

Charter School Governance and Student Outcomes

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Introduction

Recent years have brought a surge in governance-based education reforms to cities and states across the country. Mayors have taken control of public school systems in several of the nation's largest and most visible cities, including New York City, Washington, D.C., Chicago, Boston, and Cleveland. The No Child Left Behind legislation contains provisions requiring management to be completely restructured in schools and districts that have failed to make adequate yearly progress for five consecutive years. Legislatures in many states have authorized a wide variety of institutions—including universities, non-profit organizations, and city councils—to authorize and operate public charter schools. While these reforms differ in many important respects, they are all supported by a large body of work describing how governance structures can affect the operation and management of our nation's schools (Viteritti 2009; Wong et al. 2007; Henig 2009).

Of course, the primary goal of any education reform is not to change school operation and management procedures, but to improve student outcomes. However, for both empirical and theoretical reasons, we know relatively little about the relationship between governance-based education reforms and student outcomes. Empirically, it is difficult to design research that makes a direct connection between school governance and student outcomes (Viteritti 2009). Theoretically, school governance is only one of dozens of factors that may affect student outcomes, and it is relatively distant to the lives of students. As a result, theoretical connections between governance structure and student outcomes are more tenuous than the connections between governance structure and more proximal outcomes, such as school operation and management procedures. This paper explicitly addresses these difficulties in its attempt to evaluate the effects of one important governance-based educational reform on student outcomes.

Specifically, this paper examines the effect of policies that extend the authority to authorize and operate charter schools to a variety of institutions—including universities, non-profit organizations, and state departments of education—on student achievement and attainment.

We perform this analysis using data from Minnesota, a state that permits four distinct types of charter school authorizers—non-profit organizations, school boards of a local or intermediate school district, postsecondary institutions, and the Minnesota Department of Education. In addition to specifying the authorizing institution of each charter school, the Minnesota Department of Education provides data on achievement, attainment, demographic composition, and a number of additional topics. Such data are available over multiple years, a feature that allows us to construct a panel and employ modeling techniques that account for unobserved school heterogeneity. To further explore the relationship between student outcomes and authorizing type, our analysis exploits the fact that a number of Minnesota charter schools switched sponsors during our period of observation. To provide a brief preview of our results, we find authorizing type to have no statistically significant effect on student achievement. There is some evidence of variation in graduation rates by type of authorizing institution, but there is a good deal of uncertainty associated with these results and any conclusions that can be drawn on this outcome are quite tenuous. The analyses presented in this paper bring evidence to bear on several important policy topics, especially the ongoing debate over extending chartering authority to institutions other than local school districts.

This paper proceeds by first exploring the theoretical literature on school governance. This section describes how school governance might affect student outcomes, but also considers why it might not. It also considers existing empirical evidence regarding the effects of governance-based reforms on student outcomes. The paper then moves on to outline the specific

governance-based reform evaluated in this paper—the expansion of chartering authority to a variety of institutions. It briefly reviews the various authorizing structures that are in place throughout the country, with a specific focus on the authorizing situation in Minnesota. Subsequently, we describe our data and outline our analytical framework. Finally, we present our results and discuss the implications of our findings.

How School Governance Structures Can Affect Student Outcomes, Why They Might Not, and the Empirics

The most powerful arguments supporting a causal connection between school governance and student outcomes cite the ability of governance structures to pave the way for innovation and positive systemic change (Henig 2009; Viteritti 2009; Wong 2005). Unlike most education reforms, governance-based reforms rarely have a perceptible impact on students' school and classroom experiences. Instead, by creating the conditions necessary to implement changes that will have a direct bearing on students' lives, governance-based reforms are theorized to effect student outcomes in a more indirect manner. Jeffrey Henig summarizes the theoretical path through which governance-based reforms may impact student outcomes when he writes "If governance arrangements are relevant it is because of the things they either facilitate or undermine...what matters are vision, capacity, and sustained political support" (Henig 2009, p. 42). Echoing this theme, Joseph P. Viteritti states that "Structure is not a solution; it is an enabler" (Viteritti 2009, p. 9).

Applied to the context of the reform evaluated in this paper, expanding chartering authority beyond local school districts enables alternative institutions to bring different visions and capacities to the operation of charter schools. Under reforms that expand chartering authority, a university could authorize and operate a charter school that uses an innovative

curriculum to teach reading, math, or science. Similarly, a nonprofit organization could open a school that operated around a particular theme, such as environmentalism or the performing arts. In short, institutions would be given the autonomy to execute their vision for a school—a vision that they undoubtedly believe would enhance student outcomes—as long as they abided by the accompanying accountability requirements.¹ In schools that succeeded in generating positive results, the proximal cause of the improved student outcomes would likely be identified as the particular vision, intervention, or curriculum employed in the charter school. Less visible, but no less important, in the generation of the enhanced student outcomes is the governance-based reform that made implementation of the vision, intervention, or curriculum possible.

While the preceding account describes a plausible path by which governance-based reforms may lead to improved student outcomes, the implementation of such policy changes certainly does not guarantee improvements in student achievement or attainment. Governance-based reforms—including the expansion of chartering authority—can facilitate positive systemic change, but at the end of the day it is the responsibility of a wide variety of institutions and individuals to take advantage of the autonomy and implement a vision that results in enhanced student outcomes. Jeffrey Henig describes the limitations of governance-based reforms when he writes, "Governance structures do not hire, pay or train teachers. They do not make sure children go to school ready to learn. They do not devise curriculums, draw up lesson plans, look children in the eye and understand what motivates them, or stand in front of a class and guide it through the learning process. (Henig, 2009, page 42)." In short, the impacts of governance structure may be so far removed from children's direct educational experiences that they fail to exert a discernable effect on student outcomes.

¹ The exchange of autonomy for accountability has been identified as one of three main pillars of support for the original charter school concept, as well as its subsequent expansion (Schneider and Buckley 2007).

Given the possible, but not predetermined, improvements in student outcomes that can be achieved through governance-based reforms, the results of empirical investigations into the relationships between governance structure and observable student outcomes take on an additional measure of importance. Wong (2005) proposes a framework for understanding school governance arrangements. The framework identifies four models of governance structure that are most commonly included in governance-based reforms, and it provides a useful starting point for reviewing the empirical results on the relationship between governance structure and student outcomes. The four governance models Wong presents are (i) state-funded choice initiatives (charter schools, vouchers); (ii) privately funded choice initiatives; (iii) state or city takeover of districts or schools; and (iv) contracted service providers (education management organizations). We discuss the empirical evidence regarding the effect of each of these governance structures on student outcomes in turn.

Substantial literatures exist on the effects of charter schools and private school vouchers—the two most visible state-funded choice initiatives—on student achievement. The charter school literature, which is most pertinent to the current study, is decidedly mixed. Hill, Angel, and Christensen (2006) illustrate the inconclusive nature of the literature in their comprehensive review of all charter achievement studies conducted between 2000 and 2006. Of the 35 studies they identify, 15 return positive results, 10 present neutral or mixed results, and 10 find charter schools to have a negative effect. The findings of these studies are insensitive to the rigor of the methodology employed. Studies conducted since the publications of Hill et al.'s review have been similarly mixed, with some studies concluding that charter schools are having a favorable impact on achievement (Witte et al. 2007), others presenting evidence of negative

effects (Braun, Jenkins, and Grigg 2006; Bifulco and Ladd 2006), and still others reaching mixed conclusions (Sass 2006).

Analyses into the effects of private school voucher programs—both state-funded and privately supported—also reach divergent conclusions. Several studies exploit the fact that lotteries are often used to allocate vouchers, and Cowen (2010) notes that these studies often find voucher receipt to have a small, positive effect on achievement (Barnard, et al. 2003; Howell, et al. 2002; Peterson, Howell and Greene 1999; Wolf, et al. 2009). However, these gains are often present only for certain subjects or specific demographic subgroups. Other lottery-based analyses find no evidence of a positive effect of voucher receipt (Krueger and Zhu 2004). Observational studies conducted on some of the well-known state-funded voucher programs—such as those in Cleveland and Milwaukee—have also yielded mixed results (Rouse 1998; Witte 2000).

Empirical work on the effects of state or city takeovers is less prevalent. As of 2005, 23 states had passed legislation allowing them to take over academically bankrupt districts, but few states have actually invoked this statute (CCSRI, 2005). As a result, relatively little research examines the relationship between state takeover and student achievement. The little research available suggests more gains in central offices than classrooms (Ziebarth 1999; Kirst, 2002). A somewhat larger number of studies consider the effects of mayoral takeover of failing schools (Wong and Shen 2002; Cuban and Usdan, 2002; Kirst 2002; Wong et al. 2007; Henig 2009; Wong 2009). These studies focus on a range of issues and, like the literature on state takeover, report a positive relationship between takeover and financial management (Ziebarth 2002, Seder 2000, Wong and Shen 2002). But again, empirical work on the relationship between mayoral control and student achievement is more limited. Results from the most rigorous analysis of the

effects of mayoral takeover indicate that the reform has a small, positive effect on student achievement (Wong and Shen 2007; Wong 2009). Other, less sophisticated, analyses find no evidence of a positive effect (Henig 2009).

Like the literatures on other governance-based reforms, analyses of the relationship between contracted service providers and student achievement outcomes come to a variety of conclusions. Some report slightly positive results, with students in EMO-managed schools attaining higher test scores than students in schools that continue to be run by traditional district arrangements (Gill et al. 2006; Garcia et al. 2009); others fail to find evidence for achievement gains under contracted providers (Ascher 1996, Richards 1996, GAO, 1996).

Overall, both the theoretical and empirical literatures suggest that it is possible for governance-based reforms to result in improved student outcomes, but such improvements are not predetermined. The next section describes the specific reform we evaluate in this paper—the expansion of charter school authorizing authority—and considers the theoretical and empirical support for the reform. To date, no rigorous empirical evaluation of this governance-based policy reform has been conducted.

Expanding Charter School Authorizing Institutions

The Status and Evolution of the National Authorizing Environment

Over the past fifteen years, charter schools have firmly established their presence in the American educational landscape. Since the opening of City Academy in St. Paul, Minnesota in the fall of 1992, charter schools have expanded rapidly across the country, and currently educate over 1.4 million students in 4,600 schools across 40 states and the District of Columbia (Center for Education Reform 2009). As charter schools have expanded, the number of charter school governance models and administrative structures permitted by state laws have also grown. In many states, local school districts were once the predominant, and often sole, authorizer and

operator of charter schools. Today, charter schools are sponsored by entities as diverse as nonprofit organizations, postsecondary institutions, state boards of education, and independent state charter school boards (Teske, Schneider, and Cassese 2005; Hassel, Ziebarth, and Steiner 2005). Table 1 details the various types of authorizers and the number of states in which each authorizing type possessed at least some role in the chartering process as of the 2004-05 school year.

[Insert table 1 about here]

Table 1 illustrates that local school boards are the most common charter school authorizer; they play some role in the charter school authorization process in 39 of the 41 states that have passed charter school legislation.² Only in New Jersey and Hawaii are local school boards explicitly excluded from authorizing charter schools. State boards of education are involved in the chartering process in 35 states, but their role is often limited to adjudicating appeals from charter schools whose applications were rejected by other authorizers. Postsecondary institutions are permitted to authorize charter schools in nine states, independent state chartering boards exist in seven states, and nonprofit organizations are allowed to charter schools in two states—Minnesota and Ohio. Finally, Wisconsin state law allows the Milwaukee Common Council to issue charters, and Indiana has passed legislation allowing the mayor of Indianapolis to authorize charter schools. Clearly, charter schools around the country currently exist in extremely diverse authorizing environments.

Diversity in authorizing environments has not always been a feature of the charter school landscape. In nearly every early-adopting charter state—including Minnesota, California, Wisconsin and Colorado—local school districts were initially identified as the sole legal

² Including the District of Columbia.

authorizer of charter schools (Schroeder 2004; Smith 2003; Ziebarth 2005; Mead 2002). Initial charter legislation contained such restrictive measures because of the unconventional nature of the charter school concept. In the early 1990s, the concept of charter schools was quite foreign to state legislators, and the idea of allowing schools to be authorized and operated by entities other than local school boards was nearly unthinkable. As legislators and policymakers became more familiar with the charter school concept, legislation was passed in many states to expand the number and types of institutions that were allowed to authorize schools.

Motivating the expansion of chartering authority was the theory that underlies most governance-based reforms: alternative authorizing institutions could bring different, and perhaps more effective, visions and capacities to the operation of charter schools. Universities could authorize schools that employ innovative curricula; nonprofit organizations could organize schools around a specific theme or subject area; government entities—mayors, city councils—could identify individuals that could provide effective leadership in difficult situations. Policymakers believed that allowing a variety of institutions to implement their visions and operate with different capacities had the potential to improve student outcomes. In fact, it was commonly argued that if charter schools were going to reach their full potential, they would need to be allowed to operate outside of the realm of local school districts (Bierlein, Palmer, and Gau 2003; Hess, Maranto, and Milliman 2001).

However, the expansion of chartering authority is subject to the same theoretical critique as other governance-based reforms. Specifically, the reform may be so far removed from the daily educational experiences of schools that it fails to have any discernable effect on observed student outcomes. As a result, it is important to determine the effects of these reforms empirically. Unfortunately, despite a fairly well-developed literature on charter school

authorizers,³ no existing study conducts a rigorous and systematic investigation of the effect of authorizing entity on specific student outcomes, such as achievement and attainment.⁴ Having described the national authorizing environment, its evolution and expansion over time, and the theoretical and empirical support for policies expanding chartering authority, we now turn to describe the environment in Minnesota, the state that serves as the basis for our empirical analysis.

The Authorizing Environment in Minnesota

Our analysis of the relationship between charter school authorizing type and student outcomes employs data from Minnesota, a state that was chosen for three main reasons. First, as stated in the introduction of our paper, the authorizing environment in Minnesota is quite diverse, with four distinct types of authorizing entities—non-profit organizations, school boards of a local or intermediate school district, postsecondary institutions, and the Minnesota Department of Education (MDE). This diversity puts Minnesota in position to be broadly representative of the charter school authorizing options available across the country. Second, Minnesota has a relatively strong charter school tradition; the state was the first to pass charter school legislation and nearly 200 charters have been granted since the passage of that legislation in 1991. The history, breadth, and relative stability of the charter sector in Minnesota lend themselves nicely to an empirical analysis of effects that have occurred within charter schools. Third, high-quality data on all topics necessary to analyze the effect of authorizing type on student outcomes is

³ Studies regarding the role of authorizers in the chartering process exhibit substantial diversity in purpose. Some analyses explore and describe the practices and regulatory styles of authorizers and assess the potential advantages and disadvantages associated with each entity (Bulkley 1999; Vergari 2000; Hassel, Ziebarth, and Steiner 2005; Teske, Schneider, and Cassese 2005). Other analyses examine the extent to which, through mechanisms such as charter revocation, authorizers hold charter schools accountable for outcomes (Bulkley 2001; Hassel and Bardorff 2004).

⁴ Palmer and Gau (2005) present cross-tabulations of test scores by authorizing type, but the analysis does not control for any other factors that might affect achievement, such as the demographic characteristics of the student population. As a result, it is difficult to draw any causal conclusions from the analysis.

available over a substantial period of time for Minnesota. Taken together, these factors make Minnesota an optimal setting for evaluating the effects of expanding chartering authority on student outcomes.

As noted above, the evolution of the chartering environment in Minnesota mirrors the evolution of the national environment almost perfectly. The initial charter legislation passed by the Minnesota state legislature in 1991 identified local school districts as the sole legal authorizers. Over the years, that initial legislation has been amended several times to expand authorizing authority the Minnesota Department of Education⁵ (1993), public postsecondary institutions (1995), private postsecondary institutions (1997), and nonprofit institutions (2000) (Schroeder 2004).

Figures 1 and 2 illustrate the number and proportion, respectively, of charter schools in operation by authorizing type from 1992 to 2008. The figures reveal a number of interesting trends. Figure 1 shows that school districts had a near monopoly in the authorizing market until about 1998, when postsecondary institutions began to sponsor a consequential number of schools. Nonprofit institutions emerged onto the authorizing landscape in the 2001-02 school year and quickly became the predominant authorizer of charter schools. Since then, the number of charter schools sponsored by local school districts and postsecondary institutions has remained relatively flat. Figure 2 presents the data from a different perspective. It illustrates the percentage of charter schools sponsored by each type of authorizer across time; the growth and decline in the relative popularity of nonprofit institutions and school districts as authorizers, respectively, is quite apparent.

[Insert figures 1 and 2 about here]

⁵ The Minnesota Department of Education is only permitted to authorize charter schools if the school's initial application was denied by another authorizing entity and the school appeals that decision to the Minnesota Department of Education.

Having outlined the authorizing landscape in Minnesota, we now turn to briefly describe the role of authorizers in the start-up and operation of charter schools. The statutory requirements for charter school authorizers are broad; they must “monitor and evaluate the fiscal and student performance of the school” (Minn. Stats 124D.10, subd 15). However, the actual role of authorizers in the start-up and operation of a school is quite complex in nature, and requires a number of actions and responsibilities (Education Evolving 2004). First, after an organization has been recognized as an approved authorizer by the Minnesota Department of Education, the authorizer considers applications from charter school operators. These applications may either be operator-designed (the operators approach the authorizer) or authorizer-designed (the authorizer solicits proposals from operators). After receiving a proposal, the authorizer must review it and decide whether to grant the school a charter. If the decision is made to grant a charter, the authorizer seeks approval of the charter from the Department of Education and moves to develop a contract with the chartered school.⁶ The authorizer is then responsible for assisting the school in implementing and meeting the requirements of the contract, and to provide oversight and review the performance of the school. After the expiration of the initial charter, the authorizer determines whether to renew the charter of the school. Clearly, authorizers can play a vital role in determining the ultimate success or failure of a charter school.

Given their roles and responsibilities, it is easy to see how authorizing institutions’ vision, capacity, and political support—institutional characteristics that Henig (2009) identifies

⁶ The contract lays out the expectations for both the school and the authorizer. It delineates the requirements for the school under both state and federal law. It also contains any additional requirements that the authorizer will require the school to fulfill and it specifies the expectations for the initial year of operation. Furthermore, the contract will contain provisions regarding the contents of the annual report that the school will be required to provide. Finally, it details the oversight plan of the authorizer and describes the amount and types of assistance that the authorizer will provide to the school.

as being important from a governance perspective—could affect the culture and operations of a school, which could in turn impact student outcomes. Authorizers with clear vision may design and approve charters for attractive, innovative, and effective schools that succeed in improving student outcomes. Authorizers with high levels of capacity can provide greater levels of support and oversight to the charter schools they have sponsored. Authorizers with solid political support can afford to make and implement difficult, but necessary, decisions such as reorganizing the leadership of a school or even revoking the charter of a school that is failing to meet the terms of its contract. Given the potential importance of these institutional characteristics, it is instructive to briefly assess the four legal authorizing entities in Minnesota—local school districts, the MDE, postsecondary institutions, and nonprofit organizations—from the perspectives of vision, capacity, and sustained political support. Informed by the more general work of Hassel, Ziebarth, and Steiner (2005) and Teske, Schneider, and Cassese (2005), our assessment reveals significant variation in vision, capacity, and sustained political support.

School districts, initially the sole authorizer of charter schools, have been criticized as charter school authorizers for lacking vision and the will to help charter schools succeed (Teske, Schneider, and Cassese 2005). Many school districts view charter schools as a nuisance and competitive threat, and oftentimes see little incentive to expend energy and resources that will assist in the success of a charter school. While school districts may lack vision and will, they generally have the capacity to oversee charter schools; school districts know how to run schools, and they can bring that knowledge to the operation of charter schools. Similarly, school districts usually have strong political support. Even when individuals express displeasure with the state of education in general, they are usually supportive of and satisfied with their local school.

As authorizers, departments of education possess a mix of vision, capacity, and political support that is similar, but not identical to that of school districts. Specifically, departments of education often fail to have great vision; these institutions tend to focus on compliance and adherence to protocol rather than innovation and performance. Departments of education undoubtedly have capacity, however, and often provide the most rigorous oversight and assistance to the schools they charter. In addition, these institutions have an intimate knowledge of state needs, and oftentimes have the resources to meet these needs. Finally, departments of education have credibility with the public and generally possess enough political support to make necessary decisions regarding charter school governance.

Universities, the first non-governmental entity to be granted chartering authority in Minnesota, possess a very different combination of vision, capacity, and political support than school districts or departments of education. Universities are often cited as having strong vision and connection to their mission while possessing credibility with the public and policymakers (Hassel, Ziebarth, and Steiner 2005). In addition, these institutions often have personnel with a large amount of experience in the field of education; they know what works and what does not work. While these personnel are quite knowledgeable, they often have large demands on their time and may not be able to devote full attention to oversight of the schools they have chartered.

Nonprofit organizations are the most recent addition to the list of legal authorizing entities in Minnesota. Like universities, nonprofit organizations are often extolled for having a strong connection to their mission (Hassel, Ziebarth, and Steiner 2005); there is little doubt that they generally have good vision and unparalleled knowledge of the needs of the population they serve. More questionable, however, is their capacity. While Minnesota law requires nonprofit authorizers to possess at least \$2 million in assets, generating resources sufficient to be a high-

quality authorizer is still a difficult proposition for many nonprofit organizations. In addition, while nonprofits have experience running organizations, they are often inexperienced in running of schools, which are undeniably distinctive institutions. Finally, compared to the other authorizing institutions, nonprofits do not have as much credibility or public accountability; they do not have a well of political support upon which they can draw. Table 2 summarizes the characteristics of the four types of authorizing institutions.

[Insert table 2 about here]

The preceding paragraphs make clear that the four authorizing institutions in Minnesota possess unique mixes of vision, capacity, and political support. As a result, it is difficult to develop *a priori* hypotheses about the association between authorizing type and student achievement and attainment; the relationship will need to be determined empirically. In the next section we describe the data used to analyze this issue.

Data

Examining the effects of authorizing type on student outcomes requires data on three main topics: the authorizing institution of each charter school; student outcomes, specifically student achievement and attainment; and other student and school characteristics that may be correlated with the student outcomes being examined. Such data requirements are not trivial, but the Minnesota Department of Education collects, maintains, and disseminates information on each of these topics.⁷ Records of the authorizing institution of each charter school were obtained from a file maintained by MDE that details the history of each school that had been granted a

⁷ We would especially like to thank David Hartman at the Minnesota Department of Education for assisting us in our data collection.

charter since the passage of the authorizing legislation in 1991.⁸ This file contained the name of the charter school, its current authorizer, the year the authorizer chartered its first school, the date of state approval of the charter, the school year in which the charter school opened, the closure date (if applicable), and a list of any previous authorizers and the years during which they served as the sponsor. This file served as the base of the dataset we created specifically for this analysis.

The Minnesota Department of Education publishes a substantial amount of data on student outcomes, especially student achievement. The agency reports the results of several standardized assessments administered to student populations within the state.⁹ Our analysis uses data from Series I and Series II of the Minnesota Comprehensive Assessments (MCA). Minnesota has been administering the MCAs since the late 1990s, and the state currently uses the assessment to “measure student progress towards Minnesota’s academic standards and meet the requirements of No Child Left Behind”.¹⁰

Series II of the MCAs has been in place since the 2005-06 school year. Assessments in both reading and mathematics are administered annually to students in grades 3-8, 10, and 11.¹¹ Prior to 2005-06, the state administered Series I of the MCAs. Assessments in both reading and mathematics were administered annually to students in grades 3 and 5. Reading and mathematics assessments for students in grades 7 and 10 were also administered during the

⁸ The file contains data on 199 schools in total. Eight schools were granted charters but never opened; these schools are excluded from our analysis.

⁹ See http://education.state.mn.us/MDE/Data/Data_Downloads/Accountability_Data/index.html for a full list of the assessments for which data are available.

¹⁰ http://education.state.mn.us/MDE/Accountability_Programs/Assessment_and_Testing/Assessments/MCA/index.html

¹¹ A science assessment is also administered as part of the MCA-II, but the addition of this subject is relatively recent, and is not included in our analysis.

2003-04 and 2004-05 school years. As a result, for each year from 1999-00 until 2008-09, our dataset contains test results for each grade within each charter school that was required to test students and report the resulting data.

Unfortunately, Series I and II of the MCAs are scored on different scales. To account for the difference in scales, we transformed the scale scores into z-scores. To perform this transformation we first secured the statewide mean and standard deviation for each grade-subject for each school year from 1999-00 until 2008-09.¹² To calculate the z-score, we subtracted the appropriate statewide mean from the grade-subject score and then divided by the proper standard deviation. As a result of this transformation, all results from our analysis of the effect of authorizing institution on student achievement should be interpreted in standard deviation units.

In addition to providing detailed student achievement results, the MDE also reports several school-level measures of graduation rates. Our analysis employs the National Governor's Association Graduation Rate, which is a four-year on-time graduation rate that all 50 states have agreed to calculate and report. The rate is calculated by dividing the number of graduates in a given year by the total number of students in the cohort. The number of students in the cohort starts with the number of first-time 9th graders four years earlier and then adds and subtracts transfers to and from the cohort. The National Governor's Association Graduation Rate is generally lower than other measures—such as those used for AYP—because it is only calculated for on-time graduates and does not exclude any groups of students, specifically special education students or English Language Learners. Our dataset contains the NGA Graduation Rate measures from the 2002-03 school year through the 2006-07 school year; graduation rate

¹² We would like to thank George Henly at the Minnesota Department of Education for providing us with the statewide means and standard deviations for each grade-subject from 1999-00 until 2008-09.

data prior to the 2002-03 school year and after the 2006-07 school year are not currently available.¹³

Finally, for each of the years for which we have student outcome measures we also obtained school-level measures of demographics from the MDE. Specifically, our dataset contains school-level measures of enrollment, racial composition, gender composition, the percentage of students receiving free- and reduced-price lunch, the percentage of students who are English Language Learners, and the percentage of students receiving special education services. These demographic measures serve as important control variables in our analysis.

To provide a sense of the data, we present the average test scores, graduation rates, and demographic characteristics for charter schools authorized by school districts, the MDE, postsecondary institutions, and nonprofit organizations, respectively. The summary statistics, which are presented in table 3 below, indicate a great deal of diversity in the type of schools sponsored by each authorizing institution. Specifically, they illustrate that charter schools authorized by the MDE perform best on the MCA reading and math assessments; the average charter school authorized by the MDE scored less than two-tenths of a standard deviation below the state average for all public schools. However, it is also clear that schools authorized by the MDE are, on average, smaller and have a lower percentage of students who are minorities, eligible for free lunch, and have limited English proficiency. In short, the MDE seems to authorize schools with relatively advantaged student bodies. This is in stark contrast to the schools authorized by postsecondary institutions. These schools perform, on average, about three-quarters of a standard deviation below the state average, but have very disadvantaged

¹³ Schools with graduating cohorts consisting of less than 40 students are not required to report graduation rates.

populations; well over half of the students are eligible for free lunch, over 40 percent have limited English proficiency, and about 65 percent are racial minorities.

Charter schools authorized by school districts and nonprofit organizations have broadly similar test performance. The average performance for schools authorized by both of these institutions is a little more than half of a standard deviation below the state average. The characteristics of the student bodies are also broadly similar. Schools authorized by nonprofits have a slightly greater percentage of racial minorities and students eligible for free lunch than schools authorized by school districts. Schools authorized by nonprofits, however, have a student body with almost twice as large a proportion of students with limited English proficiency. These descriptive statistics illustrate the substantial diversity in student outcomes and demographic characteristics across the four types of authorizing institutions. The next section describes our strategy for determining whether differences in student outcomes across authorizing types persist when subjected to more rigorous analytical techniques.

[Insert table 3 about here]

Analytical Framework

Student Achievement

The structure of our dataset, a ten year panel where average student achievement in each grade-subject is nested within schools, lends itself to analysis using a multilevel framework. Such an approach has several advantages, primary among them the ability to partition, and model, variance at the various levels. In the case of this analysis, it allows the variance in average student achievement attributable to grade-subject factors to be separated from the variance attributable to factors at the school level. A related advantage involves the fact that the multilevel structure of our model accounts for the lack of complete independence among our

observations, thus estimating the correct standard errors (Gelman and Hill 2007). Our achievement results are based on the estimation of the model written below:

Level 1—Standardized grade-subject achievement:

$$\text{Standardized Achievement}_{ij} = \beta_{0j} + \beta_1 \mathbf{G}_{ij} + \beta_2 \mathbf{S}_{ij} + \beta_3 \mathbf{A}_{ij} + \beta_4 \mathbf{X}_{ij} + \beta_5 \mathbf{Y}_{ij} + \beta_6 \mathbf{W}_{ij} + \varepsilon_{ij}$$

Level 2—School:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \mathbf{O}_j + \rho_{0j}$$

In this model, i and j index grade-subjects and schools, respectively. At level one, average achievement in grade-subject i in school j is modeled as a function of an intercept, a vector of grade dummy variables \mathbf{G} , a vector of subject dummy variables \mathbf{S} , a vector of authorizing dummies \mathbf{A} , a vector of school-year specific school demographics \mathbf{X} , a vector of calendar year dummies \mathbf{Y} , a vector of dummy variables indicating whether schools switched authorizers \mathbf{W} , and a grade-subject error term ε . At level two, the level-one intercept, β_{0j} , is modeled as a function of the grand mean γ_{00} , a vector of dummies indicating the year in which the school opened \mathbf{O} , and a school-level random effect ρ .¹⁴

To expand on the specific contents of the model, the vector of grade dummies includes indicators for grades 3-8, and 10; grade 11 serves as the reference category. For the vector of subject dummies, reading serves as the reference category. We include indicator variables for the following three authorizers: school districts, nonprofit organizations, and postsecondary institutions; the coefficients on these variables can be interpreted relative to the MDE. The vector of school demographics, which vary by school year, include measures for enrollment, the percentage of students eligible for free lunch, the percentage of students receiving special

¹⁴ We estimate this model in Stata 11 with the “xtreg” command using a generalized least squares estimator with robust standard errors. We tested a number of other specifications as well, most notably a three-level model where standardized achievement was nested within school years, which were nested within schools. We decided to present results from the two-level model because the variation associated with the school year random effect was inconsequential. The results of other specifications, all of which are substantively similar to those presented in this paper, are available from the authors upon request.

education services, the proportion of students who are male, and the proportion of students who are non-white. With respect to the vector of school year dummies, the 2008-09 school year is the omitted category. Finally, over the time period we analyze, several charter schools went from being authorized by school districts or universities to being authorized by nonprofit organizations. To further investigate the effect of authorizing institutions on student achievement—and to mitigate endogeneity concerns—we include dummy variables that indicate the performance of these schools prior to their switch in authorizer and after their switch in authorizer. The coefficients on these variables can be interpreted relative to charter schools that never switched to a nonprofit authorizer during the period covered by our dataset.¹⁵

Graduation Rates

The model we use to examine the effect of authorizing type on graduation rates is very similar, but not identical, to the model of average achievement described above. The differences between the two models mainly stem from the fact that a different outcome is being measured, which necessitates a different set of predictors. We model the graduation rate outcome using a two level model with school years—and the accompanying graduation rate—nested within schools. This model can be expressed as follows:

Level 1—Yearly graduation rate

$$\text{Graduation Rate}_{ij} = \beta_{0j} + \beta_1 \mathbf{A}_{ij} + \beta_2 \mathbf{X}_{ij} + \beta_3 \mathbf{Y}_{ij} + \varepsilon_{ij}$$

Level 2—School:

$$\beta_{0j} = \gamma_{00} + \gamma_{01} \mathbf{O}_j + \rho_{0j}$$

In this model, i and j index school years and schools, respectively. As described earlier, the dependent variable is continuous in nature and measures the percentage of students who graduate four years after entry into ninth grade. At level one, the graduation rate for school year

¹⁵ The vast majority of these schools never switched authorizers at all.

i in school j is modeled as a function of an intercept, β_{0j} , a vector of authorizing dummies \mathbf{A} , a vector of school-year demographics \mathbf{X} , a vector of school years \mathbf{Y} , and a school-year error term ε . At level two, the level-one intercept is modeled as a function of a grand mean, γ_{00} , a variable measuring the age of the charter school O , and a school-level random effect, ρ . In this model, the \mathbf{A} , \mathbf{X} , and \mathbf{Y} vectors in the attainment model are identical in composition to the achievement model presented above. One notable change in the attainment model is the omission of the vector of switching variables. Due to the more limited number of years for which graduation rates are reported, there were not enough charter schools that switched authorizers to obtain a reliable estimate of the effect. As was the case with the achievement model, the attainment model is estimated via generalized least squares with robust standard errors.

Results

Student Achievement

Estimation of our model of student achievement returns a number of interesting results, which are presented in Table 4 below. First, the grade and subject controls have some intriguing features. All else equal, charter schools appear to be more effective at teaching reading than mathematics; in this model, scores on the mathematics assessments are about a tenth of a standard deviation lower than scores on the reading assessment and this difference is statistically significant. In addition, our model provides indications that charter schools are relatively more effective at teaching middle and high school students than elementary school students. Relative to achievement in grades 10 and 11, student achievement in grades 3-5 was about a tenth of a standard deviation lower. The reasons for the variation in achievement across subjects and grade levels is not clear, but it is undoubtedly interesting and worthy of further investigation.

Examining the coefficients on the school year dummy variables reveals evidence of a trend effect. Specifically, there is a positive linear trend in the performance of charter schools

from the 1999-00 school year through the 2008-09 school year. Substantively, this implies that, all else held constant, achievement in charter schools has improved—relative to average student achievement in Minnesota—over the ten school years contained in our dataset. This improvement is on the order of about two-tenths of a standard deviation, which is not inconsequential. This increase could be attributable to any number of factors, but we speculate that the increase in charter school achievement may be attributable to the maturation of the charter sector. As such schools become more established, they may be becoming better at identifying more effective methods of educating students. Similarly, the fact that charter schools are firmly established in the educational landscape may make them a relatively more attractive option for effective and innovative educators who may have previously remained in traditional public schools.

The variables measuring the demographic composition of schools operate in line with expectations and prior research. Specifically, the results demonstrate a negative, and statistically significant, relationship between average grade-subject achievement and two demographic measures: the proportion of students receiving special education services and the percentage of minorities in the student body. In addition to being statistically significant, these effects are substantively large as well. To provide an example, a school where minority students comprise 100 percent of the student body will perform about nine-tenths standard deviation below a school without any minority students, *ceteris paribus*. Schools with such variance in their demographic compositions are not uncommon in Minnesota. Many charter schools in the Twin Cities metropolitan area have large minority populations while the student bodies of rural charter schools are often overwhelmingly white. The substantive effect of special education students is similarly large; achievement in schools where 25 percent of the student body receives special

education services will be more than a quarter of a standard deviation below achievement in schools where no students receive such services.

Enrollment and the gender composition (percent male) of the student body exhibit positive relationships with student achievement, although the results are only marginally significant. The causal nature of the relationship between enrollment and achievement is not clear; it seems likely that the relationship could be driven by the fact that more parents choose to enroll their children in relatively effective schools, which would result in greater enrollments in high-quality schools.

Turning to our independent variable of interest, type of authorizer, it is clear that a charter school's authorizing institution does not have a statistically significant effect on student achievement. While the magnitude of the coefficient estimates for the authorizing dummy variables are not inconsequential—achievement in charter schools authorized by school districts is estimated to be about 0.15 standard deviations lower than achievement in charter schools authorized by the MDE—the relatively large standard errors associated with the point estimates prevents them from reaching statistical significance. The point estimates for nonprofit organizations and postsecondary institutions, which should be interpreted relative to the MDE, are -0.07 and -0.09, respectively. These results suggest that the variation in achievement within each authorizing type is rather substantial, which makes the detection of cross-authorizer effects difficult.

Our conclusions regarding the effects of authorizing type, or lack thereof, are bolstered by the results for the variables that indicate whether a charter school switched to a nonprofit authorizer. Relative to charter schools that never switched authorizers, the student achievement in schools that switched to a nonprofit authorizer was not statistically different, either before or

after the switch. Taken together, our results indicate that, after controlling for a variety of factors—especially the demographic composition of a school—the type of institution that authorizes a charter school has no statistically significant effect on student achievement. This finding has several important policy implications, which we discuss in greater depth at a later point in this paper.

[Insert table 4 about here]

Graduation Rates

The relatively low number of graduation rate observations—126 observations nested within 50 charter schools—renders the conclusions that we can draw from this analysis somewhat tenuous. The relatively small number of observations is attributable to two main factors. First, the majority of charter schools in Minnesota do not serve high school grade levels. Most charter schools serve elementary students, with a much smaller number serving middle and high school students. Second, charter schools that do serve high school grade levels are only required to report graduation rate measures if the graduating cohort contains at least 40 students. Many charter high schools serve substantially smaller enrollments than traditional public schools, and are thus exempt from graduation rate reporting requirements. As a result, our conclusions are likely to be generalizable only to the subset of charter high schools with enrollments in excess of 150 students.

With these caveats and words of caution in mind, we move on to examine the results of our analysis. We find only one of the variables in our model—the percent of the student body that is non-white—to be a significant predictor of graduation rates; the coefficient on this variable is -0.19. A number of additional measures are in the expected direction, but fail to reach conventional levels of statistical significance. For example, the variable measuring the

proportion of students receiving special education services displays a coefficient of -0.36 with a p-value of 0.140. While clearly not significant, the variable is in the expected direction and the magnitude of the point estimate is consequential.

The results provide some indication that the type of authorizing institution may have an effect on graduation rates, but firm conclusions on this topic are not warranted. Specifically, there are hints that charter schools authorized by nonprofit organizations have lower graduation rates than schools authorized by the Minnesota Department of Education, postsecondary institutions, and perhaps local school boards. Indeed, as the results in table 5 illustrate, the magnitude of the coefficients on these variables is substantial, but their large standard errors prevent them from being significant. Specifically, conditional on the covariates included in our model, graduation rates in schools authorized by nonprofit organizations are estimated to be nearly percentage 17 points lower than graduation rates in schools authorized by the MDE, about 8 percentage points lower than graduation rates in schools sponsored by postsecondary institutions, and approximately 6 points lower than graduation rates in schools authorized by local school districts. The p-value on the postsecondary institution authorizing variable is 0.116, but statistical differences between the other authorizing variables are nonexistent. While these results are suggestive of charter schools authorized by nonprofit institutions having lower graduation rates than charter schools authorized by other entities, it would be irresponsible to place much certainty on this conclusion. Clearly, additional research on this topic is warranted.

[Insert table 5 about here]

Policy Implications, Discussion, and Concluding Thoughts

This paper contributes to our understanding of the relationship between governance structures and student outcomes. It analyzes the effects of one governance-based reform—the expansion of charter school authorizing authority—on student outcomes, specifically student

achievement and attainment, using a multilevel modeling framework and rich data from Minnesota, a state with a diverse authorizing environment that is largely representative of the authorizing options available across the nation. Minnesota state law currently allows school boards of local and intermediate school districts, nonprofit organizations, postsecondary institutions, and the Minnesota Department of Education to authorize charter schools. The results of our analysis indicate that the type of institution that authorizes a charter school has no statistically significant effect on student achievement. There may be some effect on graduation rates, but these results are tenuous.

The results presented in this paper bring evidence to bear on policy debates that have been taking place in state legislatures and policymaking circles across the country. As table 1 illustrates, most states with charter school laws have relatively restrictive authorizing provisions; only 9 states allow postsecondary institutions to authorize charter schools and just Minnesota and Ohio permit nonprofit organizations as charter school authorizers. Among charter school supporters, there has been a movement to expand the number and type of institutions allowed to authorize charter schools (Bierlein, Palmer, and Gau 2003; Hess, Maranto, and Milliman 2001). While there are undoubtedly several factors to consider when deciding whether to expand chartering authority, this study suggests that such an expansion is unlikely to have a negative effect on student achievement. In fact, the point estimates in our model indicate that, if anything, allowing institutions other than local school districts to authorize charter school may have a slight positive effect. Permitting additional entities—particularly postsecondary institutions and nonprofit organizations—to authorize charter schools has the potential to promote a more diverse charter school landscape without sacrificing important goals, such as increasing student achievement.

In addition to being policy relevant, the results from our analysis are also germane to previous research on charter school governance. Specifically, the results are relevant to work that have been critical of local school boards as charter school authorizers (Teske, Schneider, and Cassese 2005; Bierlein, Palmer, and Gau 2003; Hess, Maranto, and Milliman 2001). Researchers that have examined local school districts as charter school authorizers have concluded that they fall short of being an ideal authorizer on many dimensions of performance. For instance, some evidence has been uncovered that school boards are hostile towards charter schools and authorize fewer schools as a result of the anticompetitive incentives they face (Teske, Schneider, and Cassese 2005). However, to date, no studies have examined whether charter schools authorized by school districts produce inferior student outcomes. This study provides suggestions that they may, but the magnitude of the point estimate is small and not statistically significant.

With respect to school governance more broadly, while our achievement results could be interpreted as evidence that all authorizing institutions are equally effective at educating students, they could also potentially be interpreted as evidence that the current structure of charter school governance is inadequate and lacks accountability. Perhaps there is no statistically significant relationship between student achievement and the type of authorizing institution because authorizers simply do not matter. As previous research on school governance structures has suggested, it could be the case that authorizers are too far removed from the day-to-day operation and oversight of the school to have any discernable effect (Henig 2009). Indeed, previous studies have noted that authorizers are often disconnected from the operation and administration of charter schools (Bulkley 2001; Bierlein, Palmer, and Gau 2003; Vergari 2000). Authorizers may have clear vision, high levels of capacity, and substantial political

support, but they may be so removed from students' daily educational experiences that these characteristics are not translated into better student outcomes. If this interpretation is accurate, it would suggest a need to further examine, and perhaps reconsider, the role of authorizers in the charter governance structure. Future research would do well to examine the quality of the charter school governance structures that are currently in place in states across the nation.

Nearly two decades after they were first introduced, charter schools are now firmly entrenched in the American educational landscape. Charter school policy debates in the 1990s and early 2000s were largely focused on the existence and expansion of charter schools. With that issue largely settled, issues of charter school governance, administration, and operation, along with their effects on student outcomes, now drive the dialogue in policymaking circles. By providing evidence-based conclusions about the relationship between charter school authorizing type and student outcomes, specifically student achievement and attainment, this paper speaks directly to the current dialogue, as well as the more general discussion of the effects of governance-based reforms. We hope that the results serve to inform policymakers as they revisit, amend, and revise current charter school policy.

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Tables and Figures

Table 1. Number of states with different types of charter school authorizers: 2004-05

Authorizer	Number of States
Local School Board	39
Independent State Charter Board	7
Postsecondary Education Institution	9
State Board of Education/Commissioner of Education	35
Mayor	1
City Council	1
Nonprofit Organizations	2
Regional School Districts	6

Source: Hassel, Ziebarth, and Steiner (2005)

Table 2. Institutional Characteristics of each Authorizing Entity

Authorizer	Vision	Capacity	Support
School districts	Little vision, innovation or flexibility. Hostility toward charter schools.	High capacity. Experience running schools. Familiar with achievement goals.	High levels of public and political support.
MDE	Focus on compliance rather than innovation or performance.	High capacity. Knowledge of state needs. May lack leadership stability.	Credibility with the public and high political support.
Postsecondary Institutions	Strong vision and connection to mission.	Previous knowledge and experience with K-12. Other demands on time – little onsite oversight.	Credibility with the public and lawmakers.
Nonprofits	Strong connection to mission.	Experience with managing organizations. Knowledge of needs of population. Experience with children. Difficult to secure funding.	Less credibility with the public. May lack political support.

Source: Hassel, Ziebarth, and Steiner (2005); Teske, Schneider, and Cassese (2005); Authors

Table 3. Charter school characteristics, by authorizing type: All available years

Characteristic	School District	MDE	University	Non-Profit
Average test score (z-score)	-0.59	-0.17	-0.77	-0.57
Average NGA graduation rate	47.0	65.1	49.8	38.6
Average enrollment	182.5	129.8	203.0	203.1
Average pct. minority	40.4	7.6	65.0	46.5
Average pct. special ed	16.8	14.5	13.1	15.8
Average pct. free lunch	38.8	21.5	57.1	45.6
Average pct. LEP	14.7	0.5	41.6	27.7

Table 4. Results of Multilevel Model Predicting Student Achievement: 1999-00 to 2008-09

Fixed Effect	Effect	Robust SE	P-Value
Math	-0.092	0.025	0.000
Grade 3	-0.109	0.070	0.119
Grade 4	-0.118	0.067	0.030
Grade 5	-0.142	0.065	0.081
Grade 6	-0.080	0.061	0.192
Grade 7	-0.079	0.061	0.192
Grade 8	-0.073	0.056	0.189
Grade 10	-0.011	0.040	0.779
University	-0.085	0.170	0.617
Nonprofit	-0.072	0.149	0.631
Local School District	-0.150	0.151	0.320
Switch to Nonprofit-Pre-switch	0.137	0.253	0.587
Switch to Nonprofit-Post-switch	0.071	0.247	0.774
1999-00	-0.240	0.083	0.004
2000-01	-0.287	0.067	0.000
2001-02	-0.192	0.063	0.002
2002-03	-0.063	0.047	0.182
2003-04	-0.154	0.044	0.000
2004-05	-0.100	0.036	0.005
2005-06	-0.072	0.026	0.006
2006-07	-0.045	0.022	0.043
2007-08	-0.029	0.019	0.118
Enrollment	-0.0001	0.00006	0.098
Percent Free Lunch	-0.001	0.001	0.300
Percent Special Education	-0.011	0.002	0.000
Percent Male	0.003	0.002	0.118
Percent Minority	-0.009	0.001	0.000
Constant	0.348	0.239	0.146
Random-Effects Parameter	Estimate		
Grade/Subject (Level 1)	0.348		
School (Level 2)	0.535		
Model Statistics			
Number of Observations	3539		
Number of Level 2 Groups	157		
R-squared within	0.0704		
R-squared between	0.3548		
R-squared overall	0.1622		

Note: Reading, Grade 11, the Minnesota Department of Education, Schools that never switch to a nonprofit authorizer, and School Year 2008-09 serve as the omitted categories for their respective vectors of dummy variables. Results for the vector of opening year dummies are not shown, but are available upon request.

Table 5. Results of Multilevel Model Predicting NGA Graduation Rate: 2002-03 to 2006-07

Fixed Effect	Effect	SE	P-Value
University	8.408	5.346	0.116
Local School District	6.365	6.042	0.292
MDE	17.184	17.132	0.316
2002-03	-6.783	9.737	0.486
2003-04	-2.764	4.899	0.573
2004-05	-3.295	2.575	0.201
2005-06	-2.127	2.060	0.302
Age of Charter	0.445	0.898	0.620
Enrollment	0.011	0.020	0.588
Percent Free Lunch	-0.089	0.096	0.355
Percent Special Education	-0.363	0.246	0.140
Percent Male	0.035	0.275	0.900
Percent Minority	-0.185	0.095	0.050
Constant	53.670	18.668	0.001
Random-Effects Parameter		Estimate	
Year (Level 1)	10.792		
School (Level 2)	19.511		
Model Statistics			
Number of Observations	126		
Number of Level 2 Groups	50		
R-squared within	0.0686		
R-squared between	0.1961		
R-squared overall	0.1940		

Note: Nonprofit Institutions and School Year 2006-07 serve as the omitted categories for their respective vectors of dummy variables.

Figure 1. Number of Charter Schools in Operation, by Authorizing Type

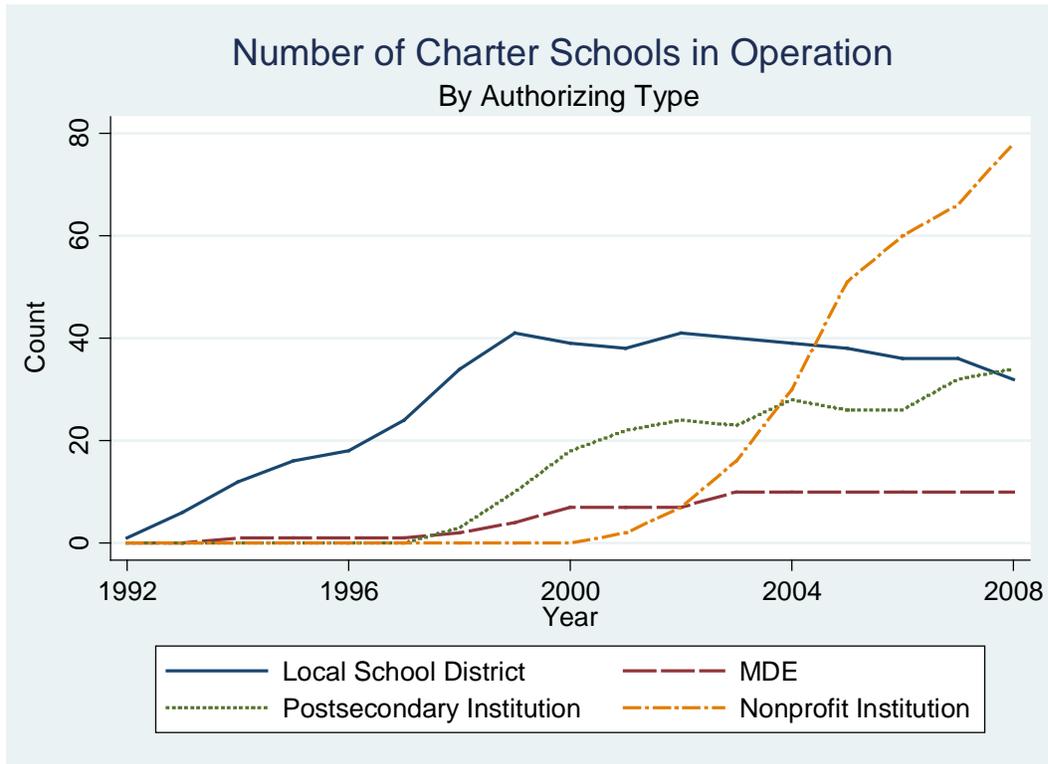


Figure 2. Percentage of Charter Schools in Operation, by Authorizing Type

