ed CHOICE

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DOES REGULATION REDUCE SPECIALIZATION?

Examining the Impact of Regulations on Private Schools
of Choice in Five Locations

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ABOUT EDCHOICE

EdChoice is a nonprofit, nonpartisan organization dedicated to advancing full and unencumbered educational choice as the best pathway to successful lives and a stronger society. EdChoice believes that families, not bureaucrats, are best equipped to make K–12 schooling decisions for their children. The organization works at the state level to educate diverse audiences, train advocates and engage policymakers on the benefits of high-quality school choice programs. EdChoice is the intellectual legacy of Milton and Rose D. Friedman, who founded the organization in 1996 as the Friedman Foundation for Educational Choice.

The contents of this publication are intended to provide empirical information and should not be construed as lobbying for any position related to any legislation.

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Executive Summary

This report considers whether certain regulations governing school choice programs reduce specialization and diversity in the supply of private schools that participate. We employ school and year fixed effects regression and examine individual private schools in five locations: Washington, D.C., Indiana, Florida, Ohio, and Louisiana as they transition into voucher program environments. Expanding on our prior analysis of the impact of regulations in three locations and building off of the work conducted by Kisida, Wolf, and Rhinesmith we exploit the Private School Universe Survey to chart how schools self-identify prior to and after switching into private school choice program environments in each of the five locations.[1]

We find that private school leaders in all five locations are more likely to classify their schools as less specialized than they were prior to entering the programs. We also find evidence to suggest that more homogenization occurred in more highly regulated voucher programs. These findings suggest a potential homogenizing effect of regulations on school supply, limiting the diversity of the private school market. These findings also suggest policymakers should carefully weigh the costs of regulating private school choice programs, as overregulation could reduce specialization and diversity of school supply in a given school choice program, limiting the options that are available to families.

Introduction

Private school choice options are being proposed and adopted in numerous states across the country. As of the spring of 2019, 62 private school choice programs were in operation in 29 states and the District of Columbia, serving more than 400,000 children.[2] Options such as tax credit scholarships, vouchers, and education savings accounts are enabling hundreds of thousands of children annually to access learning options that are the right fit for them. Although growth in private school choice programs and enrollment has been considerable over the past decade, increasing from just 10 programs in the year 2000 to 23 programs by 2008 and up to 62 in 2019, the percentage of private schools participating in school choice options varies considerably by program. Understanding how program design impacts the supply of private schools participating in these programs will be critical for policymakers as they work to create and expand education choice options for families.

As private school choice has grown, so too has our understanding of the impact of regulations on the willingness of private schools to participate in such programs. Local, state, and federal debates during the legislative process often focus on how, once created, a given school choice program will be "accountable" to parents and taxpayers. For policymakers, "accountability" is often understood to mean the layering on of regulations pertaining to participation in state of nationally norm-referenced tests, published outcomes on those tests, open admissions policies, teacher certification requirements, and prohibitions on parental co-pay ("topping off" the voucher amount), among other regulations. Understanding the impact of regulations on the supply of private schools willing to participate in these programs is important for researchers and policymakers as they work to examine, create, and expand education choice options for families. If the regulatory environment in a given location is such that it homogenizes the supply of private schools willing to participate in a school choice program, the regulations could produce negative academic results through the failure to fit students to learning options that best match their needs.[3]

Review of the Literature

Scholars have conducted numerous evaluations of the impact of school choice on academic achievement, academic attainment, resulting competitive pressure on surrounding public schools, and the impact on parental satisfaction. Although there are other areas with considerable research on the impact of school choice, pertaining, for example, to the effects of competitive pressures on public schools,[4] parent perceptions of school safety,[5] civic values,[6] fiscal impacts,[7] criminal activity,[8] and racial integration,[9] this brief review of the literature is confined to studies employing randomized control trial (RCT) evaluations, limiting the overview to the impact of school choice on academic attainment and achievement.

Building off Forster's and Shakeel, Anderson, and Wolf's reviews of school choice evaluations, we find 20 total U.S. studies using random assignment methods to assess the impact of school choice on either student academic achievement or attainment.[10]

Student Academic Attainment

Only three gold-standard evaluations exist linking private school choice to high school graduation and college enrollment. The first federal evaluation of the D.C. Opportunity Scholarship Program found that using a voucher to attend a private school increased the likelihood of high school graduation by 21 percentage points.[11] The two other studies did not find any statistically significant effects of private school choice programs in D.C. and New York City on college enrollment overall.[12] However, the New York City experiment found marginally significant positive effects of vouchers on college enrollment for minority students.[13]

Student Academic Achievement

To date, researchers have conducted 17 evaluations of the impact of school choice on participants' academic achievement using random assignment methods in the United States. Of those 17 evaluations, 11 found statistically significant positive gains on student achievement for some or all students,[14] four found no impact,[15] and two found negative impacts on academic achievement as a result of voucher use.[16]

Program Regulations

The success of the private school market relies on the ability of high-quality private educational institutions to enter the market.[17] Although highly policy-relevant, the effects of private school choice regulations on school supply are vastly understudied. The limited amount of research in this area could be due to two overarching issues: (1) voucher program regulations are not randomly assigned to specific areas, making experimental evaluations difficult, and (2) there is not a large amount of variation in regulations promulgated in different programs.

Although the research base is limited, the existing evidence suggests program regulations may have deterred high quality schools in Louisiana from participating in the Louisiana voucher program, potentially explaining the negative effects of participation on student achievement.[18] Private school leaders in states with heavily regulated school choice programs have considerable trepidation about possible future regulations, and are less likely to participate in voucher programs with high regulatory burdens.[19] Sixty-four percent of private school leaders in Louisiana, for example, reported that fear of future regulations was a major concern for them.[20]

Two survey experiments found that private school leaders in Florida, California, and New York were significantly less likely to commit to participate in hypothetical voucher programs in the following year if they were randomly assigned program regulations.[21] Specifically, the two studies found that random-admissions mandates reduced the likelihood that private school leaders were certain to participate by 60 to 70 percent, and the state testing requirement reduced the likelihood that private school leaders were certain to participate by 29 to 46 percent.

Our previous analysis found that voucher program regulations likely led to less specialization in three U.S. locations.[22] The current study provides an update to the previous report by adding more years of private school data, two additional program locations (Ohio and Florida), additional analyses (subgroup effects and analyses of private school specialization trends), more discussion of study limitations, and specific recommendations for policy.

Theory

In order for a school to participate in a taxpayer-funded school voucher program it must typically adhere to certain government regulations. At the most basic level, the desire on the part of policymakers and other stakeholders to regulate such programs stems from concerns that the rational self-interest of individuals could have negative—albeit inadvertent—consequences for society,[23] and as such, means regulation is necessary to protect society overall.[24] Although financial audits and report may not impose large costs on participating private schools, regulations pertaining to student testing (and associated impact on curriculum), rules governing admissions policies, accreditation requirements, and the prohibition of parental co-payments can have considerable impacts on a school's culture and mission.

Private schools have a particularly strong financial incentive to participate in school choice programs since they must contend with a public education system that is *free* at the point of delivery. Even then, the cost of excessive or overly burdensome regulations may outweigh the benefit of participation in publicly funded school choice programs if it means infringing on a school's mission, character, or model. As such, we expect that more highly regulated voucher program environments will increase homogenization of the supply of schools, with those that face the largest regulatory environments being the most likely to become isomorphic to—or mirror—their public school counterparts.

School Choice Programs in Five Locations

Indiana Choice Scholarship Program

In 2011, Indiana launched its Choice Scholarship Program (CSP), which provides vouchers to eligible children to attend a private school of choice. More than 34,600 students currently participate in the CSP, which is open to children from families earning up to 150 percent of the federal poverty line ($67,433 for a family of four during the 2016-17 academic year) or up to 200 percent of poverty for children with special needs.[25] The regulations governing the CSP are considerable: the state is permitted to review private school curricula, instruction, classroom materials, and private schools must administer the state test. State testing

outcomes and graduation rates of participating private schools are also used to assign an A-F letter grade, and schools receiving a D or F grade for two consecutive years lose program participation eligibility. Schools must also have sound accounting practices in place. Although these regulations are considerable, many private schools already adhered to the regulatory framework as a condition of participation in the Indiana High School Athletics Association.[26]

Ohio Educational Choice Scholarship Program

The Ohio Educational Choice Scholarship Program was signed into law in 2005 and became operational a year later in 2006. Nearly 23,000 children participated in the program during the 2016-17 school year, using a scholarship to attend one of 482 participating schools. To be eligible to participate, students must attend or be assigned to a failing public school (receiving a grade of D or F on the state's accountability system or be among the lowest 10 percent in school performance in the state).[27] The EdChoice program is lightly regulated. Participating private schools must administer the state test, and schools with more than 65 percent of students enrolled paying via the EdChoice Scholarship are required to have all students in the school take the state test. However, parental co-payments are not prohibited with the exception of co-payments for the lowest income students, meaning schools are largely free to charge tuition above the voucher amount.

Florida McKay and Tax Credit Scholarship Programs

The John M. McKay Scholarship for Students with Disabilities Program (McKay) was enacted and launched in 1999, and the Florida legislature expanded the program in 2000. Over 30,000 children participated in the program during the 2016-17 school year, using a scholarship to attend one of nearly 1,500 participating private schools. To be eligible to participate, students must have an Individualized Education Plan or a 504 plan and be enrolled in public school for a least one year.[28] The Florida Tax Credit Scholarship Program (FTC) was enacted and launched in 2001. Almost 100,000 students participated in the program in the 2016-17 school year, using a scholarship to attend one of over 1,700 participating private schools. Private schools participating in either program must be approved by the state and must require teachers to have a bachelor's degree, three years of teaching experience, or special expertise. The FTC program

also requires scholarship students to take a nationally norm-referenced test or the state public school assessment.

D.C. Opportunity Scholarship Program

In 2004, Congress established the first federally funded K-12 school choice program, in the form of the D.C. OSP. More than 1,100 eligible children currently use an OSP voucher to attend a private school of choice in the District. To be eligible, children must come from families earning less than $44,955 annually for a family of four.[29] The D.C. OSP is moderately regulated. Private schools must make students on a voucher available to take a nationally norm-referenced test if randomly chosen, but the private school they attend is not required to administer the exam. Private schools must also allow site visits by the program administrator, teachers must have bachelor's degrees, and schools must have sound accounting systems in place and be available for financial audits by the program administrator.

Although the D.C. OSP is moderately regulated at present (and at the time the Private School Universe Survey was administered), recently added regulations are beginning to considerably increase the rules and regulations with which participating private schools must comply. Beginning in the 2018-19 school year, unless amended, researchers evaluating students using an Opportunity Scholarship will have to use the same test currently used in D.C. Public Schools. Moreover, unlike in previous iterations of the law authorizing the OSP, private schools will have to be accredited upon program entry, rather than having a five-year grace period in which to obtain accreditation.

Louisiana Scholarship Program

The Louisiana Scholarship Program was established as a statewide voucher program in 2012. Some 7,100 students currently participate in the LSP, which is open to children from families earning less than $60,750 annually, and who have also attended an underperforming school (rated C, D, F, or T) during the previous school year, are entering kindergarteners, or were enrolled in a public school in the Recovery School District (RSD).

The LSP is highly regulated. Participating private schools must use an open-enrollment admissions process, students on a scholarship must take the uniform state test, and schools must maintain a curriculum deemed on par with public schools.[30] Maintaining a specialized educational institution can be highly difficult with an open-admissions process, and only one other program in the U.S.—the Milwaukee Parental Choice Program—has this requirement. Participating private schools must employ a testing coordinator who must attend Board of Elementary and Secondary Education (BESE) testing workshops and any additional training required to administer the tests.[31] The Louisiana Department of Education also monitors overall testing implementation and conducts school visits during testing periods.[32] Schools in Louisiana with more than 10 scholarship students in each grade or more than 40 students overall are assigned a Scholarship Cohort Index (SCI) score. Schools that receive an SCI below 50 in year two and onward, or have less than a 25 percent proficiency rate on state assessments, are barred from enrolling new scholarship students during the subsequent year. For private schools that provide special education services, they must provide information about what services will be offered and contrast that with the special education services the local school system provides. They must publish their tuition and fees and must cap tuition at the amount charged to students without scholarships.

Regulatory Differences across Programs

The major differences across program regulatory environments can be found in Tables 1a and 1b below. As illustrated, the LSP has the greatest number of requirements for participating schools, which include the prohibition of parental copayment, and an open-enrollment mandate. The Ohio Educational Choice Scholarship Program mandates that private schools accept the voucher amount as full payment for low-income students.

The D.C. OSP is the only program of the five to mandate that all teachers in core subjects have bachelor's degrees, and the Ohio program is the only one in the study that does not require financial reporting. Private schools in D.C. and Indiana must be accredited to participate in their voucher programs, while private schools in Ohio and Louisiana only need to be approved by the state.

Table 1a: Regulatory Burdens by Program

Variable	Indiana	Ohio	Florida McKay	Florida FTC	D.C.	Louisiana
Date Enacted	2011	2006	1999	2001	2004	2008
Average Funding Relative to Public School	43%	37%	81%	68%	47%	54%
Eligibility Rate	50%	10%	13%	49%	35%	20%
Private School Participation Rate	70%	44%**	48%	58%	69%	33%
Testing Requirement	X	X		X	X	X
Open-Admissions Process						X
Financial Reporting	X			X	X	X
Parental Copay Prohibition*						X
Teacher Requirements			X	X	X	

*Ohio prohibits parental co-payment for low-income families.
**Corey A. DeAngelis and Blake Hoarty (2018), *Who Participates? An Analysis of School Participation Decisions in Two Voucher Programs in the United States* (Policy Analysis 848), retrieved from Cato Institute website: https://object.cato.org/sites/cato.org/files/pubs/pdf/pa848.pdf

Table 1b: Detailed Regulations by Program

	Testing Mandate	Bachelor's Degree Requirement	Prohibition of Parental Co-payment	Accreditation	Open Admissions Requirement	Financial Reporting
Ohio	Yes. Participating schools must administer the state test to students on a scholarship. If more than 65% of students are on a scholarship, school must administer the test to all students.	No	No*	No. But must be chartered by the state.	No	No
Indiana	Yes. Participating schools must administer the Statewide Testing for Educational Progress (ISTEP) program.	No	No	Yes. Must have either state board, national, or regional accreditation.	No	Yes. Must submit financial reporting to the state.
Florida (McKay)	No. However, participating schools must report students' progress to parents annually.	Yes, if the teacher doesn't have three years of teaching experience or special expertise.	No	No	No	No

*Ohio prohibits parental co-payment of low-income families.

Table 1b (Continued): Detailed Regulations by Program

Florida (FTC)	Yes. Students must take a nationally norm-referenced test or the state public school assessment.	Yes, if the teacher doesn't have three years of teaching experience or special expertise.	No	No	No	Yes. Schools receiving more than $250,000 in scholarships must provide independent financial reporting to the state.
DC	Yes. Participating private schools must make students on a scholarship available at random for participation on the "state" test.**	Yes. Teachers in core subjects must have a bachelor's degree.	No	Yes. Must be accredited or on the path toward accreditation.***	No	Yes. Annual independent financial audit is required.
Louisiana	Yes. Participating schools must administer the state test.	No	Yes. Schools are prohibited from charging parents a tuition rate above the voucher amount.	No. But must be approved by the state.	Yes. Use open admissions when enrolling students on a scholarship.	Yes. Annual independent financial audit is required.

**Beginning in the Spring of 2019, OSP evaluators will assess students on an OSP scholarship using the PARCC test. However, the requirement is new for 2019 and does not affect this analysis.

***The most recent reauthorization in 2017 included a new requirement that participating private schools be accredited *upon program entry*.

Data

Building off prior research we conducted on the impact of regulations in Indiana, Washington, D.C., and Louisiana published in 2017, we extend those findings to two more locations (Ohio and Florida) using additional data from the nationally representative Private School Universe Survey (PSS) from the school year 1993-94 to 2013-14. The target population for this survey is all private schools in the United States as defined by the National Center for Education Statistics. Since the database contains unique school IDs for each period, we are able to follow individual schools over time. We use three periods before the voucher program enactment and two periods of data afterward for each program. In other words, we use data from fiscal years 2000 to 2008 for D.C., from fiscal years 2004 to 2012 for Louisiana, from fiscal years 2002 to 2010 for Ohio, from fiscal years 1994 to 2002 for Florida, and from fiscal years 2006 to 2014 for Indiana. Across the five locations, we use 11 periods of data total. The timeline of data used can be found visually in Table 2 below.

Table 2: Timeline of Data Used

Location	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014
Indiana							Y	Y	Y	Y	Y
Ohio					Y	Y	Y	Y	Y		
Florida	Y	Y	Y	Y	Y						
D.C.					Y	Y	Y	Y	Y		
Louisiana							Y	Y	Y	Y	Y

Note: "Y" indicates that a period is used. Thick black vertical lines indicate the period of voucher program enactment.

We are interested in five outcome variables located in the PSS questionnaire related to potential homogenization of private schools.[33] This information is located in questions 7b, 8a, 12, and 14a. These questions ask whether the school is coeducational (Co-Ed); whether the school has a religious orientation or purpose; and the overall purpose or type of school. The different types of schools that we are interested in include: regular, specialized (such as science/math, performing arts, gifted and talented, foreign language immersion), and alternative/non-traditional education. We also are interested in the percent of white students within a school to assess how program participation impacts study body composition. Since

existing literature has shown that private school choice programs tend to lead toward more racially integrated schools.[34]

We use data for all of the private schools, not just for the schools participating in voucher programs, for two main reasons: (1) we do not have data on the program participation status for every private school in every program/year, and (2) we expect that the effects of the voucher program on schooling supply are systemic, leading all of the private schools in the market to adapt to the program shock. However, since we would expect homogenizing effects to be strongest for schools that actually participate in voucher programs, and only one-third of the private schools in Louisiana participated in the voucher program, we should interpret any significant effects in Louisiana as conservative estimates. In other words, this should only make it more difficult to find effects where they are hypothesized to occur; potentially making these estimates lower-bounds of the true impact of regulations in Louisiana. Table 3 shows descriptive statistics of the data used below.

Table 3: Descriptive Statistics by Program

Variable	N	Mean	Std. Dev.	Within Std. Dev.	Min	Max
CSP (Indiana)						
Year	3427	2010.00	2.79	2.58	2006	2014
Enrollment	3427	157.00	182.34	117.36	1	1636
White (Percent)	3427	84.48	23.46	16.33	0	100
Co-Ed	3427	0.99	0.09	0.06	0	1
Religious	3427	0.57	0.50	0.46	0	1
Regular Ed	3427	0.83	0.37	0.24	0	1
Voucher Period	3427	0.37	0.48	0.45	0	1
Specialized	3427	0.01	0.11	0.08	0	1
Alternative / Other	3427	0.02	0.14	0.11	0	1
EdChoice (Ohio)						
Year	5034	2006.00	2.83	2.83	2002	2010
Enrollment	5034	235.00	225.58	49.32	1	2379
White (Percent)	5034	81.54	25.26	8.32	0	100
Co-Ed	5034	0.96	0.19	0.04	0	1
Religious	5034	0.80	0.40	0.06	0	1
Regular Ed	5034	0.77	0.42	0.12	0	1
Voucher Period	5034	0.40	0.49	0.49	0	1
Specialized	5034	0.02	0.12	0.09	0	1
Alternative / Other	5034	0.02	0.12	0.08	0	1
McKay and FTC (Florida)						
Year	5124	1998.00	2.83	2.83	1994	2002
Enrollment	5124	238.55	259.35	59.13	1	1986
White (Percent)	5124	70.48	31.25	9.96	0	100
Religious	5124	0.70	0.46	0.09	0	1
Regular Ed	5124	0.77	0.42	0.20	0	1
Voucher Period	5124	0.40	0.49	0.49	0	1
Specialized	5124	0.02	0.14	0.11	0	1
Alternative / Other	5124	0.06	0.24	0.16	0	1
OSP (D.C.)						
Year	430	2004.00	2.21	2.39	2000	2008
Enrollment	430	202.00	224.84	23.96	2	1097
White (Percent)	430	31.36	36.03	9.45	0	100
Co-Ed	430	0.93	0.26	0.00	0	1
Religious	430	0.50	0.50	0.06	0	1
Regular Ed	430	0.64	0.48	0.21	0	1
Voucher Period	430	0.39	0.49	0.45	0	1
Specialized	430	0.07	0.25	0.17	0	1
Alternative / Other	430	0.03	0.17	0.15	0	1

Table 3 (Continued): Descriptive Statistics by Program

LSP (Louisiana)						
Year	1893	2008.00	2.85	2.58	2004	2012
Enrollment	1893	341.00	277.73	64.30	1	1745
White (Percent)	1893	72.00	31.66	8.73	0	100
Co-Ed	1893	0.94	0.25	0.04	0	1
Religious	1893	0.13	0.34	0.17	0	1
Regular Ed	1893	0.88	0.32	0.12	0	1
Voucher Period	1893	0.58	0.49	0.45	0	1
Specialized	1893	0.02	0.12	0.09	0	1
Alternative / Other	1893	0.02	0.14	0.08	0	1

Note: Column one (N) displays the total number of schools by year observations for each location.

Methods

We use a school and year fixed effects regression approach of the form:

$$Outcome_{it} = \beta_0 + \beta_1 Voucher_{it} + \alpha_i + \varepsilon_{it}$$

Where *Outcome* is one of the six dependent variables of interest for school *i* at time period *t*. Our six dependent variables of interest are the percent of white students and whether or not the school, *i*, identified itself as Co-Ed, Religious, Regular Ed, Specialized, or an Alternative / Non-Traditional school in period *t*.

Voucher is the independent variable of interest, whether or not the institution was located in an educational market that had a voucher program in place, for school *i* in period *t*. This binary variable takes on the value of unity if the observation had a voucher program in place and zero otherwise. We expect that the coefficient of interest, β_1, will indicate more homogenization in the most-regulated program: the LSP. Since the other four programs have fewer regulations overall, we expect that their relationship will be less significant. Since these programs are targeted to low-income families, we expect that β_1 will indicate more racial diversity within schools.

Since many observable characteristics of schools, arguably, are relatively constant over time, we present results for the year and school-level fixed-effects models without time-variant controls. In fact, including any controls at all would bias our estimates toward zero since we simply wish to observe the impact of the market environment on school-level characteristics.[35]

Although the model without time-variant controls is theoretically preferred, all of our statistically significant results are also robust to a model controlling for changes in student enrollment. Most importantly, our methods allow us to compare individual schools to themselves, over time, as they switch into private school choice settings.

As a robustness check, we use a random effects probit regression model as well. Since individual schools choose to identify as one of several different types of institutions, we also use a multinomial probit regression model as a robustness check. However, since our sample sizes are all too small to rely on maximum likelihood estimation, our base school and year fixed effects regression model is preferred.[36] Nonetheless, our results tables also note when effects are robust to alternative specifications.

Results

Indiana Choice Scholarship Program

After switching into the voucher environment, private schools in Indiana became less specialized overall. As shown in Table 4 below, private schools were four percentage points more likely to identify as a regular school and 1.4 percentage points less likely to identify as a specialized school. Both effects represent around a sixth of a standard deviation reduction in private school specialization. These relatively small effects on specialization are as expected: the voucher program in Indiana has a moderate level of regulation for private schools, many of which, as mentioned before, were already adhered to by private schools for inclusion into the athletics association. We did not detect a statistically significant effect on the likelihood that Indiana private schools identified as alternative. In addition, Indiana private schools were about 4.5 percentage points—or around a quarter of a standard deviation—more inclusive of minority students after switching into a voucher environment.

Table 4: The Effect of the IN CSP on Homogenization

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Voucher	**-0.003**	**0.007**	**0.040***	**-0.014***	**-0.006**	**-4.474*****
	(0.462)	**(0.711)**	**(0.015)**	**(0.019)**	**(0.445)**	**(0.000)**
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Within	0.0008	0.6249	0.0036	0.0033	0.0027	0.0082
Time Periods	5	5	5	5	5	5
Schools	911	911	911	911	911	911
N	3427	3427	3427	3427	3427	3427

Note: All models use school and year fixed effects regression from 2006 to 2014. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Results for *regular* and *specialized* are also robust to the random effects probit regression model. All results are robust to models controlling for changes in student enrollment.

Ohio EdChoice

As shown in Table 5 below, private school leaders in Ohio have around a one percentage point lower likelihood of indicating that their institution is specialized after switching into EdChoice program years. This is equivalent to around an 11 percent of a standard deviation reduction in specialized identification. No statistically significant effects were found for private schools identifying as regular or alternative in Ohio. Private schools in Ohio experienced a 6.9 percentage point—or an 83 percent of a standard deviation—increase in the percentage of minority students after switching into the voucher environment. The EdChoice program had the biggest positive effect on racial integration out of all five locations. This finding is intuitive, as the EdChoice program the most targeted of the six programs examined, as only 10 percent of students are eligible statewide.

Table 5: The Effect of the EdChoice Scholarship Program on Homogenization

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Voucher	**0.002**	**-0.001**	**0.000**	**-0.010***	**0.002**	**-6.863***
	(0.247)	**(0.775)**	**(0.997)**	**(0.046)**	**(0.663)**	**(0.000)**
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Within	0.0011	0.0020	0.0028	0.0036	0.0019	0.0693
Time Periods	5	5	5	5	5	5
Schools	1471	1471	1471	1471	1471	1471
N	5034	5034	5034	5034	5034	5034

Note: All models use school and year fixed effects regression from 2002 to 2010. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Result for *specialized* is not robust to the random effects probit regression model. All results are robust to models controlling for changes in student enrollment.

Florida McKay Scholarship and Tax-Credit Scholarship Programs

As shown in Table 6 below, private school leaders in Florida have around a six percentage point lower likelihood of indicating that their institution is alternative after switching into private school choice program years. This is equivalent to around a 40 percent of a standard deviation reduction in alternative identification. Private school leaders in Florida were about two percentage points—or around 18 percent of a standard deviation—more likely to identify their schools as regular after switching into the school choice environment; however, this result is only marginally significant at a p-value of 0.073. Private schools in Florida experienced a 5.4 percentage point—or a 54 percent of a standard deviation—increase in the percentage of minority students after switching into the voucher environment. No statistically significant findings emerged for identifying as specialized or religious in Florida.

Table 6: The Effect of the Florida McKay Scholarship and Tax-Credit Scholarship Programs on

Homogenization

	Religious	Regular	Specialized	Alternative	White
Voucher	0.004	0.020~	-0.007	-0.063***	-5.359***
	(0.457)	(0.073)	(0.226)	(0.000)	(0.000)
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes
R^2 Within	0.0028	0.0013	0.0024	0.0170	0.0366
Time Periods	5	5	5	5	5
Schools	1308	1308	1308	1308	1308
N	5124	5124	5124	5124	5124

Notes: All models use school and year fixed effects regression from 1994 to 2002. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Results for *regular* and *alternative* are also robust to the random effects probit regression model. All results are robust to models controlling for changes in student enrollment except for *regular*. Florida did not have sufficient data to analyze *co-ed* because the older version of the PSS did not collect that information.

D.C. Opportunity Scholarship Program

As shown in Table 7 below, private schools switching into the D.C. voucher environment have around an eight percentage point—or 40 percent of a standard deviation—higher likelihood of describing themselves as a "regular" school; however, this result is only marginally significant at a p-value of 0.076. Private schools in D.C. also have around a 10 percentage point—or around 65 percent of a standard deviation—lower likelihood of describing themselves as providing an alternative or non-traditional education after switching into the voucher environment. Importantly, the D.C. voucher program requires that teachers in participating private schools have a bachelor's degree. Consequently, schools that provide non-traditional or alternative educational services face substantial costs associated with program participation, especially if they rely on teachers without bachelor's degrees. We did not detect a statistically significant effect on the likelihood that D.C. private schools identified as specialized. The voucher program does not appear to affect the racial composition of private schools in D.C., perhaps because of a lack of variation in student racial composition in this particular sample.

Table 7: The Effect of the D.C. OSP on Homogenization

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Voucher	**0.000**	**0.002**	**0.083~**	**0.023**	**-0.098****	**0.656**
	(1.000)	**(0.879)**	**(0.076)**	**(0.530)**	**(0.002)**	**(0.751)**
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Within	0.0000	0.0188	0.0161	0.0131	0.0492	0.0173
Time Periods	5	5	5	5	5	5
Schools	148	148	148	148	148	148
N	430	430	430	430	430	430

Note: All models use school and year fixed effects regression from 2000 to 2008. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. All results are robust to models controlling for changes in student enrollment.

Louisiana Scholarship Program

The most interesting results emerge for the program that attaches the most regulations to voucher program participation. As shown in Table 8 below, the LSP appears to create homogenization within the private schooling sector for most of the measured outcomes. As a result of switching into the LSP environment, private schools in Louisiana have a 3.6 percentage point—or 30 percent of a standard deviation—higher likelihood of describing themselves as regular, a 2.2 percentage point—or about a quarter of a standard deviation—lower likelihood of describing themselves as specialized, and a 1.5 percentage point—or around a fifth of a standard deviation—lower likelihood of describing themselves as non-traditional or alternative. Private schools in Louisiana experienced a 5.6 percentage point—or 65 percent of a standard deviation—increase in the percentage of minority students after switching into the voucher environment. This large effect size for racial integration in private schools follows intuition, as the LSP is targeted to the least-advantaged students based on household income levels and measures of school quality. Indeed, only 20 percent of students in Louisiana are eligible for the LSP. Since only a third of the private schools elected to participate in the LSP, while over two-thirds of private schools participate in the CSP and the OSP, and homogenizing effects should be largest for participating schools, we should consider any effects found in Louisiana to be conservative.

Table 8: The Effect of the LSP on Homogenization

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Voucher	**0.005**	**-0.020**	**0.036****	**-0.022***	**-0.015***	**-5.642*****
	(0.149)	**(0.160)**	**(0.001)**	**(0.012)**	**(0.049)**	**(0.000)**
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R^2 Within	0.0029	0.1553	0.0099	0.0071	0.0036	0.0447
Time Periods	5	5	5	5	5	5
Schools	532	532	532	532	532	532
N	1893	1893	1893	1893	1893	1893

Note: All models use school and year fixed effects regression from 2004 to 2012. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. Results for *regular* and *alternative* are also robust to the random effects probit regression model and the multinomial probit regression model. All results are robust to models controlling for changes in student enrollment.

Overall Effect Sizes

As shown in Table 8 below, most of the statistically significant effects are found in the most highly regulated voucher program: the Louisiana Scholarship Program. Three of the results for specialization are statistically significant in Louisiana, while only two are statistically significant in Indiana, Florida, and D.C., and only one is statistically significant in Ohio. In addition, while an equal number of effects are statistically significant (two) in Indiana, Florida, and D.C., the effects are much smaller in size in the more lightly regulated program in Indiana (around a sixth of a standard deviation in Indiana compared to 40-65 percent of a standard deviation in D.C. and 10-40 percent of a standard deviation in Florida).

Table 9: Statistically Significant Effect Sizes by Program

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Indiana			0.167* (0.015)	-0.175* (0.019)		-0.274*** (0.000)
Ohio				-0.111* (0.046)		-0.825*** (0.000)
Florida			0.099~ (0.073)		-0.403*** (0.000)	-0.538*** (0.000)
D.C.			0.395~ (0.076)		-0.653** (0.002)	
Louisiana			0.300** (0.001)	-0.244* (0.012)	-0.188* (0.049)	-0.646*** (0.000)
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: All models use school and year fixed effects regression. Standardized coefficients are presented. P-values in parentheses. ~ $p<0.10$, * $p<0.05$, ** $p<0.01$, *** $p<0.001$. All results are robust to models controlling for changes in student enrollment.

Subgroup Effects

Of course, we should not expect regulatory environments to affect all schools in the same way. For example, we may expect that regulatory burdens would have a larger homogenizing effect on schools with smaller student enrollment counts for three reasons: (1) smaller institutions have an advantage with adapting to environmental shocks in the market,[37] (2) large and profitable educational institutions may have enough market share to disregard the environmental shock, and (3) small private schools may be more willing to put up with the regulatory costs since voucher-generated demand is a larger portion of total demand than for large schools. We examine this by separately analyzing the homogenizing effects for the subgroup of schools that have student enrollment levels below the average amount in each location.

As shown in Table 10 below, most effect sizes are larger for smaller schools, as expected. In particular, all effect sizes are larger for small schools in D.C. and Ohio, and all but one of the effect sizes are larger for small schools in Louisiana. However, none of the effects are statistically significant for the subgroup of smaller schools in Indiana, perhaps because statistical power is limited after reducing the analytic sample size by 50 percent. The marginally significant effect for regular identification in Florida became statistically insignificant for Florida; however, the two other effects increased in size as expected.

Table 10: Statistically Significant Subgroup Effects by Program (Small Schools)

	Co-Ed	Religious	Regular	Specialized	Alternative	White
Indiana						
Ohio				-0.300** (0.007)		-0.868*** (0.000)
Florida					-0.710*** (0.000)	-0.674*** (0.000)
D.C.			0.662~ (0.059)		-0.967* (0.010)	
Louisiana			0.325* (0.027)		-0.338* (0.045)	-0.659*** (0.000)
School/Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

Note: All models use school and year fixed effects regression. Standardized coefficients are presented. P-values in parentheses. ~ p<0.10, * p<0.05, ** p<0.01, *** p<0.001. All results are robust to models controlling for changes in student enrollment.

Limitations

Changes in the variable self-identification as a "specialized" school were most pronounced among the five variables examined in this study. Changes in other variables, such as whether a school is co-educational or single sex, religious or secular, could also indicate homogenization among participating private schools in a school choice environment. However, switching from being a religious to non-religious school, or from a single-sex to coed school, is a

profound change for a principal or school leader, especially within the short time frame considered in this study. It is possible that a private school would choose to exit or never participate in a school choice program if the regulatory environment were such that it threatened such a core component of a school's mission and values. By contrast, the facets of a school's curricular offerings, such as whether it offers a foreign language immersion option, gifted and talented programs, or self-identifies as a STEM school may be a more fungible component of the school's overall mission.

Alternatively, switching from being a religious to non-religious school, such as a public charter school, is not unprecedented. Such a switch does, however, require a private religious school to forgo key components of its mission—critically, its religious-based instruction, curriculum, and even hiring practices. Although this would clearly suggest isomorphism to the public system, there is limited evidence of widespread private-to-charter conversions (although Memphis, Tennessee recently experienced nine such conversions). As McShane and Kelly identified, there have been six Catholic-to-charter conversions in Washington, D.C., 10 Catholic-to-charter conversions in Florida, and two Catholic-to-charter conversions in Indiana (one of which ultimately switched back to being a Catholic school).[38] Not only are such conversions not yet widespread, a school that converted to a public charter school would no longer participate in the Private School Universe Survey from which data for this study were derived. As such, the "religion" variable in this study would appear to be a less powerful variable for understanding homogenization than the "specialized" variable.

A second limitation of this study is its use of a data set (the PSS) that includes all private schools in a given state, rather than just the private schools that participate in a state's school choice program. We suspect, however, that this fact makes our estimates of homogenization conservative. As noted previously, homogenizing effects are likely strongest for the schools that actually participate in a given voucher program, so using the entire school population in a given state should only make it more difficult to find effects where they are hypothesized to occur, thus biasing our findings toward zero. Moreover, it is likely that the effects of voucher program regulations on schooling supply are systemic, potentially leading all institutions in a given market to adapt to the program shock. As a check, we examined national trends in specialization over time.

Tables 10a, 10b, and 10c examine three time periods prior to the switch into a voucher environment, and two time periods after the switch for each location. Table 11 considers national trends from 2000 to 2014. As shown in Figures 1, 2, and 3, specialization does not appear to be trending downward over time nationally and the designation as "regular" is also almost completely stable over time nationally, further supporting our hypothesis that uniquely strict regulatory environments may at least partially explain homogenization in the private school choice market. PSS data do not indicate a national reduction in specialized private schools over the study period, suggesting that our models are capturing effects of voucher program regulations rather than overall trends in homogenization over time.

Table 11a: Trends in Specialization Mean by Program Year (Regular)

Program	-3	-2	-1	+1	+2
CSP (Indiana)	0.81	0.83	0.84	0.85	0.86
EdChoice (Ohio)	0.77	0.76	0.77	0.77	0.78
McKay and FTC (Florida)	0.74	0.76	0.77	0.78	0.81
OSP (D.C.)	0.64	0.64	0.60	0.68	0.65
LSP (Louisiana)	0.85	0.87	0.89	0.91	0.91

Note: Thick black vertical lines indicate the period of voucher program enactment. Reported values are the proportion of private schools that identified as regular.

Table 11b: Trends in Specialization Mean by Program Year (Specialized)

Program	-3	-2	-1	+1	+2
CSP (Indiana)	0.02	0.01	0.01	0.01	0.01
EdChoice (Ohio)	0.02	0.01	0.03	0.02	0.01
McKay and FTC (Florida)	0.03	0.02	0.01	0.02	0.02
OSP (D.C.)	0.04	0.02	0.07	0.11	0.09
LSP (Louisiana)	0.02	0.02	0.01	0.01	0.01

Note: Thick black vertical lines indicate the period of voucher program enactment. Reported values are the proportion of private schools that identified as specialized.

Table 11c: Trends in Specialization Mean by Program Year (Alternative)

Program	-3	-2	-1	+1	+2
CSP (Indiana)	0.02	0.03	0.02	0.02	0.01
EdChoice (Ohio)	0.01	0.02	0.01	0.01	0.02
McKay and FTC (Florida)	0.12	0.06	0.05	0.04	0.02
OSP (D.C.)	0.08	0.02	0.04	0.00	0.00
LSP (Louisiana)	0.04	0.02	0.02	0.01	0.00

Note: Thick black vertical lines indicate the period of voucher program enactment. Reported values are the proportion of private schools that identified as alternative.

Table 12: National Trends in Specialization Mean by Year

	2000	2002	2004	2006	2008	2010	2012	2014
Regular	0.68	0.69	0.68	0.68	0.69	0.69	0.68	0.68
Specialized	0.02	0.03	0.04	0.04	0.03	0.02	0.02	0.03
Alternative	0.05	0.03	0.03	0.03	0.03	0.04	0.03	0.03

Note: Data come from all Private School Universe Survey observations for each year. Reported values are the proportion of private schools that identified as regular, specialized, and alternative.

Figure 1: National Trends in "Regular" Mean by Year
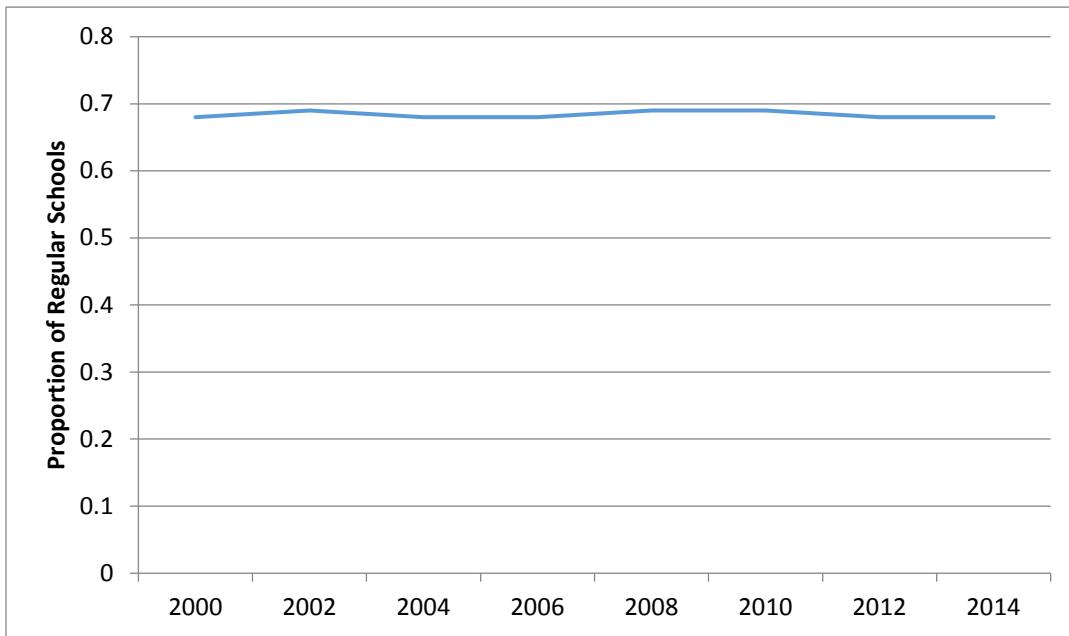
**Figure 2: National Trends in "Specialized" Mean by Year**
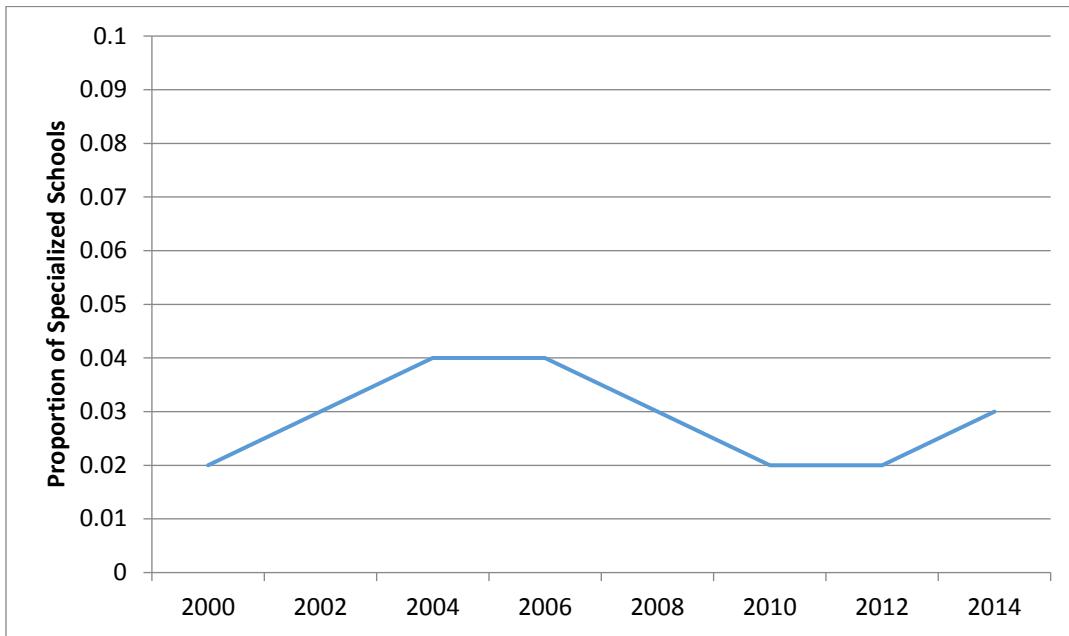
Figure 3: National Trends in "Alternative" Mean by Year
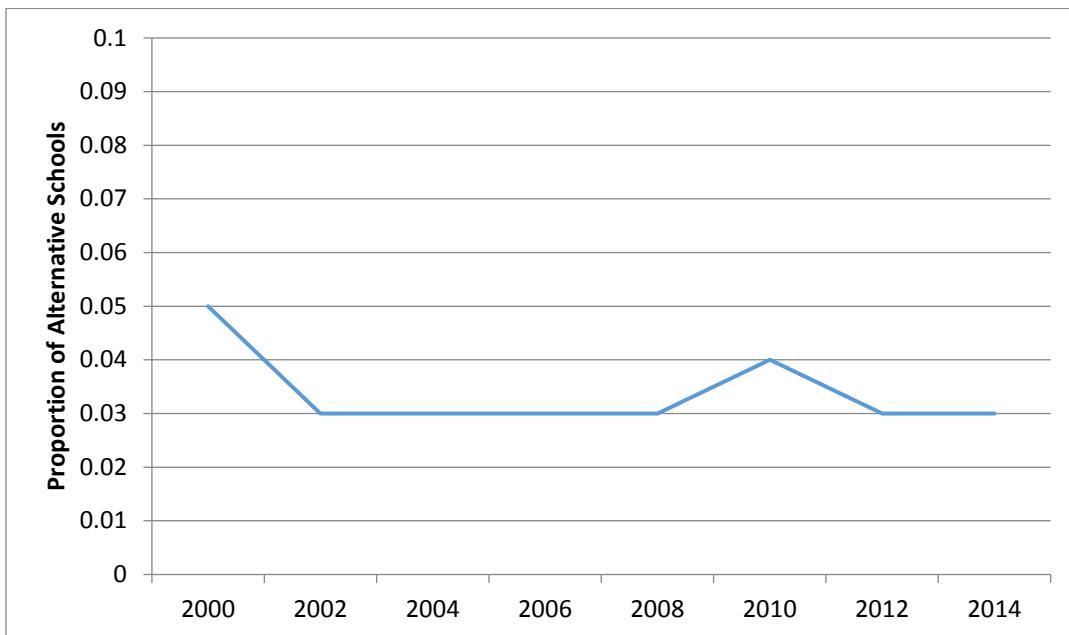
Policy Implications

Our findings suggest that voucher programs tend to induce homogenization in the supply of schools, with more regulated voucher environments inducing more homogenization. We find that upon switching into school voucher environments, private schools in all five locations are more likely to identify as less specialized than they were prior to entering the programs. However, the programs with the lightest regulations, Ohio and Indiana, had the lowest levels of homogenization.

We believe our results to be causal estimates of the impacts of private school choice program regulations on the homogenization of private schools within each location for at least three key reasons: (1) our econometric methodology allows us to control for all time-invariant characteristics of private schools, and (2) no other characteristics associated with participating in voucher programs—besides regulatory burden—theoretically lead to more homogenization, and (3) almost all statistically significant results are larger where we expect them: in smaller schools.

Our study finds that voucher program environments lead to more homogenization within geographic locations. However, we cannot definitively conclude that more highly regulated voucher program environments cause more homogenization in the supply of private schools across the five program locations. Nonetheless, our analyses provide suggestive evidence that more highly regulated voucher programs tend to be more likely to lead to less specialization for two primary reasons: (1) we find the most and largest effects in the most highly regulated voucher environment even though only a third of the private schools elected to participate in Louisiana, and (2) our analysis compares five different regulatory environments, finding the most effects for the LSP.

In Ohio, private school leaders had around a one percentage point lower likelihood of indicating that their institution is specialized after switching into the EdChoice program, representing the smallest amount of homogenization of programs in our analysis. This is equivalent to around 11 percent of a standard deviation reduction in specialized identification.

Homogenization occurred to a slightly greater extent among private schools in Indiana, which experienced around a sixth of a standard deviation (or about 17.5 percent of a standard

deviation) reduction in private school specialization, than in Ohio. These relatively small effects on specialization are as expected: the voucher program in Indiana has a moderate level of regulation for private schools, many of which, as mentioned before, were already adhered to by private schools for inclusion into the athletics association.

Most results were not statistically significant in Florida, a state with two relatively lightly regulated private school choice programs in place during the years of analysis. However, private school leaders in Florida had around a six- percentage point lower likelihood of indicating that their institution was alternative after switching into private school choice program years, a reduction of around 40 percent of a standard deviation.

D.C.'s private school market appears to have been more homogenized still. Private schools in D.C. have around a 10 percentage point lower likelihood of describing themselves as providing an alternative or non-traditional education after switching into the voucher environment. This is around a 65 percent of standard deviation decrease in the likelihood of private schools classifying as alternative in D.C. as a result of voucher program homogenization.

Finally, the program with the greatest level of homogenization was the LSP. Although private schools in Louisiana were 2.2 percentage points—or a quarter of a standard deviation— less likely to describe themselves as specialized (a lower likelihood than in D.C.), as previously noted, most of the statistically significant effects found in this analysis were found in the LSP. Three of the results for specialization are statistically significant in Louisiana, while only two are statistically significant in Indiana and D.C., and only one is statistically significant in Ohio. As Kisida, Wolf, and Rhinesmith note, this concern may be driven by the fact that the Louisiana program requires all participating private schools to accept all applicants regardless of previous academic preparation.[39] Importantly, the voucher program in Louisiana is the only one in the current study that requires participating private schools to surrender their admissions processes over to the state.

Recommendations for Policymakers

These findings suggest policymakers should carefully weigh the costs of regulating private school choice programs, as overregulation could reduce specialization and diversity of school supply in a given school choice program, limiting the options that are available to families. The Louisiana Scholarship Program continues to be a cautionary tale in this regard. Most of the statistically significant effects in this analysis are found in the LSP, the most highly regulated voucher program examined. Although, like Louisiana, the other four programs examined—Ohio, Indiana, Florida, and Washington, D.C.—also included testing requirements for participating schools, Louisiana's additional, most burdensome regulations were not widely mirrored. In addition to being the only program requiring schools to use an open-admissions process when admitting scholarship students, Louisiana also requires participating schools to report their daily attendance records to the state and to employ a testing coordinator, among other regulations. Indeed, private schools that did choose to participate in the LSP were experiencing declining enrollments prior to program entry—a fact that could be understood as a lagging indicator of school quality.[40] Student attrition prior to LSP participation suggests that more financially unstable private schools were willing to incur the regulations associated with program participation in order to participate in the LSP. The experience of private schools in highly regulated choice environments suggests that, in order to ensure diversity of school supply and genuine school choice for families, policymakers should:

- **Permit participating private schools to apply their existing admissions standards to students paying tuition with a scholarship.** Private school leaders should be allowed to set their own student admissions policies, regardless of whether they accept a voucher or other school choice mechanism as payment. Private schools have been correctly identified as "intentional communities" in which school leaders, teachers, and other stakeholders create a school environment that reflects the values of the community the school is designed to serve. Private schools then advertise their educational approach, and parents are free to select into the schooling model or not. Preventing a school leader from applying their own predetermined admissions standards, effectively allowing the

state to dictate school admissions procedures and policies, undercuts a school's ability to maintain that intentional community, and ultimately weakens school choice for families.

- **Avoid regulations that prescribe day-to-day school operations and create an unnecessary paperwork burden.** Reporting requirements levied on participating schools can create additional bureaucratic compliance burdens for school leaders, distracting them from their most important job of running a school. When those regulations veer into the prescription of day-to-day school practices and school culture, private schools may become reticent to participate in a school choice program, particularly if they see the costs of participation as outweighing the benefits. Moreover, parents select private schools because they offer something different than the district school to which their child was previously assigned, making the introduction of regulations borrowed from the public system inappropriate and counterproductive.

- **Create flexibility in how participating private schools demonstrate effectiveness.** A consequential evaluation by Hitt, McShane, and Wolf found that "a school choice program's impact on test scores is a weak predictor of its impacts on longer-term outcomes."[41] The findings demonstrate a disconnect between test scores and later life outcomes and suggest that policymakers should provide schools flexibility when it comes to demonstrating effectiveness. Moreover, private school performance on state tests is one of the school factors least important to parents when they engage in the school selection process.[42] By contrast, private school leaders worry testing mandates will drive school curriculum.[43] Policymakers should avoid levying uniform testing mandates on private schools participating in school choice programs.

- **Require fiscal transparency for taxpayers but empower parents to determine school quality and fit.** Evidence from Louisiana suggests that the fear of overregulation will dissuade private schools and education providers from participating in a school choice program. As such, accountability provisions should be structured in a way so that there is strong transparency for taxpayer dollars through state reporting requirements, while vesting accountability for educational outcomes with families who know their children's

needs best and have the greatest incentive to find educational options that work well for them.

- **Maximize flexibility for parents—explore education savings account options.** As an additional way to ensure private schools can retain the maximum amount of autonomy when participating in a school choice program, policymakers should consider flexible education savings account (ESA) options. Since ESAs enable families to direct their funds to multiple services, products, and providers, and since, to date, limited regulations have been attached to ESA options, private schools and providers may experience less pressure to conform to the existing state education model.

- **Strive for universality.** In addition to the above recommendations for keeping regulations at a minimum in order to maximize private school participation and diversity, policymakers should work to create universal access to school choice options. Universal eligibility would ensure *every* family has the opportunity to access learning options that work well for their children, and that all families have a vested interest in maintaining a program's success. Universality grows the pool of families with funding available to pay for private and boutique options such as tutoring, fostering demand, and enabling growth in the supply of providers. A universal education choice option also creates the scale necessary to put adequate pressure on the public system to improve—or risk losing students and dollars—in a fashion that would improve outcomes for all students, both those exercising choice and those choosing to stay in the traditional public system.

Conclusion

Policymakers should pay close attention to policy design. For example, policymakers may want to provide families with high-quality information so that families can make high-quality decisions, but recent research finds that simply giving families access to school choice increases the educational information gathered by families.[44] Moreover, while decision-makers would like to hold schools academically accountable, there is a mounting body of evidence indicating divergences between standardized test scores and long-term outcomes such as income, high school graduation rates, and happiness.[45] While additional regulations might appear beneficial, especially since they are well-intended, regulations on private schools associated with school choice program participation can lead to serious unintended consequences for their students. Our estimates indicate that additional regulations could reduce specialization in the supply of schooling, and, as a result, leave families with less meaningful educational options. If the diverse backgrounds and interests of children are not served by a broad set of available options, school choice programs could fail to improve student outcomes. As a result, decision-makers must balance the additional costs of regulation, such as homogenization in the supply of schools, with the additional benefits of regulation, such as the illusion of accountability, to design education choice policies that best serve families and the communities in which they reside.

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