EVERYONE WINS:
How Charter Schools Benefit All New York City Public School Students

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Charter schools have recently emerged as popular and effective alternatives to traditional public schools. Less than two decades since charter schools first came on the scene, the nation has 4,578 charter schools dispersed across forty-one states and the District of Columbia. These schools enroll 1.4 million students, and their rapid growth shows no sign of abating.

As charter schools continue to grow in size and number, so does their influence on traditional public school systems. Critics charge that charters rob traditional public schools of their most promising and motivated students and the resources they need to provide a quality education, since the size of school budgets corresponds to the number of students enrolled. Charter schools' proponents, relying on market theory, argue that traditional public schools can be expected to respond to competition for students—who are proxies for customers—by improving the quality of education they offer.

Using student-level data, this paper examines the impact of charter schools on the academic performance of students who remain in the local public schools of New York City, instead of joining its rapidly expanding charter sector. In particular, it tests whether there is a relationship between how much math and reading skill a regular public school student has acquired during a school year and the percentage of his or her classmates who left for a charter school at the end of the previous school year, controlling for both observed and unobserved factors pertaining to the student and his or her school.

The analysis reveals that students benefit academically when their public school is exposed to competition from a charter. Findings include:

◆ For every 1 percent of a public school's students who leave for a charter, reading proficiency among those who remain increases by about 0.02 standard deviations, a small but not insignificant number, in view of the widely held suspicion that the impact on local public schools of students' departures for charter schools would be negative.

◆ Competition from charter schools has no effect on overall student achievement in math.

◆ In both math and reading, the lowest-performing students in public school benefit from competition from charter schools.

About the Author

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INTRODUCTION

Charter schools have recently emerged as popular and effective alternatives to traditional public schools. Publicly funded, and allowed to operate outside the management and personnel rules of local school districts, many charters deliver outsized academic benefits to students who are lucky enough to attend them. But critics charge that charters rob traditional public schools of their most promising and motivated students and the resources they need to provide a quality education. The notable success of charter schools, it is often claimed, comes only at the expense of traditional public schools.

This paper examines the impact of charter schools on the students who are "left behind." Analysis of student-level data provided by the New York City Department of Education, which runs the nation's largest public school system, reveals that students benefit academically when their public school is exposed to competition from a charter. Specifically, for every 1 percent of public school students who leave for a charter, reading proficiency among those who remain increases by about 0.02 standard deviations. Math performance is unaffected. However, the lowest-performing students in a school benefit from charter-school competition in both math and reading.

This positive effect, though mild, is encouraging. We can now say with confidence that all New York schoolchildren gain from the existence of charters, even those "left behind" in traditional public schools.

CHARTER SCHOOLS

Charter schools are public schools that operate outside many of the surrounding school district's rules—in essence, a charter is able to operate as its own school district. Freedom from the restrictions inherent in large public institutions and from collective-bargaining agreements with teachers allows charter schools to experiment with new curricula and schooling policies to an extent that traditional public schools cannot. Charter schools are funded with taxpayer dollars on a per-pupil basis. However, unlike traditional public schools, which enroll students strictly on the basis of the zones in which they reside, students apply to attend charter schools, which may be located some distance from a student's residence. Thus, for a charter school to remain open, it must attract enough students, and the per-capita payments that accompany them, for it to pay the bills.

Less than two decades since the first few charter schools opened in Minnesota as a small experiment, 1.4 million students are enrolled in the nation's 4,578 charter schools, which are dispersed across forty-one states and the District of Columbia.[1] Their rapid growth shows no sign of abating.

In some urban centers, charter schools have grown so numerous that they have siphoned a considerable number of students from the traditional public school system. Several urban traditional public school systems have seen dramatic reductions in their enrollments over the last two decades, and charter schools are partially to blame for this decline. Since 1970, student enrollment in traditional public schools in Washington, D.C., has dropped by two-thirds—from 150,000 to about 44,000 students—while the city's charter schools now enroll about 28,000 students.[2] Enrollment in Detroit's public schools has declined by 45 percent since 2004, and the city's expanding charter school sector is frequently blamed for a substantial part of this decline.

As charter schools continue to grow in number, so does their influence on traditional public school systems. Though they are public schools, charter schools compete with the traditional sector for scarce resources.

A substantial portion of traditional public schools' budgets is allocated on a per-pupil basis. Thus, when a student enrolls in a charter school, he produces a financial loss to the traditional public school to which he would have instead been assigned.

THE COLLATERAL EFFECT OF CHARTER SCHOOLS

What impact does losing students and resources to charter schools have on the traditional public school sector? Proponents as well as opponents of charter schools believe that charter schools have a collateral effect on traditional public schools, although what they see as the implications of this competition differ.

Skeptics charge that charter schools are bound to diminish the effectiveness of traditional public schools by depriving them of the financial and human resources that they need to provide their students with a high-quality education. For instance, each student who attends a charter school in Detroit reportedly takes with him $7,500 in state funding that would have gone to his traditional public school.[3] Further, traditional public schools might respond to competition from charter schools in a way that detracts from their goal of providing high-quality educational services. For instance, faced with substantial declines in enrollment (due in part to charter schools), the Washington, D.C., public school system spent $100,000—money that could have been spent in the classroom—last year on an advertising campaign intended to lure students back to the traditional public schools.[4]

On the other hand, proponents of charter schools argue that competition from charter schools can be expected to improve traditional public schools precisely because competition threatens their budgets. They argue that the monopoly on student enrollment that public schools have had under the traditional system has insulated them from any consequences for their failure. An infusion of charter schools creates a market for schooling alternatives that challenges the public school monopoly. Charter school proponents, pointing to market theory, argue that traditional public schools should respond to

competition for customers (i.e., students) by improving the quality of education that they offer.

Understanding the influence that charter schools have on the effectiveness of traditional public schools is central to the decision of whether to establish more charter schools. If charter schools helped the small minority of students who attended them while harming the vast majority who remained in the traditional sector, they would be hard to defend on public policy grounds. However, if competition from charter schools instead inspired struggling urban public schools to improve, their effectiveness would extend beyond the influence that they have on the students they teach.

PREVIOUS RESEARCH AND THE CURRENT STUDY'S CONTRIBUTION

There have been previous attempts to study the influence of charter schools on students who remain in the public school system. Gill and Booker recently reviewed the growing body of research measuring the effect of competition from charter schools on student learning in traditional public schools.[5] Of the six studies they identified, three found that charter schools have a positive effect on students who remain in the traditional public school system, and three found no significant effect. No empirical research to date has found that competition from charter schools or any other form of school choice has had a negative impact on the academic performance of students who remain in traditional public schools.

Previous research tells us a great deal about the general impact of charter schools across a state. One possible limitation of this research is that its procedures for measuring the intensity of charter competition—and thus perhaps its results as well—may not translate directly to the urban context.

Five of the six previous studies of competition from charter schools use the number of charter schools within a limited geographical distance of a public school—usually 2.5 or five miles—as their measure of competitive intensity. The idea is that public schools are more affected by charter schools when their stu-

dents have a greater number of charter options nearby. Charter schools over five miles from a student's home do not pose a meaningful competitive threat because of the deterrent effect of transportation costs and other costs. Researchers favor the consistency, soundness, and simplicity of employing a standard radius in their evaluations of the competitive effect of a school-choice program statewide.

However, geographical measures of charter school competition might be of limited value in densely populated cities. Thus, it is possible that methods utilized by previous research are not well suited to measuring charter competition within cities, which is where the majority of charter schools are located. If the effects of charter school competition in cities differ from the effects of competition in less densely populated areas, the findings of previous research might not apply to the urban systems that are facing the heaviest competition from charter schools.

I propose a more direct measure of competition from charter schools in an urban environment and use it to study the impact of charter school competition in New York City—the nation's largest public school system and home to a rapidly growing charter sector. I use the percentage of a traditional public school's students at the end of the previous year who left for a charter school as a measure of charter competition. By this definition, a public school is more greatly affected by charter school competition than some other school if it has recently lost more of its students to charter schools.

I use student-level data in New York City to measure the relationship between the amount of competition that a traditional public school faces from the charter sector and the math and reading achievement of students who remain in that public school.

Besides improving our understanding of the impact of competition on public schooling generally, this paper makes two other important contributions. First, it provides high-quality estimates of the influence of charter schools on traditional public schools in the context of a large urban environment. Second, it evaluates the growing influence of charter schools in the country's

largest and most diverse school system—one so large that it educates about 2.2 percent of public school students in the United States.[6]

CHARTER SCHOOLS IN NEW YORK CITY

New York State introduced charter schools with the Charter Schools Act of 1998 during the governorship of Republican George Pataki. In 2001, when the first ten New York charter schools opened their doors, state law set the cap on the number of charter schools at 100. Because of high demand, the state quickly reached this cap; in 2007, the cap was raised to 200 charter schools under Democratic governor Eliot Spitzer.

Before it can open and receive public dollars, a New York charter school must be authorized by the trustees of the state university, the state Board of Regents, or, in the case of charter schools located within New York City, the schools chancellor. The authorizing entity considers the school's academic mission and fiscal soundness when deciding whether to grant a charter. Charter schools must be reauthorized every five years by the same entity that chartered them.

Charter schools have expanded rapidly across the state, with the greatest growth occurring in New York City. There were seventeen charter schools operating in New York City when Mayor Michael Bloomberg took office in 2002 and made expanding charter schools an important part of his aggressive education-reform platform.[7] Today, 100 New York City charter schools educate about 24,000—or about 2 percent—of the city's students.

Despite considerable growth in New York City's charter sector, demand for charter schooling continues to far outstrip supply. Each year, the vast majority of charter schools have more applications than they do available seats; by law, they must fill those spots by lottery.[8] About 50,000 students are currently on waiting lists to enroll in a New York City charter school.[9]

Charter schools in New York City receive state funds on a per-pupil basis. As of 2008–09, charter schools received $12,205 per pupil, which is about 70 percent of what public schools receive for every student enrolled.[10] However, charter schools do not receive taxpayer funds to cover capital costs. Charter schools may seek private donations in addition to their government allocations.

Charter schools exist throughout New York City and now operate in all five boroughs. However, they tend to locate themselves in high-poverty areas and enroll a student body that is more minority and lower-income than the average New York City school.[11]

The type of education provided in charter schools not only differs substantially from that found in the traditional public sector; it varies within the charter sector as well. For instance, the Knowledge Is Power Program (KIPP) network of charter schools, which operates four charter schools in New York City, is well known for its academic rigor and disciplinary standards; the Equity Project charter school in Manhattan, where teachers earn $125,000 per year, emphasizes teacher quality; some schools have adopted special curricula—for instance, Core Knowledge; and others extend the school day.

Hoxby, Muraka, and Kang recently released a study of the effectiveness of New York City's charter schools at educating the students who attend them.[12] The authors take advantage of the fact that the vast majority of charter schools with more applicants than open seats fill those openings by lottery. The study follows a Randomized Field Trial design, which is similar to the design of a medical trial and is considered the gold standard of social-science research. The researchers compare the academic performance of students who were randomly selected to enter a charter school with the performance of students who were randomly denied the opportunity. Since both groups of students applied to attend a charter school, this procedure is able to make apples-to-apples comparisons and to account for unobserved factors.

Hoxby, Muraka, and Kang reported that students attending New York City charter schools performed better in both math and reading than they would have performed had they remained in their assigned public

school. The size of the effect is substantial. Putting their results in context, the researchers found that the average proficiency gains made by a student who attended a charter school from kindergarten through the eighth grade would be enough to close large percentages of the gap between the achievement of the average student in inner-city Harlem and the average student in Scarsdale, a wealthy New York suburb noted for the quality of its traditional public schools: specifically, 86 percent in math and 66 percent in English.

Thus, we can say with high confidence that students benefit when they attend New York City charter schools. To date, however, we have no quantitative information about the effects that charter schools have had on Gotham's public school system. What happens to the vast majority of students who remain in their assigned public school? If the educational gains of the few New York City students who obtain a seat in a charter school came at the expense of the 98 percent of students who were left behind, we would have real cause to worry about the continuation of charter schools' expansion.

DATA AND METHOD

This project uses student-level data provided by the New York City Department of Education to study the effect of competition from charter schools on academic performance in regular public schools. In particular, it tests whether there is a relationship between how much math and reading skill a regular public school student has acquired during a school year and the percentage of his classmates who left for a charter school at the end of the previous school year, controlling for observed and unobserved factors pertaining to the student and his school.

The data set contains math and English Language Arts (ELA) test scores and demographic information on the universe of test-taking New York City public school students in grades three through eight from the 2005–06 through the 2008–09 school years. To facilitate the interpretation of results, I convert test scores into standard-deviation units within grade and year. The data set contains a unique ID for each student

Table I. Summary Statistics		
	Mean	Standard Deviation
ELA Test Score	0.055	0.971
Math Test Score	0.046	0.988
Previous ELA Score	0.019	0.985
Previous Math Score	0.045	0.981
Special Education	0.169	0.375
English Language Learner	0.089	0.285
Indian	0.004	0.063
Asian	0.136	0.343
Hispanic	0.390	0.488
African-American	0.326	0.469
Multiple Race	0.000	0.010
White	0.144	0.351
Fourth Grade	0.193	0.395
Fifth Grade	0.198	0.399
Sixth Grade	0.197	0.398
Seventh Grade	0.205	0.403
Eighth Grade	0.207	0.405
Year 2007	0.322	0.467
Year 2008	0.342	0.474
Year 2009	0.337	0.473
Percent Moved to Charter	0.002	0.005

Note: Summary statistics using students included in the ELA analysis. Summary statistics in other analyses are similar but not identical.

and school. Descriptive statistics on students used for estimation are presented in Table 1.

The most difficult aspect of determining the influence of charter schools on traditional public school effectiveness is developing a measure of the competition that each particular public school faces from the charter sector in a given year. In theory, the enrollments of all New York City public schools are threatened by charter schools. In reality, some schools face greater competition from charter schools than others do, either because their students have better access to charter schools or because their students are more eager to seek schooling alternatives.

I adopt as a measure of competition from charter schools the percentage of students in a school who left for a charter school at the end of the previous year. That is, I use the student-level data set to identify

those students who were enrolled in a public school one year and in a charter school the next and use this information to calculate the percentage of a school's students who left for a charter school at the end of the previous year. This is a more direct measure of charter competition than has been used in previous work. Under this definition, a school can be said to be facing an increase in competition from the charter sector if a growing number of its students are leaving for a charter school.

New York City traditional public schools saw a meaningful level of migration to the charter sector in the years covered in the data set. In the 2007–09 school years, the average school lost 0.2 percent of its students to a charter school at the end of the year preceding the one being reviewed. Some schools faced more competition from the charter sector than did others. About 8 percent of New York City schools in a given year lost over 1 percent of their student body from the year before to a charter school. Further, among schools that lost at least one student to a charter school, the average percentage of student body lost was 0.7 in a given year, and 19 percent of these schools lost over 1 percent of their enrollment, a figure probably large enough to precipitate changes in a school's policies and practices.

The percentage of students who left a particular public school for a charter alternative within this data set understates the level of competition facing public schools because it does not account for a large group of students who enter a charter school earlier than the third grade. I assume that the percentage of students leaving a traditional public school for the charter sector corresponds to the percentage of students who would have been assigned to that school but go to a charter school before they reach a grade that is observed in the data set.

One possible weakness of this measure of competition from charters is that not all students who apply to charter schools acquire a seat. Since applicants are randomly awarded seats in charter schools, the percentage of students from a particular public school who obtain admission to a charter school is a good proxy for the percentage of students throughout the system who applied for a seat, thus demonstrating their desire to leave the public school.

Accounting for unobserved difference in student ability is the second major issue to address when estimating the effect of charter competition on public school performance. Not only is accounting for unobserved differences in students a nearly universal problem when studying the influence of an education policy; measuring the level of competition from charter schools in terms of the percentage of students who leave a traditional public school exacerbates this problem. If students who leave for charter schools are different from those who remain in traditional public schools, then failing to account for such differences could severely bias estimation. For instance, if academically able students are, for some reason, more likely to leave for a charter school than students who are struggling, the withdrawal of the able students would be the cause of lower test scores in the schools that they left—not competition from competing charter schools.

I adopt a common technique to account for unobserved student heterogeneity: the use of a student-school "spell" fixed effect in the estimation. Essentially, use of this fixed effect controls for the student himself and the school that he attends. Use of the spell fixed effects accounts for all time-invariant student and school factors related to a student's math or ELA proficiency.

The analyses also include a function of the student's math and ELA test scores at the end of the previous year to further account for differences in student learning. One limitation of this "value-added" framework is that it forces the model to exclude third-grade students because test scores are first observed in the third grade.

I utilize an Ordinary Least Squares regression to estimate the relationship between the level of competition from charter schools faced by a student's school in a given year and his academic proficiency at the end of that year. The dependent variable in the regression is the student's math or ELA test score on the state's mandated exams. Along with the student-school spell fixed effect and the percentage of students in his school who left for a charter school at the end of

the previous year (the measure of competition from charters), the analysis controls for the student's grade level and the academic year.

Though the data set begins with students in 2006, the analysis begins to observe student performance only in 2007 because the previous year's observation is needed to calculate the percentage of students who moved to a charter school. Thus, in each analysis, we observe up to three years of a student's academic performance: 2007, 2008, and 2009.

I exclude students from the analysis who are currently attending a charter school. While charter schools do compete with one another for students, students leave one charter school for another for reasons different from their reasons for leaving their local public school. Further, this measure fails to account for students who leave a charter school for what is likely their greatest competitor: the traditional school to which they may always return.

I estimate models in math and ELA. The primary models use data on all test-taking students in New York City. I also look for the presence of modifiers of charter schools' competitive effect by running models restricted to students of particular races/ethnicities. Finally, I measure whether the degree of impact of competition depends on students' prior achievement level. I do this by estimating models that include interactions between the quartile of the student's proficiency in math or ELA at a particular school in the previous year and the percentage of students who left at the end of that year.[13]

Formally, the basic model for estimation takes the form:

$$(1) \quad Y_{ist} = \alpha X_{ist} + \lambda move_{st-1} + \delta_t + \theta_{is} + \varepsilon_{ist} + \varepsilon_s$$

where Y_{ist} is the test score of student i in school s at the end of year t normalized to standard-deviation units within grade and year; X is a vector of observed time-variant student characteristics—the student's grade level and cubic functions for his math and ELA test scores at the end of the previous year; *move* represents the percentage of students in the school who left for a charter school at the end of the previous year; δ is a year fixed effect; θ is a student-school spell fixed effect; ε is a stochastic term clustered by school; and α and λ are parameters to be estimated.

RESULTS

Table 2 reports the results of the estimations in math. The results of the estimation on the full sample reported in Column (I) find a positive relationship between the competition that the student's public school faces from charter schools and his academic proficiency. However, the relationship between competition from charters and student proficiency for the full sample is not statistically significant at any conventional level—that is, we cannot have high confidence that the estimated positive relationship is real and is not simply a random occurrence. Thus, I conclude that charter school competition has no influence—positive or negative—on overall student math proficiency.

Columns (II) through (IV) report the results of the estimation in math when the models are restricted to students of a particular race or ethnicity. The models find that competition from charters has no significant impact on students of particular subgroups.

Table 3 reports the results of the analyses in ELA. The impact of competition from charters on students'

Table 2. Results of Estimation in Math				
	(I)	(II)	(III)	(IV)
	Full Sample	African-American	Hispanic	White
Percent Moved to Charter	1.314	0.873	2.07	-2.758
	[0.857]	[0.572]	[1.257]	[-0.589]
Observations	944,019	307,440	367,904	135,907
R-squared	0.935	0.926	0.927	0.919

Note: All models control for student grade level, year of observation, cubic functions for the student's math and ELA test score in the previous year, and a student-school spell effect. T-statistics resulting from standard errors clustered by school reported in the brackets.   * Significant at 10%   ** Significant at 5%   *** Significant at 1%

Table 3. Results of Estimation in English Language Arts				
	(V)	(VI)	(VII)	(VIII)
	Full Sample	African-American	Hispanic	White
Percent Moved to Charter	1.672*	1.296	1.836	4.14
	[1.794]	[1.326]	[1.379]	[0.610]
Observations	948,064	309,085	369,494	136,339
R-squared	0.911	0.91	0.912	0.88

Note: All models control for student grade level, year of observation, cubic functions for the student's math and ELA test score in the previous year, and a student-school spell effect. T-statistics resulting from standard errors clustered by school reported in the brackets.   * Significant at 10%   ** Significant at 5%   *** Significant at 1%

ELA proficiency is positive and significant at the 10 percent level.

The reported coefficients in the table represent the difference in a student's ELA score that is related to a one-unit increase in the percentage of a school's students who left for a charter school at the end of the previous year. Recall that student test scores are measured in standard-deviation units. As is true for all the results reported in this paper, to interpret the size of the effect, you must multiply the coefficient reported in the table by a given percentage of leaving students. Thus, the full sample estimates in ELA reported in Column (V) find that a 1 percent increase in the proportion of a public school's students who left for a charter school at the end of the previous year produces a 0.017 standard-deviation increase in a public school student's ELA proficiency (1.672 * 0.01 = 0.017, rounded). However, when we run analyses restricted to students of particular races/ethnicities, we find no significant results.

Finally, I measure whether the effect of competition from charter schools differs among students who began the year as higher- or lower-performing in math or ELA. Table 4 reports the results of models using the full samples that add an interaction between the percentage of students in a school who moved to a charter school at the end of the previous year and an indicator of the quartile within the school of the student's math or ELA score at the end of the previous year.

The results reported in Table 4 suggest that students in the lowest quartile across the previous ability distribution within a school benefit in both math and reading when their school faces competition from charter schools. In math, students in the highest three quartiles are unaffected by charter competition. However, in ELA, all students except those in the highest quartile of prior achievement benefit from charter school competition.

INTERPRETATION AND CONCLUSION

In this paper, I find some evidence that increases in the competition that a traditional New York City public school faces from charter schools for students leads to an increase in the ELA proficiency of students who remain in public schools. Competition from charter schools also benefits students with very low prior math proficiency.

Table 4. Results of Estimation by Quartile of Prior Student Proficiency		
	(IX)	(X)
	Math	ELA
Percent Moved to Charter	-0.21	-1.851
	[-0.0902]	[-1.574]
Percent Moved * Quartile 1	3.759*	8.058***
	[1.788]	[3.657]
Percent Moved * Quartile 2	2.04	4.411***
	[1.496]	[3.116]
Percent Moved * Quartile 3	1.049	2.157**
	[0.837]	[2.155]
Observations	944,019	948,064
R-squared	0.935	0.912

Note: All models control for student grade level, year of observation, cubic functions for the student's math and ELA test score in the previous year, and a student-school spell effect. Models additionally include indicator variables for the quartile within the school of the students' prior test score in the respective subject. T-statistics resulting from standard errors clustered by school reported in the brackets.
* Significant at 10%   ** Significant at 5%   *** Significant at 1%

The magnitude of the positive effect of this competition in New York City is best described as mild to moderate. These estimates are relatively consistent with those found in previous research evaluating the effect of charter schools and other forms of school choice on student achievement at public schools.

Although the overall positive interpretation of the results stands, it is possible that some of the positive relationship between competition from charters and student proficiency in traditional public schools is explained by changes in peer quality rather than improvements in public schools' effectiveness. These changes would amount to a reverse "creaming" effect: if students who leave for charter schools are less academically advanced than the students who remain in traditional public schools, student achievement in public schools might increase because of the net increase in peer quality. Although such sorting is precisely the opposite of what the opponents of charter schools argue—that charter schools attract the best students—it is certainly possible that students apply to charter schools and then, upon acceptance, enroll in them because they are having difficulty in their traditional public school.

In fact, in their random-assignment analysis, Hoxby, Muraka, and Kang report that students who apply to charter schools have backgrounds that are more disadvantaged than those of students who do not attempt to leave their public school for a charter. However, they also report that students who applied for admission to a charter school but were randomly denied a seat were higher-performing than the national average and thus much higher-performing than the average New York City student. In short, although we can say with confidence that public school students in New York have benefited from their peers' transfer to charter schools, at least in ELA, the mechanism that produces this benefit is not apparent. Evaluating whether—and if so, how—public school students benefit from competition from charter schools is a worthy avenue for future research.

As for New York City itself, the findings of this study suggest that the increase in the number of charter schools is having a positive effect on student learning in its traditional public schools. Previous high-quality research has shown that students who attend a New York City charter school tend to benefit substantially. The results of the analysis in this paper show that continued expansion in the number of charter schools in New York City also benefits students who remain in the public school system.

At the national level, the results of this study add to a wide body of research indicating that public school students benefit when their school faces competition from school-choice policies. The most important contribution of this paper is its focus on measuring the influence of school choice in a large urban setting. My finding that public schools in New York City respond positively to competition from charter schools suggests that traditional public schools in other large urban environments could also benefit from an expanding charter school sector. That suggestion is particularly encouraging, given the recent push by officials in the federal government as well as many state governments to increase the number of charter schools.

ENDNOTES

1. The Center for Education Reform, "National Charter School & Enrollment Statistics," http://www.edreform.com/_upload/CER_charter_numbers.pdf.

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3. Marisa Schultz, "Charter Schools Expanding," *Detroit News*, August 29, 2009.

4. Stephanie Simon, "Hard-Hit Schools Try Public-Relations Push," *Wall Street Journal*, August 17, 2009.

5. Brian Gill and Kevin Booker, "School Competition and Student Outcomes" in Helen F. Ladd and Edward B. Fiske eds., *Handbook of Research in Education Finance and Policy* (Routledge), 2008.

6. National Center for Education Statistics 2008, Table 33, http://nces.ed.gov/programs/digest/d08/tables/dt08_033.asp

7. "Charter Schools in New York State for School Year 2002–2003," http://www.emsc.nysed.gov/repcrdfall2003/links/charter schools.html.

8. Some accommodations are made for the siblings of students who are already enrolled in charter schools.

9. New York City Charter School Center, http://www.nycchartercenter.org/facts.asp.

10. Center for Education Reform, http://www.edreform.com/templates/dsp_cLaw.cfm?stateID=24&altCol=2.

11. Caroline M. Hoxby and Sonali Muraka, "Charter Schools in New York City: Who Enrolls and How They Affect Their Students' Achievement," New York City Charter Schools Evaluation Project, 2007.

12. Caroline M. Hoxby, Sonali Muraka, and Jenny Kang, "How New York City's Charter Schools Affect Achievement," New York City Charter Schools Evaluation Project. 2009.

13. As I do not perform the analyses by race/ethnicity, I use interactions instead of restricting the models to students in quartiles of earlier proficiency because these quartiles may change over time, thus making the student-school spell fixed effect difficult to identify.

14. Hoxby et al., "How New York City's Charter Schools Affect Achievement."

15. Ibid.

The mandate of the **Center for Civic Innovation (CCI)** is to improve the quality of life in cities by shaping public policy and enriching public discourse. The Center sponsors studies and conferences on issues such as education reform, welfare reform, crime reduction, fiscal responsibility, immigration, counter-terrorism policy, housing and development, and prisoner reentry. CCI believes that, although good government is essential to civic health, cities thrive only when power and responsibility devolve to the people closest to any problem, whether they are concerned parents, community leaders, or local police.

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