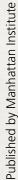# How Special Ed Vouchers Keep Kids From Being Mislabeled as Disabled

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In the last three decades, special-education programs in the United States have grown at a tremendous pace. Much of this growth reflects a growing incidence of students diagnosed with the mildest form of learning disability, called a Specific Learning Disability (SLD), and thus the hardest to distinguish from an ordinary cognitive deficit. Between 1977 and 2006, the proportion of public school students diagnosed with SLD trebled, from 1.8 percent to 5.6 percent. By the end of that period, 40.7 percent of all students enrolled in special education had been identified as having an SLD. A limited but growing body of research suggests that financial and other incentives may be responsible for a portion of these increases.

The question examined in this report is whether special-education voucher programs change the likelihood that students will be diagnosed with an SLD. Voucher programs allow disabled students to attend a private school, which receives payments in the form of full or partial tuition that would have otherwise been directed to the transferring student's public school. Special-education voucher programs appear to reduce a local public school's financial incentive to diagnose a marginal student who is merely struggling academically as suffering from an SLD by offering him the chance to leave the public school, enter a private school, and take all of his funding with him.

Four states—Florida, Georgia, Ohio, and Utah—have these programs. They are the fastest-growing type of school voucher program nationwide. We made Florida's, the first of them, the focus of our research.

It has been argued that voucher programs cause nominal disability rates to increase because parents with a preference for private education lobby to have their child diagnosed with SLD. If parental pressure was the factor responsible for skyrocketing rates of disability classification, we would expect the introduction of a voucher program to accelerate this trend. We find, however, that fourth- through sixth-grade students in public schools with an average opportunity to participate in Florida's special-education voucher program during the 2005-06 school year, based on the relative proximity of private schools willing to accept the vouchers, were about 15 percent less likely to be newly diagnosed with an SLD than they would have been in absence of the program. This finding points to another explanation—namely, the link found by prior research between financial incentives and the rate at which students were designated as disabled.

We contend that the reduction in SLD classification observed in the Florida schools after the introduction of a voucher program results from denying public schools what they understand to be the economic benefit of receiving a supplemental payment from the state for every additional child designated as suffering from an SLD. Thus, special-education vouchers appear to constrain costly growth in special-education enrollments.

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How Special Ed Vouchers Keep Kids From Being Mislabeled as Disabled

Marcus A. Winters & Jay P. Greene

INTRODUCTION

S pecial-education programs in the United States have been growing at a tremendous pace. Between 1977 and 2006, the percentage of students enrolled in federally supported disability programs increased by more than 66 percent, and such programs now serve 13.8 percent of public school students in the United States. Much of this growth can be attributed to a single special-education category—Specific Learning Disability (SLD)—which increased during that same period from 1.8 percent to 5.6 percent of all public school students and now accounts for 40.7 percent of disability diagnoses.[1] Some have speculated that a sizable amount of the growth in special education may not reflect a true increase in the incidence of disabilities. Instead, it may be the result of financial and other incentives that spur school systems to classify struggling students who may not truly suffer from a mental or physical disability as learning-disabled, and thus entitled, under various state and federal mandates, to receive more than ordinary attention, for which the school systems in question are compensated.

The question examined in this report is whether special-education voucher programs change the likelihood that students will be placed in special education. Such programs offer students with disabilities the opportunity to attend a private school charging fees that are paid with some or all of the resources that would have been spent on those students at a public school. Four states—Florida, Georgia, Ohio, and

Utah—have these programs, and they are the fastest-growing type of school voucher program nationwide.

Special-education vouchers might reduce future growth in special education by denying public schools the economic benefit to be gained from diagnosing as disabled students who are simply struggling academically. On the other hand, the recognition that a voucher can be the route to a private school education for their child might cause some parents to push for the child's classification as disabled, thereby increasing nominal disability rates.

Andrew Rotherham, cofounder of the research organization Education Sector, and Sara Mead, a senior research fellow at the New America Foundation, expressed the latter concern in a paper they prepared for the Progressive Policy Institute (2003). They wrote:

> [S]pecial education vouchers may actually exacerbate the over-identification problem by creating a new incentive for parents to have children diagnosed with a disability in order to obtain a voucher. In fact, if special education identification led to funding for private school attendance, it would be unusual if this did not create an incentive to participate in special education in many communities, particularly those with low-performing public schools.

If special-education vouchers accelerated growth in special-education enrollments, which have already become quite large, we would have reason to be leery of programs offering them. We find instead that, for a student in the average Florida public school in 2005-06, special-education voucher options reduced by about 15 percent the likelihood that he would be placed in special education. This evidence suggests that special-education vouchers place some constraint on growth in special-education enrollments and the costs that accompany such growth.

COMPETING VIEWS

Rotherham and Mead's theory depends upon the assumption that parents, in large numbers, have a decisive influence over the designation of students as candidates for special education. That assumption does not appear to be well-founded. Public schools, not parents, determine whether students are classified as disabled.

It is true that parents may challenge the decisions that schools make, but as the U.S. Supreme Court recently acknowledged in *Forest Grove School District v. T.A.*, "administrative and judicial review of a parent's complaint often takes years," mooting the effectiveness of such interventions. And the empirical research on the outcomes of special-education disputes has found that school districts win the majority of legal disputes with parents.

According to Mayes and Zirkel's (2001) review of the literature, "schools prevailed in 63% of the due process hearings in which placement was the predominant issue." In cases where the matter went beyond an administrative hearing and was actually brought to court, one study cited in Mayes and Zirkel's review found that "schools prevailed in 54.3% of special education court cases," which the authors say is in line with the findings of other studies. In suits seeking reimbursement for private school expenses (because a special-education voucher program is unavailable), Mayes and Zirkel found that "school districts won the clear majority (62.5%) of the decisions."

If special-education vouchers don't increase the number of students identified as disabled, is there any basis for believing that they decrease it? Research on the relationship between state special-education funding systems and special-education enrollments suggests that vouchers could reduce the incentive to identify students as disabled. Though no one disputes that disabilities exist and all declarations of disability are expensive, some recent work finds that factors unrelated to the presence of an actual disability might play a role in a school's decision to place a student in special education. For instance, Cullen and Reback (2002) and Figlio and Getzler (2002) found that schools place low-performing students into special-education programs in order to exempt them from taking high-stakes tests, the results of which would be poorer and might lead to sanctions on the affected schools if these students were to participate.

Other recent research finds a relationship between special-education funding formulas and the proportion

of a school's or a state's students who are identified as disabled. In most states, school systems' budgets increase along with the number of their students classified as disabled, giving such systems a financial incentive to place marginal students in special education. Some school systems have attempted to reduce this incentive by instead basing their special-education funding on historical enrollments. Greene and Forster (2002), Mahitivanichcha and Parrish (2005), and Dhuey and Lipscomb (2008), using state-level panel data, each found that states changing to what might be called a "census funding system" reduce their rate of growth in special education. Other work recognizes the same phenomenon when the financial incentive to identify students as disabled differs district by district within states. Using district-level data, Cullen (2001) found that financial incentives explained 40 percent of the growth in enrollments in special education in Texas during the early 1990s, and Kwak (2008) found a similar result in California.

Many people do not understand how public schools could benefit financially from placing students in special education when they would reasonably expect the special attention that disabled students require to impose a significant financial burden. One reason is that school finances are complicated and fairly opaque. While special-education services impose costs on schools, they also generate subsidies that school systems may know or believe exceed the cost of those services. This is most likely to be true in the case of students with mild disabilities, who may receive a degree of attention that is only slightly greater than what ordinary students are provided because they need only that much attention to achieve an acceptable level of proficiency or because of their school's interest in diverting resources obtained for special education to some other purpose. Even if the cost is not trivial, school officials who reclassify marginal students as disabled may not be doing anything more questionable than seeking additional resources for their neediest students.

Let's say a number of students in a class are behind in reading. A school could offer those students small-group instruction focused on improving reading skills and pay for it with regular school funds. But if schools claim that those students are behind in their studies because they have an SLD (the mildest form of dis-

ability and thus the one closest in character to a simple deficit in intelligence), which affects how their brain processes information, schools would provide similar small-group instruction for them but would receive subsidies from the state and federal government to do so. In short, costs might not rise much or at all, but revenue would, from identifying lagging students as suffering from an SLD—the category that has accounted for the bulk of the growth in special-education enrollments over the last three decades.

Whether the revenue from state and federal subsidies for special education exceeds costs and offers schools a sufficient financial incentive to move students into special education who would not have been moved there otherwise is not something that can be observed directly. But we can infer the influence of those incentives from schools' behavior. Since we know from previous research that schools increase special-education enrollments in response to financial incentives, we have reason to believe that the additional revenue that comes from identifying certain students as disabled exceeds the additional costs and, by implication, that the schools know that it does.

School voucher policies targeted at disabled students might undermine these financial incentives. Under such policies, public schools may still receive supplemental payments for each student they place into special education. However, students also have the option of enrolling in a private school, which would then receive not only the extra special-education funding but also the basic, per-capita educational stipend that goes to every student in every classification.

In this paper, we provide the first estimates (to our knowledge) of how special-education vouchers affect the probability that public schools will identify students as needing special education. We do so by examining shifts in the availability of private options under Florida's voucher program for disabled students. We utilize student-level panel data to evaluate the relationship between the probability that an elementary school student has been newly diagnosed as having an SLD—not only the mildest disability classification but the one whose diagnosis is most influenced by subjective factors—and the amount of competition for such students that his school faces from private schools

within a five-mile radius that accepted McKay vouchers in the year in question. This method follows previous work evaluating the responses of public schools to school choice policies. Our results suggest that fourth-through sixth-grade students in public schools facing average exposure to vouchers in 2005–06 were about 15 percent less likely to be newly diagnosed with an SLD than they would have been otherwise.

THE MCKAY SCHOLARSHIP PROGRAM

The John M. McKay Scholarship Program for Students with Disabilities (McKay) is a statewide program in Florida designed to provide parents of disabled students with the resources necessary for their child to attend a public or a private school of their choosing. Since its adoption, McKay has served as a template for other programs in the United States. Currently, voucher programs for disabled students that were modeled on McKay are operating statewide in Arizona, Georgia, and Utah. Ohio has adopted a similar voucher program specifically for autistic students.

McKay scholarships are available to any student who was enrolled in the Florida public school system during the previous year and has been assigned an Individual Education Plan—essentially a contract between the school system and each student diagnosed with a disability. After a student uses a McKay voucher to attend a private school, he retains the voucher until he decides to return to the public school, graduates from high school, or turns twenty-two years of age.

In order to participate in the program, private schools must meet certain safety requirements and employ teachers with at least a bachelor's degree. Unlike many other school voucher programs, McKay does not require private schools that want McKay funds to accept the voucher amount as full tuition payment; and private schools that accept the McKay vouchers from some students are not required to accept all applicants under the program.

The McKay program has grown dramatically since it was first implemented. In the period following its adoption statewide, in 2000–01, the number of students using its scholarships increased from 970 to 18,273 in 2006–07, making it the largest school voucher program in the United States.[2] Such growth is in large part due to the increase, from 100 to 811, in the number of private schools willing to accept the voucher.

McKay is distinguished from other voucher programs not only by the number of eligible candidates but also by the generosity of the scholarships it awards. Eligible students are provided with a voucher carrying a value equivalent to the lesser of the total amount of money that would be spent on the child in his current public school or the cost of tuition at the accepting private school. According to the Florida Department of Education, in 2006–07 the dollar value of a McKay scholarship ranged from $5,039 to $21,907, with an average of $7,206.[3]

Previous research has found that students participating in McKay appear to benefit from doing so (Greene and Forster, 2003). Recent research has found that the academic achievement of disabled students remaining in public schools rises when those students are given an opportunity, in the form of a voucher, to enroll in private school (Winters and Greene, 2008).

McKay also has implications for the funding of special education. Like many other states, Florida funds special education on a per-student basis according to a matrix reflecting the relative severity of a student's disability and the relative costliness of the services needed to help him. A per-pupil funding system like this could provide schools with an incentive to diagnose the marginal student as disabled if the additional dollars brought in by so doing exceeded the cost of the additional services provided.

By threatening to shrink the enrollments of public schools, forcing them to forgo not only a disabled student's special-education subsidy but also the basic stipend that is provided per student, regardless of classification, McKay may have the ability to discourage schools from misclassifying students as disabled.

On the other hand, McKay might provide the many parents who want a private education for their child, because they have been disappointed with their public

school's performance so far, with an incentive to push for a disability diagnosis. Though school systems have the final say over a student's diagnosis, parents are able to ask for a disability evaluation for their child (involving both objective and subjective elements)—and might put pressure on school systems to provide a positive diagnosis. If parents did, in fact, have the degree of power over the school system that Rotherham and Mead suspect they do, we would expect McKay to lead to an actual increase in disability diagnoses.

SPECIFIC LEARNING DISABILITY

Our analysis focuses on the impact of McKay on the probability that students are diagnosed with a Specific Learning Disability. We focus on SLD because it is more easily confused than graver forms of mental disability with simple cognitive deficits that do not arise from brain pathologies. This distinction also makes the diagnosis of SLD more likely to be influenced by extraneous factors, and thus to be more common than the medical realities themselves would indicate. Moreover, SLD is by far the largest and fastest-growing special-education category, and thus likely to dominate the formulation of policy.

According to the federal law known as the Individuals with Disabilities Education Act (IDEA), SLD is defined as "a disorder in one or more of the basic psychological processes involved [in] understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations."[4] Included in the SLD category are conditions such as perceptual handicaps, developmental aphasia, and dyslexia.

SLD is by far the largest special-education category in Florida, as it is in the nation. Table 1 reports the percentage of all students and all special-education students, by disability category, in our statewide data set, which includes only those students who were administered a standardized math and/or reading exam during the 1999–2000 school year, which was the year before the McKay program was adopted statewide. The table shows that students identified as having a diagnosis of SLD account for 61.2 percent of disabled students and 8.5 percent of all students in Florida.

SLD is among the mildest of the disability classifications covered under IDEA and, importantly for our purposes, is also the one whose diagnosis is most dependent on subjective evaluations. A child's classification as SLD is determined by the classroom teacher and at least one person qualified to conduct a diagnostic examination. One way that a child is determined to have an SLD is by noting the gap in performance between what a level of instruction subjectively deemed to be adequate should have produced and what it did, in fact, produce in the child's case. In the words of IDEA, a disabled child is one who "does not achieve adequately for the child's age or … meet State-approved grade-level

Table 1. Percent of Students in Each Disability Category, 2000		
	Percent of All Students	Percent of Disabled Students
Individual Education Plan (IEP)	13.9%	
Specific Learning Disability	8.5%	61.2%
Speech	1.5%	10.6%
Emotional	1.4%	9.7%
Language	1.0%	7.3%
Emotional Mental	0.6%	4.3%
Other Health Impairment	0.2%	2.1%
Emotional Severe	0.2%	1.7%
Deaf-Hearing	0.1%	0.9%
Orthopedic	0.1%	0.8%
Autistic	<0.1%	0.3%
Visual-Blindness	<0.1%	0.3%
Traumatic Brain Injury	<0.1%	0.1%

standards … when provided with learning experiences and instruction appropriate for the child's age or State-approved grade-level standards."[5]

There is reason to believe that the subjective nature of the SLD diagnosis has led to substantial overclassification of students as having an SLD. MacMillan and Siperstein (2001) suggest that public schools use low achievement alone in the diagnosis of SLD rather than a real clinical diagnosis of a student's problem in learning material. Shepard, Smith, and Vojir (1983) estimated that over half of the students identified as having an SLD in Colorado at that time did not fit either federal or state definitions of the disorder; Ysseldyke, Algozzine, and Epps (1983) and Ysseldyke, Algozzine, Shinn, and McGue (1982) found that many SLD students are indistinguishable from low-achieving regular-enrollment students. In the analyses that follow, we look for evidence of whether such misclassification of students as having an SLD is systematically related to the availability of vouchers that permit students to withdraw from their present public school and attend a private school of their choosing.

EMPIRICAL METHOD

We must first develop a measure of the degree of choice that students attending a school covered by the McKay program enjoy. We follow several other papers evaluating the systemic impact of school choice programs on public schools by utilizing the number of voucher-accepting private schools within a given radius of a public school as our measure of exposure to the possible benefits of the program (see Bettinger 2005; Booker et al. 2006; Buddin and Zimmer 2004; Bifulco and Ladd 2006; Sass

2005; and Winters and Greene 2008). The idea here is that schools near a student's home afford ready access but that schools farther away do not. We assume that public schools with fewer voucher-accepting private schools within reasonable traveling distance of them were affected less by the competition from the program because students had fewer available options. We also assume that parents with fewer voucher-accepting schools nearby would have less reason to push for a diagnosis of disability for their child. (Data were not readily available on the size of the private schools' enrollments, arguably an important factor as well in determining a disabled student's scope of opportunity to use his voucher.)

Our criterion for measuring a public school's degree of McKay exposure is the number of voucher-accepting private schools within a five-mile radius of it. Table 2 shows that during school years 2002–03 through 2005–06, the period of our analysis, there was a substantial increase in the number of schools willing to accept McKay vouchers as at least partial tuition payment.

We set out to measure whether the number of voucher-accepting private schools within the stated radius is related to the probability that a regular-enrollment student was newly diagnosed as having an SLD. In order to focus entirely on new diagnoses, we limit our panel data set to include only students who were not identified as disabled in any way in the previous year.[6] We do this because, unsurprisingly, in preliminary estimations we found that an existing diagnosis of a disability is a nearly perfect predictor of a diagnosis of disability the following year. Thus, we would not expect even a significant policy change like the enactment of McKay to decrease the probability that an already diagnosed child would remain classified as disabled.

	Statewide Totals		Within 5 Miles			
	Voucher-Using Students	Voucher-Accepting Private Schools	Average Number of Voucher-Accepting Private Schools	Std. Dev.	Min	Max
2001-02	5,013	296	3.3	3.7	0	18
2002-03	9,130	518	5.4	5.3	0	27
2003-04	13,739	687	6.9	6.6	0	31
2004-05	15,910	708	7.0	6.6	0	31
2005-06	17,300	751	7.6	7.2	0	34

Table 2. Voucher-Accepting Private Schools By Year

Using this restricted data set, we run a series of panel-regression models to estimate the probability that by the end of the academic year, a particular student will be identified for the first time as having an SLD. The dependent variable is a binary indicator of whether the student was diagnosed as having an SLD by the end of the school year. The analysis controls for such independent variables as student's grade level, Limited English Proficiency status, Free or Reduced Price Lunch status, race, ethnicity, gender, and cubic functions of the student's math and reading scores on the state's high-stakes standardized test, the Florida Comprehensive Assessment Test (FCAT), in the previous year.[7] We also include a series of fixed effects at the district, school, or student level, depending on the model. The fixed effects account for unobserved factors at these levels by allowing the variation utilized in the analysis to occur within the district, school, or student level. Finally, our variable of particular interest identifies the number of McKay-accepting private schools within a five-mile radius of any given public school in a particular year.

Formally, the basic model for estimation takes the form:

$$(1) \quad SLD_{ist} = \beta_0 + \beta_1\, Student_{ist} + \beta_2\, Exp_{ist} + \psi_i + \pi_s + \theta_t + \varepsilon_{ist}$$

where SLD is an indicator that equals 1 if student i enrolled in school s is identified as having an SLD by the end of year t, and zero otherwise; $Student$ is a vector of time-varying observed characteristics of the student; Exp represents the competitive threat from the McKay program, which we measure by counting the number of McKay-accepting private schools within a five-mile radius of the public school; ψ, π, and θ represent student, school, and year fixed effects, respectively; ε is a stochastic term clustered by school; and β_0–β_2 are parameters to be estimated.[8]

Ideally, we would follow students from the beginning of their public school careers, that is, from preschool. However, since our data come from administrative information linked to the state's testing system, we are unable to observe students prior to the third grade. Our use of a lagged test score means that we are also unable to use students in the estimation before they have entered fourth grade.[9] This is problematic, since the majority of SLD diagnoses occur earlier than the grade levels we observe. However, as Table 3 shows, there are a meaningful number of new SLD diagnoses in the fourth through sixth grades. About 1.5 percent of students who enter the fourth grade without having been diagnosed as having an SLD are so diagnosed by the end of the school year, and the number decreases to about 0.4 percent of undiagnosed students in the sixth grade. In all, about 1 percent of fourth- through sixth-grade students are newly identified as disabled during these years.

In sum, we maintain that the variation in the incidence of SLD diagnosis is sufficient to allow us to proceed. We concede, however, that the relationship between the chance to use a voucher and the rate at which students are classified as having an SLD might be different in the earlier grades from what it is in grades four through six, reducing our capacity to estimate the total impact of McKay exposure on all SLD diagnoses in the student-level model.

We estimate various forms of (1) that differ primarily in the way that we account for the influence of student and school characteristics. We estimate models utilizing a student fixed effect as well as models that utilize a school fixed effect instead. Since the lowest-performing students are the ones most likely to be identified as having an SLD, we also estimate each model after first restricting the data set to include only those students with math-test scores in the previous

Table 3. Students Newly Diagnosed as SLD by Grade in Sample				
	Grade 4	Grade 5	Grade 6	Total
Grade Level Entrants Not Previously Diagnosed SLD	572,416	576,108	599,476	1,748,000
Diagnosed SLD	9,002	5,537	2,476	17,015
Percent Diagnosed SLD	1.6%	1.0%	0.4%	1.0%
Number of Students in Sample				942,181
Percent of Sample Students Identified as SLD by Grade 6				1.8%

year that were at least one standard deviation below the mean in the state.

DATA

For the student-level analyses, we utilize a rich administrative data set supplied by the Florida Department of Education. The data set includes test-score and demographic information for the universe of public school students in Florida in grades three through ten in school years 2000–01 through 2004–05. As a consequence of our relying on a lagged student test score, our student-level analyses utilize observations of student diagnoses in school years 2001–02 through 2004–05. We also restrict the data set to include only fourth- through sixth-grade students for the reasons discussed above. Summary statistics for variables relevant to estimation of (1) are reported in Table 4.

The Florida Department of Education also provided us with the names and addresses of private schools that made themselves eligible to receive McKay vouchers for school years 2001–02 through 2005–06. We then used geographic information system (GIS) software to map these private schools as well as every public elementary school in the state by year in order to count the number of McKay-accepting private schools within a five-mile radius of each public school.

RESULTS

The results from estimating various forms of (1) for students in the fourth through sixth grade are reported in Table 5.

Each of the reported models—using a district, school, or student fixed effect—finds an inverse relationship between the number of private schools within a five-mile radius of a student's public school that accept McKay vouchers and the probability that he is newly identified as having an SLD. The size of the coefficient in each specification is also similar. Depending on the estimate, we find that with the addition of each McKay-accepting private school within a five-mile radius of the public school, the probability that a

Table 4. Summary Statistics - Student-Level Analysis		
	Mean	Std. Dev.
Diagnosed SLD During Sample Period	0.01	0.10
McKay-Accepting Schools Within 5 Miles	5.69	5.88
Prior Math Score	1505.84	276.92
Prior Reading Score	1504.35	338.39
Year 2002	0.24	0.43
Year 2003	0.25	0.43
Year 2005	0.25	0.43
Grade 5	0.33	0.47
Grade 6	0.34	0.47
Not Limited English Proficient	0.82	0.38
Male	0.48	0.50
Asian	0.02	0.14
African-American	0.23	0.42
Hispanic	0.22	0.41
Indian	0.00	0.05
Multiple Race	0.02	0.15
Not Free or Reduced Lunch	0.45	0.50
*2004 serves as comparison group		

child is identified as disabled decreases by 0.06 to 0.02 percentage points. The large number of both students and schools in our data set provides confidence that our estimates are able to measure such small effects accurately.

The table also reports results from estimations of (1) utilizing school or district fixed effects when we restrict the model to students whose previous year's math score was below a standard deviation from the mean for the state.[10] The impact of a nearby McKay-accepting private school was larger for this restricted sample than it was for the full sample, and it was statistically significant. The preferred model in this restricted sample utilizing a school fixed effect finds that the addition of another voucher-accepting private school within five miles of a public school reduces the probability that a child is identified as having an SLD by 0.204 percentage points.

While the size of this effect is relatively small, it is larger than it first appears. As shown in Table 2, in school year 2005–06 (the last year for which we have such data), there were, on average, 7.6 McKay-accept-

Table 5. Regression Results - Student-Level Analysis				
	Full Sample			Prior Math Score < -1 Std. Dev.	
McKay Accepting Schools Within 5 Miles	-0.000110***	-6.01E-05	-0.000200***	-0.000619***	-0.00204***
	-3.51E-05	-7.97E-05	-4.81E-05	-0.000201	-0.000637
R-squared	0.029	0.036	0.843	0.039	0.097
Observations	1748000	1748000	1748000	64584	64584
Year Fixed Effect	√	√	√	√	√
District Fixed Effect	√			√	
School Fixed Effect		√			√
Student Fixed Effect			√		
Student Time Variant Controls	√	√	√	√	√
Student Time Invariant Controls	√	√		√	

ing private schools within the stated radius of each of Florida's public schools. Thus, we find that, on average, McKay competition decreased the probability that a fourth-, fifth-, or sixth-grade student was newly identified as disabled by about 0.15 percentage points in 2005–06. Recalling the summary statistics in Table 4, we know that about 1 percent of students in our sample are newly identified as having an SLD during the sample period. This number translates into a 15 percent reduction in the probability that a student in 2005–06 attending a school with average McKay exposure for that year was identified as having an SLD.

CONCLUSION

In this paper, we find evidence that the introduction of special-education voucher options leads to a reduced number of special-education diagnoses. Our findings are consistent with a small literature indicating that financial incentives play an important role in the decision whether to diagnose a student as disabled.

While our finding of an inverse relationship between exposure to McKay and disability diagnosis is robust, it is difficult to put the magnitude of the impact of incentives into context. The primary external-validity problem is our inability to observe diagnoses of disability rendered before students enter the fourth grade, which is when most such diagnoses are made. We are tempted to assume that for every grade, our estimates of the size of the change in the probability of diagnosis are close to each other and that we could therefore safely apply the estimates found here to earlier grade levels. However, we lack a real basis for that assumption. We would be interested in seeing work addressing this issue in Florida and elsewhere undertaken.

One could interpret the result that we and previous research found in one of two ways: under McKay, there is less overclassification; or, under McKay, schools respond to the risk of losing funding by failing to diagnose as disabled some students who are in fact disabled. Although we can only speculate at this point, the tremendous growth in special education over the last few decades, along with the fact that much of this growth has been confined to the mildest form of learning disability—which happens to be the one in which subjective diagnostic judgments play the largest role—leads us to believe that the former interpretation is more likely.

At the very least, these findings give us enough confidence to conclude that special-education vouchers do not contribute to the growth of special-education enrollments. And our best evidence suggests that the availability of special-education vouchers places some constraint on the growth of special education, which has been quite rapid.

ENDNOTES

1. National Center for Education Statistics, Digest of Education Statistics: 2007, Table 47.
   http://nces.ed.gov/programs/digest/d07/tables/dt07_047.asp.

2. See www.floridaschoolchoice.org/Information/McKay/files/Fast_Facts_McKay.pdf.

3. Ibid.

4. See www.slc.sevier.org/ldoutl.htm.

5. See www.ideapartnership.org/oseppage.cfm?pageid=44

6. Because of this restriction, once a student in our data set is identified as disabled, he will exit the sample.

7. In models in which we exclude both student and school fixed effects, this vector also includes a district fixed effect, which in Florida is identical to a county fixed effect.

8. In practice, computational difficulties stemming from the large number of students and schools make direct estimation of (1) difficult. Since most students in the elementary grade levels evaluated here do not change schools, the school that a child attends is most often a time-invariant characteristic, so we treat it as such by excluding the school fixed effect when a student fixed effect is utilized. However, we also report results from models that replace the student fixed effect with a school fixed effect.

   We estimate (1) via ordinary least squares (OLS), which results in a linear probability model. For classical reasons, the limitations of SLD as a binary variable suggest that a method such as Probit is preferred. However, it is computationally quite burdensome to include school or student fixed effects in Probit models when conventional software is used. More important, use of a student fixed effect in a Probit model estimated by maximum likelihood (ML) forces the model to utilize only observations of students judged to have moved from one diagnostic category to another, because the fixed effect would be a perfect predictor of SLD diagnosis of those students whose status does not change. This limitation would severely restrict our sample and the interpretation of the coefficients. The linear probability model utilizing OLS is computationally manageable and does not suffer from the problem of being a perfect predictor. Some other recent studies have also utilized OLS to estimate linear probability models. (See, for example, Duggan and Levitt 2002; and Heckman and Snyder 2002.)

9. Third-grade students would have a prior test score if they were held back at the end of the previous year. However, we exclude such students because they are not representative of third-grade students generally.

10. When restricting the model to only very low-performing students, we do not also estimate models with a student fixed effect because by doing so, we would lose students whose test scores rise above and sink below the one-standard-deviation limit.

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