

# The Competitive Effect of School Choice Policies on Performance in Traditional Public Schools

David Arsen, Ph.D.  
Michigan State University

Yongmei Ni, Ph.D.  
University of Utah

March 2008



## **EPRU** | EDUCATION POLICY RESEARCH UNIT

### **Education Policy Research Unit**

Division of Educational Leadership and  
Policy Studies  
College of Education, Arizona State  
University  
P.O. Box 872411, Tempe, AZ 85287-  
2411  
Telephone: (480) 965-1886  
Fax: (480) 965-0303  
E-mail: [epsl@asu.edu](mailto:epsl@asu.edu)  
<http://edpolicylab.org>

### **Education and the Public Interest Center**

School of Education,  
University of Colorado  
Boulder, CO 80309-0249  
Telephone: (303) 492-8370  
Fax: (303) 492-7090  
Email: [epic@colorado.edu](mailto:epic@colorado.edu)  
<http://education.colorado.edu/epic>

- This policy brief is available online at: <http://epsl.asu.edu/epru/documents/EPSSL-0803-261-EPRU.pdf>

One of a series of Policy Briefs made possible by funding from the Great Lakes Center for Education Research and Practice.

## **The Competitive Effect of School Choice Policies on Performance in Traditional Public Schools**

David Arsen, Michigan State University

Yongmei Ni, University of Utah

### *Executive Summary*

This policy brief reviews research on what impact the competition introduced by vouchers and charter schools has upon the effectiveness and efficiency of traditional public schools (TPSs). Only recently has such research been possible in the U.S., as choice options became sufficiently widespread to elicit competitive responses from TPSs. We summarize conflicting theoretical predictions about how competition affects students who do not actively choose, and we identify features of policy design, implementation and local settings likely to influence the nature of competition. We find that results from available empirical studies are mixed and do not yet allow for firm conclusions about the effects of competition on traditional schools and non-choosing students. The review notes methodological challenges and possible lines of future research.

We recommend that policymakers exercise caution when assessing predictions that school choice policies will benefit students who are not active choosers, since the evidence in support of this claim is not yet strong or conclusive.

## **The Competitive Effect of School Choice Policies on Performance in Traditional Public Schools**

David Arsen, Michigan State University

Yongmei Ni, University of Utah

### ***Introduction***

One of the most important arguments for market-based educational policies is that they create competition that will pressure educational systems to use their resources more efficiently. School efficiency, also referred to as productivity, is the extent to which educational inputs (such as teaching hours) produce desired student outcomes (such as achievement gains). Increased efficiency means attaining better student outcomes with the same inputs, or the same student outcomes with fewer inputs. Ever since Milton Friedman proposed a voucher system more than half a century ago, school choice proponents have maintained that the competition introduced by choice policies will spur improvements in traditional public schools (TPSs) and so benefit students who remain in them. This argument has been central to countless school choice policy debates in recent decades. This brief surveys available evidence on this question. We do not address the large number of studies of student performance in choice schools (charter schools or voucher schools, for example), but focus instead on the effects of school choice competition on TPSs.

School choice advocates appeal to theories of market competition to predict how TPSs will respond to choice policies. According to this argument, TPSs ordinarily have little incentive to improve their efficiency because they operate in relatively monopolistic markets. If, however, policies offer parents and students expanded choices and tie funding to enrollment, then educators will have an incentive to increase their productivity by working harder and implementing previously neglected administrative and educational improvements. This theory predicts that more productive schools will prosper by attracting increased enrollment, while less productive schools will be forced to improve or shut down.

On the other hand, some predict that a more competitive system will not benefit all students, but rather will create both winners and losers relative to the status quo. Increased choice and competition could diminish the quality of at least some TPSs as choice schools draw away motivated students, funding, effective teachers, or all three. If highly motivated students are more active in choosing to attend choice schools, less motivated students would become clustered in increasingly disadvantaged TPSs. These schools in turn could have difficulty responding to the competitive challenge because of negative peer effects over which school

administrators have limited control. Choice policies could also introduce inefficiencies associated with high levels of student or teacher mobility or through the underutilization of facilities in schools losing students. Given relatively fixed operating expenses in the short run, average per-pupil costs may increase in TPSs that lose students. If revenues decline faster than costs in these schools, they may be forced to cut programs, which could spur the loss of additional students and resources and trigger a downward spiral.

As school choice policies grow, it is increasingly important to gain a better understanding of the validity of these contrasting predictions, since, for the foreseeable future, most students will remain in the TPS system. Relevant studies have not been possible in the U.S. until recently, however, since they require sufficiently high rates of choice program participation over a long enough period to elicit TPS responses. Although a variety of school choice policies could potentially generate market pressures, we focus on vouchers and charter schools because they are the only choice policies for which the competitive impacts on TPS outcomes have been studied systematically.<sup>1</sup> In this early stage of research, the initial results are mixed and inconclusive.

To frame our discussion of the empirical research, the next section offers some conceptual observations on various ways competition might affect school outcomes. We argue that in principle, choice policies could generate either positive or negative consequences for students remaining in TPSs. We also identify features of choice policies and local settings likely to affect the distribution of costs and benefits among various constituencies and some key methodological issues for researchers. Finally, we summarize the empirical research on the competitive effects of vouchers and charter schools, and we offer some concluding observations.

### ***Conceptual Background***

Discussions of the competitive consequences of school choice are most often framed in terms of economic theories of how markets affect the behavior of consumers and suppliers. School choice policies are intended to create market incentives that change the behavior of both families (consumers) and schools (suppliers). Even in theory, however, these behavioral responses and hence the educational consequences of competition are uncertain.

Proponents of school choice typically anticipate that given the opportunity, students (and families) will select higher quality schools, generally defined as schools that more efficiently produce desired student outcomes. Thus, high quality schools, including new entrants to the market like charters, are expected to gain students and resources at the expense of low-quality schools. This drain on low-quality schools is expected to prompt them to improve their *technical* efficiency as administrators move employees to work harder and/or implement better

educational practices or programs. Indeed, schools that attract choice students would provide administrators of other schools with useful information on how their practices or resource allocation could be improved. In addition, choice could generate improvements in *allocative* efficiency as students sort themselves across schools into more compatible groupings based on their learning needs and interests. Such groupings would allow educators in both choice and traditional public schools to better adapt instructional programs to their particular student bodies.

This theoretical conception entails three interrelated mechanisms through which choice and competition could affect student achievement and efficiency.<sup>2</sup> First, it presumes that students will shift from lower- to higher-productivity schools, thereby raising the education system's overall efficiency. Second, it involves a re-sorting of students across schools, which will generate peer effects on student achievement. Third, it presumes that TPSs will respond to competition in particular ways, although those expectations may or may not be realized. Consideration of each of these mechanisms highlights ways in which the systemic adjustments predicted by choice advocates are highly uncertain and contingent.

First, if school choice is to generate improvements in student outcomes, choices should be based on schools' academic quality. However, if parents choose schools for other reasons—student racial or socioeconomic composition, sports facilities, proximity to home—their choices may not pressure schools losing students to improve their academic performance. In fact, parents often lack good information on schools' academic quality, and in such situations they may well use more visible features, including student demographics, as a proxy for school quality.<sup>3</sup>

Second, the re-sorting of students under school choice policies will generate peer effects for the education of students who remain in TPSs. Proponents expect that choice policies will produce positive peer effects by fostering groupings of students in schools with more compatible learning needs. However, if parents select schools based on peer characteristics, choice could increase socioeconomic and ability stratification across schools, harming some students who remain in TPSs. This is a particularly likely outcome if low-achieving students benefit from interaction with higher-achieving classmates and active choosers are disproportionately higher-achieving. In such cases, peer effects could harm the education of disadvantaged students who become more concentrated in TPSs.

Finally, it is not at all clear that schools losing students will respond by improving their educational performance, either by implementing better educational practices or inspiring harder work among employees. Such responses are certainly possible, but so are a variety of other potential strategies. For example, administrators in TPSs may choose to cooperate with one another or with new entrants to the local

education market. Alternatively, TPSs might work together to create barriers to some choices in order to restrict families' options and blunt the potentially damaging impact of competition. Then again, TPSs may simply adopt a passive stance, being content to let other schools draw away certain students. Among schools and districts that do compete, efforts to improve school quality constitute only one of a range of strategic actions (such as marketing, extracurricular programs, upgrading facilities), each with differing consequences for school efficiency. In short, TPSs are likely to respond to competition with diverse strategies, including some that are unlikely to improve educational outcomes. While all of these potential responses have been reported anecdotally, we have as yet an incomplete understanding of which responses are most prevalent—and why.

Whatever the response of TPS educators to market-based reforms, they may need to overcome two additional sources of inefficiency that choice policies could introduce. First, school choice will increase student mobility. While low levels of mobility can be accommodated, high levels generate a turbulent educational setting that undermines teaching and learning. Second, choice may hinder efficiency in TPSs losing students, if they are forced to underutilize their capital facilities or personnel. Given relatively fixed operating expenses, average per-pupil costs could easily increase in TPSs losing students, at least in the short term.

### *Conditioning Factors*

School choice policies initiate a complex set of adjustments among participants in educational systems that can have either positive or negative results. The likelihood of either depends on choice program design and on local circumstances. We call these *conditioning factors*. While the research literature yields disparate findings on the effects of choice and competition, attention to conditioning factors may help to provide coherence to apparently conflicting findings. Moreover, a better understanding of such factors can help shape policies that preserve the benefits of choice policies while minimizing the potential harm. This list of conditioning factors is illustrative, not exhaustive, attending to four primary categories: (1) financial arrangements, (2) regulations, (3) policy implementation, and (4) local settings.

#### **Financial Arrangements**

The nature of competition among schools depends critically on the link between student flows and school funding. If resources are not at stake, schools are unlikely to compete for students. Choice policies vary greatly in the share of per-pupil funding that schools lose when students depart. Moreover, it is difficult to know how high the stakes should be. If the loss of revenue when a student leaves is less than the marginal cost of

educating that student, then the school actually benefits financially from declining enrollment. But if, on the other hand, revenues decline faster than costs when students leave, schools losing students have difficulty avoiding cuts to existing programs; still less are they able to marshal resources necessary to improve services.<sup>4</sup> One way for policy to address this tension is to phase in the full per-pupil funding loss over a period of years.

In addition, student funding must be adequately adjusted for higher-cost students (such secondary versus elementary, or special versus regular education students); otherwise, choice schools have an incentive to compete for the cheapest and easiest students to educate. Insofar as choice schools are successful in enrolling low-cost students and excluding high-cost students, they reduce their own average cost. They accomplish this not by increasing their efficiency, however, but by increasing the average cost for TPSs that continue to enroll high-cost students.<sup>5</sup>

### **Regulations**

The regulations governing choice policies strongly influence the incentives and constraints that market participants face. The predicted benefits of school choice for non-choosers apply only if students choose schools, not the other way around. To reduce the risk of harmful effects on students who remain in TPSs, rules prohibiting selective admissions practices at choice schools are therefore necessary. Rules that establish a uniform process for enrollment at choice schools decrease the opportunity to enroll or exclude students on the basis of cost or other student characteristics. Regulations regarding curriculum, teacher preparation, or testing in choice schools narrow the scope for educational innovation, but they can also help to level the playing field for competition among schools.

### **Policy Implementation**

How a choice policy is implemented also affects outcomes. For example, parents typically lack complete information on the quality of alternative schools, and all schools have incentive to present only favorable information. Policies that ensure that families receive information on application procedures and academic programs of available schools help parents make sound choices. Moreover, they help schools learn from one another and encourage widespread adoption of best practices.<sup>6</sup> Prospects for positive changes in TPSs are also enhanced when implementation involves moderately paced expansion of choice participation, technical assistance for schools in need of improvement, and rigorous oversight of the policy rules by public agencies.



## **Local Setting**

A particular policy can elicit diverse effects in different states or across local districts. For example, the rate of population growth or decline in a region will strongly condition the competitive pressures of choice policies. In rapidly growing areas, the competitive threat of choice policies is greatly muted. Public schools may even welcome the departure of students to alleviate enrollment pressure. In areas with declining population, however, choice is more likely to generate strong competitive pressure on TPSs, especially in states where districts lack the ability to raise additional funding locally. This combination of circumstances also poses the greatest risk that choice will touch off a downward spiral in at least some TPSs.

Another element of the local setting that affects choice outcomes is the degree of preexisting inefficiency in an area's public schools, which itself may be the result of the range of private or public school choices historically available. Similarly, the potential for choice policies to generate either positive or negative peer effects on students remaining in TPSs depends on the degree of preexisting racial and socioeconomic segregation. Finally, the prospect for school choice to spur improvement also clearly depends on the quality of administrative leadership. If leadership is weak, politically divided and subject to rapid turnover, a school or district will have limited capacity to respond effectively to competitive pressures.<sup>7</sup>

In sum, the competitive effects of school choice on students who remain in TPSs are conditional and uncertain. Further research is needed to clarify the competitive effects of specific policy features in conjunction with given local conditions in order to minimize the potential harmful effects of choice competition on some students. Many school choice advocates themselves acknowledge the potential risks that choice policies can pose for non-choosers. When they nevertheless argue that every child will benefit from school choice, they are usually relying on the idea that "school productivity would increase sufficiently to swamp any negative allocative effects that some students might experience."<sup>8</sup> For this reason, empirical evidence of school choice competition generating improved TPS efficiency becomes important. We turn now to an evaluation of empirical research on this issue.

## ***Methodological Challenges in Assessing Competitive Effects***

School choice policies are seldom implemented as controlled experiments, so scholars must rely on non-experimental, statistical methods to assess competitive effects. Researchers usually try to identify a causal relationship across local areas between the level of competition and TPS student achievement. In order to do so, however, they must overcome some key methodological obstacles. These include the non-

random nature of choice school location and choice student participation, and the challenge of accurately measuring the intensity of choice competition.

First, the availability of choice options is not randomly distributed across local communities, but rather is likely to be related to the performance of local public schools. It is reasonable to expect new schooling options to be disproportionately established in areas where families are least satisfied with local public schools. However, this poses a methodological problem. Suppose, for example, researchers observe that a lower level of public school quality correlates with a higher degree of competition. It is possible that low public school quality induced more choice options—or, alternatively, that competition lowered public school quality. To reliably estimate the competitive effect, therefore, researchers must address this chicken-and-egg problem with statistical procedures such as fixed-effect transformations or instrumental variable (IV) estimators.<sup>9</sup>

Second, students who participate in school choice may differ systematically from those who do not in terms of their past performance, socioeconomic background, parental motivation, and innate ability. By drawing certain students away, school choice might significantly change the student composition of conventional public schools. For example, if choice schools tend to draw lower-performing students, the average achievement level of students remaining in TPSs would automatically go up, even without any competitive effect. To correct for potential biases associated with student self-selection, researchers can include extensive control variables representing student characteristics in their estimations. Alternatively, when multi-year, student-level data are available, researchers can control for unobserved student characteristics such as parental motivation and innate ability through fixed-effects transformations.

Finally, studies of competitive effects must devise suitable measures of the intensity of competition that TPSs experience. Many studies of private schools' competitive effects have used the percentage of total enrollment in an area attending private schools. Charter school studies have measured the level of competition by the number of charter schools within a given radius of public schools, the distance from a public school to the nearest charter school, or the share of public school students who have left to attend charter schools. None of these measures is perfect, however, and there is no consensus about which is most suitable. Moreover, all reflect the existence of multiple suppliers, not the intensity of competition or whether and how schools or districts compete.<sup>10</sup>

### ***Evidence on the Effects of Choice Competition***

With the proliferation of school choice programs in recent years, there has been a steady growth in studies of the competitive effects of

vouchers and charter schools on TPS performance. As a backdrop for our review of this research, it is useful to note Belfield and Levin's survey of more than 40 studies of "traditional" forms of competition on TPSs. This includes competition between public and private schools as well as competition among public schools that is realized when households choose to live within a particular school district in an area (Tiebout choice).<sup>11</sup> Belfield and Levin conclude that these forms of competition produce at most small positive effects on student achievement and efficiency. On average, they found that an increase of one standard deviation in competition produces less than a 0.1 standard deviation increase in public school test scores.

### **Competitive Effects of Vouchers**

Evidence of vouchers' competitive effects comes mainly from two publicly funded programs, one in Milwaukee and one in Florida. Established in 1990, the Milwaukee Parental Choice Program (MCPC) offers vouchers for students from low-income families to attend secular private schools. The program was expanded in 1995 to include religious private schools. The MCPC remains the largest voucher program in the nation. The program's financial impact on Milwaukee public schools is muted by design; the district loses roughly 30 percent of state aid associated with each voucher student. In 1999, Florida adopted the "A-Plus" accountability system, which included the Opportunity Scholarship Program that allowed students in low-performing schools (those receiving "F" grades for two consecutive years) to receive vouchers to attend private schools.<sup>12</sup>

Hoxby's study of the MCPC found a substantial positive competitive effect of vouchers.<sup>13</sup> Analyzing school-level data, she compared changes in the average performance of fourth-graders prior to and after the widespread use of vouchers. She found that public schools with the highest percentage of voucher-eligible students had significantly higher increases in achievement than schools with fewer or no voucher-eligible students. In math, for example, the annual increase in test scores in the schools with the highest proportion of voucher-eligible students was 7 percentile points, compared to 5 and 4 percentile points in schools with few or no voucher-eligible students. She also found that productivity, measured as test scores per thousand dollars spent, increased faster in schools subject to the most competition.

While voucher advocates have broadly cited Hoxby's study, critics say it overstated competitive gains because it did not take into account changes in the mix of TPS students. In a follow-up study of the MCPC, Chakrabarti refined Hoxby's method to include controls for student composition and likewise found greater improvement in test scores in schools facing greater voucher competition.<sup>14</sup> In another MCPC study, however, Carnoy and his colleagues used recent data and two alternative

methodologies, including one based on Chakrabarti's work, and found "essentially no evidence that students in those traditional public schools in Milwaukee facing more competition achieve higher test-score gains."<sup>15</sup>

Evaluations of Florida's Opportunity Scholarship Program have also generated controversy. In a 2001 study and a follow-up study with Winters, Greene compared test scores gains in voucher-eligible schools (those receiving "F" grades) with schools graded A-D.<sup>16</sup> Both studies found that voucher-eligible schools made greater gains than other public schools. These conclusions have been challenged on a number of statistical grounds.<sup>17</sup> Using fixed-effects strategies, Chakrabarti compared changes in the performance of "F" and "D" schools before and after the voucher program and also found that "F" schools made greater performance gains.<sup>18</sup>

However, the Florida voucher program's integral connection to the state's broader accountability system complicates efforts to distinguish the voucher component's competitive effect. Carnoy, Ladd and others have suggested that the observed performance gains in voucher-eligible schools represent responses to the state's grading of schools, rather than the small voucher component of the program, because similar patterns of test score changes have been observed in other states (such as North Carolina) that grade schools but do not have a voucher program.<sup>19</sup> In a separate analysis of Florida's vouchers, Figlio and Rouse also found some improvements in reading scores in voucher-threatened, low-performing schools. The authors reported, however, that the gains were largely explained by changes in student composition and the stigma of failure rather than pressure from voucher competition.<sup>20</sup>

Recently, Greene and Winters estimated the competitive effects of a federally-sponsored program that provides a \$7,500 voucher to low-income students in Washington DC.<sup>21</sup> Using data for 2003-04 and 2004-05, the years before and after the voucher program's implementation, the authors employed a series of multivariate regression models to measure the impact of the physical proximity to voucher schools on public school achievement, controlling for demographic characteristics and baseline school test scores. The authors found no impacts of the voucher program on student achievement in the District's public schools, but this is not surprising for the initial year of the program, and the longer-term competitive effects may differ.

Taken as a whole, the U.S. evidence on vouchers' competitive effects remains extremely limited. The available evidence, however, neither refutes nor strongly supports the prediction that vouchers will improve TPS outcomes. Estimates of positive competitive effects appear sensitive to the use of stronger controls for student self-selection and other measurement issues. Existing evidence so far only hints at how specific features of voucher programs (funding arrangements, regulations, and implementation) could be structured in order to enhance the overall beneficial consequences of voucher competition.

### Competitive Effects of Charter Schools

More evidence is available on the competitive effects of charter schools. Studies have focused on states such as Arizona, California, Florida, Michigan, North Carolina, and Texas, where charter school enrollment is sufficient to potentially generate competitive pressures on TPSs. Among these studies, the results are once again very mixed.

Researchers have found charter competition to have a positive impact on TPS student achievement in Florida, no effect in California, and a negative effect in Ohio. Each of these studies employed multiple measures of the degree of charter competition.

Sass analyzed student-level Florida data for grades 3-10 over a three-year period with fixed-effect regressions and found a small significant positive competitive effect on TPS math achievement, but no effect on reading.<sup>22</sup> Buddin and Zimmer also used student-level, fixed-effect regressions to analyze data from six large California school districts between 1997-1998 and 2001-2002 and found no significant effect of charter school competition.<sup>23</sup> Carr and Ritter employed a pooled time series regression analysis of Ohio data and found a slight negative competitive effect.<sup>24</sup>

Two studies of North Carolina yielded contrasting findings. Holmes, DeSimone, and Rupp report that TPSs facing competition increased their test scores by approximately 1%, or about one quarter of the average yearly growth.<sup>25</sup> Bifulco and Ladd, on the other hand, examined a student-level panel dataset for grades 3-8 from 1996 to 2002 and found no significant competitive effects on reading or math scores in nearby TPSs.<sup>26</sup> Bifulco and Ladd attribute the different findings in the two studies to their ability to better control for shifts in student composition through the use of student-level data.

As in North Carolina, studies of Michigan have produced conflicting results. Hoxby analyzed trends in school-level performance between 1992-1993 and 1999-2000. She found that achievement and productivity in Michigan's TPSs increased once charter school competition reached at least 6% of district enrollment.<sup>27</sup> The estimated increase was largest in the 4th grade, about 2.4 scale points a year in reading and 2.5 scale points in mathematics. In the same study, Hoxby also found similar positive charter school competitive effects in Arizona. The major qualification in assessing Hoxby's findings is that she did not control for student composition and other school characteristics that may change as charter schools enter the educational system. Bettinger analyzed school-level Michigan data from 1996-1997 to 1998-1999, incorporating controls for student characteristics and the possibility that charter location is influenced by the performance of public schools. He found no significant competitive effect of charter schools on test scores in nearby TPSs.<sup>28</sup>

Both the Hoxby and Bettinger studies were conducted at a relatively early stage in the development of Michigan's charter schools policy. Using 11 years of school-level data, Ni was able to analyze the evolution of charter schools' competitive effect over time. She refined Hoxby's measure of charter competition and controlled for several student and school characteristics.<sup>29</sup> Based on multiple estimation strategies, including fixed effects, Ni's results show that charter competition exceeding 6% of district enrollment had a negative impact on student achievement and school efficiency in Michigan's TPSs. This effect is small or negligible in the short run, but becomes more substantial in the long run (after six years of sustained competition). In the long run, for schools in districts where charter schools have drawn away a significant share of students, charter competition decreases math and reading test performance in the range of 0.1 to 0.2 standard deviations.

So far, Texas is the only state in which two studies have found consistent positive charter school competitive effects, if modest ones.<sup>30</sup> Bohete used a pooled time series regression analysis on district-level data for 1996 to 2002 and found that a one percentage point increase in countywide charter school enrollment was associated with a 0.1 percentage point increase in district test pass rates. Booker and colleagues used student-level data over eight years for grades 4-8 in fixed-effects regressions and found that the presence of nearby charter schools generated a small but statistically significant increase in test scores (effect size < 0.1).<sup>31</sup>

The sensitivity of research findings to methodology is further illustrated by Imberman's recent study, which employed both fixed-effect transformations and IV estimates to examine the impact of charter schools on TPS achievement in an anonymous urban school district.<sup>32</sup> He found moderate gains in TPS test scores when using fixed-effect methods, but negative effects when using IV procedures.

While charter schools offer the best opportunity to study the competitive effect of school choice policies in the US, thus far the available evidence fails to yield a clear and consistent set of findings. If anything, the weight of the research suggests that charter school competition is not a very consistent force in its impact on TPSs achievement in one way or another. Several studies find no effects. When statistically significant effects have been found, they are generally small.

Is it possible to identify patterns across studies that might account for the diversity of research findings? In principle, differences in findings could arise from differences in (1) research methodologies, (2) state charter school policies, or (3) state settings.

First, as noted above, a key methodological choice for researchers is how they measure the degree of competition. Yet a review of past studies indicates no clear relationship between findings and measures of charter competition. Indeed some studies find largely consistent results using multiple competition measures.<sup>33</sup> Alternatively, the units of analysis



vary across the studies. However, there is no apparent relationship in competitive effect estimates between studies that employ student-level analyses versus those based on building- or district-level analyses.<sup>34</sup>

Second, the funding arrangements and regulations governing charter schools vary across states in ways that could significantly modify their competitive impacts on TPSs. In some states, for example, only part of per-pupil revenue follows students to choice schools when they leave their resident TPSs. In Michigan, however, where Ni found negative competitive effects, students take the full amount of school funding with them to charter schools, and local districts have no ability to increase local revenues to maintain their operations. Moreover, the state's per-pupil foundation levels have declined in real terms since 2002. Whether such policy features can help explain interstate differences in estimated charter school competitive effects has yet to be determined.

Third, state and local contexts, including the pace of overall enrollment growth or decline, appear to condition competitive effects. In states with growing enrollment, such as California, Florida, and Texas, traditional public schools are less likely to experience acute competitive pressure when students move to charter schools. If TPSs are overcrowded, charter schools can serve as a welcome "release valve" to ease enrollment pressure. By contrast, in states with declining student populations, charter school policies create more intense zero-sum competition for students and resources. Among states that have been studied, Michigan and Ohio have the slowest overall enrollment growth, and studies in both have found competition to have a negative effect on TPS performance.

### **International Experience**

School choice policies in other countries provide insights from large-scale programs that have been in effect for many years, although caution is required in relating findings from different educational settings abroad to the U.S. context. On balance, the international evidence remains mixed. In the Czech Republic, Filer and Munich found that school districts facing significant competition from private schools, which are partially funded by the state, had greater success in getting their students into university than did other districts.<sup>35</sup> Gibbons, Machin, and Silva, studying primary schools in England that are funded largely by the central government, found that students with a wider range of public school choices achieved better academic outcomes.<sup>36</sup>

On the other hand, studies of national school choice policies in Chile and New Zealand have produced less favorable evidence on competitive outcomes. Hsieh and Urquiola's study of Chile found no evidence that choice improved average educational outcomes in public schools, while Carnoy and McEwan found that competition led to small achievement gains in metropolitan areas, but small negative effects in the rest of the country, where three-quarters of Chile's primary students live.<sup>37</sup>

In New Zealand, Ladd and Fiske found that competition reduced the quality of elementary student learning as perceived by teachers, and generated negative effects on other aspects of schooling, such as teachers' job satisfaction.<sup>38</sup>

Experience with both Chile and New Zealand's large-scale choice plans reinforces the concern that schools with large concentrations of disadvantaged students have difficulty competing for students and resources, as more advantaged students leave for better schools.<sup>39</sup> It also undercuts predictions that the implementation of larger-scale voucher programs in the U.S. would generate greater improvements in TPS outcomes than current, small-scale programs. Taken as a whole, the international evidence has yet to establish consistent evidence that choice programs make educational systems significantly more productive than they otherwise would be.

### **Case Studies of Public School Responses to Competition**

Case studies hold the promise of providing a more nuanced understanding of how traditional public schools respond to competition. While quantitative studies are suited to evaluate statistical links between choice competition and TPS achievement, so far they have not provided much insight into how public school operations change in response to vouchers or charter schools. Case studies offer the opportunity of looking inside the "black box" of school organizational practices. Do educators in TPSs subject to competition work harder, become more responsive to student needs, or change their curricula or instructional practices?

Not surprisingly, the findings from case studies of TPS responses to choice policies are extremely heterogeneous. While the quantitative literature points to variations in competitive effects across states, case studies remind us that school and district responses vary widely within states as well. Indeed, competition can spur multiple responses within given schools, with some having potential to improve academic performance, and others not. Case studies also generally reinforce the notion that choice policies elicit stronger responses among TPS administrators as their perception of the financial threat from new competitors increases.<sup>40</sup> It is less apparent from the case study literature, however, whether these competitive responses can be expected to improve student achievement or school productivity.

Competition from vouchers and charter schools may spur public school districts to open new schools, change school leadership or set higher performance goals. They may also encourage public school educators to be more solicitous of parents and attentive to their concerns. Other possible responses include launching marketing initiatives, or creating "add-on" programs, such as all-day kindergarten and extracurricular activities.<sup>41</sup> Or, a TPS may instead choose to vilify charter competitors or otherwise obstruct charter school openings and



operations.<sup>42</sup> Thus far, however, there is little evidence that choice competition stimulates significant changes or innovations in TPS instructional practice.<sup>43</sup>

### ***Summary, Implications, and Recommendations***

Only recently have choice policies been implemented in the U.S. on a scale sufficient to potentially elicit competitive responses from public schools. As yet, existing empirical studies permit no firm conclusions regarding the effects of school choice policies on student achievement and efficiency in traditional public schools. While the research base is growing, it remains limited. Available studies neither refute nor strongly support the prediction that voucher and charter school competition will improve traditional public school performance. Among studies with suitable statistical controls, some find positive effects, others find negative effects, and some find no significant effects at all. The substantive effects of choice policy competition also appear modest. Among studies finding statistically significant effects, most indicate small effect sizes in the range of (+/-) 0.1.

The research surveyed here suggests, rather than conclusively establishes, that competition from vouchers and charter schools is no more beneficial for TPS performance than competition from nearby private or public schools in environments with no choice policy. Indeed, Belfield and Levin's review of studies of these traditional forms of school choice shows a higher proportion of findings indicating statistically significant positive effects on TPS outcomes than is evident among existing studies of voucher and charter school competition.<sup>44</sup>

The accumulating evidence is, however, beginning to point to interesting differences across state settings. This diversity of findings is not surprising, as we suggested in our discussion of conditioning factors at the outset. Additional research is needed on how specific policy features (financial arrangements, regulations, policy implementation), and the characteristics of local settings influence the impacts of choice reforms on the public school system. This will require comparative analysis of state-level studies. Even within states, however, there is clearly a need for research that moves beyond estimating mean state-level competitive effects to more closely exploring the causes of variations in competitive effects across local communities. Such an undertaking could benefit from careful coordination with case study research. While evidence suggests that the effects of competition are not linear, we cannot translate that finding into useful guidelines for policy until we better understand the thresholds for beneficial or harmful competition, and the duration or trajectories of effects over time.

Finally, the absence of strong evidence that choice policies improve the efficiency of traditional public schools does not rule out other potential benefits of these policies, such as improved outcomes for active

## The Competitive Effect of Choice Policies on Performance in Traditional Schools

choosers, a better match between families' values and school programs, or expanded freedom to choose. Likewise, an overall evaluation would also consider the equity and social cohesion impacts of school choice policies.<sup>45</sup>

We recommend that policymakers exercise caution when assessing predictions that school choice policies will benefit students who are not active choosers, since the evidence in support of this claim is not yet strong or conclusive.

## *Notes and References*

- <sup>1</sup> So far, very little research has appeared on the competitive impacts of home schooling or “cyber” schools. Intradistrict choice programs typically elicit only minor competitive effects, since they do not alter the funding available to district administrators. Interdistrict open enrollment policies carry stronger financial incentives than intradistrict choice, but their competitive impacts on TPS outcomes have received very little scholarly attention.
- <sup>2</sup> Hsieh, C.T., & Urquiola, M. (2003). *When schools compete, how do they compete? An assessment of Chile's nationwide school voucher program*, NBER Working Paper (No. 10008), National Bureau of Economic Research.
- Ladd, H. F. (2002). School vouchers: A critical view. *Journal of Economic Perspectives*, 16(4), 3-24.
- <sup>3</sup> Fiske, E.B. & Ladd, H.F. (2000). *When schools compete: A cautionary tale*. Washington, DC: Brookings Institution Press.
- For a review of research see:
- Lacireno-Paquet, N. & Brantley, C.(2008). *Who chooses schools, and why?* (No. EPSL-0801-247-EPRU).Education Policy Research Unit, Education Policy Studies Laboratory, Arizona State University.
- <sup>4</sup> Goldhaber, D., Guin, K., Henig, J.R., Hess , F.M., & Weiss, J.A. (2005). How school choice affects students who do not choose. In J.R. Betts & T. Loveless (Eds.), *Getting choice right: Ensuring equity and efficiency in education policy*. Washington, DC: Brookings Institution Press.
- <sup>5</sup> Arsen, D., Plank, D., & Sykes, G. (1999). *School choice policies in Michigan: The rules matter*. East Lansing, MI: Michigan State University.
- <sup>6</sup> Hastings, J.S., & Weinstein, J.M. (2007). *Information, school choice, and academic achievement: Evidence from two experiments* NBER Working Paper (No. 13623), National Bureau of Economic Research.
- <sup>7</sup> Goldhaber, D., Guin, K., Henig, J.R., Hess, F.M., & Weiss, J.A. (2005). How school choice affects students who do not choose. In J. R. Betts & T. Loveless (Eds.), *Getting choice right: Ensuring equity and efficiency in education policy*. Washington, DC: Brookings Institution Press.
- <sup>8</sup> Hoxby, C. M. (2003). School choice and school productivity: Could school choice be a tide that lifts all boats? In C. M. Hoxby (Ed.), *The economics of school choice* (p. 287). Chicago: University of Chicago Press.
- <sup>9</sup> Fixed-effect transformations eliminate most attributes of public schools and communities that influence the likelihood of choice schools setting up, including unobserved attributes. Use of fixed-effect methods, however, typically requires researchers to have several years of data for their sample schools. Instrumental variable (IV) estimators represent an alternative strategy. Suitable instrumental variables should be related to the degree of choice competition, but have no impact on unexplained student achievement (i.e., they should be external to student achievement). However, truly external IVs are very hard to find in school choice research. Using weak IVs that do not satisfy both assumptions is problematic, since a slight correlation between the IVs and the measure of choice competition could cause larger bias than estimates using no IVs.
- <sup>10</sup> Levacic, R. (2004). Competition and performance of English secondary schools: Further evidence. *Education Economics*, 12, 177-193.
- <sup>11</sup> Belfield, C.R., & Levin, H.M. (2002). The effects of competition on educational outcomes: A review of the US evidence. *Review of Educational Research*, 72, 279-341.

## The Competitive Effect of Choice Policies on Performance in Traditional Schools

- <sup>12</sup> In 2006, the Florida Supreme Court ruled the private school option of the Opportunity Scholarship Program unconstitutional. Students assigned to a failing school are no longer offered the opportunity to enroll in a private school. However, they can still attend a higher-performing public school.
- <sup>13</sup> Hoxby, C.M. (2003). School choice and school productivity: Could school choice be a tide that lifts all boats? In C.M. Hoxby (Ed.), *The economics of school choice*. Chicago: University of Chicago Press.
- <sup>14</sup> Chakrabarti, R. (2007). *Can increasing private school participation and monetary loss in a voucher program affect public school performance? Evidence from Milwaukee*. (Staff Report no. 300). Federal Reserve Bank of New York: New York.
- <sup>15</sup> Carnoy, M., Adamson, F., Chudgar, A., Luschei, T. F., & Witte, J. F. (2007). *Vouchers and public school performance: A case study of the Milwaukee parental choice program*. Washington, DC Economic Policy Institute, page 2.
- <sup>16</sup> Greene, J. P. (2001). *An evaluation of the Florida A-Plus Accountability and School Choice Program*. New York City: Manhattan Institute for Policy Research, Center for Civic Innovation.
- Greene, J. P., & Winters, M.A. (2003). *When schools compete: The effects of vouchers on Florida public school achievement* (Education Working Paper No. 2).
- <sup>17</sup> Camilli, G. & Bulkley, K. (2001). Critique of 'An Evaluation of the Florida A-Plus Accountability and School Choice Program'. *Education Policy Analysis Archives*, 9(7).
- Chakrabarti, R. (2007). *Can increasing private school participation and monetary loss in a voucher program affect public school performance? Evidence from Milwaukee* (Staff Report no. 300). New York: Federal Reserve Bank of New York.
- <sup>18</sup> Chakrabarti, R. (2003). Impact of voucher design on public school performance: Evidence from Florida and Milwaukee voucher programs. Cornell University.
- <sup>19</sup> Carnoy, M. (2001). *School vouchers: Examining the evidence* Washington, DC: Economic Policy Institute.
- Ladd, H. F. (2002). School vouchers: A critical view. *Journal of Economic Perspectives*, 16(4), 3-24.
- <sup>20</sup> Figlio, D.N. & Rouse, C. (2006). Do accountability and voucher threats improve low-performing schools? *Journal of Public Economics*, 90(1-2), 239-255.
- <sup>21</sup> Greene, J. P., & Winters, M.A. (2006). *An evaluation of the effect of D.C.'s voucher program on public school achievement and racial integration after one year* (No. SCDP-06-01). New York, N.Y.: Manhattan Institute for Policy Research.
- <sup>22</sup> Sass, T. (2006). Charter schools and student achievement in Florida. *Education Finance and Policy*, 1(1), 91-122.
- <sup>23</sup> Buddin, R., & Zimmer, R. (2005). *Is charter school competition in California improving the performance of traditional public schools?* (No. WR-297-EDU). Santa Monica, Calif.: RAND Corporation.
- <sup>24</sup> Carr, M., & Ritter, G. (2007). *Measuring the competitive effect of charter schools on student achievement in Ohio's traditional public schools* (No. 146). New York: National Center for the Study of Privatization in Education, Columbia University.
- <sup>25</sup> Holmes, G.M., DeSimone, J., & Rupp, N. (2003). *Does school choice increase school quality?* (No. W9683). NBER Working Paper Series.
- <sup>26</sup> Bifulco, R., & Ladd, H. F. (2006). The impacts of charter schools on student achievement: Evidence from North Carolina. *Education Finance and Policy*, 1(1), 50-89.

## The Competitive Effect of Choice Policies on Performance in Traditional Schools

- <sup>27</sup> Hoxby, C.M. (2003). School choice and school productivity: Could school choice be a tide that lifts all boats? In C.M. Hoxby (Ed.), *The economics of school choice*. Chicago: University of Chicago Press.
- <sup>28</sup> Bettinger, E. (2005). The effect of charter schools on charter students and public schools. *Economics of Education Review*, 24(2), 133-147.
- <sup>29</sup> Ni, Y. (2007). *Do traditional public schools benefit from charter school competition? Evidence from Michigan* (No. 145). New York: National Center for the Study of Privatization in Education, Columbia University.
- <sup>30</sup> Bohte, J. (2004). Examining the impact of charter schools on performance in traditional public schools. *The Policy Studies Journal*, 32(4), 501-520.
- <sup>31</sup> Booker, K., Gilpatric, S., Gronberg, T., & Jansen, D. (2005). *The effect of charter schools on traditional public school students in Texas: Are children who stay behind left behind* (No. 104). New York: National Center for the Study for the Privatization in Education, Columbia University.
- <sup>32</sup> Imberman, S.A. (2008). *The effect of charters schools on non-charter students: An instrumental variables approach* (No. 149). New York: National Center for the Study of Privatization in Education, Columbia University.
- <sup>33</sup> Bifulco, R., & Ladd, H.F. (2006). The impacts of charter schools on student achievement: Evidence from North Carolina. *Education Finance and Policy*, 1(1), 50-89.
- Sass, T. (2006). Charter schools and student achievement in Florida. *Education Finance and Policy* 1(1), 91-122.
- <sup>34</sup> While it is reasonable to take schools as the unit of analysis because the hypothesized competitive effect focuses on the organizational response of schools, student-level data are ideal to fully account for the student self-selection problem.
- <sup>35</sup> Filer, R. & Munich, D. (2003). Public support for private schools in post-communist central Europe: Czech and Hungarian experiences. In D. Plank and G. Sykes (Eds.), *Choosing choice: School choice policies in international perspective*, Teachers College Press: New York City.
- <sup>36</sup> Gibbons, S., Machin, S., & Silva, O. (2006). *Choice ,competition and pupil achievement* (No. 129). New York: National Center for the Study of Privatization in Education, Columbia University.
- <sup>37</sup> Carnoy, M., & McEwan, P. (2003). Does privatization improve education? The case of Chile's national voucher plan. In D. Plank and G. Sykes (Eds.), *Choosing choice: School choice policies in international perspective* (pp. 24-44). New York: Teachers College Press.
- Hsieh, C. T., & Urquiola, M. (2003). *When schools compete, How do they compete? An assessment of Chile's nationwide school voucher program* (No. 10008). NBER Working Paper.
- <sup>38</sup> Ladd, H.F. & Fiske, E.B. (2003). Does competition improve teaching and learning? Evidence from New Zealand. *Educational Evaluation and Policy Analysis*, 25(1), 97-112.
- <sup>39</sup> Ladd, H.F. & Fiske, E.B. (2001). The uneven playing field of school choice: Evidence from New Zealand. *Journal of Policy Analysis and Management*, 20(1), 42-63.
- McEwan, P.J. (2004). The potential impact of vouchers. *Peabody Journal of Education*, 79(3), 57-80.
- <sup>40</sup> Hess, F.M. (2002). *Revolution at the margins: The impact of competition on urban school systems*. Washington, DC: Brookings Institution Press.
- Hess, F.M., Maranto, R., & Milliman, S. (2001) Small districts in big trouble: How four Arizona school systems responded to charter competition. *Teachers College Record*, 103(6), 1102-1124.
- Wells, A.S. (1998). *Beyond the rhetoric of charter school reform: A study of ten California school districts*. Los Angeles: UCLA Charter School Study.

## The Competitive Effect of Choice Policies on Performance in Traditional Schools

- <sup>41</sup> Arsen, D., Plank, D., & Sykes, G. (1999). *School choice policies in Michigan: The rules matter*. East Lansing, MI: Michigan State University.
- Rofes, E. (1998). *How are school districts responding to charter laws and charter schools? A study of eight states and the District of Columbia*. Berkeley, CA: Policy Analysis for California Education.
- <sup>42</sup> Hess, F.M., Maranto, R., & Milliman, S. (2001) Small districts in big trouble: How four Arizona school systems responded to charter competition. *Teachers College Record*, 103(6), 1102-1124.
- <sup>43</sup> Arsen, D., Plank, D., & Sykes, G. (1999). *School choice policies in Michigan: The rules matter*. East Lansing, MI: Michigan State University.
- Bulkley, K., & Fisler, J. (2003). A decade of charter schools: From theory to practice. *Educational Policy*, 17(3), 317-342.
- Hess, F.M. (2002). *Revolution at the margins: The impact of competition on urban school systems*. Washington, DC: Brookings Institution Press.
- Lubienski, C. (2003). Innovation in education markets: Theory and evidence on the impact of competition and choice in charter schools. *American Educational Research Journal*, 40(2), 394-443.
- <sup>44</sup> Belfield, C.R., & Levin, H.M. (2002). The effects of competition on educational outcomes: A review of the US evidence. *Review of Educational Research*, 72, 279-341.
- <sup>45</sup> Levin, H.M. (1998). Educational vouchers: Effectiveness, choice, and costs. *Journal of Policy Analysis and Management*, 17(3), 373-392.
- Levin, H.M. (2002). A comprehensive framework for evaluating educational vouchers. *Educational Evaluation and Policy Analysis*, 24(3), 159-174.

---

EPIC/EPRU policy briefs are peer reviewed by members of the Editorial Review Board. For information on the board and its members, visit <http://epicpolicy.org/editorial-board>