

NEPC REVIEW: RISING TIDE: CHARTER SCHOOL MARKET SHARE AND STUDENT ACHIEVEMENT (FORDHAM INSTITUTE, SEPTEMBER 2019)



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November 2019

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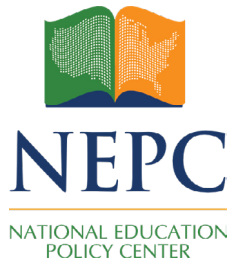
Suggested Citation: Ni, Y. (2019). *NEPC Review: “Rising Tide: Charter School Market Share and Student Achievement.”* Boulder, CO: National Education Policy Center. Retrieved [date] from <http://nepc.colorado.edu/thinktank/rising-tide>.

Funding: This review was made possible in part by funding from the Great Lakes Center for Educational Research and Practice.



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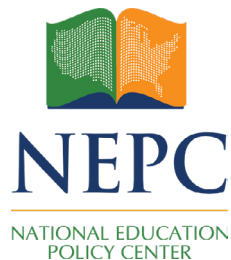
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Executive Summary

The Thomas B. Fordham Institute recently published a report, *Rising Tide: Charter School Market Share and Student Achievement*, examining the relationship between average achievement in a school district and the “market share” of charter schools. Using longitudinal national district-level data, the study finds that overall higher charter market share is associated with significant increases in average reading achievement but not math achievement. Further, some positive relationships exist for specific racial subgroups in districts of certain sizes and geographic locations. The report concludes that charter schools are “a rising tide” that “lifts all education boats.” However, one should interpret the findings and conclusions with extreme caution because of major issues surrounding the data and methods, including the measure of charter market share, the sample selection criteria, and the overreliance on results based on a small number of districts, especially the ones with over 95th percentile of charter market share. Overall, the findings have little use to policymakers because of these issues with data and methods and because the report does not probe beneath the surface. For example, it does not examine possible policy factors that might be associated with charter market share in a given area having a positive or negative association with public school systems. Similarly, it does not consider which practices might benefit charter schools and/or public school systems as a whole.



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I. Introduction

In September 2019, David Griffith at the Thomas B. Fordham Institute published *Rising Tide: Charter School Market Share and Student Achievement*.¹ This report examines whether average achievement in a school district increases as the “market share” of charter schools rises.

Charter schools are publicly funded schools that operate independently under charters granted by an authorizing body. Although the details vary from state to state, charter schools tend to enjoy substantial operational autonomy while being held accountable for meeting state and federal performance standards. Nationwide, in 2016-17, there were more than 7,000 charter schools, enrolling an estimated 3.0 million students, or seven percent of all public school students.² As the charter sector continues to expand, one of the remaining questions is whether the competition induced by charter schools improves or harms school quality. Numerous studies have strived to examine the issue from two angles: whether enrolling in charter schools increases student performance (the direct effect), and/or whether the competition from charter schools improves neighboring traditional public schools (TPS; the indirect/competitive effect). No definitive answers have emerged so far. Individual empirical studies have generated very different findings and conclusions, depending on study location, level of data aggregation, methods used, and state charter policy and local context.³

Because of the limitations of the data, the Fordham report is unable to examine either the direct effect or the competitive effect. Instead, it can only look at the combination of the two effects of charter schools on overall student performance within “geographic school districts,” including both TPS and charter students. As the report frames it, this is “a trillion-dollar question” of whether “a rising tide of charter schools” lifts “all education boats.” Using seven years (2009 through 2015) of national district-level data from the Stanford

Education Data Archive (SEDA), the study examines whether higher charter market share is associated with achievement gains for all students, as well as for students from various racial subgroups, in school districts of various sizes and geographical locations.

II. Findings and Conclusions of the Report

The Fordham report analyzes the relationship between charter market share and student achievement at the district level based on various grade samples and with different statistical models. The report highlights several main findings. In general, an overall higher charter market share is associated with a statistically significant increase in average English Language Arts (ELA) achievement but not in math achievement. When the analyses are collapsed by race, geographic location, and district size, the patterns become more complicated. Several findings stand out.

- In urban areas, higher Black charter market share (i.e., percentage of Black students that enrolled in charters) is associated with significant achievement gains for Black students in both ELA and math. The effects are even larger in the largest districts. The results are similar for Hispanic students, although math gains are limited to Hispanic students in the largest urban districts.
- In suburban districts, no significant relationship is found for Hispanic or Black students, except that in districts with large Hispanic enrollments, higher Hispanic charter market share is associated with significant ELA gains for Hispanic students.
- In rural districts, higher charter market share is associated with achievement gains for Black students in ELA but not in math. No significant relationship is found for Hispanic students until the sample is limited to rural districts with large Hispanic enrollments.
- Finally, no significant relationship between higher charter market share and achievement gains is found for White students, regardless of district size or geographic location.

The report concludes that “a rising tide of charter schools” lifts “all education boats,” especially for Black students in urban areas and for Hispanic students (p. 34). However, not all boats are lifted equally.

III. The Report’s Rationale for Its Findings and Conclusions

The report argues that, because higher charter market share is associated with average positive achievement gains of all students in a district, “the additional learning that’s happening in charter schools is not coming at the expense of less learning in district schools” and “it’s additive” (p. 5). There are two major problems with the rationale. First, in examining the validity of the positive findings, caution needs to be exercised because of issues related to

data and methods (i.e., the measure of charter market share, the sample selection criteria, and the overreliance on results based on a small number of districts), and the fact that the positive relationships only exist in some samples in some subjects and with certain statistical models. Second, even if the positive relationships do exist, the report offers no evidence whether the achievement gains in districts are caused by relative effectiveness of charter schools, or the competitive effect on TPS, or something else entirely. The analysis certainly does not warrant claims such as “most of the gains . . . are driven by charter attendance” (p. 34) or “our estimates . . . imply a neutral (or perhaps slightly positive) effect on the performance of traditional public schools in these communities” (p. 34). In other words, the conclusion that charter schools lift “all education boats” is not supported.

IV. The Report’s Use of Research Literature

The report selectively cites a few studies from two bodies of literature, one on the direct effect and the other on the competitive effect of charter schools. Admittedly, there is an extensive research literature on the direct effect, making it impossible to include them all. However, the report ignores a large number of rigorous studies using quasi-experimental methods while emphasizing lottery-based studies. These lottery-based studies have limited external validity, although they tend to report larger academic achievement gains for students in charters than in TPS. Although the two CREDO studies cited in the report include a large number of states, they by no means provide the whole picture of extant literature on the topic, which represents a wide range of charter school effects on student achievement.

The discussion of the literature on competitive effects is also biased toward studies reporting positive effects. Three of the four studies cited in the report are not peer-reviewed. High-quality rigorous studies reporting mixed and negative competitive effects are not mentioned at all. For example, several empirical studies find no significant competitive effects of charter schools,⁴ while others report negative effects of charter schools in neighboring TPS.⁵

V. Review of the Report’s Methods

The main data source of the Fordham report is the SEDA longitudinal data of all school districts in the nation. SEDA provides average district-by-grade-level test scores for ELA and math in Grades 3-8, student demographic information, student enrollment, and geographic location of districts. The report utilized cubic spline models with various controls to gauge the relationship between charter market share and average achievement in ELA and math. Compared to linear regression, which assumes a simple linear relationship between the predictor and the outcome variable, cubic spline models take into consideration curvilinear relationships and may lead to a better model fit.

There are several major issues surrounding the methods, including the measure of charter market share, the sample selection criteria, and the overreliance on results based on a small number of districts, especially the ones with over 95th percentile of charter market share.

Measure of charter share. The “charter market share,” measured as the percentage of charter enrollment in a district, does not accurately capture the true charter market share, because it is based on a very questionable assumption that students living within the boundary of the geographic school districts do not attend charter schools that are located outside the district. In reality, however, many students attend charter schools outside the geographic school districts, making it hard to disentangle a competitive effect of charter schools from a selection effect caused by the change in student composition in the districts. A preferable measure would be the share of resident students who attend charter schools whether those charter schools are located inside or outside the district.⁶

Level of data aggregation. Students in a specific unit, namely district-by-grade-level, do not necessarily correspond to a constant group of students in SEDA.⁷ Some students may have been retained in or skipped a grade; some may have left the geographic school district (either to attend a charter school or TPS); others may have moved in from another district. Depending on who these students are, average student achievement gains in the district may increase or decrease independent of any charter school effect. Longitudinal student-level data are more appropriate in such analyses, which are, unfortunately, not provided by SEDA or the National Center for Educational Statistics.

Sample exclusion criteria. Restricting the sample to districts with no more than 50 percent of charter market share is problematic, especially because it excludes not only districts with high overall charter market share (in district-by-grade-level unit) but also high shares for any of the three racial groups (Black, White, and Hispanic). This exclusion criterion is very puzzling given the use of a nonlinear cubic-spline model, which is not very sensitive to observations with extreme values. In addition, an extreme value is not necessarily a problem in model fitting. Instead of making exclusion decisions informed by comparing estimation results on samples with and without the districts with high charter market shares, arbitrarily excluding those districts may lead to estimation bias.

The restriction criteria also raise serious questions about the generalizability of the results. The SEDA contains data for more than 11,000 districts nationwide. After all the exclusion criteria are applied (including the decisions to exclude small districts and districts with no charter market share), only 755 districts are included in the overall analysis for ELA achievement and 747 for math achievement, which account for less than 7% of all districts (See Figures 1-2 on p. 18). The samples for subgroup analysis are even smaller (e.g., see Figures 6-7 on p. 22 and Figures 10-11 on p. 24). In addition, the cutoff values for small and large districts seem to be arbitrary. For example, the analysis of Black charter market share in large urban districts uses 2,500 Black students per grade as the cutoff (see Figures 10-11 on p. 24), while the analysis of Hispanic charter market share in rural districts uses 200 Hispanic students per grade as the cutoff (see Figures 22-23 on p. 30). The rationale for cutoff values in different analyses is unclear, which leads to questionable findings.

Interpretation of the results. Cubic spline regression is appropriate to account for any nonlinear relationships between charter market share and achievement gains. However, as the report points out, the distribution of charter market share is highly right-skewed, “with the 95th percentile sometimes falling closer to 25 percent than 50 percent” (Endnote 15, p. 45). Thus, the conclusions about the effects of charter market share moving from 25 per-

cent to 50 percent may be very misleading because they are based on five percent of sample districts, which, in some cases, contain less than a handful of school districts. For example, as the report indicates, “moving from 0 to 50 percent Hispanic charter market share is associated with a gain of 0.5 grade levels in ELA . . .” (p. 28). In reality, the predicted positive relationship in the segment of the highest charter market share moving from 20 percent to 50 percent is estimated based on data from about only six to seven districts. In addition, as the report points out, for technical reasons, the last segment in the predicted models, or the right tail of the spline in all the figures, is always smoothed to be linear, often with a positive slope, while in reality it could be a much more complex shape. This implies that the predicted straightforward linear relationship of higher charter market share with more achievement gains is not fully justified.

VI. Review of the Validity of the Findings and Conclusions

Because of the limitations of data and methods, one should interpret the findings and conclusions with extreme caution. First, the analyses may be biased in unknown ways because of the lack of student-level data and accurate measures of charter market share. Second, statements regarding sweeping positive relationships may be misleading given the small sample sizes included in the analysis and small numbers of districts with the highest charter market share.

Further, only 755 districts, or seven percent of the districts, across the nation are included in the analysis, although the original SEDA data cover all districts. For some subgroup analyses, the sample sizes are much smaller. Because of the various and often arbitrary exclusion criteria, the findings can only be applied to districts that fall within the restricted range. Given the fact that charter schools exist in 43 of the 50 states and the District of Columbia and a large number of districts have charter schools, findings based on small samples of districts have limited external generalizability.

Finally, since the study does not disentangle the direct effect and the competitive effect of charter schools, it provides no evidence to support conclusions such as “student achievement isn’t a zero-sum game” and “there is little evidence that charters have a negative effect on traditional public schools” (p. 34).

VII. Usefulness of the Report for Guidance of Policy and Practice

The findings have limited use in guiding policy and practice, because of the flawed data and methods. Even if the findings are valid, it offers no definitive support to the claim that charter schools are “a rising tide” that lifts “all education boats.” In addition, charter school policies and local contexts matter. The administrative organization, funding arrangements, and regulation of charter school policy varies tremendously from state to state. The likelihood of positive or negative impacts of charter schools depends more on specific features

of charter school policy design and the state and local circumstances in which the policy is implemented. The benefit to having a national dataset would be the ability to look for heterogeneous effects to discover policy factors and conditions that are associated with charter sectors having a positive or negative effect on local public school systems. However, the Fordham report provides no such analysis.

Finally, charter schools are touted as “laboratories” to foster innovations for improving achievement and spread the “best practices” to the entire public school systems. The report does not provide any evidence that supports the claim that charter schooling identifies effective practices and organizational changes that benefit charter schools and/or traditional public schools, and therefore offers no meaningful policy implications.

Notes and References

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- 3 For a review of literature on the direct effect of charter schools, see Bifulco, R. & Bulkley, K. (2015). Charter schools. In H.F. Ladd & M.E. Goertz (Eds.), *Handbook of research in education finance and policy, Second edition*. New York, NY: Routledge;

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- 6 Ni, Y., & Arsen, D. (2010). The competitive effects of charter schools on public school districts. In C. Lubienski (Ed). *The charter school experiment: Expectations, advocacy and evidence* (pp. 93-120). Cambridge, MA: Harvard Education Press.
- 7 Fahle, Erin M., et al. (2018, June 13). *Stanford education data archive: Technical documentation* (Version 2.1). Stanford, CA: Stanford Center for Education Policy Analysis. Retrieved October 20, 2019, from https://stacks.stanford.edu/file/druid:db586ns4974/SEDA_documentation_v21.pdf