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## CHARTER SCHOOLS: RATIONALE & RESEARCH

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### EXECUTIVE SUMMARY

Since Minnesota passed its pioneering charter school legislation in 1992, charter schools have emerged as a popular way to provide public education beyond the traditional public school model. By 2007, 40 states and the District of Columbia had authorized charter schools, and more than 4,000 charter schools were serving more than 1,200,000 students. By design, charter schools are publicly funded, but independently operated. Charter schools are thus given a degree of autonomy from the school districts in which they are located, although state boards of education usually retain a degree of oversight that permits them to monitor the schools' progress and to shut down schools that are not performing well. Additionally, charter schools usually receive less state funding than traditional public schools, meaning that as long as they can

equal the performance of traditional public schools, charter schools are giving taxpayers more value for their education dollars.

Proponents of charters point to several features of the charter design as a positive step in expanding school choice. Charters provide free, publicly funded educational alternatives to traditional public schools, using competition as an incentive to encourage innovation, efficiency, and excellence in all public schools. Charter schools encourage parental involvement by expanding the array of educational options available to parents who cannot afford private schooling for their children. Charter schools have a double incentive to perform well, because their students' progress is monitored both by the government and by parents. Unlike traditional public schools, a charter school may be closed if it fails to attract students or if it fails to perform up to the government's standards. It

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may also be closed if it fails to perform up to state standards or those established by the school's sponsors.

The emergence of charter schools raises two important questions related to their impact on students' academic achievement. First, what does the evidence say about how charter schools affect the achievement of their students — are charter school students learning more or less than they would have in traditional public schools? Second, what does the evidence say about how competition from charter schools affects the performance of nearby traditional public schools? The answers to these two questions should provide insight as to the broader question of whether the charter school model can be considered a successful type of education reform.

## INTRODUCTION: THE SCHOOL CHOICE MOVEMENT AND CHARTER SCHOOLS

Nobel laureate economist Milton Friedman, in *Capitalism and Freedom* (1962), suggested that government could provide funds for schooling through the tax mechanism while not necessarily serving as the providing agent or producer of education services, and that this could be effectuated by a publicly funded scholarship program. This idea — public support and public funding of education but private provision, or mixed public and private provision — has been adopted for certain areas of state and local government services (e.g., airport management, city garbage collection,

state prisons), but has been widely opposed in the arena of primary and secondary education.

School choice policies are usually focused on two types of approaches: vouchers and charter schools. Vouchers are essentially scholarships that would offer public funding to a student — or, more likely, to a student's legal guardian, who could use those funds to pay for that student to attend the school of the guardian's choice. Friedman envisioned that all schools, including those currently operated as public schools and those currently operating as private schools, would compete for student enrollment and the accompanying funding. In essence, the distinction between private and public schools would disappear, with all schools able to receive public funds, and all schools competing to draw students. In situations of crowding or oversubscription, student allocation would have to be determined by lottery, or another randomized allocation mechanism.

Voucher policies have often floundered upon the rocks of religious schools. Many people seem to believe that an operational voucher system would necessarily involve parochial schools, because nonreligious private schools are too few (and, perhaps, too selective) to make a voucher program otherwise viable. The political debate has often been intense, and voucher opponents point to constitutional restrictions on state funding for religious schools. Even when state legislatures have approved various voucher programs, constitutional challenges in the courts have often led to the legislation being declared unconstitutional.

Although Friedman spent decades advocating vouchers as an essential institutional reform, and began a foundation devoted to promoting them, charter schools have emerged as the school choice policy with the strongest political support and greatest rate of adoption. Charter schools are public schools, and may be run as for-profit or as not-for-profit institutions. They may be operated by universities, and even by public school districts themselves.

Charter schools are created by state law, and the institutional design and regulations differ between authorizing states. During the past decade, charter schools have emerged as one of the primary school choice options in the United States. By 2007, 40 states and the District of Columbia had passed legislation authorizing charter schools, and more than 4,000 charter schools served more than 1,200,000 students.

Typically, charter schools receive most or all of the state per-pupil funding that a traditional public school would receive to cover operating expenditures. They do not, however, usually receive the same public funding for facilities that is available to traditional public schools. They are also typically exempt from a number of state regulations concerning curriculum requirements and teacher hiring and compensation. Many charter schools focus on a specific type of student, such as students that have performed poorly in traditional public schools, are in danger of dropping out, or are gifted and talented.

Many policy questions regarding the effects of charter schools must be addressed. Do charter schools have a positive or negative effect on student

achievement for the students that attend them? Are charter schools having any effect on the achievement of students who remain in traditional public schools? Which students are choosing to go to charter schools, and what is it like at the schools they left? Do any of these charter school effects vary by student ability or demographic characteristics? To what extent are the effects of charter schools a function of the laws governing charter formation and operation? This study will attempt to answer some of these questions.

## ECONOMIC PRINCIPLES AND EDUCATION POLICY

Many goods and services in the United States are provided through markets. Private firms produce the goods, market-determined prices govern payment from buyers to sellers, and prices guide the total allocation of society's scarce resources across goods and services, and ration individual consumption levels across consumers. For K–12 education services, however, the primary delivery system is totally a government affair. Public-sector decision-makers — such as school boards — decide on the level of education services to be provided, the costs of provision are funded through public tax revenues, and services are delivered by public-sector suppliers, i.e., public schools. Note that the institutional format for each of these three dimensions of the service delivery system can, in principle, be separated. The best system might involve a mixture of private and public institutional arrangements. For

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example, a public agency could choose a target level of services for its community, and taxes could be collected to cover the costs, but private firms could bid for the right to operate public schools, to become the supplier of schooling.

This type of contracting arrangement is already used to provide public services in several settings, including public funding of privately operated prisons. So, what is the economic rationale for the trilemma of government provision, government payment, and government production of education?

Economists appeal to two primary criteria, efficiency and equity, when evaluating the pluses and minuses of different institutional approaches. Using efficiency as grounds to justify government provision of education would first require that education be susceptible to one of two classic arguments for market failure: that education is a public good, or that education generates externalities. Thus, some would claim that education has elements of a public good — a good that will not be provided in efficient quantity by a free and competitive market. Others claim that education provides certain positive benefits apart from those that accrue to the recipient of educational services. These positive spillovers, or externalities, could arguably lead to under-provision of education if those services were left solely to private market provision.

A key issue in evaluating these claims is the degree to which education is a private good or a public good. In the abstract ideal, private goods are rivalrous and excludable, while public goods are non-rival and non-excludable. This distinction is important, because

economists consider the market to be the best provider of private goods, whereas an optimal provision of public goods requires collective action — often thought of as government action, utilizing the ability to coerce payment via taxes.

The term “rivalrous” refers to the property of a particular good or service that precludes it from being enjoyed by more than one person at a time. For private goods such as food and clothing, this concept seems clear: One person’s enjoyment of a hamburger precludes another person’s enjoyment of that same hamburger. Note that this has nothing directly to do with sharing; I can share half of my hamburger, but my enjoyment of half the hamburger precludes your enjoyment of that same half of the hamburger. Goods that are non-rivalrous, on the other hand, can be consumed at the same instant by many people, and any one person’s use of the good does not reduce the ability of others to enjoy it at the same time. Examples often given of non-rivalrous goods include street lights, lighthouses, and national defense. Many people can make use of the light from a street light or lighthouse, and each person’s use does not diminish the benefit that the light provides to other concurrent users. Likewise, many people benefit from national defense, and one person’s consumption does not diminish the safety benefits that national defense provides to other concurrent consumers.

“Excludability” refers to the ability to exclude a person, at low cost, from enjoying a good or service. A person can easily be excluded from enjoying a hamburger or an article of clothing. Alternatively, goods that are

non-excludable are goods for which assignment of meaningful individual property or ownership rights is prohibitively costly. Again, national defense may provide an example: It would be difficult to single out a household in the middle of a country and exclude it from the general benefit that all other households receive from national defense.

Most public finance economists see education as being a rivalrous good, because the marginal cost of educating an additional student is far from zero. Additional students require additional direct resources, e.g., physical space, and their presence also lowers the quality of education services delivered to the other students, by increasing classroom congestion. The marginal cost of an additional student is likely close to the average cost of provision, and situations in which marginal costs are at least as great as average costs are described as fully rivalrous (Starrett 1988). Education is also excludable. Children can be barred from any given classroom or school for basically zero resource cost. Private schools do this all the time for students who have not paid tuition or been accepted to the school's program, and so do public schools, usually for students who reside outside their geographic district boundaries. Thus, the public good argument as justification for public provision of education simply doesn't have legs.

A second market failure argument in favor of government involvement in the provision of education is that education provides positive externalities. An externality from a good or service is a *direct* welfare gain or loss (i.e., not a

price effect) accruing to a third party that is not directly involved in an economic decision. If the producer and consumer of a product do not bear all the costs or reap all the benefits of a particular economic activity — if some of those costs or benefits fall on a third party — this is an externality. For instance, air pollution is a negative externality that accompanies the production of certain goods.

Goods that generate negative externalities tend to be over-provided by the free market, because the buyers and sellers involved in market transactions do not always recognize and respond to the negative consequences of their trading that are borne by third parties. Analogously, goods that generate positive externalities tend to be under-provided. Vaccinations are one example of such a good from the public health arena. Your vaccination protects you from a disease, but also generates some protection for me even if I am not vaccinated. Thus, vaccinations would be under-provided by a free market because external beneficiaries are not in a position to ensure participation by others who might not choose to be vaccinated when left to their own devices. A common government response is to mandate and enforce a requirement that all children be vaccinated.

Some consider education a good that generates positive externalities. A more educated citizenry might result in more informed participation in the political process, reduced crime, and a more productive work force — social benefits over and above the private return that accrues to each individual. To the extent that these positive externalities exist,

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an argument can be made for public involvement in the provision of education. The form of government intervention called for here would be a subsidy. If there is evidence of positive marginal spillovers for the level of education provision that purely private markets would generate, then a case could be made for subsidizing education in an attempt to “internalize” the relevant marginal externalities.

Finally, arguments about public provision of education at the primary and secondary level should consider the importance of parents in decisions impacting children. Young children are not in a position to make their own decisions about their educations. Economists often assume, as a matter of course, that parents are making the best decisions for their children. If this is not true, however — if some parents do not give sufficient consideration to their children’s welfare when making decisions about their children’s educations — then some may argue that collective, coercive action is needed to mandate a certain level of education. Government funding of education is one way to help assure that children receive a given level of education regardless of any shortcomings in educational decision-making that their parents may have. Note, however, that this argument would not strictly require the existence of traditional public schools — government can mandate and fund education without also operating its own schools.

A related proposition, but one that is grounded in an argument about equity rather than paternalism, is that fairness requires that some goods — such as

education — must be made available to everyone. This is commonly referred to as “commodity egalitarianism.” We might expect that private markets in education would result in significant dispersion in the quantities of education services consumed, which would violate this equity principle and serve as justification for some to advocate public intervention. There is no settled consensus regarding whether this notion of fairness would call for identical quantities of education services for all, or only require a guaranteed minimum level of services for all.

It bears emphasizing that the above arguments alone would only support government involvement in the funding of education. If government is tasked to ensure that education is provided, it does not actually have to be the direct provider. That is, government can subsidize a good without actually being the producer of that good. The food stamp program is one example of a voucher program, providing individuals with government funds that can be used to purchase any food items within a list of government-specified categories. Similarly, a universal school scholarship program would allow citizens to spend their government-granted education funds at any government-recognized school.

Thus, in principle, school vouchers do not conflict with government funding of education and with government regulation of education providers. Collective action to determine the level of public education spending with which to endow each child is consistent with individual family action to choose a school.

## COMPETITION IN EDUCATION: ARGUMENTS FOR AND AGAINST MARKET-BASED REFORM

Public elementary and secondary schools in the United States are in a highly advantageous position in the market for elementary and secondary education, because these institutions are funded by tax dollars and charge near-zero tuition to their pupils. Competition from private and parochial schools is limited by the large tuition differential, often much more than \$5,000 per student. In principle, public schools could compete with each other, but in practice, the vast majority of public schools assign students to campuses based on geography, so that the cost of moving between schools is linked to the cost of moving between houses. This has a significant dampening effect on competition among public schools. Further, moving among school districts is even more strongly tied to moving a household's geographic location. Effective choice among public school suppliers is thus quite limited.

In terms of economic efficiency, one crucial aspect of market discipline is the possibility of exit from the marketplace, such as through bankruptcy, business sale, or business closure. Firms in a competitive market are subject to market forces that will require them to exit the market if they cannot satisfy their customers. These same forces induce firms in competitive environments to pursue cost-efficient strategies for

producing their products. Private schools must satisfy these market forces, producing a desirable schooling product at a price that parents find attractive — otherwise, they will be forced to close their doors. In contrast, government as a supplier of education is largely insulated from these market forces. By treating education as a public good, funding it through taxes and eliminating consumer pricing signals for its consumption, the government virtually guarantees a set of neighborhood buyers for a given local public school, and hence there is much less pressure on underperforming public schools to improve.

Several institutional reforms have been introduced to the public education system that have resulted in increasing choice and competition for students. Magnet schools, for instance, were originally designed to draw students from throughout a district or multi-district geographic region. The primary motivation for creating them seems to have been to provide specialty schools that would provide unique opportunities for public school students, and to attract a mix of students that satisfied certain ethnic or racial targets. In any event, magnet schools provide alternative public campuses to students, and have led to some competition for students among magnet and traditional schools. This competition is limited, however. Magnet schools are still operated by school districts, and their function is best understood as enabling a reallocation of enrollment among existing campuses in a school district, rather than drawing students and funds away from the school district to an external entity.

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Reforms more directly aimed at introducing competition for public education include vouchers and charter schools. The basic idea of a voucher system is to provide public financial support directly to students and their parents, rather than to schools. In the simplest voucher scheme, each student would be provided with a tuition voucher of a given amount — say, \$7,000 — that can be redeemed at the school of the parent's choice. This approach would enable students to attend private (and possibly parochial) schools for the same, or nearly the same, out-of-pocket cost that they would face at a public school. Proponents of vouchers forward three main arguments in support of the institution:

- Vouchers allow households to better match their demand for education with their choice for education.
- Vouchers promote efficiency, by allowing private schools to compete with public schools for students on a playing field that is level, or more level, in terms of tuition expenses. Government funding through vouchers would, in principle, foster market discipline, because schools that fail to attract students would find themselves facing financial difficulty and be forced to improve quickly or close their doors.
- A voucher system may increase parental involvement in their children's educations. Vouchers provide parents with a private property right to exercise for education consumption, so they may feel more directly invested in the school enterprise. This enhanced ability to choose their child's school may lead parents to increase their level of involvement in that school.

Opponents of vouchers are far less sanguine about the prospect of a market-type approach to providing K-12 education. Some of their main objections include:

- Many parents are not well positioned to make sound judgments about school quality. Bad shoppers can make bad decisions for their kids, casting doubt on the beneficial properties of a more competitive solution.
- A voucher system will lead to more stratification along socioeconomic lines. The children of wealthy and better educated parents will sort into different schools than children of poorer and less educated parents.
- The changed distribution of kids across schools that might follow from a voucher institution could generate peer effects that particularly harm weaker students. If vouchers enable the better students in poorly performing public schools to escape and congregate with other higher performing kids, while the weaker students stay behind in a more homogeneously low-performing school, the absence of strong academic peers might lead to even worse outcomes for the kids who remain.

Some of the strongest critics of vouchers are teacher unions. The National Education Association (NEA), the largest labor union in the United States, strongly opposes vouchers and has spent money lobbying and litigating against them. The NEA has claimed that vouchers could erode educational standards, lead to reduced funding for public schools, and reduce public school teaching jobs as students exit to non-public schools. Some



ardent voucher critics have pointed out that it is possible to have choice within the public school system itself. Charter schools are one way to expand school choice within the public school system.

We identified key defining characteristics of charters in Section 1 of this study. Proponents of charters, who view the schools as a positive step in expanding school choice, point to several beneficial features of the charter design, including these:

- Charters introduce competition by providing alternative public schools that are given some degrees of freedom to experiment with educational and fiscal strategies. Charters interject competition among publicly funded schools without mandating cross-campus or cross-district enrollment for traditional public schools.
- Parents are given an implicit limited property right to public funds that can be spent on tuition at either their local traditional public school or at a charter school. As argued above, greater parental involvement in the choice of school for their kids could lead to greater involvement in the school of choice.
- The continued performance accountability to the state is, for some charter supporters, a positive.
- Opponents of charters trot out the same concerns as those voiced by voucher critics. In addition to those common concerns, charter critics often make the following case:
- Traditional public schools lose the funding that follows a student to a charter school. Of course, they also lose the responsibility of educating that student. If, however, there is

a significant difference between the marginal and average costs to the traditional public school for the students who exit to charters, the fiscal hit argument becomes more relevant.

Charters and vouchers are both members of the class of school choice institutional reforms, but they are different species. Charters offer more attenuated property rights regarding use of the public education funds than occurs with vouchers (at least relative to most common voucher proposals). It is not clear how closely a charter institution may substitute for a voucher institution.

## THE CHARTER SCHOOL SECTOR

There are many ways to look at the charter school sector. Here, we look at its size in terms of enrollment and number of schools. We also report on entry to and exit from charters, as an indicator of the market forces that lead to the growth of charters, and the competitive selection process that leads to closure of underperforming charters. We compare the funding levels for charters to those of traditional public schools, and we place charter enrollments in context by comparing it to enrollment in both public and private schools, as well as the number of home-schooled students. Finally, we discuss charter laws and regulations, in order to get some idea of how these rules vary across states.

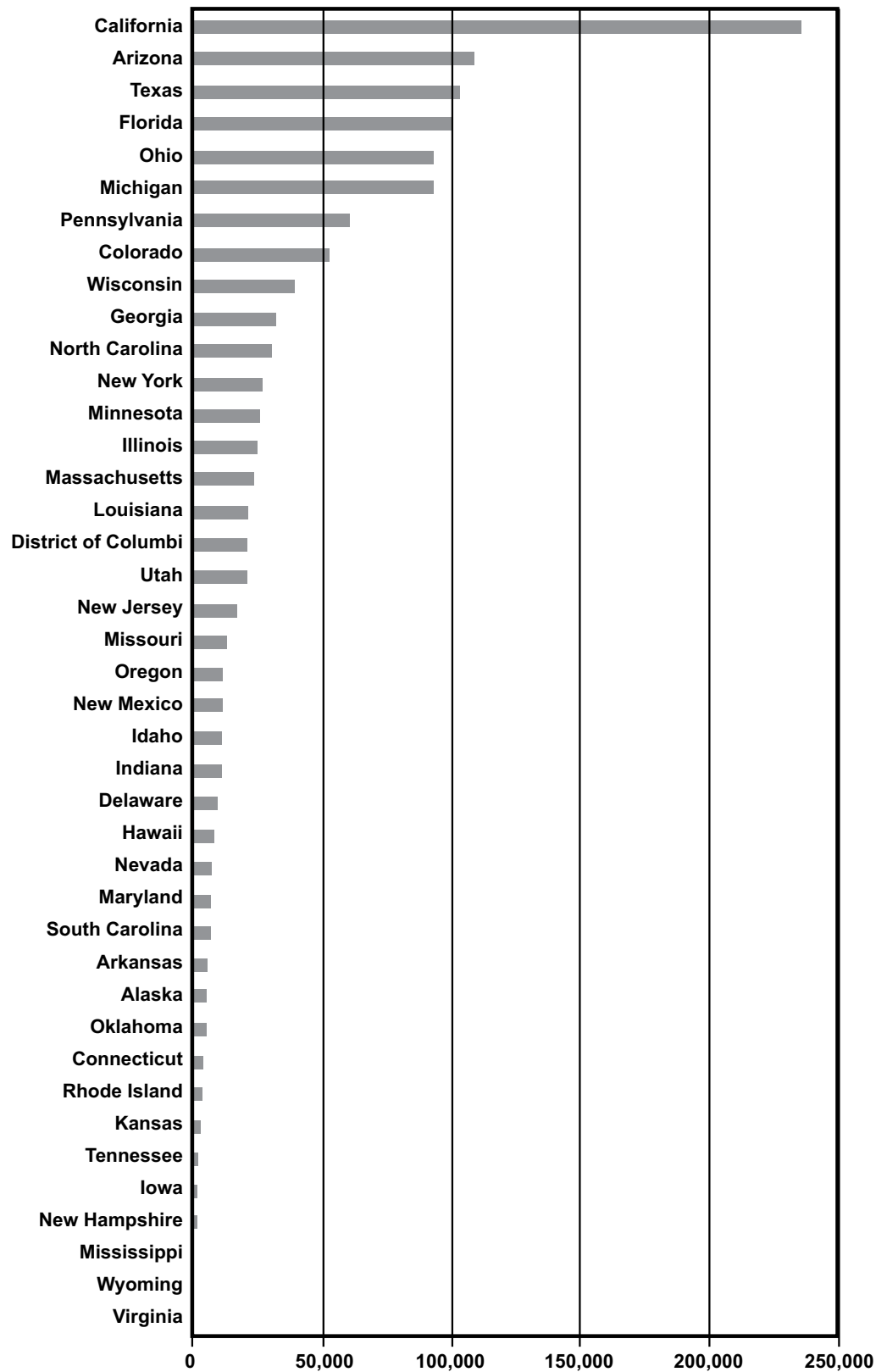
### Enrollment and Number

Charter enrollment is substantial. The Center for Education Reform reports that

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Figure 1. Charter School Enrollment



Source: Center for Education Reform, [http://www.edreform.com/\\_upload/CER\\_charter\\_numbers.pdf](http://www.edreform.com/_upload/CER_charter_numbers.pdf)

in the 2007–2008 academic year, charters existed in 40 states plus the District of Columbia, with enrollment at slightly more than 1,243,000. We illustrate this in Figure 1. Enrollment across states is quite variable, with some states having charter school enrollment of more than 100,000, and California with enrollment substantially more than 200,000.

Meanwhile, other states have charter school enrollment on the order of 200–300 students. California has the most charter school students, more than 235,000.

They are followed by Arizona with more than 108,000 charter students, Texas with more than 103,000, Florida with nearly 100,000 students, and Ohio and Michigan with more than 92,000 students. In the middle of the pack is Missouri, with nearly 13,000 enrolled students. At the bottom are Virginia, with 239 students, Wyoming, with 244 students, and Mississippi, with 367 enrolled students. Ten states do not currently allow charter schools.

It is clear that some of the largest states, including California, Texas, and Florida, are also leaders in the charter movement. But a large population does not guarantee a large charter school enrollment. New York is a case in point: The nearly 26,000 enrolled charter students in New York are far fewer than the charter enrollment in many less populous states. Virginia had only 239 enrolled charter students, fewer than Wyoming. Meanwhile Colorado is one of the leaders in charter school enrollment, with more than 50,000 enrolled students.

We might also look at the number of charter schools (Figure 2). The Center for Education Reform reports that there were 4,128 charter schools operating in

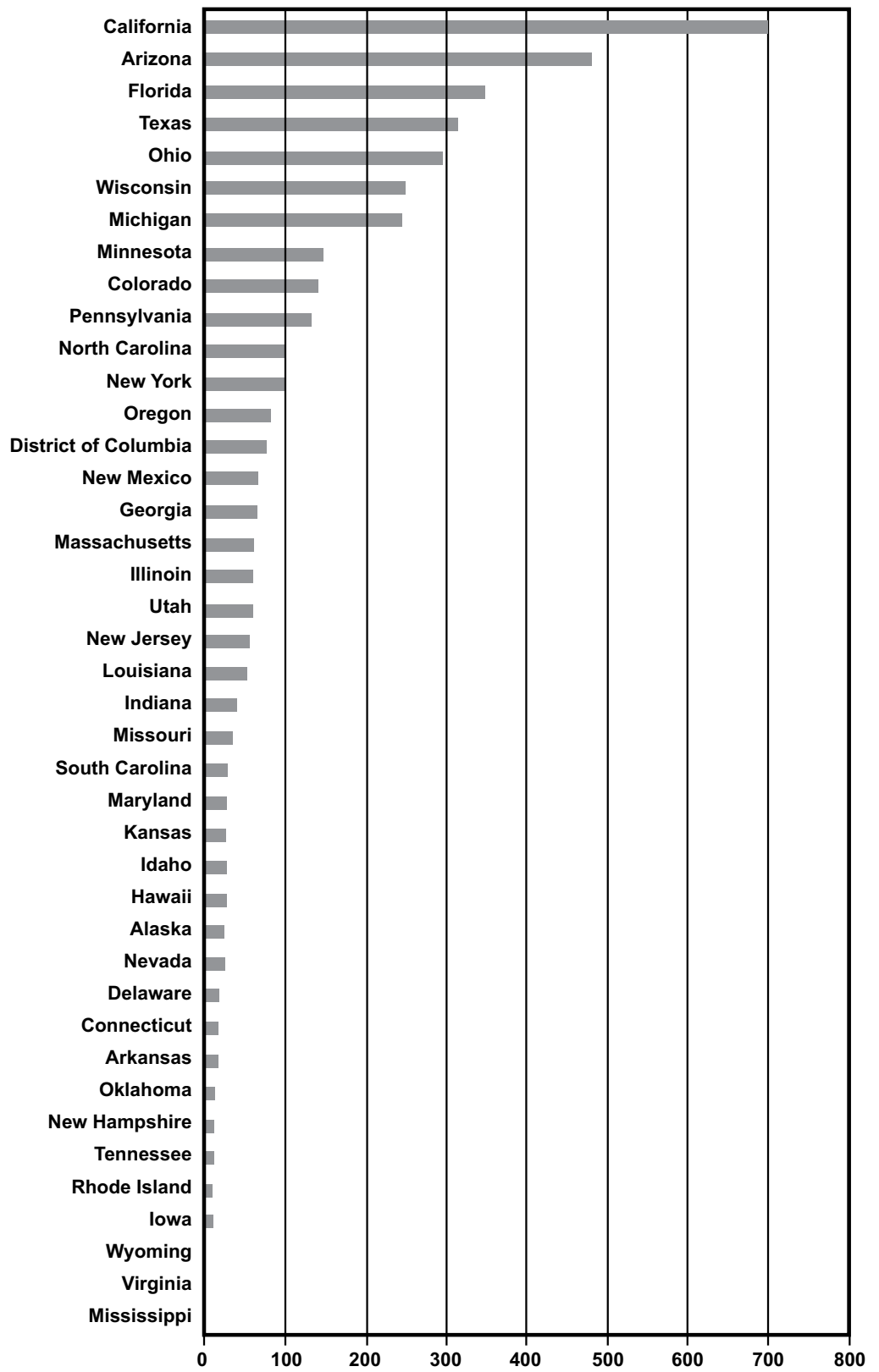
2007–2008. As might be suspected, the rank-ordered list of states by number of charter schools correlates fairly closely with the rank-ordered list of states by charter school enrollment. California had 703 charters, followed by Arizona with 479, Florida with 348, Texas with 314, Ohio with 295, Wisconsin with 247, and Michigan with 245. Missouri had 36 charters. At the bottom of the list, Wyoming and Virginia had three charter schools each, and Mississippi had one.

Table 1 provides the data behind Figures 1 and 2, and also gives information on closures of charter schools. In the entire 15-year period from 1992 to 2006, there were 588 charter schools that operated for a time, but closed by 2006. These were charter schools that entered the market for public education and later exited. For comparison, 4,128 charters operated during the 2007–2008 academic year. Thus, the approximate number of charters that have ever closed is about 14 percent of the number operating as of the 2007–2008 school year. While the reasons for those closures is not included with this data, they certainly include some that were unable to draw sufficient students or to successfully manage the education enterprise. These closures also include charters closed by the states because of problems with financial management or educational delivery. We do not have similar figures for traditional public schools, but the entry and exit of charter schools attests to their responsiveness to market forces, a market discipline not as clearly felt by traditional public schools.

Charter schools continue to see new entry, and the 4,128 charters operating

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Figure 2. Number of Charter Schools



Source: Center for Education Reform, [http://www.edreform.com/\\_upload/CER\\_charter\\_numbers.pdf](http://www.edreform.com/_upload/CER_charter_numbers.pdf)

Table 1. Charter school enrollment and closures by state: 2007–2008

STATE	SCHOOLS OPERATING (APRIL 2008)	ENROLLMENT	OPENED IN 2007–'08	CLOSURES 1992–'06
Alaska	25	4,998	1	5
Arizona	479	108,659	20	90
Arkansas	18	5,065	3	5
California	703	235,657	77	95
Colorado	140	51,925	11	11
Connecticut	19	3,675	1	5
Delaware	19	8,512	0	2
District of Columbia	78	20,642	8	16
Florida	348	99,818	23	67
Georgia	65	32,057	7	8
Hawaii	29	7,137	2	0
Idaho	30	10,262	2	1
Illinois	61	24,647	7	9
Indiana	41	10,146	3	2
Iowa	10	1,292	2	0
Kansas	30	2,686	3	9
Louisiana	54	20,703	9	8
Maryland	30	6,219	9	2
Massachusetts	62	23,482	2	6
Michigan	245	92,647	5	26
Minnesota	148	25,823	14	29
Mississippi	1	367	0	0
<b>Missouri</b>	<b>36</b>	<b>12,785</b>	<b>9</b>	<b>6</b>
Nevada	24	6,767	2	5
New Hampshire	13	1,244	5	2
New Jersey	56	16,467	3	18
New Mexico	66	10,734	5	3
New York	99	25,979	4	8
North Carolina	103	29,889	7	30
Ohio	295	92,809	9	31
Oklahoma	15	4,708	0	1
Oregon	81	11,165	11	10
Pennsylvania	132	60,532	9	11
Rhode Island	11	2,779	0	0
South Carolina	30	5,850	1	10
Tennessee	12	1,914	1	1
Texas	314	103,183	13	32
Utah	60	20,455	7	1
Virginia	3	239	0	3
Wisconsin	247	38,840	51	20
Wyoming	3	244	0	0
United States	4,128	1,243,002	346	588

Source: Center for Education Reform, [http://www.edreform.com/\\_upload/CER\\_charter\\_numbers.pdf](http://www.edreform.com/_upload/CER_charter_numbers.pdf)

Figure 3. When Did Currently Operating Charters Begin Operation?



***In the fall of 2005, the latest year provided in the National Center for Education Statistics, there were 14,166 public school districts and 94,382 public school campuses in the United States. Of those, fewer than 4,225 were charters. This compares to 34,610 private school campuses in the same period.***

in 2007–2008 included 346 new schools. That is, about 8 percent of the charter schools operating during 2007–2008 were new schools. California led the way, with 77 new charters (an 11-percent increase), followed by Wisconsin, with 51 (a 21-percent increase), Florida, with 23 (a 7-percent increase), Arizona, with 20 (a 4-percent increase), Minnesota, with 14 (a 9-percent increase), and Texas, with 13 (a 4-percent increase). Missouri opened nine new charter schools in 2007–2008, a 25-percent increase. At the bottom of the ranking, Delaware, Mississippi, Rhode Island, Virginia, and Wyoming opened no new charters in 2007–2008.

Figure 3 shows when the 4,128 charter schools that were operating in 2008 first opened their doors to students. The first charter was established in Minnesota in 1992. From that date forward, the entry of new charters into the education market increased steadily, reaching a local high-water mark in 1999, when 400 of the 4,128 currently operating charters opened their doors, representing nearly 10 percent of the charters currently in operation. The rate of entry declined slightly following 1999, with a local trough in 2003 when 300 charters entered, followed by a rise to a new peak in 2004 of nearly 450 charters entering. From 2005 to 2008, there has

Table 1. Charter school enrollment and closures by state: 2007–2008

NUMBER OF SCHOOLS/CAMPUSES					
	TOTAL	ELEMENTARY	SECONDARY	COMBINED	OTHER
Public School Districts	14,166	--	--	--	--
Public School Campuses	94,382	67,291	23,800	5,288	584
Charters	4,225	n/a	n/a	n/a	n/a
Private Schools	34,610	23,494	2,694	8,494	n/a
Catholic Schools	7,920	6,530	1,060	320	n/a
Other Religious	13,660	7,280	640	5,740	
Non-Sectarian	6,810	3,510	960	2,340	
ENROLLMENTS					
Total	55,224,000	38,941,000	16,285,000		
Public Schools	49,113,000	34,205,000	14,909,000		
Charters	1,243,002				
Private	5,059,450	2,675,960	832,320	1,551,170	
Catholic Schools	2,320,040	1,645,680	584,250	90,110	
Other Religious	1,746,460	714,860	107,980	923,630	
Non-Sectarian	992,940	315,430	140,080	537,440	
Home School	1,096,000				

Source: NCES. Public School Data for Fall 2005. Private School Data for 2003-04. Charter data from Center for Education Reform for Fall 2007. Home School Data estimated by NCES.

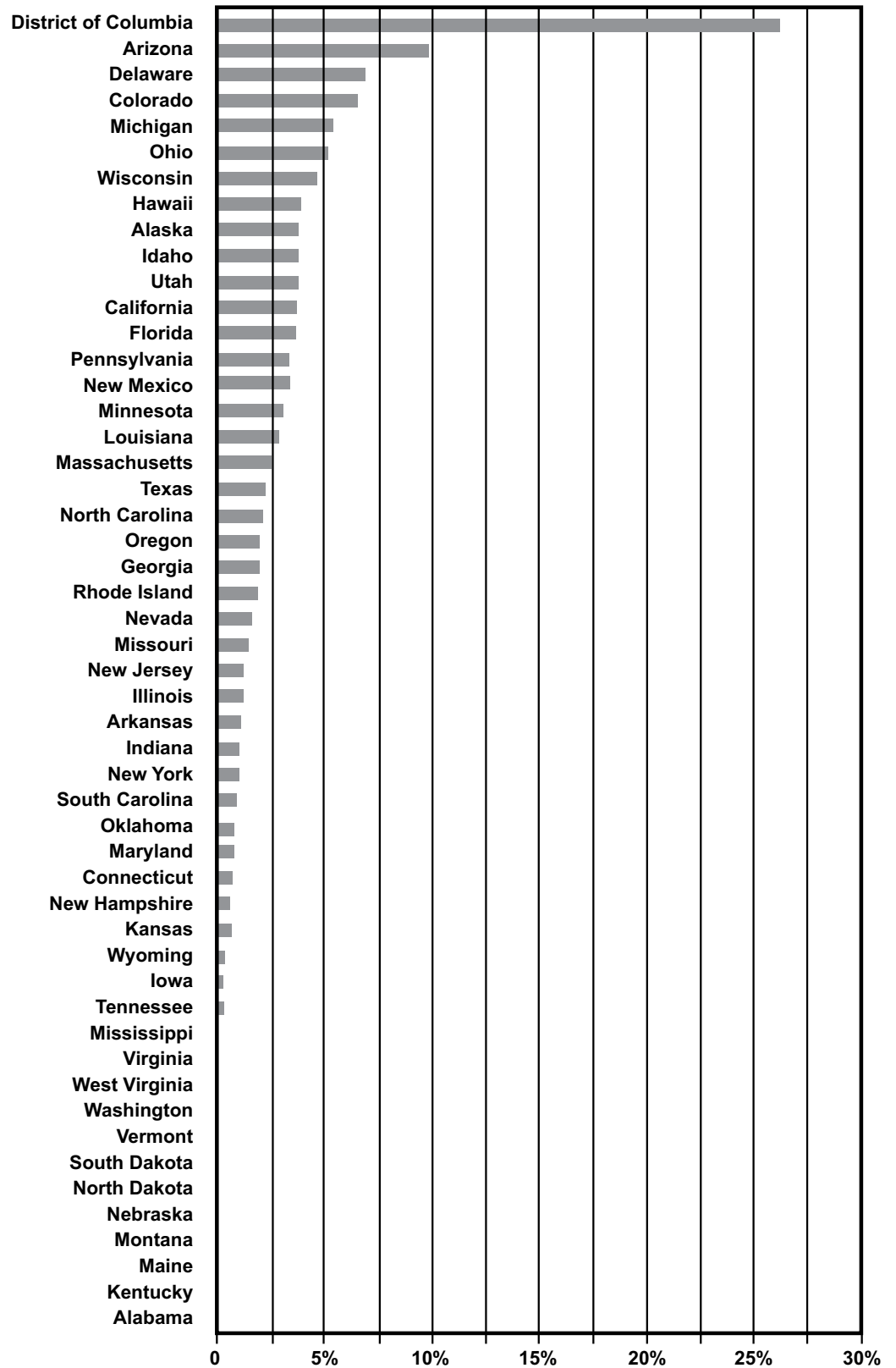
been a decline in the rate of charter entry, with 346 entering in 2007 and about 175 in 2008.

Further insights might be gained by comparing charter school numbers and charter school enrollment to total public school enrollment in the United States (Table 2). In the fall of 2005, the latest year provided in the National Center for Education Statistics, there were 14,166 public school districts and 94,382 public school campuses in the United States. Of those, fewer than 4,225 were charters. This compares to 34,610 private school campuses in the same period. The public schools enrolled 49,113,000 students, with fewer than 1,243,000 of those in

charter schools. For comparison, there were 5,059,000 students in private schools, and an estimated 1,096,000 being home schooled. Thus charter school enrollment is roughly the same magnitude as home schooling. Despite the growth of charters, they still have enrollment that is only about 20 percent the size of private school enrollment, and roughly 2.5 percent of overall public school enrollment. Despite their growth and significance, charters do not yet rival private schools as a draw on U.S. school enrollment. There seems to be plenty of room for continued growth, although state restrictions on the number of charters may be hampering their growth in many

***Despite their growth and significance, charters do not yet rival private schools as a draw on U.S. school enrollment.***

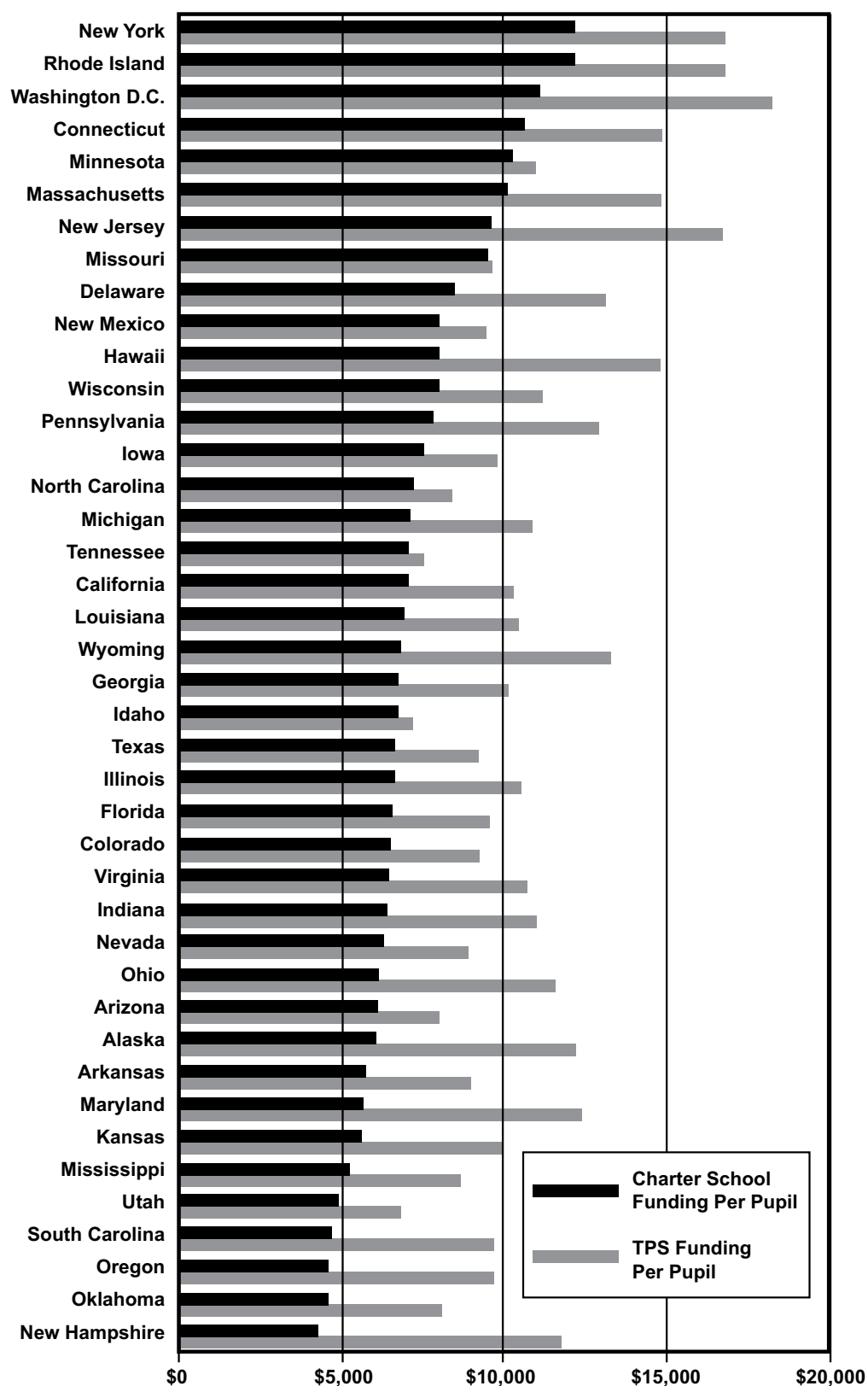
Figure 4. Charter School Enrollment as a Percentage of Total Public School Enrollment, by State



Source: NCES and Center for Education Reform.



Figure 5. Charter School Funding Levels



Source: Center for Education Reform.

***Much of the difference in public funding levels between traditional public schools and charters stems from the lack of capital facilities assistance given to charter schools. Funds specifically allotted for the acquisition or maintenance of facilities do not follow the student to the charter.***

locales. Many states have quite limited numbers of charter schools, and 10 states still do not have charter schools.

Figure 4 presents the data on charter school enrollment as a percentage of total public school enrollment, by state. Here, the District of Columbia stands out, with 27.9 percent of public school students in charters. Arizona has 9.8 percent, Delaware 6.9 percent, Colorado 6.6 percent, and Michigan 5.3 percent. States with large numbers of charter students, such as California and Florida, actually only enroll 3.6 percent each in charters. Texas is even lower, at 2.2 percent. Finally, note that Missouri is at 1.4 percent, but this is misleading in some ways, because Missouri enrolls a much higher percentage within the two districts (Saint Louis city and Kansas City) where charters are allowed.

## **Funding**

State regulations on the number of charters are not the only factor restricting charter growth. In many states, there is an issue with charter school funding. Charters receive funds from state and local sources, often on a per-pupil basis, and this often amounts to less than the per-student funding received by traditional public schools. The Center for Education Reform reports data on per-pupil funding for traditional public schools and for charter schools, by state. We present this information in Figure 5. Missouri is the most generous to charters, with traditional public schools receiving \$9,585 per student and charters receiving \$9,515 per student, or 99 percent of the

funding level of traditional public schools. However, this comparison may be misleading, because charters in Missouri can only operate in the Saint Louis city and Kansas City districts, and per-student spending in these two districts is higher than the state's average level of spending on traditional public school students. Missouri's Department of Elementary and Secondary Education reports that Saint Louis spends \$15,549 per student, while Kansas City spends \$15,142 per student. Compared to these local students, charters receive roughly 63 percent of the funding level of traditional public schools.

The Missouri case indicates that the numbers in Figure 5 should be viewed as suggestive rather than definitive evidence of funding differentials between charters and relevant traditional public schools. Other states generous to charters include Minnesota (traditional public schools: \$11,010; charters: \$10,302, or 94 percent), Tennessee (traditional public schools: \$7,512; charters: \$7,067, or 94 percent), Idaho (traditional public schools: \$7,257; charters: \$6,703, or 92 percent). The state least generous to charters is reported to be New Hampshire, which spends \$11,753 per student in traditional public schools, but provides \$4,300 per student to those attending charter schools.

Many states with the largest charter enrollments fall in the middle of these extremes. California spends \$10,264 per traditional public school student, but \$6,585 per charter school student, a ratio of 72 percent. Arizona is similar, spending \$8,025 per traditional public school student, but \$6,075 per charter school student, a 76-percent ratio. Florida spends \$9,542 per traditional public school

student, but \$6,552 per charter school student, or 69 percent. Texas spends \$9,210 per public school student, and \$6,620 per charter school student, or 72 percent.

Much of the difference in public funding levels between traditional public schools and charters stems from the lack of capital facilities assistance given to charter schools. Funds specifically allotted for the acquisition or maintenance of facilities do not follow the student to the charter. This leaves charters with three options for funding capital: private source funds, grant funds (available in some states, and from federal programs), or cannibalization of operating funds. Nailing down the actual level of reliance on each of these three sources is difficult. As a result, true apples-to-apples full-cost comparisons of charters to traditional public schools are elusive. Supporters often claim that charter schools will prove to be more cost effective than traditional public schools, and sound evidence supporting this claim would add a valuable plank to the charter platform. However, to the best of our knowledge, such evidence has not been provided to date. Pinning down the relevant cost figures is an important topic for future research.

The charter funding issue is also complicated because charter supporters claim that the lack of funding has restricted charter growth. This may well be true, but the data issues mentioned above contribute to the difficulties involved in analyzing this issue. It is clear that charter schools have opened even in states that provide relatively low per-student support. For instance, California leads in

the number of charters, though far from in the percentage of students attending charters, offering a rather low \$6,585 per charter student. The funding level, state restrictions on number of charters, and chartering requirements all contribute to the rate of growth for charters. The degree to which funding restricts charter growth remains an open question.

## CHARTER LAWS: DIFFERENCES ACROSS STATES

The Center for Education Reform (CER) produces an annual ranking of charter laws across the states. The laws are scored on five dimensions: 1) approval process (e.g., eligible chartering authorities); 2) operations (e.g., waivers from education regulations); 3) funding (e.g., amount per pupil); 4) teachers (e.g., certification); and, 5) students (e.g., eligibility). CER is a pro-charter organization, and thus it advocates the view that the best or strongest laws are those that impose the fewest rules and constraints on the formation of charters, with respect to each of these five areas of the chartering process. The legal institutional structure governing charters varies considerably across the states. For 2008, CER awarded eight A's, 14 B's, 11 C's, six D's, and two F's to the assorted 40 states plus the District of Columbia that currently have charter laws in operation.

We provide some insight into the basis for these report card rankings by discussing three cases in greater detail. We focus upon Michigan, North Carolina, and Texas because: a) they represent examples of A, B, and C performers, respectively; and, b)

***The funding level, state restrictions on number of charters, and chartering requirements all contribute to the rate of growth for charters. The degree to which funding restricts charter growth remains an open question.***

<sup>1</sup> Two other major questions associated with charters are their effects on school segregation by race and/or income, and the efficiency of charters relative to traditional public schools. The two questions we focus upon have received the greatest attention to date in the empirical literature.

**Table 3. Comparison of Charter Laws for Michigan, North Carolina, and Texas**

STATE	CER RANKING	CAPS AND APPROVAL PROCESS	OPERATIONS	FUNDING	TEACHERS	STUDENTS
Michigan	3rd strongest of nation's 41 charter laws	Unlimited number of charters allowed by local school boards, 150 authorized by state universities; schools may be opened without third-party consent	No automatic waiver from most state and district laws and regulations; can seek case-by-case waivers	100% of state and district operations funding follows students, based on average district per-pupil revenue	Teachers in non-district charters may negotiate as a separate unit	For university charters, all students in state; for others, students in district where charter is located
North Carolina	17th strongest of nation's 41 charter laws	100; 5 per district per year; state board of education and local school boards are chartering authorities	Yes, automatic waiver, except for local board-sponsored charters	100% of state and district operations funding, based on average district per-pupil revenue	For non-local school board sponsored charters, teachers not subject to district work rules	All students in state
Texas	15th weakest of nation's 41 charter laws	215, not including schools started by public universities	Limited; exemptions determined by commissioner	State funds are guaranteed; local revenue is determined based on statewide averages	Teachers at open-enrollment charters work independently	Students in geographic area specified in charter

Source: Center for Education Reform.

***The objective here is to determine whether attending a charter school causes a difference in a student's performance.***

they are three of the states that have been evaluated in solid charter school studies (see discussion below). We highlight some of the key differences in Table 3.

## ASSESSING THE EFFECT OF CHARTER SCHOOLS ON ACADEMIC ACHIEVEMENT

There are at least<sup>1</sup> two big-picture questions raised by the emergence of

charter schools. First, do charter schools improve academic achievement for their attendees? That is, does the expansion of choice really benefit those choosing charter schools? In addition to this fairly obvious direct effect, there is considerable interest in the potential spillover effect of charter school competition on traditional public school performance. Does the presence of charter schools lead to improved achievement for regular public school students? We will gauge the success of charter schools as an institutional reform by the answers to these two questions.

## IMPACT ON STUDENTS WHO ATTEND CHARTERS

If we narrow the definition of direct effect to impact on academic achievement, the relevant question is whether students in charter schools are learning more or less than they would have learned in their traditional public schools. Posing the question is much easier than answering it. The objective here is to determine whether attending a charter school causes a difference in a student's performance. To identify properly the charter school attendance effect requires two bits of information: 1) how the student actually learned in the charter school; and, 2) how that same student would have learned if she had instead attended a traditional public school. The difference between these two conceptual achievement levels offers a good measure of the impact of charter school attendance on student achievement. Collecting the first required information is relatively straightforward, at least once we decide on the acceptable measures of academic achievement. The second requirement is a bigger hurdle to clear. Obviously, the same student cannot simultaneously attend a traditional public school and a charter school in the same school year. The analysis of this issue, then, requires the researcher to generate a "close to ideal" estimate of how the charter school student would have performed had she attended a traditional public school rather than a charter. This is called a "counterfactual," and its generation is the art behind the econometric analysis of how charter schools impact student achievement.

The best, most scientific way to generate this counterfactual is to have students randomly assigned to charter and public schools. The most scientific experimental method to generate the appropriate counterfactual is possible when students are assigned by a lottery, or chance-based method. This experimental method compares the performance of students attending charter schools with those of students who applied to those same charter schools but were unable to enroll because of excessive demand for seats. When observers can assume that seats in schools experiencing such demand were rationed by a fair lottery, and the division between admitted and non-admitted kids is random, their analysis of score differences between the two groups approximates a truly ideal controlled experiment, in which kids would be randomly assigned into charters from the beginning. Unfortunately for researchers, these conditions are relatively infrequent.

If the lottery-based experimental method cannot be implemented, the search for a sound counterfactual — what social scientists refer to as the search for internal validity — turns to non-experimental approaches. These approaches are said to possess internal validity if the construction of a counterfactual results in the ability to identify differences in student performance that can really be attributed to charters. Two recent surveys (Betts, et al. (2006), and Hassel, et al. (2007)) that catalogue and critique the charter research literature suggest sorting the non-experimental studies into three bins: 1) single-year or snapshot studies;

***The best, most scientific way to generate a counterfactual is to have students randomly assigned to charter and public schools. The most scientific experimental method to generate the appropriate counterfactual is possible when students are assigned by a lottery, or chance-based method.***

***The best of the non-experimental methods are the panel data approaches. These studies are based on data that includes a set of students that can be followed over time, so that we have observations on multiple students that we can follow over time, a panel of data.***

2) school-level change studies; and, 3) student-level panel studies. The majority of the extant published studies of charter school achievement fall into the first two categories. This is unfortunate, because these two approaches rank the lowest on the expected internal validity scorecard.

In addition to the data issue raised above, there are other issues important for evaluating the performance of charter schools. A crucially important issue involves looking beyond simple differences in average score levels or passing rates between charters and traditional public schools, or even differences in average score changes or growth. Both of these methods have serious flaws. Some states established charter schools to draw primarily students who are academically at risk, so comparing average performance levels of these students in charters with students in traditional public schools can be very misleading. Even if average scores by charter students are compared to groups in traditional public schools that have been similarly composed with regard to observable characteristics such as race, limited English proficiency, and economically disadvantaged status, these comparisons are still likely to be biased because such labels almost certainly do not fully account for differences in the composition of the students who attend charter schools. Charter students are unlikely to be either a random selection or representative of any demographic classification of students. The very act of choosing to attend a charter distinguishes these students from those who remain in traditional public schools.

Examination of differences between charters and traditional public schools

in terms of average changes in test scores (or growth in test scores) is more appropriate, given that this method controls for students' level of performance prior to entering a charter school. Nevertheless, analysis of test score growth still suffers in two important respects. First, charter students may systematically differ from students in traditional public schools not just in their level of performance but in their growth trend, or ability to improve. That is, they may be more or less likely to show improvement in scores from year to year than the non-charter population. Thus, the so-called selection problem — that students do not randomly choose to be in charter schools — is not resolved by the use of score growth rather than levels. Students who choose to attend charters may be different from other students in their performance growth trends, as well as in their levels of performance. Second, because the charter sector has experienced substantial growth in each year since charters began operating, any average of students' score changes may be heavily influenced by the effects of changing schools, because a very large share of the observations will be of students in their first charter year.

## SILVER STANDARD STUDIES

The best of the non-experimental methods are the panel data approaches. These studies are based on data that includes a set of students that can be followed over time, so that we have observations on multiple students that we can follow over time, a panel of data.

We focus our attention on the recent examples, i.e., those produced since 2003. These “second best” or “silver standard” studies are the next best thing to the lottery-based methods. Our basic criteria for a “silver standard” study are:

- The study adopts a **student-level value-added approach**. Individual students are followed over time, and learning or value-added results are measured by improvements in individual test scores. Two major alternative value-added models appear in the charter literature. One approach models a student’s test score level in a given year as a function of previous (one or more) test scores and variables that capture the important inputs into the student’s educational environment in the current evaluation year. In what follows, we refer to these as value-added models. As an alternative, some researchers try to explain individual test score gains in a given year as a function of the school environment in that same year. This is a special case of the value-added model, in which the coefficient on last year’s test score is restricted to be -1, and the coefficient on older vintage scores is restricted to be zero. We refer to these as restricted value-added models.
- The study utilizes a **fixed effects type of econometric method**. The fixed-effects approach generates estimates of the mean effect of charter attendance on test scores by comparing the gains for a particular student when she attends a charter with her gains when she attends a traditional public school. This

method obviates the need to model the process by which students are selected into charter schools (such as the techniques pioneered by Heckman (1979)) or to establish an appropriate comparison set of traditional public school students based on limited observable characteristics or random selection (e.g., Peterson and Howell (2003)). The student is her own control group.<sup>2</sup>

We should point out that while the student fixed-effect method effectively controls for time-invariant student, family, and peer effects, there remains some concern that students may experience a change in one of these factors contemporaneous with the move to a charter school. For example, the family’s decision that the student attend a charter may be stimulated by a disciplinary problem, or, more positively, by the emergence of a previously lacking parental awareness or concern for a student’s academic progress. Thus, this method is characterized as the silver standard, rather than the gold standard represented by randomized experiments.

- **Charter heterogeneity is addressed.** Charter operators come in many flavors and differ along several important dimensions, including age, structure, objectives, and regulatory environment.

We summarize features and conclusions for our set of silver standard studies in Table 4. Basically, the results are mixed, but they point to a small impact, positive or negative — especially for charters that have operated for

***We should point out that while the student fixed-effect method effectively controls for time-invariant student, family, and peer effects, there remains some concern that students may experience a change in one of these factors contemporaneous with the move to a charter school.***

<sup>2</sup> We will also lump hierarchical linear modeling — a popular statistical modeling approach among quantitative education community researchers (as opposed to economists) — into the fixed-effect type family.

**Table 4. Non-experimental ‘Silver Standard’ Studies of Impact of Charter Schools on Charter School Student Performance**

CITATION	STATE OR CITY	DATA	YEAR AND GRADES	ACHIEVEMENT MEASURE AND ESTIMATION METHOD	CONCLUSIONS
Booker et al. (2008)	Texas	Student level; Texas standardized math and reading test scores	1995 – 2002; grades 3–8 & 10	Restricted value-added, fixed effects	Large negative first year in a charter effect; positive effects of charters on students who stay beyond first year; students bounce back when return to public school; lower performance in new charters
Bifulco & Ladd (2007)	North Carolina	Student level; NC standardized math and reading test scores		Restricted value-added, fixed effects	Negative effect of attending charters; particularly large negative effect first year in charter; effect is smaller, but still negative, for more mature charter schools
Buddin & Zimmer (2005)	California (Los Angeles, San Diego)	Student level; CAL standardized math and reading test scores	1997–1998 to 2001–2002	Restricted value-added (differenced), fixed effects	Mixed results across grades, cities, and tests; all effects, positive and negative, are small
Hanushek, et al. (2007)	Texas	Student level; Texas standardized math and reading test scores	1996–2002; grades 4–8	Value-added, fixed effects	Negative new charter school effect; no difference between more mature charter school performance and traditional public school performance
Sass (2007)	Florida	Student level; Florida standardized math and reading test scores	1999–2000 to 2002–2003	Value-added and restricted value-added, fixed effects	Achievement in new charter schools lower than in traditional publics; by fifth year of operation, charters perform same as traditional publics; targeted student population charters do worse; no difference between for-profit and not-for-profit charter performance
Solmon & Goldschmidt (2004)	Arizona	SAT-9 reading test scores	1997–1998 to 1999–2000	Linear hierarchical	Mixed results, with charters outperforming traditional publics at the elementary level, the reverse in high schools, and no difference for middle schools
Ballou et al. (2006)	Idaho	Student level; standardized math and reading test scores	2002–2003 to 2004–2005; grades 2–10	Restricted value-added, fixed effects	Small positive effect of elementary charters; small negative or no difference for higher grades
Zimmer and Gill (2008)	Pennsylvania (Philadelphia)	Student level; 3 different (Penn., SAT-9, Terra Nova) standardized math and reading test scores	2001–2002 to 2006–2007, grades 1–11	Restricted value-added, fixed effects	Average gains for charter kids and traditional public school kids same; small positive effect of charters for high school kids, small negative effect for elementary and middle school kids; age of charter doesn't matter
Booker, et al. (2008)	Illinois (Chicago)	Student level; ILL standardized math and reading scores	1997–1998 to 2006–2007, grades 3–8	Value-added, fixed effects	No significant difference in math scores, small and significant positive charter effect reading; negative and significant first year in a charter student effect

**Although most of the existing studies utilize the non-experimental (or quasi-experimental) approach, it is important to report the findings of three important studies that use the lottery-based experimental methodology. These would be gold standard studies, studies using the best methodology for generating the counterfactual.**



several years. In addition, heterogeneity in findings across states is not surprising, because of the large variation in the regulatory environment across states. A charter school in Michigan faces a different operating environment than does a charter school in Texas. Also, some studies indicate that students attending newly opened charters suffer a relatively large negative performance impact that dissipates over time, either when the student returns to traditional public schools or continues to remain in a charter school.

## THREE GOLD STANDARD STUDIES

Although most of the existing studies utilize the non-experimental (or quasi-experimental) approach, it is important to report the findings of three important studies that use the lottery-based experimental methodology. These would be gold standard studies, studies using the best methodology for generating the counterfactual.

Caroline M. Hoxby and Jonah E. Rockoff (2005) use a random-lottery method to study the charter school effects on student achievements. The data comes from three campuses operating within the largest charter school system in Chicago, focusing on students from kindergarten through fifth grade. Their econometric models distinguish different charter school effects on students who were offered a chance to attend a charter school than on students who actually attended charter schools. The estimates show that students who are eligible to enroll

in the first through fifth grades have higher achievement when compared with students who were lotteried-out.

More recently, Hoxby and Murarka (2007) applied a similar research design to evaluate 47 charter schools in New York City. They found a positive achievement effect in both math and reading for students who are attending New York City charters.

The most recent evidence comes from a study of lottery students at oversubscribed charter schools in Boston (Adbulkadiroglu, et.al. (2009)). This study focuses on middle and high school charters, and provides a careful analysis of differences between the performance of lottery winners and losers. The authors find that charter schools have a positive and significant effect on student performance in math and reading in both middle and high schools. The estimated impact on math performance of attending a charter middle school is strikingly large — an increase of half of a standard deviation.

We note that the gold standard designation is derived from the strong internal validity properties that the experimental studies possess. The results of these studies are based upon a very particular and particularly small set of schools, and therefore may have limited applicability for charters in the large. As noted in Abdulkadiroglu et. al. (2009, p. 8), “If oversubscription and good record keeping are signs of school quality, the results from our lottery study may be somewhat better than we should expect from a broader sample of schools.” Thus, the results offer what is termed weak external validity.

***We note that the gold standard designation is derived from the strong internal validity properties that the experimental studies possess. The results of these studies are based upon a very particular and particularly small set of schools, and therefore may have limited applicability for charters in the large.***

***Evidence from the small number of lottery-based studies is consistently positive and quantitatively rather substantial.***

## SUMMARY COMMENTS ON CHARTER STUDENT PERFORMANCE EVIDENCE

- Even after narrowing the field to the best of the recent non-experimental studies, there is no preponderance of evidence stacking up either for or against the case for improved student achievement within the charter environment. Rather, there is a genuinely mixed bag of results, with charters outperforming traditional public schools in some cases, vice versa in other cases, and ties in a number of remaining cases. The jury is out.
- Although directionality of charter school effects is all over the board, the more consistent message is that these effects are small.
- Evidence from the small number of lottery-based studies is consistently positive and quantitatively rather substantial.
- There is a significant body of evidence suggesting that charters improve as they move beyond the startup years (but even this finding isn't uniform).
- There is plenty of evidence that, on average, students show a drop in score performance during their first year in a charter school. This may be an anomaly, whether arising from difficulties transitioning to the new school, or other factors. We note that this disruption effect correlated with changing schools is

not unique to charters — evidence of disruption effects associated with changing schools is also found among traditional public schools, in Hanushek, Kain, and Rivkin (2004). However, this could be seen as evidence that charters, on average, are truly poorer academic units. Distilling the truth about the transition to a charter effect is not a trivial task, but a failure to account for this effect may distort conclusions regarding the overall impact of charter school attendance on the achievement path of charter school students.

- The adoption of common best-practice methods will help to enable across-state comparisons of results.
- The impact results referenced in Table 4 above are averages for charters, for charter types, and/or for particular charter school student types. There is a distribution of effects among charters and charter students within a particular state or city sample, and much remains to be learned from these heterogeneities. For example, are there any systematic features of Missouri's above-average performing charters that distinguish them from lower-performing charters? The difference may lie in variations in educational/teaching practices that may not show up in common observational data. There may be important research opportunities that couple best-practice econometrics with best-practice survey methods. Econometrics can help identify the

top performers, and the survey can investigate how particular schools got to the top.

- It is also important to recognize that all of the discussion to date takes gains in test scores as the relevant achievement indicator. Other outcomes, however, matter as well. Features of the school environment, such as safety and discipline, may rank high on the parental school evaluation scorecard and may well be driving some parents to try charters. Other academic outcomes, such as completion rates, could also be an important part of the school quality picture. This may be of particular relevance when evaluating the performance of high school charters — particularly in states where many of them are targeted to deal with academically at-risk high school kids.

## SYSTEMIC IMPACT ON TRADITIONAL PUBLIC SCHOOLS

Perhaps the most important potential impact of competition, from charters or other sources, is the systemic effect on the performance of students remaining in traditional public schools. Only a small percentage of students attend charters, even in states that are relatively supportive in allowing charters to set up and operate, but the existence of charter schools and the competitive pressure they exert on traditional public schools may generate an impact far beyond the influence felt directly by students attending charters. If

charter competition leads to more effective traditional public schools, then the impact of charters multiplies far beyond the measure of charter student achievement. The realized competitive effect of charters to date, however, is probably muted by the relatively small size of the charter sector and by the significant restrictions placed on charters as public school operations. A larger charter presence may well magnify the competitive impact of charters on traditional public school students.

An important claim that distinguishes choice reform from many other within-institution reforms is the possibility of increasing educational outcomes for all students without increasing the allocation of resources to the educational sector. Charters lead to a reallocation of students among public school types, but because public school dollars follow students, the existence of charters only reallocates funds from traditional public schools to charters without increasing the overall allocation to public education as a whole. In fact, given that charters are usually barred from receiving the capital funds that are available to public schools, the proliferation of charter schools may result in an overall reduction in resources allocated to public education.

Existing public school suppliers may not be cost-efficient because they face weak incentives, and this could result in public schools operating above their relevant cost frontiers. If choice reforms increase effective competition, and all suppliers in the new equilibrium move toward or onto their cost frontiers, then across-the-board improvements in outcomes are possible. That is, charters may force traditional public schools to

***Existing public school suppliers may not be cost-efficient because they face weak incentives, and this could result in public schools operating above their relevant cost frontiers. If choice reforms increase effective competition, and all suppliers in the new equilibrium move toward or onto their cost frontiers, then across-the-board improvements in outcomes are possible.***

***To the extent that student body composition can have a positive impact on student performance, the equilibrium sort under the new institutional structure — in which charters compete with traditional public schools for students — may lead to improved performance among both students at charter schools and those remaining behind at existing public schools.***

become more efficient in order to more effectively compete with charters for student enrollment.

Sorting is a second mechanism for potential systemic improvements from expanded choice. New charters entering the market may, by attracting certain students, alter the composition of the student body at traditional public schools. For example, the ability distribution of students may be altered by the exit of some children with the highest — or lowest — level of ability. This sorting by ability can have impacts stemming both from peer effects — students' achievement being influenced by the characteristics of their peers — and from the impact of sorting on the ability of teachers to efficiently teach students. Students may learn better — or worse — in the presence of more homogeneous, or more heterogeneous, peers. Likewise, teachers may be better able to teach efficiently to a more homogeneous — or more heterogeneous — student body. Thus, the directionality of peer effect impact on student achievement depends on the specific peer effect at issue, and individual student responses to the same change in peers may be quite different. To the extent that student body composition can have a positive impact on student performance, the equilibrium sort under the new institutional structure — in which charters compete with traditional public schools for students — may lead to improved performance among both students at charter schools and those remaining behind at existing public schools.

A key issue in evaluating the competitive effect of charter schools is how to measure charter competition.

Conceptually, passage of the law allowing charter schools to operate could be taken as the key point of increased charter competition, because from that point forward, every traditional public school district affected by the law faces the threat of potential entry by charter schools. School districts might improve in response to this threat without a single charter school ever forming. However, the threat of entry associated with a charter law is attenuated by constraints on potential operators that usually come bundled with charter legislation, and thus the expected response of existing schools could be minimal. In principle, this type of competitive effect could be tested for with an event study, evaluating the effect of charter law passage. In practice, the number of confounding events and the limited number of event dates limits the usefulness of this type of approach.

A further source for competitive effect could occur in correlation with actual charter entry, so that the threat of losing students to charters is readily apparent. One way to measure this charter competition effect would involve analyzing the degree to which charter schools have become well established locally, at a level that provides meaningful competition for the traditional public school district. Various such measures have been used in the economic literature, including the number of charter students within a certain geographic area, the number of charter schools within a certain geographic area, binary indicators for charter enrollment surpassing a threshold, and binary indicators for the existence of charter schools within a certain geographic distance.

**Table 5. Student-Level Studies of Impact of Charter Schools on Traditional Public School Performance**

CITATION	STATE OR CITY	DATA	YEAR AND GRADES	COMPETITION MEASURE	ACHIEVEMENT MEASURE AND ESTIMATION METHOD	CONCLUSIONS
Booker, et al. (2008)	Texas	Student level; standardized test scores; math and reading	1995–2002; 3rd–8th	Charter school market share	Restricted value added; spell fixed effects	Small positive effect on math and reading
Bifulco & Ladd	North Carolina	Student level; standardized test scores;	1996–2002; 3rd–8th	Variable measuring proximity and number of nearby charters	Restricted value added; fixed effects	No effect on math; negative effect on reading
Sass	Florida	Student level; standardized test scores	1999–2003, 3rd–10th	Market share; proximity	Restricted value added; spell fixed effects	No effect on math; small positive effect on reading
Buddin & Zimmer (2005)	California	Student level; standardized test scores; math and reading	1997–2002	Proximity; Presence of charters; Number within 2.5 miles; market share; Number of students lost to charters	Levels of test score; fixed effects	No effect
Zimmer (2008)	Philadelphia	Student level; all grades	2001–2002	Distance to nearest charter; number of charters within 2.5 miles	Student and school fixed effects	No effect

We examined five studies using panels of student-level data to study the impact of charter competition on traditional public schools. These studies are summarized in Table 5. They all use standardized test scores, and mostly use a form of restricted value-added specification for student achievement, measuring the ability of schools to improve on past student performance. They mostly use some form of student fixed effects, sometimes spell fixed effects that combine student and school fixed effects. Measures of charter competition vary, but generally include measures of charter enrollment or the number of charter schools within a particular geographic distance of traditional public schools. Yet, despite these similarities, results differ across states. Studies report small positive impacts in Texas and Florida, small negative impacts in North Carolina, and no effect in California or Philadelphia. The key finding seems to be that the impact of charter competition is small — sometimes positive and small, sometimes

negative and small, but, at least in these studies, always small. Table 5 summarizes the results.

## CHARTERING IN MISSOURI

### History

Missouri charters began operating in 1999, in response to the perceived poor performance of two school districts: Saint Louis and Kansas City. Because charters are seen as a response to the performance of these two school districts, charters are allowed only in these two districts. However, an unlimited number of charters are allowed, and their per-pupil funding is equivalent to traditional public schools. New charters can be authorized by either of the two school districts themselves, or by institutes of higher education, and any person or nonprofit organization can apply for a charter. Charters can operate from converted

***Missouri charters began operating in 1999, in response to the perceived poor performance of two school districts: Saint Louis and Kansas City.***

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public schools (up to 5 percent of traditional public schools can be converted to charter schools) or new starts. For-profit organizations are not allowed to apply for a charter, but they may be hired by the charter governing body to manage the school. Charters have limited relief from state regulation, and limited autonomy. Public school districts may provide capital funds to the charters they sponsor, or with whom they contract. At least one third of the charters issued go to schools that actively recruit high-risk students and dropouts. The charter law structure in Missouri is rated as the 10<sup>th</sup> strongest in the country on the Center for Education Reform charter law scorecard.

### **Current Situation**

Table 6 lists the number of charter schools in Missouri, and the year they began operating. This data, taken from the Missouri Department of Education website, lists 29 charter schools for the current academic year. This includes 18 in Kansas City and 11 in Saint Louis. Kansas City charters include 13 that have been operating since the 1999–2000 school year. There were three new charters in Kansas City in 2007–2008, and there are none for the current school year. Saint Louis has a different pattern of chartering, with no charters in 1999–2000, three in 2000–2001, three more during the next six years, then four new charters in 2007–2008, and one in 2008–2009.

Table 7 lists the sponsor of charter schools in Kansas City and in Saint Louis. In Kansas City, there have been four sponsoring organizations, and two have sponsored the majority of charters: nine

by the University of Central Missouri and seven by the University of Missouri–Kansas City. In Saint Louis, sponsorship is more diffuse, with Missouri Baptist University sponsoring four charters, the Missouri University of Science and Technology sponsoring two, and others sponsoring one charter each. The Saint Louis School District and the Missouri Board of Education each sponsor one charter.

Table 8 provides a summary of average student performance for Kansas City public school students attending charter schools, in comparison with Kansas City public school students attending traditional public schools. Student performance is measured here by student performance on the annual Missouri Assessment of Proficiency (MAP) test, which gauges student knowledge of communication arts and mathematics. The MAP test results are classified as “below basic,” “basic,” “proficient,” or “advanced,” depending on score. In the Kansas City School District’s third grades, 22.1 percent of charter school students were graded as below basic for the 2008 communication arts test, while 35.9 percent of traditional public school students were graded as below basic. For the mathematics test, 16.9 percent of those same third graders scored below basic, in comparison to 19.6 percent of traditional public school students.

The general conclusion for Kansas City is that in grades 3 through 8, charter school students performed better than students in traditional public schools. In both math and communication arts, and across grades — with one exception, fifth-grade communication arts — a higher percentage of charter school students

Table 6. Growth of Charter Schools in Kansas City and Saint Louis City School Districts

SCHOOL YEAR WHEN OPENED	KANSAS CITY	SAINT LOUIS
1999–2000	13	0
2000–2001	1	3
2001–2002	0	1
2002–2003	2	1
2003–2004	0	1
2004–2005	0	0
2005–2006	0	0
2006–2007	0	0
2007–2008	3	4
2008–2009	0	1
Total	18	11

Table 7. Sponsors of Charter Schools in Kansas City and Saint Louis City

DISTRICT	SPONSOR	NUMBER OF CHARTERS SPONSORED
Kansas City	*Metropolitan Community College–Penn Valley	1
	*University of Central Missouri	9
	*University of Missouri–Kansas City	7
	*University of Missouri–Columbia	2
Saint Louis City	*Missouri Baptist University	4
	*Missouri University of Science & Technology	2
	*Southeast Missouri State University	1
	*Saint Louis University	1
	*University of Missouri–Saint Louis	1
	*Missouri State Board of Education	1
	*Saint Louis City School District	1

scored as proficient or higher (i.e., proficient or advanced). However, this pattern is reversed in high school. On the 11<sup>th</sup>-grade test for both subjects, traditional public school students did better than charter school students.

Table 9 provides the results for Saint Louis city, and the comparison of average

performance levels is quite different from the Kansas City results. In Saint Louis, the average performance of students attending charter schools is worse than the average performance of students attending traditional public schools. This is true for every grade level, and for both subjects.

***In Saint Louis, the average performance of students attending charter schools is worse than the average performance of students attending traditional public schools. This is true for every grade level, and for both subjects.***

Table 8. Kansas City School District Achievement 2008: Charters and Traditional Public Schools (TPS)

MAP, Kansas City, 2008, Communication Arts								
Grade Level	Below Basic (%)		Basic (%)		Proficient (%)		Advanced (%)	
	CS	TPS	CS	TPS	CS	TPS	CS	TPS
3	22.1	35.9	57.3	56.4	14.6	12.1	7.5	5.5
4	16.2	20.3	56.6	55.5	22.3	20.1	4.9	4.2
5	17.3	16.8	58.4	57.5	17.9	19.3	6.4	6.5
6	23.5	19.7	47.3	55.4	22.7	20.4	6.4	4.5
7	22.3	27.1	49.3	47.2	22	22	6.4	3.8
8	9.1	15.9	15.5	59.8	18.7	18.7	6.7	5.6
11	31.7	33.1	52.1	45.5	13	16.8	3.2	4.6

MAP, Kansas City, 2008, Math								
Grade Level	Below Basic (%)		Basic (%)		Proficient (%)		Advanced (%)	
	CS	TPS	CS	TPS	CS	TPS	CS	TPS
3	16.9	19.6	57.9	57.7	21.5	18.6	3.6	4.1
4	19.7	21.4	53.1	57.3	24.8	17.9	2.4	3.4
5	23.6	19.9	54.3	59.4	17.9	16.7	4.2	4
6	26	34.6	47.8	50.8	21.7	20.2	4.5	4.3
7	31.9	37.2	41.5	41.7	21.8	17.5	4.9	3.5
8	42.3	43.7	41.6	40.4	12.8	13.2	3.4	2.6
11	58	57.6	30.7	23.4	10.5	15	0.8	4

Note: "CS" indicates charter schools; "TPS" indicates traditional public schools.

***One obvious difference between traditional public schools and charter schools is that Missouri law requires one third of charters issued to go to schools serving high-risk students and dropouts.***

Interestingly, Tables 8 and 9 also provide an ability to compare performance between the two school districts. Although average performance in Saint Louis seems better than Kansas City in the lower grades, by eighth grade, Kansas City students — both charter students and traditional public school students — achieve higher average performance than Saint Louis students. This continues for the high school test, as well.

As discussed in Section 5 of this study, these comparisons of average levels of performance, although interesting, must be interpreted with caution. This comparison of average performance cannot be used to judge the value-added qualities of either charter

schools or traditional public schools. Students and their families self-select into charter schools, and the pool of students attending charters may differ substantially from the pool of students attending traditional public schools. The relative performance of these disparate student bodies cannot be used to judge the relative benefits of attending either charter schools or traditional public schools. In order to judge the efficacy of these two types of educational institutions, one would need individual student data with sufficient detail to provide researchers with the ability to set up the counterfactual of how a student in one educational institution (charter or traditional) would have performed in the



Table 9. Saint Louis City School District Achievement 2008: Charters and Traditional Public Schools (TPS)

MAP, Saint Louis, 2008, Communications								
Grade Level	Below Basic (%)		Basic (%)		Proficient (%)		Advanced (%)	
	CS	TPS	CS	TPS	CS	TPS	CS	TPS
3	42.7	23	49.6	53.3	6.5	15.6	1.1	8
4	34.2	24.1	55.2	53.7	9.3	18.6	1.3	3.6
5	24.8	19.6	62.1	55.2	11.3	19.1	1.9	6.1
6	25.9	28.6	57.2	52.9	15.2	15	1.8	3.6
7	29.2	30.2	54.8	50.1	15.2	16.8	0.8	2.9
8	16.8	19.5	67.5	61.3	13.5	15.1	2.2	4.2
11	39	32.6	52.2	48.7	7.9	14.2	0.9	4.5

MAP, Saint Louis, 2008, Math								
Grade Level	Below Basic (%)		Basic (%)		Proficient (%)		Advanced (%)	
	CS	TPS	CS	TPS	CS	TPS	CS	TPS
3	34.6	19.9	54.8	60.3	10.1	16.1	0.5	3.7
4	37.5	27.9	55.4	55.6	6.4	14.5	0.8	2
5	34.1	26.7	62.9	54.5	11.6	15.6	0.8	3.1
6	29.3	31.2	53	49.5	16.9	16.4	0.7	2.8
7	40.3	42.5	44.6	40	13.6	13.6	1.5	3.9
8	57.3	52.3	31.4	34.6	9	10	2.3	3.1
10	70.2	NA	21.4	NA	8.3	NA	0.2	NA
11	NA	55.7	NA	28.8	NA	10.8	NA	4.7

Note: "CS" indicates charter schools; "TPS" indicates traditional public schools.

alternative institution. Only then can one meaningfully judge the potential value-added experience of charter schools as compared to traditional public schools.

One obvious difference between traditional public schools and charter schools is that Missouri law requires one third of charters issued to go to schools serving high-risk students and dropouts. To the extent that this requires charters to serve a student body skewed toward lower-performing students, this requirement would likely result in charters having a lower average student performance. But the important issue when judging charters is not absolute student performance, but the performance of students in a charter

relative to the performance that student might have achieved in a traditional public school. That question requires data beyond that which is available on public access websites.

Table 10 provides information about average socioeconomic and ethnic characteristics of students in both traditional public schools and charter schools in Kansas City. Charter schools and traditional public schools have a similar percentage of students who qualify for free and reduced-price lunches. Charters have a higher average percentage of black students, and, consequently, a smaller percentage of Hispanic and white students.

***The important issue when judging charters is not absolute student performance, but the performance of students in a charter relative to the performance that student might have achieved in a traditional public school.***

Table 10. Ethnic Characteristic of Kansas City Charter Schools and Traditional Public Schools

School Type	Total	Asian (%)	Black (%)	Hispanic (%)	Indian (%)	White (%)	F/R Lunch (%)
Charters	6,116	1.9	77	12.8	0.2	8.2	80.9
Traditional Publics	24,449	1.9	64.4	19.3	0.3	14.1	79.9

***Once charters attract students, they seem to educate them with a quality roughly comparable to traditional public schools, in terms of improving student performance over time. Further, they appear to achieve these results with somewhat less funding per student than do traditional public schools, at least in most states.***

## SUGGESTIONS FOR FURTHER RESEARCH

Missouri offers an attractive and promising environment for assessing charter schools. With the ratio of charter school students to traditional public school students reaching 20 percent in Kansas City, the relative size of the charter sector in the relevant market is among the highest in the country. Researchers with access to individual student data, including MAP scores, could implement a gold or silver standard study (depending upon the presence or absence of lottery data) of both the impact of charters on their students, and, perhaps even more importantly, of the impact of charters on the kids who remain in city public schools.

## CONCLUSIONS

Overall, charters seem to do a reasonable job of educating students, especially once one examines value-added comparisons. Some studies estimate an initial negative impact for charter attendance, but over time charter school students catch up and even surpass the achievement level they would have attained had they stayed at a traditional public school. However, these effects are not large, and a general conclusion that the impact is weak — and weakly positive at best — seems

warranted. A caveat to this conclusion is to note that the evidence from the small number of gold standard lottery-based studies is both consistently positive and quantitatively substantial.

Regarding a charter impact on traditional public schools, the results are mixed. For Texas and Florida, the impact is estimated to be small but positive for at least some grades. For California and Philadelphia, the impact seems to be negligible. Finally, for North Carolina, a small negative impact is found. Overall, a conclusion that the charter competition effect is, at best, weakly positive again seems warranted. Perhaps further research should be directed at attempts to link state-specific charter institutions or regulations to their effects on the impact of charter competition.

What, then, to make of charter schools as an educational policy reform? It seems that charters provide students and parents with a choice of schools, and that charters have been successful at attracting students and at growing their enrollments. Once charters attract students, they seem to educate them with a quality roughly comparable to traditional public schools, in terms of improving student performance over time. Further, they appear to achieve these results with somewhat less funding per student than do traditional public schools, at least in most states. Finally, charters may exert a competitive impact

on traditional public schools, although this impact is estimated to be small — and may be negative in some states. The modest estimated impacts of charter schools are consistent with what we might expect from the modest expansion of school choice that is generated by charter policies.

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