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Edited by Gregory K. Ingram and Daphne A. Kenyon



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 LINCOLN INSTITUTE
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9

Charter School Location: Evidence and Policy Implications

Robert Bifulco

The effects of charter school programs on students, schools, and communities depend partly on the supply decisions made by charter school operators. These include decisions about what “markets” to enter, where to locate within a market, how many seats to make available for students, and what programs to offer. Despite their potential importance, supply decisions have been largely neglected in the study of charter schools. This chapter helps address this gap in the literature by reviewing what is currently known about the location of charter schools.

Combined with the educational preferences of parents and students, the location of charter schools influences who attends them. Research on a variety of programs that allow parents to choose schools other than a geographically assigned public school has demonstrated that the likelihood of choosing a school decreases as the distance between home and the school increases (Barrow, Claessens, and Schazenbach 2010; Bifulco and Ladd 2007; Booker et al. 2011; Burgess and Briggs 2010; Cullen, Jacob, and Levitt 2005; Hastings, Kane, and Staiger 2009; Schwartz, Stiefel, and Wiswall 2012). Thus, students residing near charter schools are more likely to attend. In addition, many families might be reluctant to send their children to schools in some neighborhoods. For instance, parents might not want to send their children to a school in a neighborhood where their own racial group is underrepresented or that has a markedly different racial composition than the one where they reside. Also, many parents would avoid sending their children to a school in a neighborhood perceived as unsafe. In a study of Internet search behavior of parents in Washington, DC, Schneider and Buckley (2002) found that after student demographics, location was the next most sought-after information about schools.

The effects of location on who attends a charter school might be magnified by student sorting. For instance, ample evidence suggests that parents, especially white parents, prefer to send their children to schools that have a high percentage of their own racial group (Bayer, Ferreira, and McMillan 2007; Bifulco and Ladd 2007; Clotfelter 2001; Ferreyra and Kosenok 2013; Goldhaber 1996; Hastings, Kane, and Staiger 2009; Lankford and Wyckoff 2005; Saporito 2003; Saporito and Lareau 1999). Thus, if a charter school is located in a neighborhood predominantly populated by families of a particular race, then it might expect to attract a disproportionate number of students from that racial group—which even in the absence of concerns about location would discourage many families from other racial groups from choosing that school.

The influence of location on who chooses a charter school is important because it has implications for several important policy outcomes. The remainder of this chapter discusses why the location of charter schools matters, examines the current distribution of charter schools across districts and neighborhoods, reviews the small literature on the determinants of charter school location decisions, and discusses the policy implications of this research as well as additional research needs.

Why Charter School Location Matters —————

The most prevalent motivations for charter school programs include expanding educational choices for families that might otherwise have a constrained set of school options and creating incentives for public schools to improve by increasing competition for students and funding. Critics of charter school programs worry that ceding control of school location and programming decisions to private actors and expanding parent choice of schools might increase the segregation of students by race, socioeconomic status, or performance, and that charter schools might drain resources from traditional public schools, making it more difficult for them to meet student needs. This section discusses how the location choices of charter schools might influence these and other outcomes.

CHARTER SCHOOL LOCATION AND SCHOOL SEGREGATION

The effects of charter school location decisions on school segregation by race or class will likely depend on the context. For instance, for the reasons discussed earlier in this chapter, charter schools located in predominantly black neighborhoods can be expected to have trouble attracting white students but present desirable options for some black families. In the context of a school district that has achieved some level of school racial integration through careful school zoning or controlled public school choice plans, such a charter school is likely to increase segregation. Bifulco and Ladd (2007) provide evidence of this type of segregating effect when charter schools entered countywide school districts in North Carolina. This study found that black students who transferred from traditional public schools to charter schools were transferring from schools that were on

average 53 percent black to schools that were 72 percent black. Similarly, charter schools in predominantly white areas attracted white students from more racially integrated schools to less racially integrated schools. In addition, children with college-educated parents moved from traditional public schools where 41 percent of students also had college-educated parents to charter schools where 58 percent of students had college-educated parents.

Alternatively, one might imagine that charter schools can increase integration in areas with highly segregated public school systems. For instance, charter schools located on either side of the border between an urban district with concentrations of poor and minority students and a suburban district with greater percentages of nonpoor and white families might be able to achieve more diverse enrollments than schools in either district, particularly if charter schools can accept students from both districts. As an example, Bifulco, Cobb, and Bell (2009) found that many interdistrict magnet schools in Connecticut, which are similar in important ways to charter schools, and located in the inner-ring suburbs around the cities of Hartford and New Haven, were able to attract student bodies considerably more diverse than the public schools their students otherwise would have attended. Among magnet high school students residing in the predominantly poor and minority central cities, their magnet school had a substantially higher percentage of white students and substantially fewer free-lunch-eligible students than their previous school. Similarly, the typical suburban magnet school student's school had a higher percentage of minority and free-lunch-eligible students than his or her previous school.

Even in cases like the Connecticut interdistrict magnet school program, however, the effects on the distribution of students across schools is not entirely desirable. Bifulco, Cobb, and Bell (2009) also present evidence that interdistrict magnet schools in Connecticut tended to bring together relatively high-achieving students from the central cities and relatively disadvantaged students from the suburbs. Thus, it appears that creating diverse school environments for some central city students came at the expense of removing the highest-achieving students from the schools of the poor and minority students who remained in district-run central city schools.

The key point is that the effects of charter schools on school segregation will depend on the location of those schools. If policy makers hope to use charter school programs to promote integration, or at least hope to avoid increases in segregation, they need to pay attention to the location decisions of charter schools.

CHARTER SCHOOL LOCATION AND FISCAL IMPACTS ON PUBLIC SCHOOL DISTRICTS

Charter school programs can have fiscal impacts on local public school districts for several reasons. Much of the negative fiscal impact of charter schools for school districts relates to the difficulties of shedding costs as enrollments decrease. Thus, the fiscal impacts are likely to be most negative in the urban centers of the Northeast and Midwest that have shrinking enrollments and large legacy costs,

such as obligations to pay retiree health care benefits. As Teske and colleagues (2000) argue, however, in areas with rapidly rising enrollments, such as suburban districts in the South and West, districts avoid any negative fiscal effects because they are able to maintain enrollment levels despite declining market share. One early study of charter schools found that districts with declining enrollments reported that charter schools had a negative impact on their budgets, while districts with increasing enrollments were more likely to report no fiscal impacts (RPP International 2001).

The fiscal effects of charter schools will also depend on the way these schools are financed. One approach is for the state to make per pupil payments directly to the charter school without any involvement of local school districts. Under this approach, district residents who enroll in charter schools are typically not included in enrollment counts for the purpose of determining many state aid awards; thus, the primary effect of charter schools on school districts is reduced state aid. Under these policies, fiscal impacts will depend on how much a district relies on state aid. A second approach to financing charter schools is for local school districts to make payments to a charter school for each resident student who enrolls in that charter. Under this approach, fiscal impacts will depend on the size of the per pupil payments that districts are required to make relative to the per pupil costs the district can shed in response to reduced enrollments, and also on how many students transfer from private schools to public schools. Transfers from private schools to charter schools increase the payments that districts need to make to charter schools, but they do not allow for any reductions in costs.

Bifulco and Reback (2014) estimated the fiscal impacts of charter schools on the Albany and Buffalo city school districts in New York. The shares of students from these districts attending charter schools are close to 20 percent, among the highest in the nation. The school-age populations in these districts have been stagnant or declining, and both districts have substantial legacy costs. Finally, state law in New York requires districts to make relatively large per pupil payments to charter schools based on estimates of per pupil spending, which include expenditures for retiree health benefits. Under these circumstances, Bifulco and Reback found that charter schools have had negative fiscal impacts on local districts of between \$600 and \$1,100 per pupil.

The key point here is that the fiscal impact of charter schools on local school districts will also depend on charter school locations. If charter schools tend to locate in districts with declining or stagnant enrollments, or in areas likely to attract students who would otherwise attend private schools, the negative fiscal impacts of charter schools could be substantial. Any negative effects will be felt disproportionately by taxpayers or students in these types of districts.

CHARTER SCHOOL LOCATION AND PUBLIC SCHOOL COMPETITION

Advocates for expanding school choice argue that the threat of losing students and the resources they generate to charter schools can provide incentives to school districts to become more efficient or more attractive to parents. One might expect

that those districts that face the largest negative fiscal consequences will have the strongest incentives to improve. Thus, any negative effects for taxpayers or students that result from losing financial resources due to charter schools might be more than offset by increases in efficiency or effectiveness.

Evidence on the competitive effects of charter schools is inconclusive. The amount of competition a school faces is difficult to measure and is not randomly determined. Thus, estimating competition effects poses difficult empirical challenges. Different studies have taken various approaches to addressing these challenges and have yielded mixed results. Hoxby (2002), examining charter school programs in Arizona and Michigan, and Booker and colleagues (2008), using data from Texas, found positive effects of charter schools on nearby traditional public schools. Other studies using data from Michigan, North Carolina, California, and Florida did not find any robust evidence of positive effects (Bettinger 2005; Bifulco and Ladd 2006; Buddin and Zimmer 2004; Sass 2006). Imberman (2011) used a creative instrumental variable strategy to deal with the nonrandom location of charter schools and found that charter schools have a net negative spillover effect on nearby traditional public schools.

As Ladd (2002) argues, the model of market competition does not necessarily translate easily to the field of education. One reason is that parents often judge a school's quality by the socioeconomic composition and level of student achievement, rather than the instructional quality or value added offered by the school. Socioeconomic composition and even high levels of student achievement, however, often cannot be replicated as can instructional quality and other services under more direct control of school officials. As a result, schools serving large shares of low-income and low-performing students are at a disadvantage competing with schools serving more-advantaged students, which can undermine incentives to improve.

Charter schools are most likely to create incentives for public schools to improve if traditional public schools can make themselves more attractive to parents by improving their quality of instruction and services, which in turn might depend on the location of the charter schools. If charter schools locate in areas likely to attract students from traditionally disadvantaged groups with relatively low achievement levels, traditional public schools in the surrounding area might be able to compete for those students by improving instruction and services. If, however, charter schools locate in areas that attract primarily advantaged and high-achieving students, surrounding public schools that serve concentrations of disadvantaged and low-achieving students will have difficulty competing. In such cases, public schools are as likely to be made worse off by the exodus of their most motivated students and parents as they are to improve in response to competitive pressures.

CHARTER SCHOOL LOCATION AND HOUSING MARKETS

Several studies have demonstrated that the quality of school services influences property values (Black 1999; Brasington and Haurin 2006; Kane, Riegg, and

Staiger 2006). By changing the schools that families can access from a given location, school choice programs have the potential to influence property values and residential sorting. Theoretical papers have predicted large potential effects of school voucher programs on housing markets (Epple and Romano 1998; Ferreira 2007; Nechyba 2000, 2003), and Brunner, Cho, and Reback (2012) found that in states that adopt interdistrict choice programs, school districts that have desirable nearby, out-of-district schooling options experience increases in housing values, residential income, and population density.

I am not aware of any completed studies of the effect of charter schools on property values, but it is likely that any effect will depend on where charter schools choose to locate. Consider a charter school that locates in a relatively high-performing district near the border of a lower-performing district. Assuming that state law allows charter schools to enroll students across district lines, such a charter will be accessible to students residing in the low-performing district and will therefore be likely to attract a more-advantaged and higher-achieving student body than the public schools in that district. In this case, some families that otherwise would choose to live in the high-performing district might choose to take advantage of lower housing prices in the low-performing district by choosing to live in that district and sending their children to the charter school. As a result, the charter school would increase housing values, population density, and perhaps residential income in the low-performing district, similar to the effect of interdistrict choice programs estimated by Brunner, Cho, and Reback (2012).

A charter school that locates in a low-income neighborhood in a low-performing district would likely have different effects on housing markets. For reasons discussed previously, such a school is unlikely to enroll the types of students that would allow it to become an attractive option for students in surrounding high-performing districts. Thus, it would be unlikely to generate re-sorting across district lines. The entry of a charter school in such a location could have positive effects on school quality in the low-performing district either by providing a better schooling option nearby or through positive competition effects. Alternatively, the charter could reduce school quality through negative fiscal impacts or by attracting higher-achieving students from nearby public schools. Thus, the effects on school quality, and thereby property values, in the low-performing district would be uncertain.

What Is Known About the Location of Charter Schools —————

Forty-two states and the District of Columbia have charter school programs. Table 9.1 includes a list of states with charter school laws, when those laws were adopted, and the charter school market share. As of 2009–2010, the share of total public school students attending charter schools exceeded 1.5 percent in 31 states plus the District of Columbia. In the Northeast and Midwest, as well as in several southern states, charter schools are predominantly located in cities, particularly large cities, and controlling for the type of urban area, larger districts

with higher percentages of low-income and black students tend to have greater concentrations of charter schools. In several western states, as well as Florida and North Carolina in the South, charter schools are more dispersed across different types of areas and districts.

Within school districts, charter schools in most states tend to locate in neighborhoods that have higher percentages of students from traditionally disadvantaged groups, including blacks, Hispanics, high school dropouts, and those from low-income families, and lower percentages of white children and college-educated adults. Important exceptions to this pattern, where charter schools do not tend to locate in the more-disadvantaged tracts of the districts they enter, are in the states of Arizona, Michigan, Louisiana, South Carolina, Wisconsin, and Maryland, and to a lesser extent in Oregon, North Carolina, Utah, New Jersey, Colorado, and Minnesota.

These general patterns were found using data from the 2009–2010 Common Core of Data (CCD) assembled by the National Center of Education Statistics (NCES 2010), the 2010 U.S. census (U.S. Census, 2011a), and the 2006–2010 American Community Survey (U.S. Census 2011b). Information on the latitude and longitude of each charter school identified in the CCD was combined with boundary map data from the U.S. Census Bureau to determine the district and census tract where the school is located. Information from the CCD was used to examine the relationship between the share of students in a district attending charter schools and district characteristics, such as the percentage of students eligible for free lunch, the percentage of English language learners, the percentage of special education students, and the percentages of black, Hispanic, and white students. In much of the discussion that follows, the share of public school students in a district attending charters is referred to as the charter sector’s “market share.”¹ Information from the U.S. census and the American Community Survey was used to compare the populations of census tracts where charter schools were located to tracts where they were not located. The analysis of district market shares presented here is limited to the 31 states where the statewide share of public school students in charter schools was at least 1.5 percent in 2009–2010 (see table 9.1). The comparison of tracts with and without charter schools also includes the District of Columbia, but excludes Alaska, Hawaii, California, Illinois, and Delaware.²

1. The market share was calculated by dividing the total enrollment of all charter schools located in a district (not the total number of students residing in the district who attend charter schools) by the total number of students enrolled in public schools in the district, including both traditional public schools and charter schools. An effort was made to identify virtual charter schools—that is, charter schools where instruction is primarily provided via the web rather than at a specific physical location—and these were not included in calculating total enrollment in charter schools.

2. California was excluded because of uncertainty about whether all virtual charter schools were identified and thus eliminated from the sample; Illinois was eliminated because of difficulty

Table 9.1
State Charter School Programs

State	Year Adopted	Charter School Market Share (%)
District of Columbia	1995	37.8
Arizona	1994	11.5
Colorado	1993	8.9
Delaware	1995	7.8
Michigan	1993	7.2
Utah	1998	6.8
California	1992	5.9
Florida	1996	5.9
Idaho	1998	5.6
Ohio	1997	5.5
Pennsylvania	1997	5.1
Oregon	1999	4.6
Hawaii	1994	4.6
Minnesota	1991	4.4
New Mexico	1993	4.4
Alaska	1995	4.4
Wisconsin	1993	4.2
Louisiana	1995	4.2
Nevada	1997	3.4
Texas	1995	3.3
North Carolina	1996	3.0
Massachusetts	1993	3.0
Rhode Island	1995	2.8
Georgia	1993	2.5
South Carolina	1996	2.3
Missouri	1998	2.2
Indiana	2001	2.2
Arkansas	1995	2.1
Illinois	1996	2.1
New York	1998	2.0
New Jersey	1996	1.8
Maryland	2003	1.7
Oklahoma	1999	1.0

Table 9.1
(continued)

State	Year Adopted	Charter School Market Share (%)
Kansas	1994	1.0
Connecticut	1996	0.9
Tennessee	2002	0.7
New Hampshire	1995	0.5
Wyoming	1995	0.3
Iowa	2002	0.1
Virginia	1998	0.0
Mississippi	2010	NA
Maine	2011	NA
Washington	2012	NA

Note: Market share is the percentage of public school students enrolled in a charter school. NA = Not applicable.
Source: Calculations based on data from NCES (2010).

The district analyses presented here are similar to those reported by Stoddard and Corcoran (2007), except that these analyses are based on 2009–2010 data, whereas Stoddard and Corcoran used 2003–2004 data. These analyses are also similar to those presented in this volume by Logan, Burdick-Will, and Minca (chapter 10). However, the within-district analyses in the current chapter focus on the neighborhoods where charter schools have located, whereas Logan, Burdick-Will, and Minca focus on the characteristics of students in charter and noncharter schools.

CHARTER SCHOOLS TEND TO LOCATE IN LARGE CITIES

Table 9.2 demonstrates that cities, and particularly large cities, have disproportionate shares of charter school students. Nearly 40 percent of all charter schools in the 31 states in this analysis are located in large cities, defined as having a population greater than 250,000, and less than 15 percent of other public schools are located in these cities. The charter sector's market share in large cities in these states is 9.4 percent, which is more than twice as great as in midsize and small cities, and at least three times as great as in any noncity area. Charter schools have above-average market shares in midsize and small cities as well as large cities, and below-average market shares in all other types of locations.³

identifying the location of campuses for schools with multiple sites; and Delaware was not included because there are no midsize or large city school districts in Delaware.

3. These findings are similar to those of Stoddard and Corcoran (2007).

Table 9.2
Distribution of Charter Schools and Charter School Enrollments by Type of Area

	Percentage of Charter Schools	Percentage of Other Public Schools	Charter Sector's Market Share
Large cities (>250,000)	38.8	13.9	9.4
Midsized cities (100,000–250,000)	7.2	5.5	3.9
Small cities (<100,000)	9.4	6.8	4.3
Large suburbs (>250,000)	18.4	26.8	2.3
Midsized suburbs (100,000–250,000)	1.9	2.9	1.9
Small suburbs (<100,000)	1.6	2.0	2.4
Towns, fringe (<10 miles from urbanized area)	0.8	2.2	1.2
Towns, distant (10–35 miles from urbanized area)	3.7	7.1	1.4
Towns, remote (>35 miles from urbanized area)	3.0	3.9	1.9
Rural, fringe (<5 miles from urbanized area)	9.9	13.4	2.8
Rural, distant (5–25 miles from urbanized area)	3.4	10.5	0.9
Rural, remote (>25 miles from urbanized area)	2.0	5.0	1.2

Notes: Sample limited to 31 states where charter enrollments were greater than 1.5 percent of public school enrollments as of 2009–2010 (see table 9.1). Market share equals total enrollment of all charter schools located in the type of area divided by the total number of students enrolled in public schools in the type of area.

Source: Calculations based on data from NCES (2010).

Large cities have a disproportionate share of charter schools and charter school students in all northeastern and midwestern states, as well as most states in the South. The tendency to locate in large cities, however, is not as strong in western states. In Alaska, Colorado, Idaho, and Oregon, charters are either evenly distributed across different types of areas or are clustered in the suburbs or in rural areas. The western states of Arizona, California, and Utah, as well as North Carolina and Florida in the South, have an above-average concentration of charter schools in the cities, but also significant concentrations in either rural or suburban areas.

CHARTER SCHOOLS LOCATE IN DISTRICTS WITH HIGHER PERCENTAGES OF LOW-INCOME AND BLACK STUDENTS

Controlling for type of area where charter schools locate (as defined in table 9.2), this analysis found that other district characteristics are correlated with greater charter school market shares. Table 9.3 shows that larger districts and districts with greater proportions of free-lunch-eligible and black students are associated with higher shares of charter school students. The results indicate that controlling for type of area, a one-standard-deviation increase in the percentage of students in a district who are black is associated with a 0.20-standard-deviation

Table 9.3
Association Between District Characteristics and Charter Sector's Market Share

	Without Controls for Other District Characteristics ^a		Controlling for Other District Characteristics ^b	
	Coefficient Estimate (standard error)	Effect Size ^c	Coefficient Estimate (standard error)	Effect Size ^c
Ln enrollment	0.551** (0.104)		0.550** (0.146)	
Percentage eligible for free lunch	0.022* (0.011)	0.098	0.012** (0.005)	0.054
Percentage English language learners	0.011 (0.016)	0.016	-0.000 (0.016)	0.001
Percentage special education	0.040 (0.037)	0.040	0.034 (0.026)	0.036
Percentage black	0.060** (0.021)	0.199	0.049** (0.020)	0.165
Percentage Hispanic	-0.008 (0.007)	-0.036	-0.005 (0.008)	-0.024
Percentage white	-0.017 (0.012)	-0.102		
Controls for type of area	Yes		Yes	
Controls for state fixed effects	Yes		Yes	

^aResults from separate regression models that include only the variable indicated in the row header in addition to controls for area type and state fixed effects.

^bResults from a single multiple regression that includes all variables listed, except percentage white, plus controls for area type and state fixed effects.

^cEffect sizes are the standard deviation change in charter sector's market share associated with a one-standard-deviation change in the independent variable listed.

Notes: Sample includes 8,896 regular school districts in the 31 states with greater than 1.5 percent charter school market share (see table 9.1). All coefficient estimates are from regressions that include a set of dummy variables to control for type of area (as defined in table 9.2) and state fixed effects, and were estimated using ordinary least squares and standard errors computed to be robust to clustering at the state level.

*, ** = statistically significant at 0.10 and 0.05 levels.

Source: Estimates based on NCES (2010).

increase in the charter sector's market share, and a one-standard-deviation increase in the percentage eligible for free lunch is associated with a 0.10-standard-deviation increase in the charter sector's market share. In a multiple regression, district enrollment, percentage eligible for free lunch, and percentage black each show a statistically significant, positive association with the charter sector's

market share, controlling for other district characteristics. Also, similar associations emerge when the sample is limited to city areas and when the sample is limited to noncity areas.⁴

This pattern is, again, quite general for charter schools in the Northeast and Midwest, as well as for those in most states in the South. With the exception of enrollment, however, the district characteristics included in table 9.3 are not consistently associated with charter school market shares in Alaska, California, Colorado, Florida, Idaho, North Carolina, Oregon, and Utah. In Minnesota, New Mexico, Nevada, South Carolina, and Wisconsin, charters do tend to locate in city districts with higher percentages of students from traditionally disadvantaged groups, but when charter schools in these states are located in the suburbs they are not located in suburban districts with particularly high proportions of disadvantaged students. In Arizona, the opposite is true: charters tend to locate in suburbs that have high proportions of disadvantaged students relative to other suburbs, but in cities that have relatively low proportions of students from disadvantaged groups.

WITHIN DISTRICTS CHARTER SCHOOLS TEND TO LOCATE IN DISADVANTAGED NEIGHBORHOODS

Table 9.4 focuses on the location of charter schools within large and midsize city school districts. The sample used for the analysis presented in this table includes 12,473 census tracts located at least partially in a large or midsize city school district that contains at least one charter school. The tracts are associated with 126 different school districts in 26 states and the District of Columbia and include 1,512 tracts that contain a charter school.⁵ Columns 2 and 3 in table 9.4 compare the average characteristics of tracts that contain charter schools with the average characteristics of tracts that do not contain charter schools. The last column presents coefficient estimates from regressions of each tract population variable on an indicator of whether or not the tract contains a charter school, controlling for district fixed effects. These regressions provide tests of whether tracts that contain charter schools are systematically different from tracts in the same district that do not contain charter schools.

The results in table 9.4 indicate that tracts that contain charter schools tend to have higher percentages of individuals from disadvantaged groups, including black children, Hispanic children, adult high school dropouts, and poor children. Tracts that contain charters also tend to have lower percentages of white children and college-educated adults. The same analysis of charter school location within suburban districts was conducted and provided similar results. Compared to other tracts in the same district, suburban census tracts that contain charter

4. Results by subsample are available from the author.

5. The 26 states are the 31 states that have a charter school market share greater than 1.5 percent in table 9.1 minus Alaska, Hawaii, Delaware, California, and Illinois.

Table 9.4
Comparison of Census Tracts with and Without Charter Schools

	Tracts with Charter Schools	Tracts Without Charters	Within-District Difference in Means ^a
Population ages 5–19	670.9	633.4	61.0**
White (%)	25.6	35.5	–8.1**
Black (%)	36.2	28.6	6.1**
Hispanic (%)	30.8	26.1	3.4**
High school dropouts, age 25 and older (%)	21.3	18.1	2.9**
College graduates, age 25 and older (%)	30.7	36.1	–4.6**
Children below 50% of poverty line (%)	11.7	9.5	1.6**
Children below poverty line (%)	24.7	20.1	3.5**
Children below 150% of poverty line (%)	36.9	30.7	4.9**

^aCoefficient estimates from a regression of the tract population variable indicated by the row heading on an indicator of whether or not the tract contains a charter school, controlling for district fixed effects. Each row presents results from a separate regression.

Notes: Sample included 12,473 census tracts located at least partially in 126 large and midsize city school districts that contain at least one charter school. Districts in states where charter schools had less than 1.5 percent market share as of 2009–2010 and districts in Alaska, California, Delaware, Hawaii, and Illinois were excluded due to data availability issues.

** = statistically significant at 0.05 level.

Sources: Calculations based on data from NCES (2010) and U.S. Census (2011a, b).

schools also tend to have high percentages of people from groups that traditionally face educational disadvantages and lower percentages of people from traditionally advantaged groups.

Charter schools tend to locate in tracts with higher percentages of disadvantaged students in most of the states in the sample. However, there are several states where charter schools do not tend to locate in tracts that are disadvantaged relative to other tracts in the same district, including Arizona, Michigan, Louisiana, South Carolina, Wisconsin, and Maryland, and to a lesser extent Oregon, North Carolina, Utah, and New Jersey.⁶

Some have argued that concerns about costs and the need to meet specified student achievement levels could drive charter schools away from areas where residents have the greatest needs (Lubienski and Gulosino 2007; Lubienski, Gulosino, and Weitzel 2009). In a study of Washington, DC, schools, Henig and MacDonald (2002) found that charter schools tend to locate in census tracts with high shares of minority students, but that within high-minority areas, charter schools tend to locate in areas with relatively high socioeconomic status. Lubienski and Gulosino (2007) found patterns of location among some types of charter

6. Results of the analysis of suburban tracts and specific states are available from the author.

Table 9.5
Differences Between Census Tracts in Likelihood of Containing a Charter School

Tracts Where:	Coefficient Estimates	Standard Error
Percentage of white 5- to 19-year-olds >90	-0.055**	(0.014)
Percentage of black 5- to 19-year-olds >90	0.002	(0.021)
Percentage of Hispanic 5- to 19-year-olds >90	-0.019	(0.015)
Percentage of adult high school dropouts >40	0.019*	(0.011)
Percentage of adult college graduates >80	-0.088**	(0.020)
Percentage of children below 50% of poverty line >40	-0.042**	(0.013)
Percentage of children below poverty line >40	0.031**	(0.011)

Notes: Each coefficient estimate was obtained from a separate linear probability model that includes the variable indicated in the row heading and controls for district fixed effects. Estimates obtained applying ordinary least squares and standard error calculations robust to clustering by district to a sample of 12,473 census tracts located at least partially in 126 large and midsize city school districts that contain at least one charter school. See table 9.4 notes for more details.

*, ** = statistically significant at 0.10 and 0.05 levels.

Sources: Calculations based on data from NCES (2010) and U.S. Census (2011a, b).

schools in the Detroit area that suggest a strategy of trying to attract relatively advantaged students from high-need areas. More generally, one might ask whether charter schools either seek out or avoid the most disadvantaged neighborhoods. One also might ask whether charter schools seek out neighborhoods with high concentrations of educationally advantaged students.

Table 9.5 presents the results of an analysis designed to address these questions. The results in this table are from linear probability models in which an indicator of whether or not a census tract contains a charter school was regressed on indicators of whether the tract has exceptionally high proportions of students of various descriptions. Each regression controls for district fixed effects and so reveals whether tracts with very high concentrations of students from traditionally disadvantaged groups are more or less likely to contain a charter school than other tracts in the same districts, and similarly whether tracts with very high concentrations of students from traditionally advantaged groups are more likely to contain a charter school. As in the analysis reported in table 9.4, the regressions were run on a sample of census tracts at least partially located in large and midsize city districts that contain one or more charter schools.

Table 9.5 shows that the likelihood of containing a charter school is lower for tracts where more than 90 percent of 5- to 17-year-olds are white and more than 90 percent of adults are college educated. These results hold for most states, with only a few exceptions, most markedly Colorado, and suggest that charter schools generally do not seek out the most advantaged neighborhoods within districts.

The results in table 9.5 and similar analyses within each state provide a mixed message on whether charter schools avoid or seek out the most disadvantaged neighborhoods. Tracts where more than 90 percent of 5- to 17-year-olds are black are neither more nor less likely to contain charter schools, suggesting that charters do not systematically avoid such neighborhoods. There are, however, some states where urban charter schools are less likely to locate in the most racially isolated black neighborhoods, including Michigan, New Jersey, and New York, and some states where urban charter schools are more likely to locate in such neighborhoods, including Colorado, Indiana, and Ohio. Tracts where greater than 40 percent of adults are high school dropouts are slightly more likely than other tracts in the same district to contain a charter school. This pattern is not seen in a large number of states, however, and in one state, Minnesota, these types of tracts are significantly less likely to contain a charter school. Also, tracts where greater than 40 percent of children are from poor families are slightly more likely to have a charter, but again there are many states where this pattern does not hold. Also, tracts where more than 40 percent of children are from families with incomes less than half the federal poverty line are less likely to contain a charter school, and this result is found across the majority of states examined. In sum, charter schools might be less likely to locate in the most disadvantaged neighborhoods in some states, but more generally there is little evidence that charter schools either systematically seek out or avoid the most disadvantaged census tracts.

What Influences Charter School Location ---

Only a handful of studies have examined charter school location choices. Glomm, Harris, and Lo (2005) and Bifulco and Buerger (2012) used reduced form models to identify factors that could predict the distribution of charter schools across districts in Michigan and New York, respectively. Stoddard and Corcoran (2007) examined the distribution of charter schools and charter school enrollments across districts within states using a national sample. Ferreyra and Kosenok (2013) and Henig and MacDonald (2002) examined the distribution of charter schools across neighborhoods in Washington, DC. Ferreyra and Kosenok (2013) develop and calibrate an equilibrium model of charter school location and household choice, while Henig and MacDonald (2002) provide a primarily descriptive account. Bifulco and Buerger (2012) also looked descriptively at the distribution of charter schools across neighborhoods in several cities in New York. Mehta (2012) developed a structural model focused on when a charter school will choose to locate near a traditional public school in North Carolina.

All of these studies emphasize the importance of student demand in determining the location of charter schools. Given the terms under which they are financed, all charter schools need to attract a sufficient number of students to cover their costs. Thus, it is natural to assume that charter schools will locate in areas where demand for alternatives to traditional public schools is strong.

Demand for alternatives is likely to be strong in areas served by low-performing schools, and Glomm, Harris, and Cho (2005), Stoddard and Corcoran (2007), and Bifulco and Buerger (2012) all provide evidence that charter schools are more likely to locate in districts with low levels of student performance. Glomm, Harris, and Cho (2005) also emphasize diversity in the public schools as an important demand factor. They argue that a diverse population is likely to have a dispersed distribution of parental preferences for different types of educational programs (and perhaps student body compositions as well). As a result, schools or districts that serve diverse populations will have a difficult time satisfying the preferences of all parents, creating a demand for charter schools that can differentiate their offerings from the local schools' or district's. Glomm, Harris, and Cho (2005) and Bifulco and Buerger (2012) found that in Michigan and New York charter schools are more likely to locate where populations are diverse in terms of race and adult education levels. The importance of these demand factors might explain why charter schools have concentrated in large urban areas and in areas with high percentages of disadvantaged students.

Despite the clear importance of demand factors, other factors might also influence charter school location decisions. These other factors, including cost considerations, financing policies, accountability, political factors, and authorizer behavior, are important because they suggest policy levers for influencing the location of charter schools.

Several studies suggest a role for cost factors. Ferreyra and Kosenok (2013) and Henig and MacDonald (2002) emphasize the role of fixed costs, particularly the cost of facilities, which may vary across locations and can also be influenced by policy. For instance, the New York City Department of Education provides several charter schools space in existing public school buildings for nominal charges (NYC-IBO 2010), thereby exercising considerable influence over the location decisions of charter schools. Bifulco and Buerger (2012) hypothesize that differences in professional wages can influence the cost of hiring teachers at charter schools and thereby charter school location choices. Controlling for demand factors and per pupil charter school payments, they found that charter schools in upstate New York are more highly concentrated in metropolitan areas with lower professional wages.

Different types of students can be expected to have different educational service needs, which have been shown to influence the costs of operating schools and achieving outcome goals (Downes and Pogue 1994; Duncombe and Yinger 2000, 2005; Reschovsky and Imazeki 1998). Bifulco and Buerger (2012) argue that in the absence of offsetting revenues, the high costs of serving poor or limited English proficient students might discourage charter schools from locating in areas that are likely to attract concentrations of these types of students. Their empirical analysis, however, was unable to distinguish the effects of cost considerations on location decisions from the effects of student needs on the demand for alternatives to public schools.

Bifulco and Buerger (2012) speculate that charter school financing and accountability policies can influence charter school location decisions. In some states, charter schools are provided a flat per pupil payment determined by the state regardless of where they locate. One might imagine that this provides an incentive for charter schools to locate in districts with relatively low per pupil expenditures, where charter schools might be able to establish a comparative advantage by spending more per pupil than nearby public schools, and a disincentive to locate in districts where traditional public schools can offer relatively high per pupil spending. In other states, such as New York, per pupil charter school payments are pegged to the amount of spending in the district where the charter school is located. Under this type of policy, charter schools have an incentive to locate in high-spending districts in order to obtain higher per pupil payments. Of course, a high level of spending in a district might allow the district to operate public schools that are attractive to students and parents, making it difficult for charter schools to draw a sufficient number of students. Thus, charter schools might be particularly likely to locate in high-spending districts that use their resources inefficiently. Bifulco and Buerger found that in New York, after controlling for costs and student performance levels, charter school concentrations are significantly higher in districts with higher per pupil spending, and thus higher per pupil charter school payments. One might also hypothesize that policies to provide charter schools higher per pupil payments for poor students, English language learners, and other high-cost students would strengthen incentives to locate in areas likely to attract those types of students.

Bifulco and Buerger (2012) also speculate that charter school accountability policies might influence charter school location decisions. In most states, a charter school must meet student performance standards specified in its charter and the law in order to retain its charter. Efforts to monitor student performance in charter schools, the rigor of charter school performance standards, and the willingness of authorizers to close charter schools for low performance vary from state to state (NAPCS 2012). Demanding student performance standards, particularly if formulated as absolute student achievement levels (such as percentage of students achieving proficiency), may create incentives for charter schools to locate in areas attractive to high-achieving students and avoid areas with concentrations of disadvantaged students who are likely to require costly additional resources to achieve standards. Also, the form that performance standards take might influence location decisions. If charter schools are required to show higher levels of student performance than nearby public schools, that might encourage charters to locate near low-performing schools, whereas if the focus is on absolute performance standards, the incentive could be to locate in areas with more high-achieving students.

The patterns of charter school location documented in the preceding section suggest that holding charter schools accountable for student achievement standards has not discouraged charters from locating in areas accessible to disadvantaged students. The relatively high demand of families in these areas appears

to outweigh any concern that attracting large concentrations of disadvantaged students might make it more difficult to achieve student performance goals. Nonetheless, it is possible that if student performance standards are raised, charter schools might have stronger incentives to locate in areas attractive to high-achieving students and to avoid locating near disadvantaged students.

Henig and MacDonald (2002, 967) hypothesize that in addition to standard economic considerations of demand and costs, political factors might influence the location of charter schools: "Location in an area with political clout could increase the likelihood that a charter school could leverage future advantages from public authorities in such matters as funding, regulatory enforcement, access to public services, and the like." Also, negotiating charter school authorization processes may take some social entrepreneurship, which is more prevalent in some areas than in others (Stoddard and Corcoran 2007).

Several scholars have argued that it is useful to distinguish between mission-oriented and market-oriented charter schools (Henig and MacDonald 2002; Lacireno-Paquet et al. 2002; Lubienski and Gulosino 2007). Mission-oriented charters are initiated by organizations with roots in the nonprofit social service sector and with missions of serving disadvantaged populations. Market-oriented charters have links to for-profit enterprises seeking to make money by directly operating charter schools or by contracting with them to provide a range of services. Henig and MacDonald (2002) argue that market-oriented charter schools are more responsive to cost considerations in choosing a location, and as a result are more likely to avoid locations that will attract high concentrations of disadvantaged students. Using Washington, DC, as a case study, they found some descriptive evidence consistent with this argument. Although both kinds of charters in Washington are concentrated in areas with high percentages of minority students, market-oriented charters are more likely than mission-oriented charters to locate near areas with high rates of home ownership and less likely to locate near concentrations of Hispanic populations, who may have a greater need for costly bilingual educational services. In a study of metropolitan Detroit, Lubienski and Gulosino (2007) also found that profit-oriented charter schools are less likely to locate in high-need areas than are mission-oriented charters.

Finally, the decisions of charter school authorizers are likely to matter for charter school location. The studies reviewed here assume that charter school location is the choice of independent charter school operators or potential operators. The decisions of government or quasi-government agencies known as authorizers, however, also play a role. The agencies approved to authorize charter schools vary from state to state and include, most commonly, local school districts, state boards of education, university boards of trustees, and newly formed government or nonprofit agencies. The behavior of authorizers is not well understood. In some states, such as Arizona, authorizers seem to have placed few constraints on charter schools. In other states, authorizers may play a more active role and at least potentially could act as central planning agencies, coordinating charter school supply decisions in pursuit of policy goals.

Policy Implications and Research Needs

The preceding discussion has at least four implications for policy. First, charter school location matters for several of the key policy goals of charter school programs, including racial segregation and socioeconomic stratification, fiscal impacts on school districts, and the nature of competition created for traditional public schools. Also, the location of charter schools potentially has implications for property values and residential sorting.

Second, several policy levers can be used to influence the location of charter schools. Charter school financing policies are one important lever. For instance, charter schools can be encouraged to locate in areas likely to attract low-income students or English language learners through programs to subsidize facility costs in those areas or by increasing per pupil charter school payments for students in those categories. Accountability policies are also potentially important. In most states, the need to achieve student performance standards does not seem to have discouraged charter schools from locating in areas likely to attract concentrations of disadvantaged students. However, more-demanding standards could create disincentives to locate in those areas. If so, policies to compensate charter schools for the additional costs of bringing concentrations of disadvantaged students up to performance standards, or efforts to formulate performance standards in ways that recognize the challenges such schools and students face, should be considered. Finally, charter school authorizers can play an important role in determining the location of charter schools, particularly if there is a robust supply of potential charter school operators.

Third, which charter school locations are most desirable depends on the policy goals. Goals of increasing integration, or at least minimizing increases in segregation; minimizing negative fiscal impacts; and improving school effectiveness through competition potentially conflict. Charter schools located near concentrations of educationally disadvantaged groups may be unlikely to attract many advantaged, high-achieving students. Such schools are likely to compete with nearby traditional public schools on the quality of educational services provided, which might be the most desirable form of competition. However, such locations, particularly in areas where schools have achieved a high level of racial or socioeconomic integration, might serve to increase student segregation, as was the case in North Carolina (Bifulco and Ladd 2007). Also, in northeastern and midwestern cities with declining populations, such locations might serve to increase the negative fiscal impacts of charter schools. Alternatively, locations near the borders of adjacent districts with substantially different racial or socioeconomic compositions might serve to promote integration by giving students in each district the opportunity to attend school together. However, such schools might also provide more favorable peer environments than traditional public schools in the more-disadvantaged districts and draw the most motivated students and parents away from those schools. Under such conditions, the traditional public schools would have difficulty competing, which would undermine incentives to improve.

Fourth, both the effects of policies on charter school location decisions and the effects of charter school location on policy goals are likely to depend on context. The effects on school segregation when charter schools locate in impoverished or racially isolated neighborhoods can be expected to depend on whether traditional public schools have achieved a high level of integration or are already segregated prior to charter schools entering. Also, the fiscal impacts of such location choices will depend on whether school-age populations in a district are growing or shrinking and on the extent of legacy costs faced by the district. Providing charter schools additional per pupil payments for serving costly students might not influence charter school location decisions much if these schools are not required to meet demanding student performance standards, but it might matter more if a charter school's continued authorization depends on achieving demanding, absolute student performance standards. Also, charter schools might not cause much residential re-sorting if the districts where charter schools locate are substantially less attractive to middle-class families than the surrounding districts. The change in expected school quality at a given location will not be sufficient to entice families into otherwise undesirable districts. However, effects on residential sorting and property values might be larger when there are smaller differences between the districts that have access to the charter school. Optimal policy choices, therefore, depend on both goals and context, and it is unlikely that one-size-fits-all policies will be appropriate for all states.

Several kinds of studies can help policy makers choose better policies. First, policy makers need more information about how charter school location influences school segregation, fiscal impacts, competition effects, and property values. This chapter details reasonable hypotheses about the effects of charter school location, but the empirical evidence on these questions is thin. Second, more studies are needed to identify the effects of various policies on charter school location. The preceding discussion suggests that charter school finance and accountability policies might influence charter school location decisions. Studies that examine variation in charter school financing and accountability policies across states and the relationship between this kind of variation and charter school locational patterns are needed to test these hypotheses.

Also, more needs to be learned about the behavior of charter school authorizers. Lubienski, Gulosino, and Weitzel (2009) speculate that local school districts are less likely than other authorizers to grant charters to schools that will have a competitive relationship with the district and more likely to approve schools that complement their offerings or help the district meet specific needs. Charter schools that complement rather than compete with district schools might have different locational incentives. In addition, state agencies and nonprofit authorizers might have different priorities in authorizing charter schools, and little is known about how choices made by various authorizers differ.

Finally, structural equilibrium models such as those being developed by Freyre and Kosenok (2013) and Mehta (2012) are useful in helping to predict the systemwide effects of charter school policies. Charter school location choices,

student and family preferences regarding school characteristics, existing public and private school options, and public policies interact in complex ways to shape charter school program outcomes. For instance, the location of a charter school influences the racial and socioeconomic composition of its enrollment, which in turn influences which students will attend the charter, which in turn influences the attractiveness of the location to charter operators. These are equilibrium processes, and the effects of policy changes will interact in complex ways to influence the outcomes of these processes.

Conclusions

The descriptive analysis presented here shows that charter schools are much more likely to locate in large urban areas, and within areas of a specific type (urban, suburban, rural), charter schools tend to locate in districts with higher percentages of low-income and black students. Within districts, charters tend to locate in more-disadvantaged neighborhoods, although in some states and districts they do appear to avoid the most disadvantaged neighborhoods. How such location choices are likely to influence important policy outcomes is very likely to depend on context. In cases where charter schools are having negative effects on segregation or the fiscal condition of traditional public schools, or where positive effects of charter school competition have not materialized, policy makers ought to consider the role that charter school location might be playing. If alternative charter school locations are likely to promote more positive charter school impacts, state officials have several levers through which they can affect charter school location, including financing, accountability, and authorizing policies.

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