



Charter school closure and student achievement: Evidence from Ohio[☆]



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ABSTRACT

The closure of low-performing schools is an essential feature of the charter school model. Our regression discontinuity analysis uses an exogenous source of variation in school closure—an Ohio law that requires charter schools to close if they fail to meet a specific performance standard—to estimate the causal effect of closure on student achievement. The results indicate that closing low-performing charter schools eventually yields achievement gains of around 0.2–0.3 standard deviations in reading and math for students attending these schools at the time they were identified for closure. The study also employs mandatory closure as an instrument for estimating the impact of exiting low-quality charter schools, thus providing plausible lower-bound estimates of charter school effectiveness. These results complement the more common lottery-based estimates of charter school effects, which likely serve as upper-bound estimates due to their focus on oversubscribed schools often located in cities with high-performing charter sectors. We discuss the implications for research and policy.

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1. Introduction

Charter schools continue to proliferate. During the 2013–14 school year, there were over 6400 charter schools serving over 2.5 million students nationwide—more than double the 3000 charter schools in operation just a decade earlier (NAPCS, 2015). These publicly-funded schools, which operate under a contract (or “charter”) that they develop in collaboration with a state-approved authorizing organization, enjoy greater operational independence from state and local regulation than traditional public schools.¹ However, the charter school model is designed to couple such au-

tonomy with greater accountability for service provision. Charter schools must compete for students—and the public funding that accompanies them—in order to stay open and, thus, must meet the quality demands of parents (Hanushek et al., 2007). Additionally, authorizers or state regulators may hold charter schools formally accountable for educational outcomes. For example, 15 states now have laws requiring the automatic closure of charter schools that fail to meet minimum performance requirements (Ziebarth, 2015).

We exploit exogenous variation generated by Ohio’s automatic closure law to identify the effect of charter school closure on the achievement of students attending these schools at the time they were identified for required closure. The specific metric providing the identifying variation is a school’s score on Ohio’s value-added “gain index.” Conditional on failing to meet requirements on other performance metrics, a charter school is required to close if its gain index score in math or reading results in it being classified as having “below expected gains.” We employ regression discontinuity (RD) techniques and individual-level data from over 6000 students attending 36 charter schools at risk of closure on the basis of their gain index scores to estimate the achievement effects of closure. We estimate these effects up to three years after a school was informed that it would be required to shut down within one year.

performing charter schools for which there is substantial excess demand. However, there are also some very low-quality charter schools. Recent work by CREDO (2013, 2015) reveals the significant variation in charter school quality across the country.

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¹ Charter schools were initially conceived in the early 1990s as a set of public schools that would be free from many of the rules and regulations governing traditional public schools. This autonomy was intended to promote innovations that could then be imported back to traditional public schools. In this conception, charter schools were intended as a complement, rather than an alternative, to traditional public schools. In practice, however, charter schools are often seen as competition for traditional public schools, and there is often considerable tension between the two sectors. Likely due in part to the increased autonomy of charter schools, the quality of these schools is highly heterogeneous. There are a number of very high-

The results indicate that requiring poor-performing schools to close has a positive effect on the achievement of their students. Three years after schools are identified for closure—and two years after schools are required to shut down—students from closing schools post reading and math scores that are typically between 0.2 and 0.3 standard deviations higher than those of students whose schools just avoid mandatory closure. The analysis also indicates that these gains are associated with displaced students ending up in higher-quality schools as measured by school value-added in math and reading. Finally, using mandatory closure as an instrument for student exit from our sample of charter schools, we show that exiting these low-performing schools leads to substantial achievement gains—often estimated to be in the range of 0.5 standard deviations, although these estimates are quite imprecise.

The analysis is relevant to several policy issues and related scholarly literatures. First and foremost, the analysis contributes to debates surrounding the optimal approach to charter school accountability. The initial charter school model assumed that oversight from authorizing organizations, together with the choice and competition inherent in the model, would ensure a charter sector with schools of consistently high quality. Although recent evidence indicates that this approach to accountability may generate quality improvements over the long term (Baude et al. 2014), charter schools in many states have been characterized by highly variable quality. Importantly, the state on which we focus, Ohio, has been singled out for its lack of charter school oversight and the poor performance of its charter sector (O'Donnell, 2015). Charter sectors such as Ohio's have contributed to a view that markets themselves may provide an inadequate mechanism for ensuring charter school quality and that state regulatory interventions may be necessary. Consistent with some other recent studies focused on private school markets (e.g. Witte et al. 2014; Carlson, Cowen, and Fleming 2014) our results indicate that state interventions in charter school markets can generate substantial achievement benefits.

Second, the analysis contributes to a body of research estimating the impact of charter school attendance on student achievement. The most convincing studies exploit admissions lotteries at oversubscribed schools to identify the effect of charter school attendance on student achievement (see Abdulkadiroglu et al., 2009, 2011; Angrist et al. 2010, 2012; Angrist, Pathak, and Walters 2013; Curto and Fryer 2014; Dobbie and Fryer 2011, 2013; Gleason et al., 2010; Hoxby, Muraka, and Kang, 2009). These studies often focus on high-performing charter sectors such as those in New York City or Boston (see Angrist, Pathak, and Walters 2013; CREDO, 2015) and find positive effects that are sometimes substantial in magnitude. For example, Abdulkadiroglu et al. (2011) found that attending Boston charter schools, as opposed to traditional public schools, resulted in annual achievement gains of up to 0.4 standard deviations.

Like admissions lotteries, the arbitrary performance requirement in Ohio's automatic closure law provides an exogenous source of variation in student attendance at a particular set of charter schools. Unlike lottery-based studies, however, the set of charter schools for which the closure law provides such variation consists of the lowest performing schools in a state with a relatively poor-performing charter sector.² Thus, whereas the lottery-based estimates likely represent an upper bound of charter school effectiveness, we generate among the first plausible lower-bound estimates of charter school effectiveness as measured by student

achievement. Our results suggest that the negative impact of attending very poor-performing charter schools in Ohio is comparable in magnitude to the positive impact of attending oversubscribed charter schools in some other contexts (see Angrist, Pathak, and Walters, 2013).

Third, our analysis contributes to a small literature on school closure, which generally finds that closure ultimately has a negligible impact on the achievement of the students it displaces (e.g., see Brummet, 2014; de la Torre and Gwynne, 2009; Engberg et al., 2012; Young et al., 2009). These few studies, however, employ difference-in-differences designs that require arguably stronger assumptions to identify causal effects than our RD approach. In addition, these existing studies focus exclusively on the closure of traditional public schools. The impact of closure might differ in the charter sector, where closure is much more commonplace.³ The impact of closure is also likely to differ in our study of Ohio's automatic closure law because closure decisions are formally tied to school "value added" quality metrics. Given that the closed schools in our sample are among the lowest performing in the state, the subsequent schooling options for students displaced by closure should be of relatively higher quality. This increases the likelihood that improved school quality can compensate for the negative effects of closure-induced student mobility (e.g., Brummet, 2014; Engberg et al., 2012). Indeed, the results of our analysis are consistent with the literature on the value-added measurement of school quality (e.g. Deming et al., 2014; Deming, 2014), as they suggest that the superior quality of students' new schools may explain the estimated educational benefits of closure.

The paper proceeds as follows. Section 2 provides background on Ohio charter schools and the state's automatic charter school closure law as it applied during the years of this study. Section 3 describes our research design. Section 4 describes our data and provides some descriptive analyses of trajectories in student achievement and school quality. Section 5 describes the RD analysis, including the running variable, the statistical models, and the results. Finally, we offer some concluding thoughts in Section 6.

2. Ohio charter schools

2.1. Overview

Ohio has approximately 400 charter schools that serve around 7% of public school students in the state. As in the rest of the country, these schools are publicly funded, non-sectarian, and enjoy more freedoms than traditional public schools when it comes to designing their curricula, managing their human resources, and developing a school environment. Compared to traditional public schools in Ohio, charter schools disproportionately serve minority, low-achieving, and impoverished students from urban communities (CREDO 2014).⁴

Historically, a defining feature of Ohio's charter sector was a lack of regulation. For many years there was little oversight of charter school authorizers, including few restrictions on the entities allowed to serve as authorizers and the number of schools a given organization could authorize.⁵ During this period of lax

³ Indeed, 200 charter schools closed in 2012–13 alone—about 3.4 percent of all charter schools in operation during that year (NAPCS, 2015).

⁴ Ohio law allows new, "start-up" charter schools to open in any school district that the state has identified as "challenged," which includes the state's largest urban districts and those with poor performance on measures of student achievement. Additionally, any school district in the state can convert one of its traditional public schools to a charter school, but there are few such "conversion" charter schools.

⁵ The entities permitted to authorize charter schools vary across states, but the two most common entities are local school boards and state departments of education (Carlson, Laverty, and Witte 2012). Ohio is one of a small number of states that also allow nonprofit organizations to authorize charter schools. Studies estimating

² Ohio has low-performing charter schools compared to Boston and New York which have served as the context for several charter school lottery studies. It is worth noting, however, that there are charter sectors that may be worse, such as those in Texas and Nevada (see CREDO, 2013; CREDO 2015). Nevertheless, the schools on which we focus—the worst performing schools in Ohio—are almost surely near the bottom of the national distribution.

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