Parental Valuation of Charter Schools and Student Performance

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ABSTRACT

This paper reports evidence that parental value of charter schools is primarily determined by the schools' academically effectiveness. Data on the New Jersey charter schools indicate that not all charter schools are equally effective, measured by student test scores, or equally valued, measured by the number of students on their waiting list. The charter school value model estimates the effect of tests score, student demographics and school characteristics for both the charter school and the home district traditional public schools. The estimates indicate that the charter school test scores have the largest and most robust effect on the size of the waiting list. Neither the charter school students' race or income nor traditional public school students' test scores affect charter school parental value. Thus this research supports a basic tenet for competitive, market based public school improvement: parents choose academically effective schools.

Key Words: Charter Schools, School Choice

JEL Classification: I21

Why have charter schools, thus parents' preferences for charter schools, increased dramatically in recent years when many studies conclude that students in charter schools do not score as highly on tests as students in traditional public schools? Perhaps parents value other aspects of charter schools more highly than students' performance on standardized tests, such as more instructional time, more discipline or more specialized educational programs. Or perhaps parents do not believe a charter school will provide an inferior education for their child; some analyses conclude charter school students perform as well as or better than public school students and these studies may be more consistent with parents' perception of charter schools.

The policy prescription that competitive pressure on public schools will improve educational outcomes depends on parental choice. Milton Friedman [62] argued that choice for public school students would stimulate public schools to be more academically effective, commonly measured by higher standardized tests scores.[1] The market driven public school improvement follows from three tenets: 1) parents dissatisfied with traditional public schools choose more effective schools; 2) their choice causes effective schools to prosper and expand, taking students from ineffective traditional public schools; 3) traditional schools respond to the loss of students by improving effectiveness in order to keep students.[2] These later two channels for market driven public education improvement have attracted extensive, and inconclusive, research on the effectiveness of charter schools, the largest choice school type. Research into what attracts parents to charter schools is less extensive, but no less important. This paper provides evidence that

the value parents place on charter schools depends primarily on their effectiveness, measured by student tests score, providing support for market driven improvement in public school effectiveness.

Charter schools are the most numerous choice schools because they are public schools, hence do not involve public funding for private school issues, and do not charge tuition. In comparison to traditional public schools, the charter public schools offer alternative modes of instruction and often embrace different philosophies and methods to foster innovation and improvement in public schools. First established in Minnesota in 1991, these public schools are issued a contract, or charter, which specify the philosophy and goals of the school and the method of achieving the goals. Typically, the schools are exempt from many regulations and requirements that govern most public schools to provide an alternative method of instruction, as detailed in the school's charter. These schools are reviewed periodically and the charter may be revoked if the schools do not attract enough students to maintain fiscal solvency, meet their specified goals or are mismanaged.[3] This alternative to the traditional public school is gaining popularity: in 2006, there were 3947 charter schools in 40 states, an 11% increase in the number of schools since 2005.

The positive charter school assessment by parents that drives this growth contrasts with the ambiguous assessment from research on charter schools academic effectiveness, both for students who move from and students who stay in traditional public schools. In October 2006, a widely publicized analysis of the National Assessment of Educational Progress (NAEP) test of fourth grade students conducted by H. Braun, F. Jenkins & W. Grigg (2006), researchers at the National Center for Education Statistics (NCES),

indicated that charter schools students scored 4.2 % lower in reading and 4.7 % lower in math than students of noncharter public schools, after accounting for several individual student characteristics. Bulifco and Ladd (2006) found similar results in an analysis of North Carolina charter school students. Hanushek, Kain, Rivkin & Branch (2007) and Booker, Gilpatric, Gronberg & Jansen (2007) conclude that there is no difference between Texas charter school student performance and traditional public school student performance on standardized tests, after an initial 2 to 3 year adjustment period during which charter school students underperformed. Using nationwide data, Caroline Hoxby [2004] concludes that charter school student's score higher on standardize tests than traditional public school students after accounting for student differences in race, family income and other characteristics. Research on the effect of charter school competition on local schools is also ambiguous. Analysis of national data by Caroline Hoxby (2004) indicates charter school competition increases the test scores of traditional public school students. Booker, Gilpatric, Gronberg & Jansen (2004) finds that competition from Texas charter schools increases the test scores of noncharter public school students. Bettinger (2005) concludes that charter school competition has no effect on the scores of Michigan noncharter public school students.

Whether public school improvement will result from charter school competition depends on parental motivations for school choice. Choice of a school with higher performing students will cause these schools to prosper and expand, displacing schools with poor performing students and creating incentives for traditional schools to improve student performance. However, if parents are motivated to choose charter schools by ineffective traditional public schools, by the race or income of the traditional public

schools or by the charter school's unconventional education philosophy, not by the academic qualities of the charter school, choice may not improve educational opportunities for students who remain in traditional schools. For example, if a charter school emphasizes "harmonizing with the environment" and draws students from ineffective traditional public schools, the traditional school may respond to parental preferences with a more environmental enriched curriculum, not a more academically challenging curriculum. Thus, whether parents are attracted to a charter school by students' academic performance or repelled by the performance of the alternative traditional public school determines how the traditional public schools adapt to competition.

Surveys of parents who choose between private schools, traditional public schools and alternative public schools find the most cited factor is students' scores on standardized tests.[4] However, other factors are important, depending on school location and parental demographics. Parents in higher income locations often cite other measures of academics, for example the number of honors classes. Parents in low income areas often cite safety and hours of instruction. Some studies of parent's actions, not words, suggest that race and income play a prime roll in charter school choice. Weither and Tedin (2002) analyze over 1000 Texas students who changed from traditional public schools to charter schools. In surveys, their parents indicated educational effectiveness was the prime motivation for changing schools. However, comparisons of the students' prior public school with the students' current charter school reveal students moved to schools with lower average test scores, with higher income peers and with more racial segregation. Similar race and income peer effects are found by Lankford, et al (1995) in

their analysis of the private/public school choice.   Hanushek, et al (2007) analyze over 20,000 panel observations on Texas students who change schools and reach the opposite conclusion: parental school choices are motivated by school effectiveness. They find that exits from both charter schools to traditional public schools and exits from tradition public schools to charter schools are inversely related to test scores and the magnitude of the effect for the movers from charter schools is higher. They conclude that the choice to leave a charter school depends on the academic effectiveness of the charter school.

This paper provides a unique analysis of parental valuation of charter schools by measuring the preference for a charter school using its waiting list. Charter schools that have more applications than seats determine admission by a random drawing and unsuccessful lottery participants are put on a waiting list. The waiting list data allows the charter school's value to be determined by preferences of all the parents who apply, not only those parents who win the admissions lottery and enroll their children in the charter school. For the New Jersey charter schools analyzed, the wait list average is 184 students and the average number of opening for new students is 40, so the preferences of nearly 80% of parents who desire a particular charter school would not be represented in analysis limited to charter school parents. Further even if the winners and losers of the admissions lottery have similar characteristics and preferences, there is no reason to think that the characteristics of the charter schools that have a waiting list of several hundred are similar to the characteristics of the charter schools that do not have a waiting list. The analysis of charter school parents would give equal weight to oversubscribed and undersubscribed charter schools with similar enrollments.

The analysis presented here indicates that academic achievement, measured by students' performance on standardized tests, primarily determines the value that parents place on New Jersey charter schools. The estimated effect of charter school test scores is the largest in magnitude and robust over different models and sample sizes. Also, models identify other characteristics of the schools, such as educational spending, instructional time, class size and faculty teaching ratios, as less important but sometimes significant factors determining the size of the waiting list. The school district traditional public schools students' performance on standardized exams, the characteristics of theses schools and its students, except for the percent of poor students and educational spending, do not significantly affect charter school value as expected. Thus this analysis provides support for a basic tenet of the belief school choice and market forces can improve the effectiveness of public schools.

INFORMAL MODEL

Measuring the value parents attach to a charter school based on parents' actions is problematic because charter schools do not charge tuition or discriminate based on entrance exam scores or other measures of academic accomplishment. Schools that offer parents valued educational philosophy and instructional methods will be more preferred and will have more applications for admission than schools that do not match parent preferences. A private school or a public magnet school that has more applications than seats rations by raising tuition or raising minimum entrance scores or both; these variables measure parents' valuation of the school. If the charter school is

oversubscribed, the school conducts a lottery; students not chosen are placed on a waiting list. Parents will apply for admission to a charter school if the expected benefits of applying exceed the implicit application costs they incur.[5] The expected benefits derive from both the value of charter school attendance and the likelihood of a successful application. The waiting list proxies for the unobservable parental valuation because longer waiting lists reduce the likelihood of a successful application thus charter schools with longer waiting lists must have a higher valuation in order for parents to incur application costs.

The model relates the waiting list [WAIT], to test scores, school resources and the characteristics of students and schools, both charter schools and the alternative traditional public schools:

$$WAIT_{i,t} = f(SCORES_{i,t}, SCORES_{d,t}, STUDENTS_{i,t}, STUDENTS_{d,t}, SCHOOLS_{i,t},$$
$$SCHOOLS_{d,t}),$$

Where $WAIT_{i,t}$ is the number of students wait listed for charter school i at time t. Parents choose to apply to charter schools based on the academic performance of students. The test scores of students at charter school i at time t are $SCORES_{i,t}$; the test scores of students at the traditional public school in the home district of the charter school are $SCORES_{d,t}$. The valuation model includes characteristics of students at both the charter school and the district schools and characteristics of the schools. Student characteristics, STUDENTS, notably race and income, may determine choice. School characteristics, SCHOOL, included in this analysis are resources measured by expenditures, class size, teacher salary, student teacher ratios and instructional time. Also, suspensions are included because parents cited discipline as a factor determining choice. Because the

dependent variable is a nonnegative integer, a Poisson regression estimates the model parameters. The error term is clustered on the school for robust estimates and the number of places for new students is the exposure variable, on which WAIT is conditional.

DATA

This paper analyzes the factors that determine parents' valuation of New Jersey charter schools. New Jersey is a good source of school data for several reasons. First, New Jersey has some of the highest performing [6] and lowest performing public school students in the nation. In 2003, New Jersey had the highest state median household income and also contained three cities, Newark, Jersey City and Patterson, among the 25 American cities with the highest unemployment rate. Also, New Jersey public schools spend more per student than schools[7] in any other state and spending in urban schools with the lowest performing students is higher than spending in suburban schools with the highest performing students.[8] New Jersey is small but densely populated and has a tradition of home rule; there are nearly 600 school districts, which allow parents to choose to live in many different locales without changing employment locations. Finally, New Jersey has a high proportion of private schools; in 2005, it had 621 elementary nonpublic schools and 1356 public elementary and middle schools. In general, New Jersey parents have a long history of school choice that precedes the national school choice movement, as evidenced by the fact that the state ranks second among the fifty states in the 2001 Education Freedom Index, Green (2002).[9]

In 1996, the New Jersey implemented legislation creating charter schools. These charters are issued by the state Department of Education to the founders of the charter school with the approval of a home school district, which does not have authority to regulate the charter school. These charter schools are open to any student in the state with preference given to students who reside in the home district. From 1996 to 2006, 73 schools have been granted charters and, during 2004/2005, 53 charter schools were operating. All New Jersey charter schools are startups; the charter schools do not replace existing public schools. New Jersey, like other states, issues charters to schools whose founders have diverse points of emphasis, philosophies and methods, which are specified in their mission statements and provide parents information required to make school choices. Also, the charter schools offer different deliveries of education services, such as 11 month school years and 8am to 5 pm school days. In short, the charter schools present to parents a diverse offering in educational philosophy and implementation.

The New Jersey charter schools are concentrated in the urban areas, which allows parents in these home districts the choice not only between traditional and charter schools, but in several cities, the choice between different charter schools. The data set consists of 203 observations over a seven year period, the 1999/2000 to 2005/2006 school years, for the 42 charter schools that offered an elementary or middle school curriculum.[10] The number of observation per charter schools differs for several reasons: some charter schools did not get renewed; some charter schools closed because of financial reasons; new charter schools were started and some test scores are not available because charter schools did not always include fourth grade or eighth grade and are not required to report test scores their initial two years.[11] The analysis includes 2 charter

schools which have data for a single school year and 4 charter schools have data for all the seven years. Table 1 details the number of charter schools and the number of data set observations by city and whether the city is in a Special Needs District, the low income, urban districts designated by the New Jersey Supreme Court for additional state funding.[12] In recent years the expenditures per student in several of the Special Needs Districts has exceed spending in even the most affluent suburban districts. Note that 36 of the 42 charter schools are in Special Needs Districts. Newark parents can, at some time before high school, potentially choose among 9 charter schools and Jersey City parents can choose among 7 charter schools. These numbers do not indicate the number of choices at each grade level because the charter schools offer various grade levels; for example, grade levels include prekindergarten to 12th grade, pre-k to 2nd grade and 5th grade to 8th grade. Data that represent more than one charter school choice add up to 140 observations, 72% of the sample.

This study analyzes parental value of charter schools with school and district level data on New Jersey elementary and middle public schools, both charter and traditional, over the period 2000-2006, as reported in the state issued New Jersey School Report Cards.[13] These Report Cards provide parents with information needed for informed choices: test scores, characteristics of the schools' students, the schools' resources and learning environment, school finances and teacher and staff information. Most of the variables are measured at the school level for three academic years. The Report Cards also include comparable, averaged data for other schools operating in the home district, in similar socioeconomic school districts[14] and throughout the state. These Report Cards

are made available to parents, are reported on line at the web sites of the Department of

Education and major newspapers and are summarized in state newspapers.

The state requires each charter school to report the number of student on its wait

list, which is published on the School Report Card. Schools that have more applications

than seats available for new students are required to conduct a lottery. The students who

are not chosen in the lottery are put on the wait list, with their lottery number, for the

subsequent school year and are contacted if space becomes available. The Report Card

includes three years of wait list and enrollment data, thus provides the information to

evaluate the likelihood of a successful charter school application.

The measure of school performance is constructed from the scores on

standardized tests required by the state of all public school students. Over the sample

period the state of New Jersey has tested all public school students in 4th and 8th grades in

both math and language; more recently science has been added to some tests. The Report

Card summarizes the results of the annual March tests in three categories: advanced

proficient, proficient and partially proficient. The state reports more detailed

information, including the mean score, in an annual assessment report, also available

online. These tests have been changed during the sample period resulting in different

mean scores. To facilitate comparisons, each annual school score for math, language and

science, when available, are standardized with the state school average and standard

deviation; therefore the scores measure standard deviations from the state average.[15]

Scores in each subject area are averaged for the school score; for schools that test both 4th

grade and 8th grade students, the school score is the average of the two grade level test

scores. Test scores are calculated for each grade equivalent traditional public school in

the home district and the averaged value provide the measure of the district scores. These

test scores are lagged one period to match the time period of other Report Card data.[16]

Table 2 reports summary statistics for the sample data. The average number of

students on the wait list [WAIT] is 186. The value of WAIT varies from 0 to 1784 and

WAIT equals 0 for 23 observations and exceeds 500 for 17 observations. The new

students that can be enrolled [OPENINGS] averages 40. The average charter school

score is .96 standard deviations less than the state average; scores range from -3.15 to

1.95. The charters school students' did not test as well as the students in the home

district traditional public schools; these students scored .80 standard deviations less than

the state average. Demographic measures indicate that charter school students are similar

to the students in the home district traditional public schools. Black and Hispanic

students [MINORITY] comprise 80% of the student body of charter schools and 78% of

the student body of other district schools. Students who qualify for subsidized lunches

[POOR] comprise 60% of charter school students and 61% of other district school

students.

The instructional expenditures of New Jersey charter schools are 19% less than

expenditures at the home district schools. The average expenditure per student (COST)

for the charters is $11,310 while the average for the district is $14,000.[17] Faculties at

charter schools (FACSALARY) are paid nearly 50% less than faculty at home district

schools.[18] Although the charters have about one more student per faculty member

[SFRATIO], the charters have nearly 1 less student in the average class [CLASSSIZE].[19]

The average percent of students suspended [SUSPEND]for the charters is 10.8% while

the home district average is 7.9.[20] The table reports that 72% of the observations come

from charter schools in the special needs districts [SPECNEEDS]. The charter schools average 382 minutes of instructional time; the state average in 2005 was 339 minutes.[21] The binary variable ACADEMIC indicates that 25% of the charter schools stress academics in their mission statements.[22]

ESTIMATED MODEL

Table 3 reports estimates of the charter school value model. Two version of the model are reported, both with and without the characteristics of the home district schools, which were usually estimated to be statistically insignificant or to have an effect on charter school value opposite what is expected.[23] The models are estimated with four different samples. The full sample results are reported in columns 1 and 2. Columns 3 and 4 report the model estimates with the 140 observation sample of charter schools in the 7 home districts with more than one charter school, hence parental choice of more than one charter school option. Two charter schools stand out and the models are estimated without each one in the sample. The variable SCORE exceeds 1.25 in only 7 of the 203 sample observations, all the observations for The Princeton Charter School. And WAIT exceeds 900 for 6 observations, which are the 6 observations for North Star Academy Charter. Columns 5 through 8 report estimates based on samples without one of these schools. The table also reports the results of simulations of the estimated model to assess the relative importance of some variables on parental value. The value of a variable is increased 1% and the estimated percentage change in WAIT is the elasticity.[24]

Charter school students test scores primarily determine parental value of charter schools. The number of students on the wait list is positively related to tests scores and the magnitude of the effect is large. For all models and samples, SCORE is statistically significant and has the largest effect of WAIT. The elasticity varies from 5.4 to 8 and usually exceeds the elasticity of any other variable by a factor of at least 3. As reported in column 4, SCORE has the largest effect on WAIT in the sample where parental choice includes more than 1 charter school: a 1% increase in test scores result in an 8% increase in the number of students on the wait list. Charter school value does not depend on the effectiveness of the schools that the parents want their children to leave; the test scores of the students at the traditional public school inversely affect value but the impact is not statistically significant. Also, charter schools that stress academics in the mission statements are more highly valued, although the effect is not significant at the 5% level.

The estimated effect of student characteristics on charter school value does not suggest parents value charter schools for the racial makeup or economic circumstances of the students. Neither POOR nor MINORITY charter school students has an effect on the waiting list. An increase in the number of POOR students in traditional public schools has a statistically significant positive effect in 4 of the 8 estimates, consistent with parents wanting to exit these traditional public schools. However, charter schools do not have fewer POOR students, so these estimates do not suggest parents are seeking higher income student peers. Increases in district MINORITY students decreases charter school value, opposite the prediction of choice based on increasing racial segregation, but this estimate is significant in only 2 of 8 estimates.

Parental valuation of the charter schools depends to some extent on the characteristics of the charter school, but most of the estimates are not statistically significant or robust for different samples. The variables that most directly measure instruction have the largest effects. The student to faculty ratios has a significant negative effect on WAIT in 7 of 8 model estimates. The elasticity of this effect ranges from -1.16 to -.67. Instructional time has the largest effect on WAIT; a 1% increase in INSTTIME is estimated to increase WAIT from 1.9% to 2.6% although the estimate is significant in only 4 of 8 models. Higher charter school spending increases the charter schools value as do smaller class sizes; the estimates are statistically significant in one model.

The characteristics of the alternative traditional district public schools do not affect value as expected or are not robust. The estimates indicate the size of the waiting list increases with increases in faculty salaries and decreases in student faculty ratios in the traditional public schools. One would expect more faculty resources at home district schools would reduce the value of charter schools. Increases in educational expenditures at home district schools decreases the parental valuation of charter schools, as expected, and the effect is significant in 3 of 4 model estimates.

CONCLUSION

This research suggests an answer to the question posed at the start of this paper: parents choose charters schools because they value schools that are academically effective and endorse academic goals. This analysis suggests parents are not concerned

about the average performance of charter school students. The New Jersey data analyzed here indicate not all charter schools are equally effective, measured by student test scores, or equally preferred, measured by waiting lists. Because the average student tests scores at heterogeneous charter schools are above or below student tests scores at traditional public schools does not diminish the evidence presented here that charter school value depends on academic effectiveness. This research supports the basic tenet of public school improvement through parental choice and competition that parents choose academically effective schools.

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TABLE 1
CHART SCHOOLS BY SCHOOL DISTRICT

SCHOOL DISTRICT	NUMBER OF CHARTER SCHOOLS	OBSERVATIONS.	SPECIAL NEEDS DIST.
ASBURY PARK	1	4	yes
ATLANTIC CITY	2	7	yes
CAMDEN	2	10	yes
CLIFTON	1	6	no
EAST ORANGE	1	4	yes
ENGLEWOOD	1	4	yes
GALLOWAY	1	4	yes
HOBOKEN	2	11	yes
JERSEY CITY	7	39	yes
MORRIS	1	3	no
NEW BRUNSWICK	1	6	yes
NEWARK	9	39	yes
PATERSON	1	1	yes
PLAINFIELD	1	3	yes
PLEASANTVILLE	2	12	yes
PRINCETON	1	7	no
RED BANK	1	7	no
SPARTA	1	6	no
TEANECK	1	6	no
TRENTON	5	24	yes
TOTAL	42	203	

Table 2

MEANS/ STANDARD DEVIATIONS

VARIABLE		
WAIT	186.32	
	261.02	
OPENINGS	40.04	
	23.22	

	SCHOOL	
	CHARTER	DISTRICT
SCORE	-0.96	-0.79
	1.16	0.87

	STUDENTS	
	CHARTER	DISTRICT
MINORITY	79.89	77.65
	28.53	26.04
POOR	59.84	61.43
	25.99	24.83

	SCHOOL	
	CHARTER	DISTRICT
SFRATIO	11.93	10.61
	3.32	1.55
COST	11.31	14.00
	2.08	2.36
CLASS SIZE	17.42	18.03
	3.96	1.74
SUSPEND	10.82	7.92
	12.10	5.37
FACSALARY	39.15	57.83
	5.37	12.14
TIMEINST	381.76	
	41.09	
ACADEMIC	0.25	
	0.43	
SPECNEEDS		0.72
		0.45
NUMBER	203	

Table 2 (continued)
DEFINITIONS FOR DATA FROM NEW JERSEY SCHOOL REPORT CARD

WAIT: The list contains numbers of students who are waiting for openings in the charter school roster as of the opening of school.

OPENINGS: Enrollment if first grade level of charter school plus difference in fisrt class grade level and sencond grade level.

SCORE[1]: Performance on State Tests Grade Eight Proficiency Assessment (GEPA), New Jersey Assessment of Skills and Knowledge (NJASK) 4TH GRADE

MINORITY[2]: The percentage of Black and Hispanic students.

POOR[b]: The percentage of students who qualify for a subsidied or free lunch.

SFRATIO: The ratio of students to faculty

COST: The total of education related expenditures is divided by the average daily enrollment

CLASS SIZE: Enrollment per grade divided by the total number of classrooms for that grade.

SUSPEND: These are percentages of students who were suspended at least once during the school year. Students suspended more than one time are counted once. The percents are calculated by dividing the total number suspended by the total enrollment.

 FACSALARY: This is the median salary faculty

TIMEINST: This is the amount of time per day that a typical student is engaged in instructional activities under the supervision of a certified teacher.

ACADEMIC: Binary variable =1 if charter school mission statement emphasizes student academic performance

SPECNEEDS: Binary variable =1 if charter school home district is a Special Needs District

Source: NEW JERSEY SCHOOL REPORT CARDS, 2000 to 2006 unless noted.

[1] Sources: New Jersey Department of Education Assessment Reports, 1999 to 2005

[b] Sources: New Jersey Department of Education Enrollment Reports, 2000 to 2006

TABLE 3
MODEL ESTIMATES

COLUMN	1	2	3	4	5	6	7	8
SAMPLE	FULL				LESS PRINCETON		LESS NORTH STAR	
					SCORE			
SCORE	0.45 **	0.45 **	0.50 **	0.51 **	0.44 **	0.43 **	0.35 **	0.38 **
	4.64	4.70	4.72	4.72	4.53	4.34	3.62	3.52
SCORE D	-0.23	0.05	-0.58	-0.09	-0.23	0.03	-0.18	0.08
	-0.88	0.16	-1.94	-0.21	-0.86	0.10	-0.67	0.25
					STUDENTS			
MINORITY	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00
	1.03	0.72	-0.01	0.05	1.35	0.94	0.72	0.61
POOR	0.00	0.00	0.01	0.00	0.00	0.00	0.00	-0.01
	-0.17	-0.26	0.53	0.25	-0.23	-0.32	-0.53	-0.74
MINORITY D	-0.02 *	-0.01	-0.05 **	-0.01	-0.02	0.00	-0.02	0.00
	-2.03	-0.49	-2.97	-0.68	-1.77	-0.32	-1.57	-0.14
POOR D	0.02 *	0.02 **	0.02	0.01	0.02 **	0.02 **	0.01	0.01
	2.41	2.67	1.90	1.80	2.66	2.94	1.30	1.38
					CHARTERS			
SFRATIO	-0.07 *	-0.10 **	-0.06 *	-0.08 **	-0.07 *	-0.10 **	-0.06	-0.08 *
	-2.42	-3.22	-2.22	-2.87	-2.32	-3.15	-1.81	-2.50
FACSALARY	0.01	0.03	0.00	0.02	0.02	0.03	0.01	0.03
	0.62	1.74	0.13	0.87	0.73	1.65	0.49	1.31
COST	0.07	0.06	0.07	0.05	0.08 *	0.06	0.06	0.05
	1.89	1.69	1.76	1.54	2.24	1.77	1.23	1.22
CLSIZE	-0.06	-0.06	-0.07	-0.07	-0.07 *	-0.07	-0.04	-0.05
	-1.83	-1.77	-1.65	-1.62	-2.07	-1.91	-1.11	-1.35
TIMEINST	0.01 *	0.01 *	0.01 *	0.01	0.00	0.01	0.01	0.01 *
	2.02	1.96	1.98	1.73	1.92	1.89	1.94	2.09
SUSPENSION	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.00
	1.18	1.13	1.02	1.05	1.11	1.04	0.19	0.31
ACADEMIC	0.53	0.55	0.36	0.42	0.49	0.52	0.34	0.40
	1.89	1.86	1.03	1.15	1.63	1.71	1.14	1.25
SPECIAL NEEDS	0.26	0.53	-0.39	-0.56	0.34	0.58	0.38	0.67
	0.79	1.36	-1.03	-1.45	1.12	1.48	1.11	1.49

SFRATIO D	-0.20 **		-0.26 **		-0.17 **		-0.21 **	
	-3.01		-3.58		-2.75		-2.86	
FACSALARY D	0.03 **		0.04 **		0.03 **		0.03 **	
	2.88		3.02		2.88		2.70	
COST D	-0.08 *		-0.10 **		-0.09 *		-0.08	
	-2.18		-2.57		-2.63		-1.87	
CLSIZE D	-0.05		-0.04		-0.05		-0.08	
	-1.19		-0.65		-1.27		-1.79	
SUSPENSION D	0.02		0.02		0.02		0.03	
	0.98		0.63		1.26		1.81	
CONSTANT	2.27	-1.70	5.04 *	0.38	1.60	-1.95	2.67	-1.92
	1.55	-1.30	2.29	0.19	0.93	-1.46	1.40	-1.27

TABLE 3 [CONT]
ELASTICITES

PREDICTED WAIT	186.3	186.3	229.9	229.9	184.7	184.7	150.5	150.5
SCORE	6.95	7.79	7.79	8.02	6.78	6.66	5.86	5.35
SFRATIO	-0.85	-0.75	-0.78	-0.99	-0.84	-1.16	-0.94	-0.67
FACSALARY	0.46	-1.14	0.14	0.96	0.59	1.37	1.09	0.41
COST	0.82	0.82	0.83	0.61	0.88	0.65	0.62	0.72
CLSIZE	-1.09	0.13	-1.20	-1.26	-1.24	-1.16	-0.94	-0.74
TIMEINST	2.05	2.36	2.37	2.61	1.89	2.11	2.63	2.31
OBSERVATIONS	203		140		196		197	

** (*) significant at the 1% (5%) level

D   indicates value for home district schools

Summary of charter school data

school	home district	obs	Wait list	score	score district	Open-ings	Minority %	Poor %	Chrt. Schs. in home dist	S
Learning Center CS	ATLANTIC CITY	1	0.00	-3.15	-1.34	5.00	96.30	39.78	2	
CAMDEN'S PROMISE CS	CAMDEN CITY	4	381.25	-1.45	-1.57	101.25	98.41	87.85	2	
CLASSICAL ACADEMY CS OF C	CLIFTON CITY	6	11.17	0.54	-0.11	34.17	53.61	24.03	1	
LIBERTY ACADEMY CS	JERSEY CITY	6	26.67	-2.15	-0.72	45.83	98.38	67.50	7	
DISCOVERY CS	NEWARK CITY	5	215.00	-0.32	-1.34	14.80	93.06	74.05	8	
EAST ORANGE COMMUNITY CS	EAST ORANGE	4	118.75	-1.12	-0.95	101.75	100.00	77.74	2	
ELYSIAN CS OF HOBOKEN	HOBOKEN CITY	6	99.83	-0.19	0.11	31.83	48.18	33.21	2	
EMILY FISHER CS OF ADV. S	TRENTON CITY	6	217.67	-2.25	-1.65	32.33	99.15	89.00	5	
ENGLEWOOD ON THE PALISADE	ENGLEWOOD CITY	4	30.25	0.01	-0.95	30.50	96.04	69.79	1	
GALLOWAY COMMUNITY CS	GALLOWAY TWP.	4	14.00	-1.46	0.18	31.75	43.61	41.53	1	
GATEWAY CS	JERSEY CITY	5	90.80	-1.79	-0.78	52.00	96.82	76.79	7	
Granville Csa	TRENTON CITY	2	0.00	-2.21	-1.52	46.00	100.00	69.80	5	
Granville CS	TRENTON CITY	2	0.00	-1.96	-1.75	77.00	99.63	76.92	4	
GREATER BRUNSWICK CS	NEW BRUNSWICK CITY	6	62.33	-0.61	0.86	22.83	72.12	28.80	1	
GRAY CS	NEWARK CITY	5	506.20	-0.92	-1.34	42.20	98.31	72.10	8	
HOBOKEN CS	HOBOKEN CITY	5	295.20	-0.39	0.09	20.80	42.93	28.38	2	
HOPE ACADEMY CS	ASBURY PARK	4	137.50	-1.91	-1.70	15.50	99.63	68.93	1	
INTERNATIONAL CS OF TRENT	TRENTON CITY	6	37.17	-1.90	-1.65	11.67	95.70	85.24	5	
JERSEY CITY COMM. CS	JERSEY CITY	4	90.25	-1.22	-0.69	47.50	98.53	83.08	7	
JERSEY CITY GOLDEN DOOR	JERSEY CITY	7	284.29	-1.56	-0.77	55.57	88.61	65.80	6	
LADY LIBERTY ACADEMY CS	NEWARK CITY	4	169.25	-2.23	-1.27	54.50	99.37	83.84	9	
LEAP ACADEMY UNIVERSITY C	CAMDEN CITY	6	370.33	-1.54	-1.59	53.33	99.49	88.87	2	
LEARNING COMMUNITY CS	JERSEY CITY	6	93.50	-0.23	-0.72	36.00	61.14	46.10	7	
MARION P. THOMAS CS	NEWARK CITY	4	242.00	-2.04	-1.27	40.50	100.00	55.76	9	
NEWARK CS	NEWARK CITY	2	89.50	-1.37	-1.12	62.00	100.00	75.12	9	
NEW HORIZONS COMM. CS	NEWARK CITY	5	253.80	-2.48	-1.47	83.80	98.92	83.43	8	
NORTH STAR ACAD. CS OF NE	NEWARK CITY	6	1362.83	-0.29	-1.41	57.33	99.13	87.79	8	
OCEANSIDE CS	ATLANTIC CITY	6	129.83	-1.70	-1.37	32.50	98.58	86.81	1	
PATERSON CS	PATERSON	1	55.00	-1.56	-0.75	77.00	90.03	61.99	1	
PLEASANTECH ACADEMY CS	PLEASANTVILLE CITY	7	120.86	-0.76	-1.39	28.71	98.95	56.69	2	

School	District								
PLEASANTVILLE CS FOR AC.	PLEASANTVILLE CITY	5	83.40	-1.79	-1.54	34.80	80.12	65.64	2
PRINCETON CS	PRINCETON REGIONAL	7	231.57	1.62	1.50	23.71	12.08	6.98	1
QUEEN CITY ACADEMY CS	PLAINFIELD CITY	3	108.00	-1.36	-1.30	20.00	98.79	50.97	1
THE RED BANK CS	RED BANK BORO	7	62.43	-0.15	-0.39	16.86	50.81	42.71	1
ROBERT TREAT ACADEMY CS	NEWARK CITY	5	567.20	0.72	-1.34	51.00	96.89	64.94	8
MARIA L. VARISCO-ROGERS C	NEWARK CITY	3	52.33	-1.63	-1.21	32.67	94.97	92.93	9
SCHOMBURG CS	JERSEY CITY	4	0.00	-2.59	-0.69	79.75	98.85	74.26	7
SOARING HEIGHTS CS	JERSEY CITY	7	258.43	-0.46	-0.77	18.57	80.20	66.70	6
SUSSEX COUNTY CS FOR TECH	SPARTA TWP.	6	14.33	0.25	0.91	47.00	2.97	20.17	1
TEANECK COMMUNITY CS	TEANECK TWP.	6	97.83	0.09	0.04	26.83	59.56	9.80	1
TRENTON COMMUNITY CS	TRENTON CITY	4	39.75	-1.99	-1.67	63.00	99.80	69.05	5
UNITY CS	MORRIS SCHOOL DISTRICT	3	93.33	-0.13	0.91	9.00	12.70	5.75	1
VILLAGE CS	TRENTON CITY	4	8.50	-0.58	-1.67	34.00	99.43	75.97	5

[1]Milton and Rose Friedman formed a foundation to promote school competition and provide information and research on school choice. http://www.friedmanfoundation.org/

[2] Caroline Hoxby [2004] provides a detailed discussion of the inner workings of the "Black Box" that generates market based public school performance increases.

[3] The Center for Education Research reports that 436 charter schools have closed from inception to year 2005/2006 academic year, about 11% of charter schools started. For the 2005/2006 year, New Jersey had 51 operating Charter Schools and 59 approved charter schools; since 1992, 15 New Jersey charter schools have closed. [http://www.edreform.com/_upload/cer_charter_survey.pdf]

[4] Laura Hamilton & Kacy Guin [2005] summarize research on parent choice.

[5] The North Star Charter School, one of the 4 schools highlighted in *No Excuses* by Henry and Abigail Thernstrom, had 1784 students on its waiting list for the 2005/2006 school year even though it requires a time intensive application procedure, as detailed on its web site: "After parents attend an Open House and students attend a Simulated School Day, they can obtain an official application for admission to North Star." See www.uncommonschools.org/nsa/ourSchools/enrollment.html

[6] New Jersey elementary schools are ranked 6 in the nation by PSK12 [http://www.psk12.com/]

[7] New Jersey public schools spent nearly $13,000 per student, more than any other state according to an April 2005 Center for Education Reform report. [http://www.edreform.com/_upload/CER_state_edstats_snapshot_apr06.pdf]

[8] Of the top ten highest spending districts during the 2004/2005 school year, nine are low income, urban districts, designated Special Needs Districts.

[9] The 2001 Index of Educational Freedom reports: "New Jersey, which moved up slightly to 2nd place, has strengths across the board. It has many small districts, allowing families to move to desired school districts; it offers a wide selection of charter school options; and it offers direct subsidies to private schools for certain expenses. New Jersey is also relatively accommodating to home-schooling."

[10] The 4 charter high schools are not included because the state mandated tests are given in the fall, not the Spring, and do not have similar characteristics to be comparable to the tests in the 4th and 8th grade. The 2 charter schools comprised of grades pre-k to 3 are not included because test scores are not available.

[11] Most charter schools started with an initial grade or two and expanded by adding higher grades as the original students progressed. Thus a school that started with first grade would not give fourth grade test for three years. Hanushek, et al (2007) and Booker , et al (2007) conclude charter school effectiveness improves after 2 to 3 years, so the New Jersey scores after two years are more informative to parents than initial year's scores.

[12] Coate and VanderHoff (1998) provide details on the historical development of these districts.

[13] These Report Cards are available on line at http://education.state.nj.us/rc/

[14] The state has 10 District Factor Groups based on the 7 socioeconomic characteristics of the district.

[15] For all the tests used, the average of the school mean test score is about 220 out of 400 points and the standard deviation is about 15 points. The assessment reports were not issue for the tests given spring 2003; the means for these tests are estimated from the categorical data and regression estimates of the mean on the three categories for the 2004 tests.

[16] The tests are taken in March, reported to parents in June and school summaries are released in December. The categorical test summaries are published in the Report Card with enrollment and other data usually collected during the first half of the school year. For example, the 2005/2006 Report Card was released in January 2007 and reported the number of students on the wait list as of September 2005 and the results of tests taken in March 2006. The March 2005 tests are summarized in the 2004/2005 Report Card.

[17] These are expenditures for educational purposes but do not include facilities expenditures which are often not incurred by district owned traditional public schools. Thus, these averages likely understate the funding differences because charter schools, unlike traditional public schools, may have to pay rent or capital costs from this funding.

[18] The faculty salary is highly correlated with experience. Experience is not considered separately because the Report Cards detail experience at the particular school only, so the average level of experience is substantially lower at the newly created charter schools.

[19] Charters tend to have fewer special education, art, consumer economics and teachers in areas other the basic subjects.

[20] This high value for the mean results from four observation in which the SUSPEND exceeding 50. The median number of SUSPEND is 7.2 for charter schools and 6.2 for other district schools.

[21] The instructional time is the same for all the home districts so it cannot be used in the regression model.

[22] While all mission statements give some mention to academic goals, the statements of New Jersey charters indicate they have diversity philosophies and instructional methods. The designation of a charter school as ACADEMIC is, therefore, somewhat subjective and based on the mission statements that contain wording such as: "rigorous curriculum"; "education excellence" and "core curriculum". Charter schools not designated ADADEMIC have mission statements that contain the following descriptions of emphasis: "effective academic and personal development through the use of technology"; "prepare a diverse cross section of …children…for success as students, citizen and workers"; "'a corridor of learning and productive living'"; "children will be taught to read through music"; "A primary focus …is the exploration of the effects of human endeavor on our ecosystem";".. endeavors to foster ecological literacy"; "will provide … an appreciation of the world's human and natural environment".

[23] The estimate effects are likely opposite the expected effect due to the state Supreme Court imposed spending in the Special Needs Districts and the predominance of charter schools in these districts. A lack of data precludes a more extensive investigation of the effects of district school characteristics on charter school value.

[24] The elasticity of SCORE references a 1% increases in the school means not the standardized score. The school mean is about 220, so a 1% increase is 2.2 points.