

DOCUMENT REVIEWED:	“The Effect of Special Education Vouchers on Public School Achievement: Evidence from Florida’s McKay Scholarship Program”
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### Summary of Review

A new report published by the Manhattan Institute for Education Policy, “The Effect of Special Education Vouchers on Public School Achievement: Evidence from Florida’s McKay Scholarship Program,” attempts to examine the complex issue of how competition introduced through school vouchers affects student outcomes in public schools. The possible contributions of this report, however, are outweighed by research design problems, failure to take into account alternative explanations, and unsubstantiated assumptions about the direction of possible selection bias. Together, these problems call into question the findings and render the conclusions drawn from those findings highly suspect.

## Review

### I. INTRODUCTION

A new report released by the Manhattan Institute for Education Policy, “The Effect of Special Education Vouchers on Public School Achievement: Evidence from Florida’s McKay Scholarship Program,” has received some attention in the press<sup>1</sup> and is likely to be cited by advocates of private school vouchers in the future. The report, written by Jay P. Greene and Marcus Winters, attempts to examine the complex issue of how competition introduced through school vouchers affects student outcomes in public schools.<sup>2</sup> An important contribution of this report to the literature of voucher competition publications is its focus on students who are enrolled in public school special education programs. However, this contribution is outweighed by errors in methods and analysis. In particular, the report does not include a clear explanation (“specification”) of the statistical model chosen; the analysis fails to take into account alternative explanations; and it includes unsubstantiated assumptions about the direction of possible selection bias.<sup>3</sup>

Florida’s McKay Scholarship Program is open to any student in the state who has been classified with a learning disability. These vouchers pay the lesser amount of full tuition at the chosen private school or the full amount that the public school would have received had the student enrolled. Accordingly, for students who wish to enroll in high-tuition private schools, the difference would be the responsibility of the parents or guardians. Under Florida’s normal funding system, public schools would receive different amounts of money depending on the nature of the disability; thus, the maximum voucher size varies with the type of disabil-

ity classification. According to the report, in 2006-2007 McKay Scholarships ranged anywhere from \$5,039 to \$21,907, with an average of \$7,206. As discussed below, this fact becomes important with regard to assumptions made by the authors in their discussion of possible selection bias in their analysis.<sup>4</sup>

Given the special education focus of the McKay Program, the report addresses some important issues concerning voucher-based school choice programs involving this very important group of students. However, there are important weaknesses in the analysis and interpretations of the data that undermine any practical use of the results and conclusions.

Most troubling are fundamental problems with variable and model specifications (as explained below). In addition, the report includes critical unsubstantiated assumptions that lead to unwarranted weight given to estimates from the analysis. The report does appropriately note the serious problems with selection bias in any analysis of this type, and it does acknowledge, in the technical version of the report, that the authors’ methodology does not fully correct for it.<sup>5</sup> Yet, despite this disclaimer about the study’s limitations, the report subsequently presents arguments suggesting that the authors can in fact anticipate the direction of possible bias in their analysis, an assertion that I challenge later in this review.

Without any tests or appropriate literature substantiating these assumptions, the report leads the reader down a path with a predetermined conclusion: that vouchers have a positive competition effect. Florida’s McKay Scholarships, the report tells us,

improve the educational outcomes of those special education students who stay in public schools, choosing not to use a voucher. The theory of action behind this conclusion is that increased competition to enroll these students leads public schools to improve the services or programs for the students not choosing to leave

If valid, such conclusions have key policy implications. However, the Manhattan report inadequately addresses several critically important issues, discussed below, calling the report's conclusions into serious question.

## **II. FINDINGS AND CONCLUSIONS OF THE REPORT**

The scope of the report is narrowly focused and is very brief given the complexity of the analysis attempted. This brevity leaves many questions unanswered and makes it difficult to thoroughly examine the methods used or conclusions reached. However, the omissions themselves are evidence that the findings of this report should be viewed very cautiously and should not, without substantial confirmation and reanalysis, be used to make policy decisions regarding similar types of voucher programs.

The report begins by outlining the critical questions at issue in the analysis. The nation has seen a vigorous debate about whether private school vouchers promote competition between public and private schools, and more importantly whether that competition increases student outcomes for both groups of students (those who leave the public sector for private schools and those who remain).

The authors suggest that their analysis is designed to directly address this question by providing estimates of the effect on public

school productivity of offering private school vouchers to students with disabilities. In their report this design is actualized by examining whether those students that remain have better schooling environments as a result of the public school response to the threat of losing students to private schools. The authors contend that Florida's McKay Scholarship Program provides an excellent proving ground for this analysis because it is the largest private school voucher program in the nation and because it has seen a large increase in participation — rising to approximately 4.5% of eligible students (in the 2006-2007 school year, about 18,200 of nearly 400,000 students with disabilities in Florida).

The authors' main conclusion is that there is some evidence that suggests outcomes for students in public school special education programs improve with increased exposure to voucher opportunities.<sup>6</sup> The authors estimated relatively small effect sizes of 0.05 and 0.07 standard deviation units in mathematics and reading scores (respectively) for students with specific learning disabilities and average exposure to voucher-accepting private schools. (Exposure to private school vouchers is defined as the number of schools that accept vouchers within a 5- or 10-mile radius). In presenting these results, the authors assert that they are likely lower-bounds and that the actual benefits are likely greater since any selection bias that may exist is likely to bias the estimates downward.

Yet, as discussed below, these estimates and this conclusion are based on poor model specifications, unclear analytic decisions, and questionable selection bias assumptions.

## **III. THE REPORT'S USE OF RESEARCH LITERATURE**

In the authors' very brief discussion, they

characterize the findings in the research literature on competition in a relatively balanced way. They suggest that there is conflicting evidence on the question of whether public school outcomes improve when exposed to greater competition, either from the private sector or from public sector choice alternatives such as charter schools. In addition, they mention that several studies have found, using different methodologies, positive outcomes of Florida's accountability system, including its voucher provisions.<sup>7</sup>

However, in a different section of this report, where the authors discuss possible selection bias in their analysis, they use supporting literature that, while somewhat appropriate, does not fully characterize the unique issues faced by students with disabilities in this policy environment. This exclusive use of tangentially appropriate literature gives the superficial but incorrect impression that the explanations of possible bias raised in this literature are valid and complete.

In addition, the report completely omits any literature about the testing of students with disabilities and how accommodations may affect the results and outcomes of their study. The lack of substantive knowledge about the group examined may seriously compromise the validity of the report's findings.

#### **IV. REVIEW OF THE REPORT'S METHODOLOGIES**

The main text of the technical report describes the data used as the universe of public school data from Florida between the years of 2000-2001 and 2004-2005 (five years of data). However, within the analysis (specifically tables 3 and 4), there are conflicting numbers of years present. Table 3 shows four years of data when describing

the number of private schools accepting McKay voucher, and Table 4 shows only three dummy variables (two presented and one omitted) suggesting only three years in the regression analysis. The year variables are omitted from all other tables.<sup>8</sup>

In addition, the report's key exposure variable (number of private schools accepting vouchers within 5 and 10 miles of the school) is seriously flawed. In urban areas, multiple public schools likely share the same pool of voucher-accepting private schools. A private school "competing" with three public schools is likely to have a weaker effect (all other things being equal) on any given school than a private school competing with only one public school. The supply of voucher vacancies depends on both the number of spots available in the private schools and the pool of potential public school students near those schools. This suggests that the number of private schools willing to accept vouchers is less important than the number of available spots relative to the number of available public school students who could fill those spots. None of this is accounted for in any of the models estimated in this report.

Future researchers engaging in such analyses may want to use, as a measure, the number of spots available in the private sector relative to the number of public school special education students in similar grade levels within a chosen distance. Such a measure would be a much stronger indicator of the local supply of voucher spots available, since it would compare actual spots that could be taken by students in that particular school.

Another concern is that the exposure measure used in the report is actually measuring how urban the area surrounding the student is rather than the supply of voucher spots.

This confounding of the two variables (urbanicity and exposure to vouchers) is due to the fact that urban schools would naturally have more public and private schools in close proximity to one another. Thus, any estimated effect attributed to the exposure variable would be partially due to the public school's location in an urban area, relative to a rural or suburban public school. This confound is particularly important because we know that urban schools generally perform worse than their suburban and many of their rural counterparts.

Such a modeling problem could be easily addressed by including appropriate geographical control variables (such as whether the area in which the student is attending school is urban, rural or suburban). This simple approach is not explored in the report, nor is any reason provided for this omission.<sup>9</sup>

These are the two most significant examples of the numerous vague descriptions and poor variable choices present in the report. Issues related to model specification and selection bias will be addressed in following sections.

### **Achievement Analysis**

In the achievement regression models the report uses student scores on state standardized reading and mathematics tests as the outcome in an individual level, fixed-effects analysis<sup>10</sup> to control for unobserved individual characteristics. It also includes a district fixed-effect variable, unspecified student characteristics, dummy variables indicating type of disability, the voucher exposure variable, and the interaction between disability type and exposure. The authors argue that the interaction between disability type and voucher exposure plus the main effect of voucher exposure represent the average effect of the McKay Program.

There are several problems with the model. The report never states which individual characteristics were included in the analysis. Perhaps more importantly, the choice of a district fixed effect is curious given the hypothesis that school (not district) changes were responsible for improvements in student test scores. The district variable, particularly in Florida (where countywide districts are the norm), simply does not make much sense as a control.

In addition, within the text of the report the authors never clarify what test-score metric they use for their outcome. Florida reports both a developmental scale for their examinations as well as a criterion-referenced scaled score. The developmental score is useful for measuring changes year to year in an individual student; the criterion-referenced score is useful for comparing cohorts of students in the same grade from year to year. The appropriate measure to use here would be the developmental score, but again, the report does not state which is used.<sup>11</sup>

Further, the sample in this analysis uses all grades (3-10) over all the years (presumably 2000-2004). This choice of analytical frameworks virtually assures that there will be serious issues of attrition, since 10<sup>th</sup> grade students in 2000 will only appear in the dataset one time, and 9<sup>th</sup> grade students in 2000 will appear only two times, and so on. This may account for the fact that the average number of observations for students is only about 2.5 years for each of the achievement regressions, even though the dataset covers five school years. This choice may again lead to biases in the estimates; however, it is unclear which direction this bias would lead.

### **Selection Bias**

The report includes a useful outline of vari-

ous types of selection bias that might be present in these estimates. However, the authors' assumptions about the directionality and mechanisms driving the bias are questionable, with many plausible mechanisms ignored and untested.

#### *Attrition/Choice Bias*

Non-random attrition from the sample is a critical problem for research such as this. The authors are attempting to determine whether the exit of students to private school (and the threat of that exit) affects the test scores of those who remain in public school. This begs question of whether a subsequent increase in the scores of public school special education students is simply due to low-scoring students exiting the public system with vouchers (which may upwardly bias estimates of the effectiveness of the McKay program). Alternatively, it is possible that students of higher ability exit with vouchers (which would downwardly bias the estimated McKay program effect).

The authors suggest that Florida's private schools are "creaming" the best students from the public school systems. Accordingly, their estimates of the McKay program effect would likely be a lower bound (underestimated). Unfortunately, the authors fail to consider factors other than "creaming." For instance, the students who take the voucher are unlikely to be satisfied with the public system and may be performing at lower levels than their potential. One could also argue that relatively high-performing special education students would be less likely to transfer out of the schools in which they were performing better than their peers. Also, the federal No Child Left Behind Act (NCLB) provides an incentive for public schools to encourage lower-performing special education students to take advantage of the voucher program and transfer out.<sup>12</sup>

Such transfers would have two positive main effects under NCLB for the public school: it could lower the number of special education students sufficiently to take that subgroup out of NCLB calculations (driving the number below the law's subgroup report threshold), and it could leave behind higher-performing special education students, helping the school's average subgroup score to meet Adequate Yearly Progress targets.

Finally, since the severity of the disability is related to how much money comes with the voucher, there is a potential incentive for new private schools to open (or existing private schools to broaden their scope) and admit students with more severe disabilities, and likely lower test scores.<sup>13</sup>

Each of these scenarios would result in an upward bias of the parameters estimated in the report (an overestimation of the voucher competition effect), rather than the downward bias that was conclusively posited in the Manhattan report.

#### *Assignment Bias*

The authors also discuss the possibility of bias in assignment of students to special education by public schools. They suggest that these schools might classify fewer students as eligible for special education since these schools would be reluctant to qualify students for the voucher if they were afraid of the competition. This, they argue, would lead to fewer students with mild disabilities being placed in special education, leading to an attenuation of the voucher effect. An alternative scenario for this assignment bias could be that schools are more likely to assign students that they wanted to leave the school such as those with behavior disorders. This may lead to the assignment of more students to special education, and those students may be relatively high-



performing academically (relative to other special education students), thus biasing the effect upwards. Raising such additional possibilities is not intended as a criticism of those that the report includes; rather, the criticism is that the possibilities treated seriously in the report are only those that support the conclusion that the results underestimate the competition effect.

### *Supply Bias*

As the report explains, private schools that accept vouchers could be making that decision based on the type of nearby public schools. One type of supply bias would occur if private schools were more likely to accept vouchers if located near public schools that are doing a relatively good job with their special education students. These schools could more effectively skim the cream. Alternatively, if private schools located near low-performing public schools were more likely to accept vouchers, they may be able to attract dissatisfied students. Again, the authors argue that the students transferring would be high-performing relative to their peers.

Both of these alternatives, argue the authors, would bias their estimates downward since more academically able students would be leaving, resulting in less able students remaining in the public schools. This formulation of supply bias also relies on the premise that private schools skim the cream from the public system. As we have discussed in previous sections, this contention is far from proven with regard to special education students. Private schools may have reasons for accepting lower-performing students, and the various motivations of those students and their families, as well as of the public schools and their employees, also play a complicated role.

## **V. REVIEW OF THE VALIDITY OF THE FINDINGS AND CONCLUSIONS**

The report is on its most solid ground when it describes the challenges in performing an analysis such as this — an analysis that uses general administrative data and that does not include tracking information on the students who leave for the private system.

However, the report's findings rest on very weak foundations. The variables are vaguely defined and the models are poorly specified. The report also fails to take into account the possible effect of testing accommodations. The assumptions employed to explain the possible direction of selection bias is weak at best. And all of the conclusions rest on models that use a very weak measure of private school voucher supply.

Moreover, consider the following two additional concerns:

1. The report does not sufficiently describe how such small numbers of students leaving public schools (an average of four per public school in Florida) would encourage such substantial changes in the behavior of public schools. Nor do the authors discuss how the mere presence of schools (absent large defections of special education students from the public schools) would trigger immediate changes in public school behavior that would be quickly reflected in student test scores. The report does not include a description of how public school officials would know how many private schools in the local area were accepting vouchers or the level of capacity in these private schools to enroll additional students with disabilities.

These issues of time lag and information gathering become important when one real-

izes that the number of voucher recipients was quite modest until nearly halfway through the sampled time period. In order for the hypothesized competitive effects to have caused improvements in nearby public schools, those schools would have had to almost immediately receive the signal that special education students were leaving their schools and then adjust their practices accordingly, with the effects of these changes then very quickly having an impact on test scores. Such a series of events seems unlikely given, for instance, the difficulty schools are having meeting even the general testing expectations of NCLB.

2. Also, the authors fail to account for the fact that special education students are exactly the group for which these standardized test scores have the least reliability, given the fact that, depending on the severity and type of disability, different accommodations are available to students. An important al-

ternative explanation for the authors' findings could be that the longer special education students are in a school the better the school is at finding appropriate accommodations — which would allow them to score better on the state standardized test.

## **VI. USEFULNESS OF THE REPORT FOR GUIDANCE OF POLICY AND PRACTICE**

This report is a useful starting point for discussions and research around school vouchers for students with disabilities. However, the analyses are so vague and the approach so flawed that their only practical use is as an initial template for addressing the important issues of selection bias for studies such as this. Any attempt to use this report for decision-making or policy evaluation, prior to validation using different methods and more robust approaches, should be viewed with extreme skepticism.



## Notes & References

- <sup>1</sup> Samuels, C. A. (2008). Vouchers a spur to public schools? *Education Week*, 27(6), 4.
- The *Washington Times* published a three-part op-ed series by Greene and Winters on April 29<sup>th</sup>, April 30<sup>th</sup>, and May 1<sup>st</sup>, advocating for vouchers in general and special education vouchers in particular. See <http://washingtontimes.com/article/20080429/EDITORIAL/399369326/1013/editorial>, <http://washingtontimes.com/apps/pbcs.dll/article?AID=/20080430/EDITORIAL/119143777> and <http://washingtontimes.com/article/20080501/EDITORIAL/670099657> (All retrieved May 20, 2008.)
- <sup>2</sup> Green, J. P., & Winters, M. (2008). "The Effect of Special Education Vouchers on Public School Achievement: Evidence from Florida's McKay Scholarship Program." Manhattan Institute, Retrieved May 18, 2008, from [http://www.manhattan-institute.org/pdf/Effect\\_of\\_Vouchers\\_for\\_SE\\_Students\\_on\\_Public\\_School\\_Achievement\\_2-19-08.pdf](http://www.manhattan-institute.org/pdf/Effect_of_Vouchers_for_SE_Students_on_Public_School_Achievement_2-19-08.pdf) (Technical Version)
- <sup>3</sup> The Manhattan Institute released two versions of this report—a 'general release' report and a more detailed version (hereinafter, the 'technical version') made available on the Manhattan Institute website, also entitled, "The Effect of Special Education Vouchers on Public School Achievement: Evidence from Florida's McKay Scholarship Program." Retrieved May 18, 2008, from [http://www.manhattan-institute.org/pdf/Effect\\_of\\_Vouchers\\_for\\_SE\\_Students\\_on\\_Public\\_School\\_Achievement\\_2-19-08.pdf](http://www.manhattan-institute.org/pdf/Effect_of_Vouchers_for_SE_Students_on_Public_School_Achievement_2-19-08.pdf). This review is based on the technical version of the report.
- <sup>4</sup> Selection bias is defined as bias in estimates due to how samples are selected and are unrelated to the actual underlying phenomenon that is being estimated. For instance, in the case of the McKay Scholarships, students who receive the vouchers and leave the system are only included in early years of the Manhattan analysis. If these students are different in some way from those who stay (which is quite likely) then estimates of special education students' progress are likely to be biased. The direction of that bias is unclear and there is no attempt in this analysis to determine directionality.
- <sup>5</sup> "Though our ability to evaluate the progress of individual students over time through the use of panel-data with individual fixed effects may help to mitigate those sample selection issues by accounting for unobserved student heterogeneity, these techniques do not account for non-random attrition entirely. Unfortunately there are no variables available in our dataset that could serve as a reasonable instrument to account for these sample selection problems, and thus we are unable to correct for this bias statistically" (p. 13 of the technical version).
- <sup>6</sup> The authors go further in their *Washington Times* editorial comments, writing, for example, "What we know from our study is that rather than harming public schools, vouchers improve the education that they provide to their disabled students." Retrieved May 20, 2008, from <http://washingtontimes.com/article/20080429/EDITORIAL/399369326>. This sort of causal statement cannot be supported by the analyses reported in the Manhattan study.
- <sup>7</sup> Earlier this year, Damian Betebenner wrote a think tank review of one such study. See Betebenner, D. (2008, Jan. 15). *Review of "Feeling the Florida Heat? How Low-Performing Schools Respond to Voucher and Accountability Pressure."* Boulder and Tempe: Education and the Public Interest Center & Education Policy Research Unit. Retrieved May 20, 2008, from <http://epicpolicy.org/thinktank/review-feeling-florida-heat-how-low-performing-schools-respond-voucher-and-accountability->
- <sup>8</sup> I emailed the authors for the full tables and even within these full tables it appears that there are only four years included in the analysis.
- <sup>9</sup> A possible reason for the choice of number of schools could have been an extension of a common approach used to determine probability of enrolling in private schools: distance to the near-

est private school. Why this measure wasn't employed, but the density measure was employed, is unclear.

<sup>10</sup> Fixed-effects analyses are used when there are multiple observations clustered in some way (such as multiple observations for a single individual, or many observations within a single school, which is the situation in this analysis). This clustering presents a problem since observations clustered in this way violate the assumption in ordinary linear regressions that all observations be independent of one another. Fixed-effects provide a way to take into account the clustering of observations by looking only at deviations within the clusters around the means of the clustered groups.

<sup>11</sup> In subsequent contacts with the authors, they confirmed that they used the developmental scores in their analysis. However, failure to include such an important piece of information in the text of the report is a critical oversight and contributes to the lack of clarity throughout the report.

<sup>12</sup> Note that this is a discussion of incentives and of potential selection bias scenarios that should be considered; it is not an accusation that any public school educators are engaged in such "counseling out."

<sup>13</sup> The nature and extent of this incentive would depend on the financial and other costs of educating a given student or category of students, in addition to the value of the voucher.

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