blueprint for achieving this goal and neither does anyone else" (p. 47).

Figure 3

Correlation Between Average Share of Mothers with a College Degree and Black-White Completion Gap



Source: U.S. Census Bureau (Census of Population) and author's calculations.

Note: Census Divisions are defined as follows. New England: CT, ME, MA, NH, RI, VT. Middle Atlantic: NJ, NY, PA. East North Central: IL, IN, MI, OH, WI. West North Central: IA, KS, MN, MO, NE, ND, SD. South Atlantic: DE, DC, FL, GA, MD, NC, SC, VA, WV. East South Central: AL, KY, MS, TN. West South Central: AR, LA, OK, TX. Mountain: AZ, CO, ID, MT, NV, NM, UT, WY. Pacific: AK, CA, HI, OR, WA.

Box 3
The Growing Correlation between Human Capital, Income, and Racial Inequality

Beginning with an influential study by Simon Kuznets (1955), economists have investigated how economic growth affects the distribution of income. A succession of studies have examined whether countries that grow more rapidly—or have higher levels of income—have less income inequality. These studies have reached a variety of conclusions.

Bradbury (1996) examined regions of the United States and found some support for the view that growth and inequality are negatively related. For example, during the 1980s, income inequality rose in all regions, but relatively little in New England, which experienced a particularly strong economic boom. By contrast, in the early 1980s, the West South Central region experienced a severe economic decline, which was associated with a steep increase in income inequality.

The current study finds some evidence that regions with relatively high levels of educational attainment and income tend to have greater disparities in these attributes across racial groups. Thus, black mothers located in areas of the country with high average educational attainment generally are more likely to be college-educated than black mothers located in areas with low average educational attainment—but the gap be-

tween black and white mothers is larger in regions of high average educational attainment than in regions of low educational attainment. Similarly, black families in high-income regions have higher incomes than blacks in low-income regions, but they lag further behind white families. These correlations between average levels of education and income on one hand and racial inequalities on the other have been especially strong in recent years.

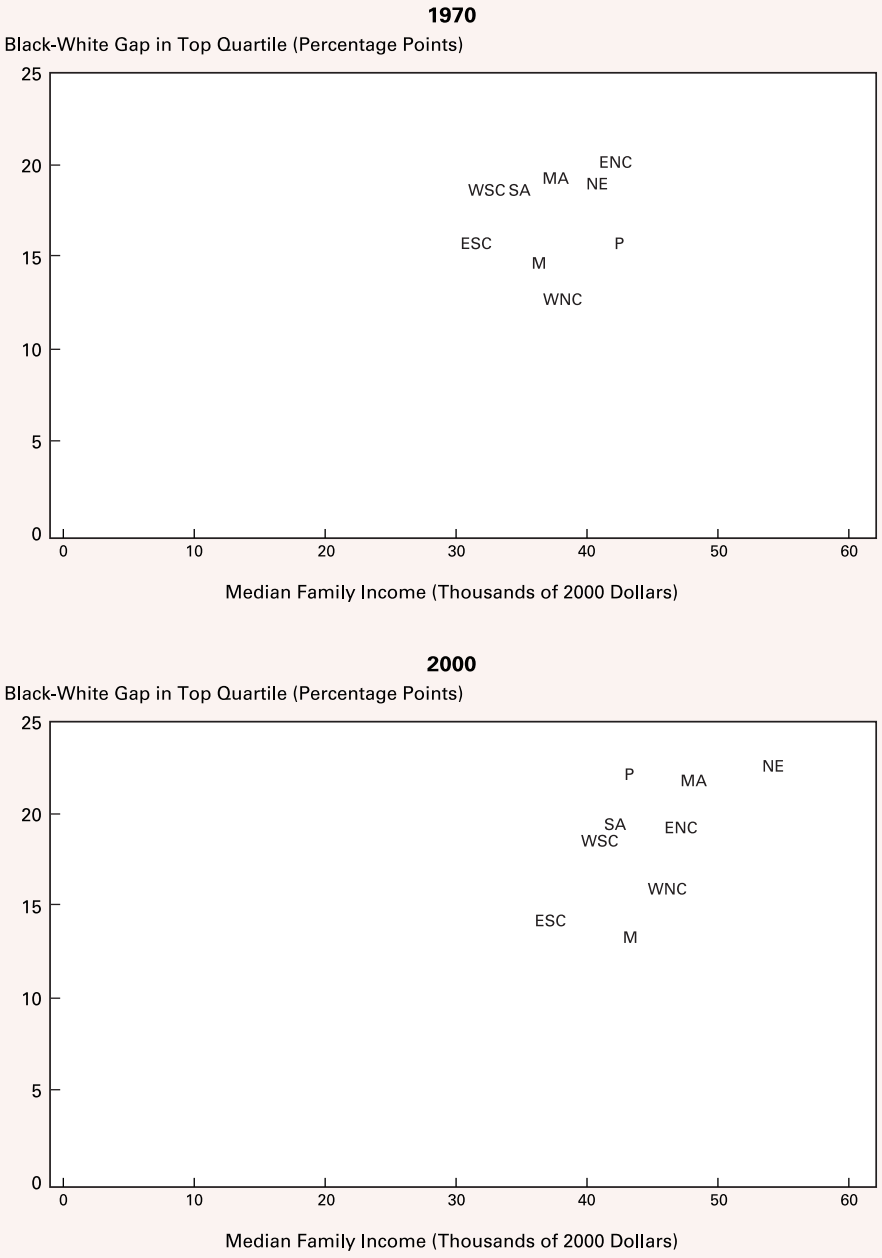
In each Census year between 1970 and 2000, the region with the lowest average college completion share for mothers (the East South Central region) had the smallest or next to smallest gap between black and white mothers according to this measure, and the region with the highest average college completion share for mothers (New England) had a relatively large racial gap. The other regions more or less lined up in between. Although this positive correlation between the average educational attainment of mothers and racial inequality in educational attainment of mothers existed as early as 1970, the differences across regions were quite small at that time (Figure 3). By 2000, the differences across regions were much more pronounced.

The correlation between median income levels and racial income inequality also became more pronounced over time (Figure 4). For example, in 1970, five regions (the West South Cen-

(continued)

Figure 4

Correlation Between Median Family Income and Black-White Completion Gap in Top Family Income Quartile



Source: U.S. Census Bureau (Census of Population) and author's calculations.

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Box 3
The Growing Correlation between Human Capital, Income, and Racial Inequality
(continued)

tral, South Atlantic, Middle Atlantic, New England, and East North Central regions) had similar differences between black and white family representation in the top income quartile. By 2000, differences in median family income across regions were larger and more systematically related to income differences between the races.

These findings on the positive correlation between education and income on the one hand and racial inequalities on the other invite follow-on research. For one thing, it would be worth investigating whether the findings hold up using smaller geographic units such as states or metropolitan areas. If the findings do hold up, one would want to know why the relationship holds. That is, what enabled whites in some areas to improve their educational and income achievements so substantially? In any particular area, why did these same factors have much smaller effects for blacks than for whites?

England was the highest in the nation. Although both black mothers and white mothers became more educated on average in subsequent decades, the differences between them widened. In 2000, the gap in maternal college completion shares exceeded 18 percentage points both in New England and in the Middle Atlantic region. The East South Central region had the smallest educational attainment differences between black and white mothers in that year.

College completion shares for heads of household also varied by region, but not as much as for mothers. In any case, the general conclusions about which regions have seen greater divergence remain the same (data not shown).

Turning to the distribution of income, black families nationwide are underrepresented in the top half of the income distribution (Table 3). In 1970, only about 10 percent of black families whose oldest child was 5 to 14 years of age were in the top income quartile for such families, compared with 28 percent of white families. Only 23 percent of black families were in the top half, compared with 56 percent of white families. The relative income distributions of black and white families became more similar by 1980, but then they diverged during the 1980s and 1990s. As of 2000, the overall patterns looked strikingly similar to what they had been three decades earlier. In 2000, the difference between black families and white families in terms of representation in the top quarter of the income distribution was about 20 percentage points—31 percentage points for representation in the top half.[6]

Table 2
Black-White Graduation Share Gap for Mothers of Children Ages 5 to 14
Percentage Point Difference

	1970	1980	1990	2000
New England	5.1	8.9	14.6	18.3
Middle Atlantic	6.4	8.3	12.4	18.8
East North Central	3.2	5.2	9.0	13.3
West North Central	1.6	4.9	7.3	14.8
South Atlantic	3.7	5.7	10.0	13.6
East South Central	1.8	1.3	5.7	9.7
West South Central	2.2	5.0	9.1	13.1
Mountain	2.4	8.3	9.8	13.3
Pacific	5.3	7.3	10.8	16.5
National Average	4.0	6.1	10.0	14.8

Source: U.S. Census Bureau (Decennial Census of Population).

In 1970, the areas with the smallest differences between the incomes of black families and white families were the West North Central and Mountain regions (Table 3). The identity of the regions with the largest differences depends on the definition used. However, regardless of the definition used, the Middle Atlantic region ranked high in inequality judging by its representation in both the top quartile and the top half of the income distribution.

Between 1970 and 1980, all parts of the country saw some convergence in the incomes of black and white families. After 1980, by contrast, regional patterns diverged considerably. Between 1980 and 1990, New England and the Middle Atlantic states experienced a sharp divergence from other regions in the magnitude of the black-white gap, as measured by representation of black and white families, respectively, in the top quartile of the income distribution. In 2000, these two areas, along with the Pacific region,

[6] Over these decades, the difference in median income of black and white families increased from about $17,000 in 1970 to about $26,000 in 2000. These incomes are expressed in constant 2000 dollars.

Table 3
Black-White Gap in Top Half of Family Income Distribution for Families with Children Ages 5 to 14
Percentage Point Difference

	Top Half				Top Quartile			
	1970	1980	1990	2000	1970	1980	1990	2000
New England	28.8	26.5	33.0	29.6	18.9	13.3	21.3	22.6
Middle Atlantic	32.2	30.4	32.8	33.3	19.1	15.8	20.4	21.9
East North Central	27.9	27.6	31.8	35.1	15.8	13.2	16.0	19.4
West North Central	27.0	24.0	26.9	29.9	12.8	10.1	12.3	16.0
South Atlantic	33.6	26.2	29.9	28.0	18.8	14.9	18.5	19.4
East South Central	30.6	24.7	26.6	26.9	15.2	11.9	13.9	14.4
West South Central	34.6	28.6	29.8	30.9	18.5	17.5	17.4	18.8
Mountain	25.2	22.4	24.7	20.6	14.7	12.4	14.2	13.5
Pacific	30.4	27.7	27.7	31.0	19.9	18.0	19.4	22.2
National Average	32.6	28.0	30.7	31.2	18.3	15.2	17.9	19.8

Source: U.S. Census Bureau (Decennial Census of Population).

showed the greatest differences between black and white families according to the top quartile measure. The East North Central region had the largest inequality measured by the percentage of black versus white families in the top half of incomes. The areas with the least income inequality were the Mountain and East South Central regions.[7]

Looking jointly at the two measures of socioeconomic status—maternal educational attainment and family income—one striking finding is that racial inequalities tend to be larger in regions that, on average, have relatively high education and income. Box 3 provides a discussion of this correlation.

Black-White Differences in Academic Achievement and Resources by Region

Studies of college attendance find that students with greater academic achievement in high school are more likely to attend college, holding constant other personal characteristics. At the same time, black high school students, on average, lag behind whites on various measures of academic achievement, including standardized test scores.[8] On average, they also have inferior school resources.

In contrast to the information on socioeconomic status, which is drawn from the decennial Censuses, information about high school achievement is taken from much more limited samples. This fact restricts our ability to draw conclusions about time trends or narrowly defined areas of the country. The most reliable source of nationwide information about standardized test scores is the National Assessment of Educational Progress (NAEP).[9] For the 1990s, the data in Flanagan and Grissmer (2002) can be combined[10] to show that overall differences between the scores of blacks and whites on the NAEP are quite similar in most broad regions of the country (top panel of Table 4).

The Northeast recorded the highest NAEP scores for whites, 0.38 standard deviation above the national average. The same region had the top score among black students, 0.66 standard deviation below the national average. This difference between the white and black scores in the Northeast—about one standard deviation—was similar to the differences in the Midwest and West. The Southeast had a slightly smaller difference between black and white NAEP scores.

The overall similarities in NAEP score gaps across the Northeast, Midwest, and West are the result of offsetting differences in test score gaps between blacks and whites within given types of locations (suburban, urban,

[7] Yet another alternative measure of family income inequality is the ratio of the median income of black families to the median income of white families. In 2000, in the Middle Atlantic and East North Central regions, black families' median income was especially low relative to that of whites. By far the highest ratio was in the Mountain states. Median family incomes are used below to compare the affordability of college for black and white families.

[8] For an extensive discussion of the factors affecting high school academic achievement by race, see Jencks and Phillips 1998.

[9] NAEP is a Congressionally mandated project of the National Center for Education Statistics, a division of the U.S. Department of Education. The assessments have been conducted regularly since 1969 and constitute the only nationally representative, continuing evaluation of U.S. students' knowledge in various subject areas. Nearly 100,000 students in 2,000 public and private schools are tested in each administration of NAEP.

[10] To derive a sufficiently large sample for analyzing four broad regions of the country, Flanagan and Grissmer combined the scores from nine national NAEP tests given to fourth and eight graders from 1990 to 1998. The NAEP regions are based on an aggregation of U.S. Bureau of Economic Analysis regions and therefore are somewhat different from the U.S. Census Bureau regions. The Northeast includes New England, the Middle Atlantic states, Delaware, the District of Columbia, and Maryland. The Midwest corresponds to the East North Central district plus the West North Central district. The Southeast consists of the East South Central district, some states in the South Atlantic (Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia), and Arkansas and Louisiana. The West includes the Mountain and Pacific districts as well as Oklahoma and Texas.

Table 4
Average NAEP Scores and Location of Student Population in the 1990s by Race and Region

	Whites	Blacks	Difference
Overall Scores (standard deviation units[a])			
Northeast	.38	–.66	1.04
Midwest	.31	–.70	1.01
Southeast	.15	–.76	.91
West	.17	–.88	1.05
Scores by Location (standard deviation units[a])			
Suburban			
Northeast	.47	–.38	.85
Midwest	.37	–.49	.86
Southeast	.23	–.76	.99
West	.18	–.93	1.11
Rural			
Northeast	.37	–.68	1.05
Midwest	.31	–.71	1.02
Southeast	.14	–.79	.93
West	.16	–.99	1.15
Central City			
Northeast	.03	–.84	.87
Midwest	.14	–.79	.93
Southeast	.17	–.79	.96
West	.15	–.81	.96
Location Shares within Regions			
Suburban			
Northeast	63%	37%	26 points
Midwest	54%	27%	26 points
Southeast	49%	39%	10 points
West	53%	50%	3 points
Rural			
Northeast	22%	5%	17 points
Midwest	25%	4%	22 points
Southeast	27%	15%	12 points
West	18%	7%	11 points
Central City			
Northeast	15%	58%	–43 points
Midwest	20%	68%	–48 points
Southeast	25%	46%	–22 points
West	29%	43%	–14 points

[a] From the national average for all students
Source: Flanagan and Grissmer (2002) and author's calculations.

Table 5
Share of Blacks in Schools with Majority Non-White Enrollment, by Region, 2001–02
Percent

	Non-White Share	
	50 percent or more	90 percent or more
Regional Breakdowns used in Boozer, Krueger, and Wolkon (1992)		
South	70.0	31.7
Border	68.0	41.9
Northeast	78.6	51.4
Midwest	73.0	46.8
West	76.4	30.2
Census Divisions		
New England	67.4	26.7
Middle Atlantic	80.2	55.3
East North Central	75.9	50.8
West North Central	57.1	26.6
South Atlantic	67.8	29.4
East South Central	67.6	39.2
West South Central	74.7	36.2
Mountain	56.5	13.9
Pacific	80.2	33.4
U.S. Total	72.1	37.9

Source: U.S. Department of Education, Common Core of Data.

and rural) and differences in the concentration of blacks and whites among these location types within each region. The differences in scores between whites and blacks were sizable across all types of school districts—suburban, urban, and rural (middle panel)—but they were especially large in the West. In the Northeast and Midwest, disproportionate shares of whites lived in the high-scoring suburbs, while disproportionate shares of blacks lived in the low-scoring central cities (bottom panel). Locational disparities by race were not as prevalent in the Western states.

Academic achievement as measured in the NAEP or other standardized tests can be caused by a variety of influences. A study by Boozer, Krueger, and Wolkon (1992) looked explicitly at the schooling environments of minority children in different parts of the country. They found that, for black students, the Northeast moved from being the least racially segregated region of the country in 1968 to being the most racially segregated region in 1989. This remained true in 2001–02, although a breakdown of the nine Census divisions shows that the findings were driven by the Middle Atlantic states, not by New England (Table 5). In the Middle Atlantic and East North Central regions, a majority of black schoolchildren attended schools that were at least 90 percent non-white. This is noteworthy because a number of studies find evidence that black academic achievement is hampered by attending predominantly minority schools.[11]

Boozer, Krueger, and Wolkon also looked at school resources. They found that Hispanics had the largest class sizes nationwide, mostly as a consequence

of above-average class sizes in the West, where a disproportionately high share of Hispanic students were located. However, there were only minimal differences in average class sizes for black and white students, especially looking within regions of the country.[12]

Updated data confirm that, for the nation as a whole, there is relatively little difference in the size of the average class attended by black students versus the average class attended by white students. However, in the Middle Atlantic, East North Central, and Pacific regions, somewhat greater percentages of black than white students attend schools with average student-teacher ratios in excess of 25, whereas the opposite is the case in the East South Central region (Table 6).

Turning to another measure of school resources, white students in all regions have similar rates of computer usage in school (Table 7). On the other hand, the share of black students who use computers in school is lower in New England, the Middle Atlantic states, and the Mountain region than in other areas. As a result, these three regions have the largest racial differences in computer use.

Black-White Differences in College Affordability by Region

The Kane (1994) and Black and Sufi (2002) studies indicate that high college tuition and fees have had a differentially deterrent effect on low-income students, keeping an especially large proportion of them from attending college. This section evaluates this proposition as an explanation for regional patterns.

From 1970 to 1980, college costs rose in line with median family income (Table 8). After 1980, college costs rose much more sharply than incomes—especially in the most recent decade. The average tuition and fees at four-year public colleges and universities rose from 4.3 percent of the median family income in 1980, to 5.3 percent in 1990, and to 7.4 percent in 2000.

In 1970, New England and the West South Central region had the lowest public college cost burdens, as measured by costs relative to income. In 1980, the lowest public college costs were found in the West South Central and Pacific regions, and the highest in the Middle Atlantic and East North Central regions.[13] As a result, college tuition and fees as a percent of median family income ranged from 2.7 percent in the West South Central region to 5.9 percent in the Middle

Table 6
Share of Students in Schools with Student-Teacher Ratios above 25, 2001–02, by Census Division
Percent

	Whites	Blacks	Difference
New England[a]	.3	1.1	–.8
Middle Atlantic	.6	2.3	–1.7
East North Central	1.7	4.0	–2.3
West North Central	.5	1.2	–.8
South Atlantic	.8	1.1	–.3
East South Central[b]	6.8	3.5	3.4
West South Central	.3	.6	–.4
Mountain	6.0	5.3	.7
Pacific	8.6	10.5	–1.8
United States	2.5	2.6	–.1

[a] Data for Massachusetts are unavailable.
[b] Data for Tennessee are unavailable.
Note: Schools with fewer than two full-time equivalent teachers were dropped in an attempt to control for outliers.
Source: U.S. Department of Education, Common Core of Data.

Table 7
Share of Students Ages 6 to 17 Using Computers in School, 1997, by Census Division

	Whites	Blacks	Difference
New England	82	66	16
Middle Atlantic	83	66	17
East North Central	85	73	12
West North Central	86	81	5
South Atlantic	84	73	11
East South Central	82	70	13
West South Central	84	71	13
Mountain	82	63	19
Pacific	80	76	4
United States	83	71	12

Source: U.S. Census Bureau (Current Population Survey, October 1997).

[11] See, for example, Cook and Evans (2000) and Grissmer, Flanagan, and Williamson (1998). The magnitude of the impact of segregation on achievement varies across studies, and some studies are more rigorous than others in controlling for other influences.

[12] Boozer, Krueger, and Wolkon conclude that wealth, not race, is the main determinant of differences in educational resources. However, they find that in the Northeast, class sizes are larger for the average black student than for the average white student. Also, minority children are less likely to be exposed to computers in school than are white children, even after adjusting for family income.

[13] To form averages by Census division, tuition and fees by state were weighted by undergraduate enrollment. Separate weighting according to the location of black and white undergraduates made little difference.

Table 8
Average Four-Year Public College Tuition and Fees as a Share of Median Family Income, by Census Division

	1970			1980		
	Tuition and Fees (2000 dollars)	Family Income (2000 dollars)	Costs as Share of Income (percent)	Tuition and Fees (2000 dollars)	Family Income (2000 dollars)	Costs as Share of Income (percent)
New England	1,020	41,898	2.4	1,827	43,053	4.2
Middle Atlantic	2,083	41,273	5.1	2,482	42,091	5.9
East North Central	2,405[a]	42,107	5.7[a]	2,301	45,449	5.1
West North Central	1,823	38,355	4.8	1,614	42,070	3.8
South Atlantic	1,797	36,270	5.0	1,690	38,284	4.4
East South Central	1,854	31,893	5.8	1,595	34,612	4.6
West South Central	908[b]	34,394	2.6[b]	1,056	38,786	2.7
Mountain	1,770[c]	37,729	4.7[c]	1,818	41,432	4.4
Pacific	1,280	42,107	3.0	1,435	43,942	3.3
United States	1,789	39,606	4.5	1,795	41,850	4.3

	1990			2000		
	Tuition and Fees (2000 dollars)	Family Income (2000 dollars)	Costs as Share of Income (percent)	Tuition and Fees (2000 dollars)	Family Income (2000 dollars)	Costs as Share of Income (percent)
New England	2,852	54,118	5.3	4,599	55,200	8.3
Middle Atlantic	3,030	49,425	6.1	4,807	49,530	9.7
East North Central	2,987	46,130	6.5	4,101	49,700	8.3
West North Central	2,234	43,099	5.2	3,252	47,250	6.9
South Atlantic	2,301	42,703	5.4	2,964	44,000	6.7
East South Central	1,962	35,586	5.5	2,774	38,000	7.3
West South Central	1,585	36,904	4.3	2,559	38,800	6.6
Mountain	1,931	40,858	4.7	2,446	43,000	5.7
Pacific	1,662	47,738	3.5	2,775	45,000	6.2
United States	2,346	44,153	5.3	3,349	45,170	7.4

[a] Excluding Indiana and Wisconsin: data not available.
[b] Excluding Louisiana and Oklahoma: data not available.
[c] Excluding Utah: data not available.
Source: Integrated Postsecondary Education Data System and U.S. Census Bureau (Census of Population).

Atlantic region. In 2000, the same four regions of the country were at the extremes, and costs relative to income ranged from 6.2 percent in the Pacific region to 9.7 percent in the Middle Atlantic region.

Because the median income of black families is lower than that of white families, college costs impose a higher burden on blacks than on whites. In 1980, tuition and fees represented 7.2 percent of black families' median income, compared with only 4.0 percent of the median income of white families (Table 9). The Middle Atlantic region had the highest costs relative to income for both white families (5.4 percent) and black families (9.9 percent), as well as the largest black-white spread in burdens of any area of the country. At the other extreme, college costs for black families in the West South Central area represented only 4.3 percent of median income (the same as the national average burden for all families), and the black-white difference in costs as a fraction of income was relatively small (as it was in the Pacific and Mountain states).

During the 1980s and 1990s, the median income of white families grew more rapidly than that of black families. As a result, between 1980 and 2000, public college costs as a fraction of income rose by over 5 percentage points for black families and by (only) about 2 percentage points for white families.

Table 9
Average Four-Year Public College Tuition and Fees as a Share of Median Income of White and Black Families, by Census Division
Percent

	1970			1980		
	Whites	Blacks	Difference	Whites	Blacks	Difference
New England	2.4	4.0	–1.6	4.1	7.2	–3.1
Middle Atlantic	4.8	7.9	–3.0	5.4	9.9	–4.6
East North Central	5.5	8.1	–2.7	4.9	8.0	–3.2
West North Central	4.6	7.2	–2.6	3.7	6.0	–2.3
South Atlantic	4.5	8.5	–4.1	4.0	6.7	–2.7
East South Central	5.4	11.3	–5.9	4.2	7.6	–3.4
West South Central	2.3	4.8	–2.5	2.4	4.3	–2.0
Mountain	4.4	7.0	–2.6	4.1	6.3	–2.2
Pacific	2.8	4.5	–1.7	3.0	5.1	–2.1
United States	4.3	7.6	–3.3	4.0	7.2	–3.1

	1990			2000		
	Whites	Blacks	Difference	Whites	Blacks	Difference
New England	5.0	8.8	–3.8	7.5	15.3	–7.7
Middle Atlantic	5.5	9.6	–4.1	8.2	17.2	–8.9
East North Central	6.1	12.4	–6.4	7.6	17.0	–9.4
West North Central	5.0	9.7	–4.7	6.5	13.3	–6.8
South Atlantic	4.7	8.4	–3.7	5.7	10.6	–4.9
East South Central	4.9	9.9	–5.0	6.5	12.9	–6.4
West South Central	3.5	7.4	–3.9	5.1	10.7	–5.5
Mountain	4.2	6.9	–2.7	4.9	7.4	–2.5
Pacific	3.0	5.1	–2.0	4.7	9.0	–4.2
United States	4.8	8.9	–4.2	6.3	12.8	–6.5

Source: Integrated Postsecondary Education Data System and U.S. Census Bureau (Census of Population).

Between 1980 and 1990, New England colleges and universities had the highest percentage increases in tuition and fees of any region of the country. But family incomes of blacks and whites grew at rates comparable with each other, and both were higher than in any other region. Therefore, in 1990, college cost burdens in New England were comparable with the national averages for both white and black families. From 1980 to 1990, the East North Central region experienced average tuition and fee increases, below-average income growth for white families, and the lowest income growth in the nation for black families. As a result, in that region, 1990 college costs as a fraction of income were the highest in the nation, and the black-white spread in burden rose to over 6 percentage points—also the highest in the nation. The Pacific region had the lowest college costs relative to income, and the percentage-point difference in cost burdens between black and white families remained virtually unchanged from its value in 1980.

Between 1990 and 2000, black families' median real income fell, while tuition costs increased sharply. In 2000, three parts of the country—New England, the Middle Atlantic, and the East North Central regions—stood out for their high college costs relative to family incomes and for their large differences in burden between black and white families. In each of these regions, annual tuition and fees represented over 15 percent of black families' income and roughly 8 percent of white families' income. By contrast, in the Mountain states, tuition and fees relative to incomes of both black and white families were little different in 2000 than they had been several decades earlier, and the difference in burden remained quite small.

One factor that can alter these cost comparisons is financial aid. Because Pell Grants and other federal assistance programs are administered using identical rules across the country, they are unlikely to alter the conclusions about relative costs in different regions. State-specific, need-based financial aid tends to be smaller than the aid from federal programs, but it varies considerably across different parts of the country.[14] By far the most generous area is the Middle Atlantic. This fact may conceivably reduce the gap in burden between black and white families in that region.[15]

Yet another consideration is the prevalence of public colleges and universities in different parts of

[14] Kane (1995) estimated that less than 7 percent of state spending for higher education comes in the form of means-tested grants. The great bulk of state assistance to higher education goes to keeping tuition lower than it otherwise would be. Tuition subsidies are identical at all income levels.

Table 10
Enrollment in Historically Black Colleges and Universities as a Share of Total Black Undergraduate Enrollment, Selected Years
Percent

	1970	1980	1990	1999
United States	32.6	23.2	21.6	15.2

	1984	1999	HBCU Enrollment as a Share of Total Undergraduate Enrollment, 1999
New England	0	0	0
Middle Atlantic	1.4	1.3	0.2
East North Central	1.5	.8	0.1
West North Central	9.7	6.9	0.4
South Atlantic	35.9	24.2	5.9
East South Central	36.3	32.7	7.9
West South Central	30.8	23.0	3.7
Mountain	0	0	0
Pacific	0	0	0

Note: The U.S. and Census Division figures are based on different sources of information on black undergraduate enrollment and therefore are not exactly comparable. In addition, calculations assume that historically black institutions in each Census Division had the national proportion of black students, 81.6 percent in 1980 (used for 1984) and 82.6 percent in 1999.
Source: National Center for Education Statistics.

New England colleges and universities appear to be much more selective than colleges and universities

In 2000, 55 percent of freshmen enrolled in a four-year college in New England were from out of state, while the national average was 27 percent.

elsewhere in the country. In 2000, 55 percent of freshmen enrolled in a four-year college in New England were from out of state. The national average was 27 percent, and no region other than New England exceeded this average by more than 4 percentage points. Thus, students growing up in New England whose parents were not college-educated may perceive college as less accessible than similar students in other regions. This, too, may exacerbate racial differences in educational attainment.

the country, since for in-state residents they are considerably less expensive options than are private colleges and universities. On the whole, about two-thirds of American undergraduates attend public colleges and universities. The availability of public university slots is greatest in the Mountain and West South Central regions, where their share is about 80 percent. At the other extreme, the public share in New England is only about 40 percent, by far the lowest among all nine Census divisions. These regional differences may affect perceptions of college costs.

Perhaps in part because of the high share of private institutions of higher education, as well as the existence of some particularly renowned institutions,

The Role of Historically Black Institutions of Higher Learning

In the South, black students' access to college was limited historically not only by academic and financial resources but also by rigid segregation. In the early post World War II era, the combination of the limited capacity of Negro colleges and the formal barriers to entry at other institutions of higher learning prevented black Southern veterans from being able to take full advantage of the GI Bill. Turner and Bound (2002) found that Southern blacks experienced no significant increases in educational attainment despite the financial assistance provided by the GI Bill. About 55 percent of black applicants to the Negro colleges were turned away for lack of space, and the poor financial backing for these institutions (especially the private colleges) prevented them from recruiting new faculty members and expanding. By contrast, blacks outside

[15] Taking total state awards for need-based undergraduate scholarship and grant programs and dividing by the number of full-time equivalent students at four-year public institutions yields a national average per-student state aid figure of $569 for 2000. In the Middle Atlantic region, average aid per student exceeded $1,800. The only other regions that were above the national average were New England and the East North Central area. As a rough adjustment, if we subtract these average state aid amounts from college tuition, the Middle Atlantic colleges appear to have been much less expensive, and the gap in burden between black and white families becomes smaller. The South Atlantic region becomes somewhat more expensive in relative terms because state aid is small compared to tuition. Relatively little change is introduced for the other regions. However, to do the comparison properly, it would be necessary to know more details about the formulas for distributing state aid. National-level comparisons of the progressivity of federal and aggregate state aid are provided in Kane (1999).

Box 4
Regression Analysis of Factors Affecting College Completion Gaps

Notwithstanding its obvious limitations, a crude regression relating regional college completion differences between blacks and whites in 2000 to the values of the four explanatory variables listed in the top panel of Table 11 yields an adjusted R^2 of .685, with all variables entering with the expected signs. The largest t-statistic by far is for mother's education (1.7). A similar regression for 1990 (using 1970 values for the two family socioeconomic variables and 1980 values for the college affordability variable) yields an adjusted R^2 of .639, with the highest t-statistic for family income (1.2), but mother's education enters very insignificantly and with the incorrect sign. As noted in the text, regional differences in maternal college completion shares were quite minor in 1970, compared with those recorded in subsequent Censuses. Thus, these simple regressions seem to side with previous authors who attribute black-white college completion gaps more to differences in family circumstances than to college costs. However, as the text notes, very large increases in college costs—and the opening of a very large gap in burden between blacks and whites—occurred after 1990, so the associated effects on college completion shares have not yet been fully observed.

the South, who had access to a wider variety of colleges and universities, benefitted from the GI Bill.

Southern elementary and secondary schools, colleges, and universities opened up to black applicants as a result of civil rights legislation and court decisions in the 1950s and 1960s. In 1968, 78 percent of Southern black elementary and secondary school students were attending schools that were 90 to 100 percent minority; by 1972, this share was only 25 percent (Orfield 1983 as cited in Boozer, Krueger, and Wolkon 1992). Desegregation of Southern schools had a large national effect on black education patterns because of the high concentration of blacks in the Southern states. As recently as 1970, three-quarters of black men in the United States had been born in the South, compared with less than one-third of white men (Smith and Welch 1989). Furthermore, the financial aid provisions of the Higher Education Act of 1965 made a wider range of colleges affordable nationwide for low-income students including blacks, and the 1973 U.S. Court of Appeals decision in *Adams* v. *Richardson* further mandated that both predominantly white and predominantly black institutions throughout the nation increase the diversity of their student bodies.

Despite the much broader range of institutions of higher education currently open to blacks than in earlier times, historically black colleges and universities continue to draw significant numbers of black students. As recently as 1990, about one-fifth of black undergraduates in the United States were attending historically black colleges and universities (Table 10). In the three southern Census divisions (the South Atlantic, East South Central, and West South Central divisions), where most historically black institutions are located, the shares were higher than elsewhere.

In recent decades, historically black institutions may have acted as a spur to young black students in the South to aspire to college, thereby helping to close the racial education gap.[16] Similarly, the absence of such institutions in New England and the West might have made it harder to close the racial education gap in these regions.

These arguments appear to have considerable validity. Among adults aged 25 to 34, the lowest black-white college completion gaps in 2000 were found in the three southern Census divisions: the South Atlantic, East South Central, and West South Central. On the other hand, the numerical significance of historically black institutions is falling, as other colleges and universities have expanded at a faster rate. Thus, whatever has been the impact of historically black institutions, their future impact almost certainly will be less.

Summary of Findings

Ideally, the evidence presented in Section II would be entered into an econometric model to quantify the contributions of various socioeconomic and educa-

[16] In addition to their cultural attraction, historically black colleges and universities (HBCUs) also are somewhat more affordable than other higher education institutions. For example, in 2000, the average tuition at the 21 four-year public HBCUs in the South Atlantic Census division was 13 percent lower than the average tuition at similar non-HBCUs. The discounts in the East and West South Central areas were 3 percent and 23 percent, respectively.

Table 11

Summary of Socioeconomic and Educational Factor Rankings, by Census Division

	Factors Determining Racial College Completion Gaps in 2000						
	Mother's College Completion (1980)	Family Income in Top Quartile (1980)				Public College Cost Burden (1990)	Non-HBCU Share (1984)
New England	1	5				5	1
Middle Atlantic	2	3				2	1
East North Central	6	6				1	1
West North Central	8	9				6	4
South Atlantic	5	4				4	9
East South Central	9	8				3	9
West South Central	7	2				8	9
Mountain	2	7				7	1
Pacific	4	1				9	1

	Current Socioeconomic and Educational Factors						
	Mother's College Completion (2000)	Family Income in Top Quartile (2000)	Segregated Schools (90%) (2001–02)	High Student-Teacher Ratio (2001–02)	Computer Use (1997)	Public College Cost Burden (2000)	Non-HBCU Share (1999)
New England	2	1	7	4	3	2	1
Middle Atlantic	1	3	1	3	2	1	1
East North Central	6	4	2	1	6	2	1
West North Central	4	7	8	4	8	5	4
South Atlantic	5	4	6	7	7	6	9
East South Central	9	8	3	9	4	4	9
West South Central	8	6	4	6	4	7	9
Mountain	6	9	9	8	1	9	1
Pacific	3	2	5	2	9	8	1

Source: Tables 2, 3, 4, 6, 7, 8, and 10.

Divisions where blacks are at greatest relative disadvantage.

Divisions where blacks are at least relative disadvantage.

Numbers indicate ranking of factors within column, from greatest relative disadvantage (1) to least (9).

Because of the very large differences in the presence of historically black colleges and universities, the Census divisions are (somewhat arbitrarily) assigned values of only 1, 4, or 9.

tional factors in explaining differences in black and white rates of college completion by region. This is not feasible because of the large number of possible explanatory factors relative to the number of Census divisions and years of data.[17] Previous studies using observations on individuals have attempted to sort out the relative importance of family background, schooling environments, academic achievements, and college costs, but—as noted—they reach different conclusions regarding the relative importance of each of these factors in determining college completion.

In the absence of a precise quantitative evaluation of the evidence, Table 11 summarizes the influences on educational attainment by race for the various areas of the United States.[18] The top panel indicates how the nine Census divisions compare in the available historical socioeconomic and educational factors that arguably help to explain current differences in black versus white rates of college completion. The bottom panel presents the most recent evidence on these same factors—as well as some additional factors—in an attempt to presage future racial disparities in educational attainment by region. Box 4

[17] In principle, it would be possible to expand the number of available observations by going back further in time. However, as indicated, average college completion shares were quite low as recently as 1970. Any variation across Census divisions in prior decades is likely to be relatively small. A more promising avenue for future research would be to examine finer geographic units.

[18] Special thanks to Julie Hotchkiss for suggestions concerning tabulation of the findings.

presents insights from a simple econometric assessment of these relationships.

The large racial gap in educational attainment in the Northeast can be traced, in part, to differences that existed in socioeconomic status between black and white families in this area when these adults were children. In 1980 (when the current 25- to 34-year-olds were between the ages of 5 and 14), a larger difference existed between the educational achievement of black and white mothers in New England than in any other part of the country. The Middle Atlantic and Mountain states were tied for second place. Furthermore, in 1980, the Middle Atlantic states had an above-average difference in the percentages of black versus white families in the top quartile of the income distribution (and the largest gap for the top half, not shown in Table 11). Black-white differences in family incomes do not explain the situation in New England, however, as the region's racial income gap was below the national average as of 1980.

Differences between the socioeconomic status of black and white families in the Northeast suggest that this region will continue to have the greatest racial education gaps among young adults.

More recent changes in the relative socioeconomic status of black and white families in the Northeast suggest that this part of the country will continue to have the greatest racial education gaps among young adults. As of the latest Census, New England and the Middle Atlantic states have the greatest maternal education gaps between the races. These areas—and the Pacific region—also show the largest disparities in black versus white representation in the top quartile of the income distribution. The Middle Atlantic and the East North Central regions have the greatest disparities between races measured by the top half of incomes.

Several schooling indicators reinforce the prediction that the Northeast and the East North Central regions will exhibit unusually large educational attainment gaps between blacks and whites in the next one or two decades. The majority of blacks in the Middle Atlantic and East North Central regions attend schools that have mostly minority students, and student-teacher ratios in the schools attended by blacks are high relative to those in schools attended by whites in these regions. Black-white inequalities in prevalence of school computer use—an alternative indicator of school resources—are also especially great in the Northeast (along with the Mountain states).

New England (along with the Western states) has no historically black colleges or universities, and the capacity of its public universities is low compared with the large capacity of its (relatively high-priced and relatively selective) private institutions. On the other hand, historical public college costs do not explain the current racial educational achievement gaps in New England. Until 1990, the differences between black and white families in the ratio of public college costs to income generally were not particularly high in the region. In 1990, by far the largest difference in cost burden by race was in the East North Central region. The Middle Atlantic states had the second largest difference.

Between 1990 and 2000, college costs rose sharply throughout the nation, and the black-white family income gap widened in all regions except the Mountain states. Because New England, the Middle Atlantic states, and the East North Central region already had the highest average tuitions as of 1990, by 2000 they had the greatest difference in cost burden between black and white families. (The finding for the Middle Atlantic area may possibly be mitigated by the high amount of state financial aid for college students.) To the extent that college costs influence college attendance and completion in the future, these differential burdens will also accentuate racial educational attainment gaps in these regions.

Although this section has provided explanations for regional differences in college completion gaps by race, some anomalies remain. The current racial educational attainment gaps in New England and especially in the Pacific region seem larger than what can be attributed to family socioeconomic status and tuition costs. By contrast, the gap in the East North Central region seems small in light of these influences.

III. Migration as a Source of Regional Differences in College Graduate Shares

Thus far, this paper has considered inequality of access to college for students from different regions. Indeed, the majority of adults in any given region of

Table 12

Effect of Migration on College Graduate Shares for 25- to 34-Year-Olds, by Census Division

1980	Actual Share (Percent)	Effect of Migration (Percentage Points)		Effect of Domestic Migration Only (Percentage Points)	
		5-Year Period	Since Birth	5-Year Period	Since Birth
New England	29.1	–.1	1.3	–.3	1.7
Middle Atlantic	25.7	–.3	–4.1	–.5	–3.1
East North Central	21.8	–.5	–2.3	–.8	–2.5
West North Central	24.2	–.5	–.6	–.6	–.8
South Atlantic	22.2	.8	3.3	.6	2.8
East South Central	18.3	–.5	1.8	–.5	1.6
West South Central	21.8	.5	1.8	.4	1.8
Mountain	24.8	.4	2.3	.5	2.5
Pacific	24.3	1.3	.4	1.1	1.2
1990					
New England	30.2	.5	1.9	.2	2.1
Middle Atlantic	27.0	0	–2.1	–.3	–1.8
East North Central	21.1	–.6	–1.5	–.9	–1.9
West North Central	22.9	–1.1	–1.3	–1.3	–1.7
South Atlantic	22.5	1.1	3.0	.9	2.2
East South Central	17.5	–.8	.1	–.9	–.3
West South Central	20.3	–.2	1.4	–.3	1.4
Mountain	21.0	–.5	.9	–.6	1.0
Pacific	22.7	1.6	1.2	1.4	2.1
2000					
New England	36.2	.1	.8	–.5	1.2
Middle Atlantic	32.1	.6	–1.9	0	–1.3
East North Central	27.6	–.4	–1.0	–1.0	–1.4
West North Central	29.4	–1.6	–2.9	–1.8	–2.7
South Atlantic	27.2	.7	2.3	.4	1.8
East South Central	21.6	–.9	–.1	–1.2	–.6
West South Central	22.9	.2	.4	–.1	1.0
Mountain	25.2	–.5	–.5	–.4	1.6
Pacific	26.9	3.1	.8	2.2	2.5

Note: Actual figures for 1970 were as follows: New England 19.0, Middle Atlantic 16.9, East North Central 14.8, West North Central 16.2, South Atlantic 14.5, East South Central 11.7, West South Central 14.7, Mountain 17.2, Pacific 18.3.

Source: Author's calculations using U.S. Census Bureau data (Census of Population).

the country are likely to have gone to high school in that region. For example, among a 1996 sample of college-educated adults in their thirties who had been living in the United States in 1979, Kodrzycki (2000) found that 70 percent were still living in the region where they went to high school. Because of regional differences in the fraction of in-migrants who were college-educated, as well as in the fraction of in-migrants in the overall population, the "sources" of college graduates varied by area of the country. In the Middle Atlantic states and in the Midwest (defined as the East and West North Central regions), no more than 20 percent of the college graduates in the sample had attended high school in another part of the country. Migration was a much larger source of college graduates in most parts of the South and West. For example, over half the college-educated residents of the Mountain states had moved to the region sometime after high school.

This paper uses data from the 1980, 1990, and 2000 Censuses in order to examine migration patterns of successive cohorts. In each Census, individuals were asked whether they had been living in a different location (including a different country) five years earlier. Thus, it is possible to examine migration in the periods 1975 to 1980, 1985 to 1990, and 1995 to 2000 and to trace whether college graduates were more attracted to certain areas of the country than others. In addition, it is possible to analyze whether black college graduates exhibited different location preferences than whites.

The specific simulations were as follows: Movers who were between the ages of 25 and 34 in each Census year were "sent back" to the region or country where they had lived five years earlier. The college graduate shares in each region were recomputed on the assumption that no migration had occurred (among either college graduates or non-graduates). Thus, if the actual college graduate share exceeded (fell short of) the hypothetical share, migration was deemed to have raised (lowered) the share of college graduates in the region. The Censuses also asked individuals for their place of birth. The resulting data enabled similar simulations to be performed to examine the influence of lifetime migration patterns, which reflect both the location choices that individuals made as adults and those made by their families during their childhood. Variants of these simulations examined only interregional migration. In these latter cases, individuals who had migrated to the United States from other countries—either in the five-year period or anytime during their lives—were not reassigned to their birthplace for the purpose of computing the hypothetical college graduate shares.[19]

In the period under consideration, the college graduate shares of the Pacific and South Atlantic regions consistently increased through net in-migration—both domestic and international (Table 12). For example, in the case of the Pacific region, migration in the periods 1975 to 1980, 1985 to 1990, and 1995 to 2000 caused the college graduate share among 25- to 34-year-olds to rise by a total of 6 percentage points (1.3 + 1.6 + 3.1). The overall college graduate share for this age group in the Pacific region rose from 18.3 percent in 1970 to 26.9 percent in 2000—a gain of 8.6 points. Thus, net in-migration of educated young adults during the 15 years for which we have data accounted for about two-thirds of the overall 30-year increase in the college graduate share. If we had data for the periods not surveyed by the Censuses—1970 to 1975, 1980 to 1985, and 1990 to 1995—we might find that migration accounted for the full increase (or even more). The implication is that the college attainment rate on the West Coast would not have increased from 1970 to 2000 had it not been for the high educational attainment of in-migrants. In the case of the South Atlantic region, the net inflow of persons with a college education also contributed significantly to overall educational attainment rates, but so did rising college graduation rates among the indigenous population. Migration added 2.5 points to the college graduate share for 25- to 34-year-olds in the 15 years observed. Thus, the contribution of migration may have represented about four-tenths of the increase (2.5 divided by one-half of 12.3, the change in the college graduate share between 1970 and 2000).[20] In contrast with these regions, the East North Central, West North Central, and East South Central regions suffered from a "brain drain" in recent decades.

Next, these same simulations were performed separately for whites and blacks. Because the white share of the population is high, the results for whites are similar to the results for the population as a whole. But the pattern for blacks looks very different for some regions and time periods (Appendix Table A2). The net out-migration of college-educated blacks from New England had a significant impact, reducing the share of 25- to 34-year-old blacks with a college degree by 2.5 percentage points during 1975 to 1980, by 0.4 percentage point from 1985 to 1990, and by 1.9 percentage points from 1995 to 2000—for a total negative impact of 4.8 percentage points.[21] Thus, although the share of New England blacks with a college degree rose by 11.6 percentage points from 1970 to 2000 (from 7.1 percent to 18.7 percent), the increase might have been considerably larger in the absence of black out-migration.

The combination of net in-migration of educated whites and net out-migration of educated blacks has led to a significant widening of the educational attainment gap in New England.

The effects of migration on the black-white education gap are shown in Table 13. The combination of net in-migration of educated whites and net out-migration of educated blacks has led to a significant widening of the educational attainment gap in New England. For example, migration patterns during the 1995 to 2000 period caused the black-white difference

[19] The simulations were not able to examine out-migration from the United States because residents of foreign countries are not encompassed by the U.S. Censuses. Emigration is relatively rare compared with immigration. From 1981 to 1990, for example, the U.S. Census Bureau estimates that immigrants outnumbered emigrants by a factor of roughly 5 to 1.

[20] The factor one-half adjusts for the fact that the Censuses query individuals about their location changes during a five-year period, not the full ten years.

Table 13

Effect of Migration on Black-White Differences in College Graduate Shares, 25- to 34-Year-Olds, by Census Division

1980	Actual Difference (Percent)	Effect of Migration (Percentage Points)		Effect of Domestic Migration Only (Percentage Points)	
		5-Year Period	Since Birth	5-Year Period	Since Birth
New England	15.0	2.5	1.6	2.2	2.5
Middle Atlantic	16.9	0	–1.0	–.2	–.6
East North Central	12.4	–.8	–.7	–.8	–.2
West North Central	10.7	–.9	–2.6	–.9	–2.2
South Atlantic	14.2	.6	2.5	.5	2.4
East South Central	8.4	0	.6	0	.5
West South Central	14.2	.1	1.0	.1	1.0
Mountain	12.5	–.7	–.7	–.8	.4
Pacific	13.6	1.0	1.8	.8	2.3
1990					
New England	15.6	1.0	1.1	.5	2.1
Middle Atlantic	16.2	–.2	–1.6	–.4	–.8
East North Central	11.6	–.7	–.5	–.7	–.2
West North Central	10.0	–1.2	–2.4	–.9	–1.5
South Atlantic	13.2	.7	1.4	.6	1.5
East South Central	9.1	.3	.1	.2	.2
West South Central	13.5	.3	.1	.4	.5
Mountain	11.4	.2	–2.0	.1	–.8
Pacific	13.3	1.0	2.3	.7	2.8
2000					
New England	20.2	2.1	.8	1.6	1.9
Middle Atlantic	21.7	.2	–.8	–.2	–.3
East North Central	16.3	–1.4	–1.5	–1.3	–1.0
West North Central	17.4	–.7	–.6	–.9	–.9
South Atlantic	15.4	.6	.5	.4	.4
East South Central	12.0	.3	.8	.1	.5
West South Central	16.2	.5	1.1	.5	1.1
Mountain	16.7	–.2	–1.5	.2	–.9
Pacific	19.4	2.2	5.6	1.2	5.1

Note: Actual (percent) figures for 1970 were as follows: New England 13.1, Middle Atlantic 14.5, East North Central 10.6, West North Central 7.5, South Atlantic 10.9, East South Central 5.7, West South Central 12.0, Mountain 9.1, Pacific 12.8.

Source: Author's calculations using U.S. Census Bureau data (Census of Population).

[21] The large black out-migration during the 1970s may in part reflect tensions over school integration. In 1973, the Massachusetts Supreme Judicial Court ordered the state to correct the racial imbalance in the Boston Public Schools. That order resulted in a plan to bus black students to schools in predominantly white neighborhoods, ushering in a period of particularly strained race relations, including violent protests. According to an account of this period by Bluestone and Stevenson (2000), "While busing cannot explain the huge migration of white families out of Boston in the 1950s and 1960s, it is crucial for understanding the development of racial attitudes during the 1970s and after. For months on end, busing was the lead story of every local newscast. The race and class antagonism that were expressed affected not only those neighborhoods where the buses rolled, but the entire region" (p. 42). Although the link between school desegregation and white flight to the suburbs has been emphasized repeatedly, the data presented in this study suggest that racial tensions could also have led the most mobile blacks—those with a college degree—to shun the region.

in college graduate shares to increase by 2.1 percentage points. This compares with a total increase in this gap of 4.6 points between 1990 and 2000 (or 2.3 points per half-decade). Differential migration patterns by race also caused a widening of the educational attainment gap in New England in the 1975 to 1980 and 1985 to 1990 periods.

Migration also caused black educational attainment to diverge from that of whites in the Pacific region during each of the time periods shown. Educated blacks and educated whites were both drawn to the region, but the response of whites was greater than the response of blacks. By contrast, migration had an equalizing effect in the Midwest. On net,

educated blacks and educated whites left the East North Central and West North Central regions, but the response of whites was stronger.

The lifetime migration numbers address longer-term patterns. Under these simulations, the black-white differences in college graduation shares were recomputed under the assumption that the 25- to 34-year-olds still lived at their place of birth. For example, for the 2000 statistics, the locations refer to the period 1966 to 1975. In general, the direction of the impact of migration on the black-white education gap remains unchanged. The magnitudes are sometimes different, however. The lifetime migration numbers show a smaller effect for New England, probably reflecting the sizable black in-migration to the region from the 1950s to about 1970.[22] For the Pacific region, on the other hand, the impacts are considerably larger.

The final two columns of Table 13 show the migration effects excluding international migration. For the most part, differences in domestic location patterns between blacks and whites—not international migration—have been the driving force behind any effects on regional patterns of differences in educational attainment between blacks and whites.

IV. Conclusions

Young black adults lag behind young white adults in their shares of college completion. The evidence presented in this paper suggests that this gap is especially likely to grow in the Northeast, where it is already larger than in any other part of the country. The principal reason for this conclusion is that black families in the Northeast (New England plus the Middle Atlantic region) are increasingly at a disadvantage relative to white families with respect to the key factors determining the likelihood of college attendance and completion.

In 2000, in New England and the Middle Atlantic states, the gap between black and white mothers in their average share of college completion was greater than in any other area of the country. These areas also had among the highest differences in the shares of black families versus white families in the top quartile of the income distribution. Furthermore, because public colleges and universities in these areas charged relatively high tuition and fees, the difference in burden between black and white families was substantial.

The predictions concerning gaps between black and white educational attainment also depend on future migration patterns. Historically, New England has experienced far higher net in-migration of college-educated whites than blacks, exacerbating the racial education gap. Further research on the determinants of these migration patterns would be helpful in assessing whether or not these differences are likely to diminish in the future.

Migration patterns also are likely to hold the key to what happens to racial education inequalities in the East North Central and Pacific regions. As of 2000, these two areas showed substantial inequality in the distribution of black versus white family incomes. The East North Central region also stands out in its unequal school resources and college cost burdens between blacks and whites. Historically, the East North Central region has exhibited less pronounced racial differences in college completion shares than some other regions because college-educated blacks have not left the region for other parts of the United States to the same degree as have college-educated whites. By contrast, differences in observed college completion shares of young adults in the Pacific region have been accentuated by the region's difficulty in attracting college-educated blacks as compared with the very strong rates of in-migration by college-educated whites.

Inequality in educational attainment between blacks and whites is smallest in the Southern states (especially the South Atlantic and East South Central regions), which are home to over one-half of the nation's 25- to 34-year-old blacks. The existence of prominent historically black institutions has likely played a role in boosting educational aspirations for black students in the South. Although historically black institutions continue to have influence by way of their visibility, their share of black enrollment has fallen. Therefore, future trends in educational achievement of blacks in the South are likely to depend increasingly on the same factors that apply in other regions—the socioeconomic status of indigenous black families, the quality of schooling their

[22] Interestingly, the lifetime migration numbers reveal a positive impact of migration on black educational attainment in the New England region. For example, in 2000, the share of 25- to 34-year-old blacks with a college degree was 1.1 percentage points higher than if these individuals had not moved to New England sometime in their lifetimes. Two comments are relevant. First, this positive effect is entirely due to international migration. Domestic migration alone (shown in the last column of Appendix Table A2) had a negative impact on educational attainment. Second, the string of negative migration numbers in the 1975 to 1980, 1985 to 1990, and 1995 to 2000 periods suggests that the influx of highly educated black families largely took place in the late 1960s or early 1970s. Bluestone and Stevenson (2000), chapter 2, provide evidence of black in-migration during this earlier period.

children receive, and the rate of in-migration of college-educated blacks from other parts of the nation and overseas.

Beyond these findings on the sources of racial college completion gaps for particular regions, the study provides cross-cutting results that warrant attention. The shares of blacks and whites with college degrees have both risen over time. However, the regions where educational attainment is highest tend to be the ones where educational attainment differs the most between the races. Future research might investigate this phenomenon further. For example, if one looks at finer geographic units, are there examples of areas that made large progress in increasing the share of the population with a college degree and where blacks' gains were (at least) comparable to those of whites? If not, what are the key remaining obstacles to achieving parallel or catch-up educational gains for blacks?

Appendix

Table A1
College Completion Shares for States with Largest Black Populations Ages 25 to 34 in 2000
Percent

State	College Graduate Share			Memo:
	White	Black	Difference	Black Population
Alabama	25.3	11.1	14.2	148,936
California	39.3	16.7	22.5	321,609
Florida	26.8	11.3	15.5	315,547
Georgia	33.2	18.6	14.5	378,834
Illinois	39.5	17.0	22.5	262,631
Louisiana	25.8	10.6	15.1	180,004
Maryland	41.0	22.5	18.5	223,196
Michigan	27.5	12.2	15.3	210,228
Mississippi	23.3	10.8	12.5	135,987
Missouri	28.2	15.1	13.1	86,620
New Jersey	41.2	16.0	25.2	173,141
New York	41.1	17.6	23.5	404,140
North Carolina	30.8	15.7	15.0	256,223
Ohio	26.9	12.8	14.1	175,888
Pennsylvania	30.9	11.4	19.5	175,910
South Carolina	28.1	11.5	16.6	153,147
Tennessee	24.2	13.0	11.2	132,114
Texas	34.3	16.4	17.9	379,107
Virginia	37.5	17.1	20.3	201,734

Source: U.S. Census Bureau (Census of Population).

Table A2

Effect of Migration on Black College Graduate Shares for 25- to 34-Year-Olds, by Census Division

1980	Actual Share (Percent)	Effect of Migration (Percentage Points)		Effect of Domestic Migration Only (Percentage Points)	
		5-Year Period	Since Birth	5-Year Period	Since Birth
New England	14.9	–2.5	.3	–2.3	–.4
Middle Atlantic	11.7	–.4	–1.8	–.4	–2.0
East North Central	10.8	0	–1.3	–.1	–1.8
West North Central	14.1	.4	1.9	.3	1.5
South Atlantic	10.9	.2	.6	.3	.4
East South Central	11.3	–.6	.6	–.6	.5
West South Central	11.8	.3	.4	.2	.2
Mountain	15.3	1.0	2.5	1.1	1.3
Pacific	14.2	.7	.3	.6	–.6
1990					
New England	15.9	–.4	1.4	–.2	.4
Middle Atlantic	13.9	–.1	0	0	–.9
East North Central	10.8	–.1	–1.0	–.2	–1.5
West North Central	13.5	–.1	.8	–.5	–.2
South Atlantic	12.3	.5	1.4	.5	.7
East South Central	10.0	–1.1	–.8	–1.1	–1.0
West South Central	11.5	–.4	1.3	–.5	.5
Mountain	12.8	–.7	2.7	–.6	1.1
Pacific	14.3	1.1	1.8	1.2	.3
2000					
New England	18.7	–1.9	1.1	–1.7	–.3
Middle Atlantic	15.8	–.1	–.3	–.1	–1.2
East North Central	13.7	.5	.2	.2	–.5
West North Central	14.1	–.9	–1.8	–.7	–1.7
South Atlantic	16.4	.2	2.4	.2	1.5
East South Central	11.9	–1.2	.6	–1.2	–1.4
West South Central	14.1	–.2	.6	–.4	–.1
Mountain	15.2	.2	2.6	–.3	1.7
Pacific	16.6	1.5	.5	1.8	.–5

Note: Actual (percent) figures for 1970 were as follows: New England 7.1, Middle Atlantic 5.2, East North Central 5.7, West North Central 9.7, South Atlantic 6.5, East South Central 7.5, West South Central 6.4, Mountain 10.7, Pacific 8.1.

Source: Author's calculations using U.S. Census Bureau data (Census of Population).

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